CITY OF EMERYVILLE

EMERYVILLE SUSTAINABLE TRANSPORTATION BACKGROUND REPORT

MARCH 2012

NELSON\NYGAARD

EXHIBIT B

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STOP
STOP
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CHAPTER 1. INTRODUCTION

In the past several decades, Emeryville has seen a remarkable transformation. Growth in residents, employment, and retail options has redefined the City from its industrial past. Yet, this swift growth also has posed challenges for the City's future. Increasing demands on its transportation system and capacity constraints may become more evident in the coming years and could potentially inhibit the city's continued prosperity. Expanding roadway capacity as a means of tackling increased congestion may not be a viable option due to right-of-way constraints. Finally, a continued reliance on single-occupancy vehicles for transportation to, in and around Emeryville has a high impact on the environment as compared to other transportation choices. The Sustainable Transportation Plan was developed over the past two years to help the City of Emeryville address some of the issues noted above and to help achieve its transportation, environmental and economic goals and move toward a more balanced transportation network.

Some of the strategies highlighted in the Plan are enhancements and improvements on transportation programs and services that currently exist within the city while other strategies are new and innovative and may require the city to collaborate with other agencies and the private sector for implementation.

This Background Report presents the existing conditions, stakeholder interview summary, strategy details, and funding sources related to the Plan.

Existing Travel Modes and Shift to Sustainable Transportation Modes

There is no one silver bullet for reducing dependence on the automobile and changing the behavior of the large percentage of Emeryville workers and residents who drive alone to work. Many opportunities exist for improving transportation options and incentivizing workers to use transit and other forms of sustainable transportation. There are however, other trip purposes that do not readily lend themselves to sustainable transportation. For example, since Emeryville serves a unique role in the Bay Area as a regional retail destination with stores like IKEA, Home Depot and the Bay Street Center, automobile travel is likely the preferred mode of travel for this type of trip. Maintaining vehicular access to these regional retail stores is important as an economic foundation for the city. This Report recommends a series of strategies for improving transportation by modes other than single-occupant vehicle, while maintaining automobile access and convenience for certain trips that are considered invaluable by this mode. The strategies include parking management, transit improvements, improvements for pedestrians and cyclists, wayfinding and transportation demand management.

Figure 1-2 shows existing modes of travel for commuters and other types of trips for Emeryville and non-Emeryville residents for local, sub-regional and transbay travel. It reveals that “drive alone” is the dominant mode share for all work trips with the exception of commuters traveling to Emeryville from communities beyond its neighboring cities. This data demonstrates that there are many opportunities to increase the sustainable mode share through a combination of strategies recommended in this Report.

Mode share can be monitored using U.S. Census American Community Survey data, which provides 5-year averages on commute mode. The City counts pedestrians and bicycles at some intersections annually. Multi-modal counts will occur as transportation impact studies are conducted for development projects.

Many Emeryville employees work in San Francisco, Alameda County, or Contra Costa County. Four AC Transit bus lines to San Francisco stop within a quarter mile of most Emeryville work places, and seven AC Transit routes run from streets in or near Emeryville to areas in Alameda and Contra Costa County. Better pedestrian access to bus stops, bus stop amenities, parking pricing, parking cash out, commuter checks, a City transit map, and use of AC Transit’s EasyPass program could help to shift employees to transit.

A sample of six trips using sustainable modes is illustrated in Figure 1-3. For each sample trip the figure shows trip purpose, origin-destination, modes of travel, and travel time and costs. Since potential for increasing transit usage is greatest for work trips, four of the sample trips are for work trips to demonstrate the options and how feasible it is from both a travel time and cost perspective. Although the cost of driving is high, people typically do not factor their “sunk costs” for solo driving (such as vehicle maintenance and insurance) into their travel mode decisions. Those costs are figured into these sample trip costs.

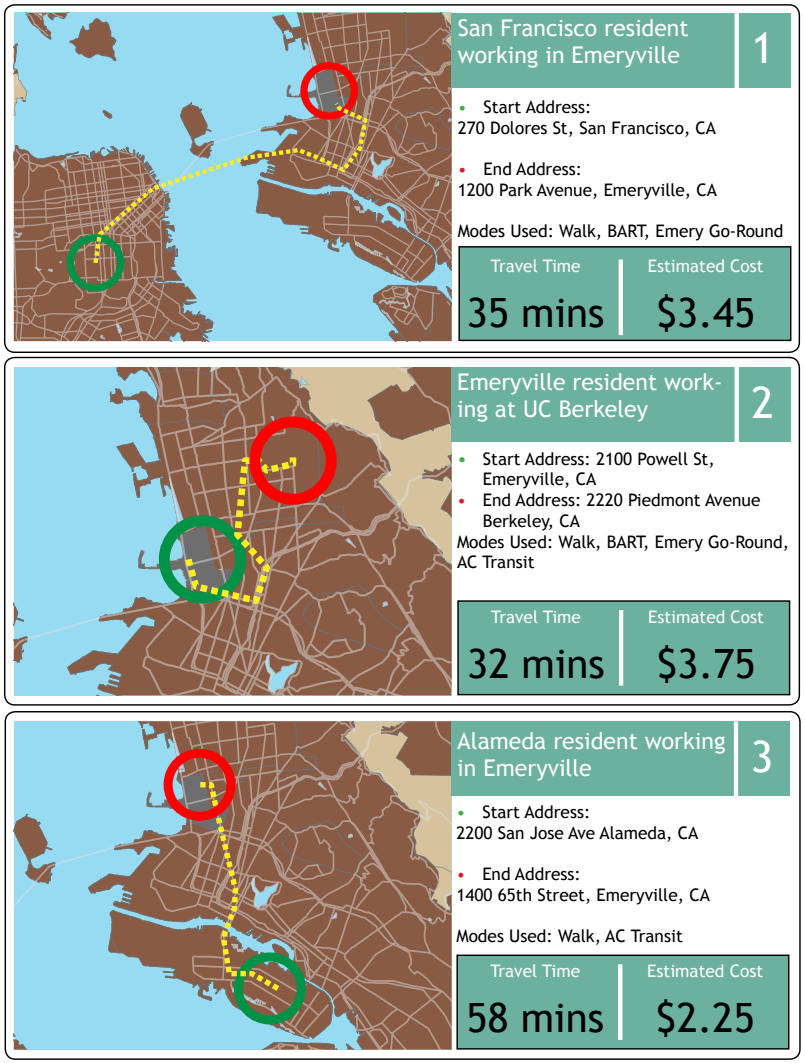
Figure 1-1 Existing Travel Modes and Opportunities for Increasing Sustainable Modes

Major Travel Markets		Existing Modes of Travel (1) *(>5% mode share)*		Opportunities To Increase Sustainable Transportation	Strategies to Encourage Sustainable Transportation
Origin	Destination	Mode	Approximate Percent (1)		
Commuters					
Emeryville Residents					
Emeryville	Emeryville	Drive Alone Walk	50% 37%	Walking, Bicycling, Emery Go-Round	Enhance connectivity of bike routes and facilities; prioritize pedestrian improvements to enhance walking experience, Promote parking cash-out for employers with 10+ employees; Modify EGR service to cater towards intra-Emeryville trips.
	Berkeley, Oakland, Albany and Piedmont	Drive Alone Transit Carpool	75% 15% 10%	Transit, bicycling	Promote Transit EasyPass Program; Improve service between Emeryville and neighboring cities; Enhance East Bay bicycle network connections.
	Alameda Island	Drive Alone Transit	60% 41%	Transit, ridesharing, bicycling	Promote Transit EasyPass Program; Install transit signal priority; enhance East Bay bicycle network connections.
	Remainder of Alameda County	Drive Alone Carpool	80% 20%	Ridesharing, transit	Promote Transit EasyPass Program; Incentivize carsharing programs and schedule adjustments for transferring between Emery Go-Round and BART.
	San Francisco	Drive Alone Transit Carpool	35% 50% 11%	Transit, formal and casual carpool	Emery Go-Round schedule adjustment for transferring to BART; Promote Transit EasyPass Program; Incentivize additional casual carpool pick-up locations; Improve signal priority; Stripe bus-only lanes; Engineer streets to help buses
Emeryville Workers					
Berkeley, Oakland, Albany and Piedmont	Emeryville	Drive Alone Transit Carpool	70% 8% 10%	Transit, ridesharing, bicycle	Promote Transit EasyPass Program; Improve service between Emeryville and neighboring cities; Enhance East Bay bicycle network connections.
Alameda Island		Drive Alone Transit Carpool	81% 6% 11%	Transit, ridesharing, bicycling	Promote Transit EasyPass Program; Install TSP; enhance East Bay bicycle network connections and ridematching.
Remainder of Alameda County		Drive Alone Transit Carpool	80% 6% 13%	Transit, ridesharing, bicycling	Promote Transit EasyPass Program; incentivize carsharing programs and schedule adjustments for transferring between Emery Go-Round and BART.
San Francisco		Drive Alone Transit Carpool	74% 12% 11%	Transit, formal and casual carpool	Promote Transit EasyPass Program; Emery Go-Round schedule adjustment for transferring to BART; Online ride matching for Emeryville residents; Incentivize additional casual carpool pick-up locations and place carpool signs at bus stops.

(1) Data based on the 2000 US Census Transportation Planning Package (CTPP 2000). Combined some destinations and used overall average.

Major Travel Markets		Existing Modes of Travel (1) *(>5% mode share)*		Opportunities To Increase Sustainable Transportation	Strategies to Encourage Sustainable Transportation
Origin	Destination	Mode	Approximate Percent (1)		
Recreational/Shopping/Other Trips					
Emeryville Residents					
Emeryville	Emeryville	N/A	N/A	Transit, carsharing, Bicycling,	Enhance connectivity of bike routes and facilities and improve pedestrian network to serve retail districts of Emeryville; Route adjustments to EGR to cater towards Emeryville residents.
	Berkeley, Oakland, Albany, and Piedmont	N/A	N/A	Transit, carsharing, Bicycling	Promote Transit EasyPass Program; Enhance connections of bike routes and pedestrian network from other cities to better link retail districts of Emeryville; Expand carsharing availability and incentivize membership.
	San Francisco and Other Bay Area Locations	N/A	N/A	Transit, ridematching, carsharing	Promote Transit EasyPass Program; Expand carsharing availability and incentivize membership; Adjust EGR schedules for transferring to BART.
Bay Area Residents					
Berkeley, Oakland, Albany, and Piedmont	Emeryville	N/A	N/A	Transit, Bicycling	Enhance connections of bike routes and pedestrian connections to transit from other cities to better link to retail districts of Emeryville.
San Francisco and Other Bay Area Locations		N/A	N/A	Transit, promotion of "park-once" policies	Encourage transit route adjustments to connect to Emeryville and provide schedule adjustments for transferring to BART; incentivize a "Park-once" policy.

Figure 1-2 Sample Sustainable Trips



Study Process

The Sustainable Transportation Background Report and Plan represent three years of research, analysis, public outreach and strategy development. The plan began as the Emeryville Alternative Transportation Strategies in 2008. In 2010, a decision was made to rename it the Emeryville Sustainable Transportation Plan as it better reflects the City's goal of economic vitality and environmental sustainability by developing a balanced transportation network. A timeline of the key milestones is summarized below.

Figure 1-3 Study Timeline

Sustainable Transportation Strategies Timeline	
Spring 2008	Planning Study Initiated
Summer 2008	Emeryville TMA Board Retreat
Fall 2008	Collaboration with General Plan Meetings
Fall 2008	Stakeholder Interviews
Winter 2009	Existing Conditions Report
Spring/Summer 2009	Complementary Transportation Planning Activities • Alternative Transportation Impact Analysis • Horton St. / Overland Ave. Corridor Analysis
May 2010	Open House Meeting
June 2010	Presentation to Emeryville TMA Board
March 2011	Draft to Planning Commission
May 2011	Draft to City Council, ETMA
June 2011	Draft to Bicycle/Pedestrian Advisory Subcommittee, Transportation Committee

Report Organization

The organization of this Background Report is shown in Figure 1-5 and summarized below. Existing conditions in the City of Emeryville including demographics, transportation services, the circulation network, and other transportation programs currently in operation are covered in **Chapter 2**. Stakeholder interviews enabled the study team to gain insight into the key challenges and priorities. **Chapter 3** presents the major themes from the stakeholder interviews and provides a summary of overall transportation needs in Emeryville. **Chapter 4** presents a comprehensive set of transportation strategies for Emeryville's consideration including transit, Transportation Demand Management (TDM), parking, bicycle and pedestrian connectivity and safety, and wayfinding. The strategies were developed based on existing conditions in Emeryville, best practices from around the country and reflect the priorities and values of Emeryville residents and community leaders. **Chapter 5** outlines some of the key implementation considerations and identifies funding opportunities.

Figure 1-4 Sustainable Transportation Background Report Organization

Chapter Name	Topics and Content
Chapter 1 – Introduction	• Report Introduction
Chapter 2 – Existing Conditions	• Demographics and Land Use • Circulation and Parking Network • Transit Services • Transportation Demand Management Programs • Bicycle and Pedestrian Connectivity and Safety • Wayfinding
Chapter 3 – Stakeholder Interviews and Summary of Needs	• Summary of Stakeholder Interview Feedback and Comments • Needs Summary
Chapter 4 – Sustainable Transportation Strategies	• Transit • Transportation Demand Management • Parking • Bicycle and Pedestrian Connectivity and Safety • Wayfinding • Feedback from Open House
Chapter 5 – Funding	• Funding Opportunities

Chapter 2 Existing Conditions


Shellmound Way
FREEWAY
WEST
80
EAST
San Francisco
Berkeley
580
WEST
Oakland
880
SOUTH
San Jose
KEEP RIGHT
XING PED
XING PED
BOOKS & MUSIC

CHAPTER 2. EXISTING CONDITIONS

This chapter summarizes important background elements that are essential information for the development of the Emeryville Sustainable Transportation Plan. This information includes Emeryville's demographic composition, existing land use conditions and planned land uses in Emeryville and their relationship to transportation. It also discusses existing elements of the city's circulation network, transit connections, and transportation demand programs that are currently in place. The information found in this chapter serves as the basis for understanding the existing environment within Emeryville.

Demographics and Land Use

Population, Housing, and Employment

Emeryville has experienced dramatic growth in population, housing and jobs over the past several decades, as industrial uses gave way to retail, employment, and housing development. Demographics such as age distribution, auto ownership, and the travel behavior of residents, employees, and visitors is important information to support the design of a transportation system that best meets the needs of residents, employees and visitors, especially one that enables and encourages use of alternative modes.

Emeryville has one of the highest jobs to employed resident ratios in the Bay Area, with 4.2 jobs per employed resident in 2005.

As of 2010, the City of Emeryville is estimated to have a population of 10,100, a 47% increase since 2000. Employment declined slightly during the same time period, from 19,860 jobs in 2000 to 18,610 jobs in 2010.[1] This decline may be attributed to the recent economic slowdown in the nation's economy. Population, housing and jobs are all expected to continue to grow steadily throughout the General Plan buildout period as shown in Figure 2-1.

1 The sources for all data in this chapter, except as otherwise indicated, are the 2000 US Census, 2000 Census Transportation Planning Package (CTPP), and Association of Bay Area Governments (ABAG), "Projections 2009"

Emeryville has one of the highest jobs to employed resident ratios in the Bay Area, with 4.2 jobs per employed resident in 2005. In the future, the City is planning to focus more development on housing compared to job growth, and as a result is expected to have 2.6 jobs per employed resident by the year 2030.[2] The percentage of households renting versus owning did not change significantly between 1990 and 2000, with 37% of housing units being owner-occupied and 62% being renter-occupied.

Figure 2-1 Population, Housing and Job Growth

	2000	2010	Build-out	Percent Change	
			2030	2000-2010	2010-2030
Population	6,882	10,100	15,500	47%	53%
Housing Units	3,975	5,770	9,755	45%	69%
Jobs	19,860	18,610	30,000	-6%	61%

Source: Department of Finance 2008, ABAG Projections 2009, City of Emeryville, Dyett & Bhatia 2008.

Age Distribution

In 1990, 13% of the total population was 18 years or under and just under 9% of the population was 65 years or over. In 2000, the number of people age 18 or younger dropped to 11%, whereas the number of people age 65 and over increased to 10%. These trends continue the Association of Bay Area Government's (ABAG) age projections for years 2010 and 2030. The projected number of people 19 years and under in 2010 is 23% of the total population, but this number drops in the 2030 projections to 20% of the population. The difference between the Census data and ABAG's projections may reflect a large number of 19 year-olds as well as an increase in the number of people under 20. The number of people who are 65 years and over will continue to increase according to ABAG's predictions from 11% in 2010 to 21% in 2030. Expectations that nearly one quarter of the population will be over the age of 65 by 2030 indicate that a re-evaluation of transportation needs and services in the longer term will be necessary. Figure 2-2 summarizes the age distribution in 1990 and 2000, and projected by ABAG in 2010 and 2030.

2 Department of Finance 2008, ABAG Projections 2009, City of Emeryville, Dyett & Bhatia 2008

Figure 2-2 Age Distribution as Percentage of Total Population

	US Census		ABAG Projections	
Age Distribution	1990	2000	2010	2030
18 years old and under*	13%	11%	23%	20%
65 years and over	9%	10%	11%	21%
Total:	22%	21%	34%	41%

* ABAG Projections for youth are defined as 19 years and under

Disability Status

In 2000, 21% of the civilian non-institutionalized population five years and over in Emeryville indicated having a disability (including temporary disability). Comparatively, 18% of the non-institutionalized population five years and over in the San Francisco-Oakland-San Jose, CA Metropolitan Area indicated having a disability.[3]

Household Income and Auto Ownership

In 2000, the median household income in the City of Emeryville was $45,359 with 28% of households having income less than $25,000/year. 11% of the households in Emeryville did not have access to a vehicle in 2000, similar to the nine-county San Francisco Bay Area, of which 10% of households did not have access to a vehicle in 2000.

Journey to Work

Employed residents of the City of Emeryville have a lower drive-alone rate (57%) compared to the San Francisco Bay Area (68%), especially if they also work in Emeryville (see Figures 2-3 and 2-4 below), whereas employees in Emeryville who live elsewhere have a higher-drive alone rate than the Bay Area average. The percent of resident commuters using public transit rose from 13% to 19% between 1990 and 2000, primarily because of the successful Emery Go-Round shuttle service.[4] Emery Go-Round ridership rose by approximately 70% during that time period. At the

3 US Census Bureau, Census 2000, Table P119: Imputation of Disability Items for the Civilian Non-institutionalized Population 5-years and over.

4 US Census Bureau, Census 1990, Table P049: Means of Transportation to Work: Workers 16 years and over (STF-3); Census 2000, Table P30: Means of Transportation to Work: Workers 16 years and over (SF-3)

same time, the number of residents who commute to work in a carpool decreased from 17% to 9%, a drop of eight percentage points between 2000 and 2010.[5] Commute times for Emeryville residents increased by almost 20% between 1990 and 2000. The average travel time to work in 1990 was 22 minutes; by 2000 it had increased to 26 minutes.

Figure 2-3 Work Commute Mode - Employed

	Emeryville		SF Bay Area
Mode	1990	2000	2000
Drove alone	58%	57%	68%
Carpooled	17%	9%	13%
Public transportation	13%	19%	10%
Walked	4%	6%	4%
Other means	3%	3%	2%
Worked at home	5%	6%	3%

Image from Nelson\Nygaard

In 2000, 22% of Emeryville residents also worked in Emeryville, but the most common job location for employed residents was the City of San Francisco (26%), and another 17% worked in Oakland. The most common residential locations of Emeryville employees were San Francisco (27%) and Contra Costa County (24%). Overall, of all jobs in Emeryville, 95% are occupied by employees living elsewhere.

A large proportion – 28% – of residents who worked in Emeryville walked to work in 2000 (as compared to only 3.2% of all Bay Area commuters) and another 4% rode a bicycle. Only 37% of Emeryville residents who worked in Emeryville drove alone, compared to 60% of residents who worked outside Emeryville. A significant number of Emeryville residents working elsewhere carpooled (10%) or used public transit (28%). Of Emeryville workers living elsewhere, 77% drove alone and 13% carpooled. 21.9% of Emeryville residents take transit to work, while only 6.2% of Emeryville workers take transit to access their place of work in Emeryville.

Commute times for Emeryville residents increased by almost 20% between 1990 and 2000. The average travel time to work in 1990 was 22 minutes; by 2000 it had increased to 26 minutes.

In 2000, 6% of workers in Emeryville who lived elsewhere rode transit to work. However, in the last eight years, Emery Go-Round ridership has increased significantly, with almost half of MacArthur BART patrons transferring to or from the Emery Go-Round (see this chapter's section on transit), suggesting that a larger proportion of workers are using transit to come from other locations to work in Emeryville. Figure 2-4 summarizes the travel mode of commuters working or living in Emeryville.

5 The most recent journey-to-work data for the City of Emeryville is from the 2000 Census Transportation Planning Package (CTPP).

Figure 2-4 Travel Mode of Commuters in 2000

Emeryville Residents	Travel Mode of Commuters						Work at Home	Total Population
	Drive Alone	Carpool	Transit	Bicycle	Walk	Other		
Work in Emeryville	37%	5.3%	25%	3.8%	28%	1.1%	25%	1,000
Work Elsewhere	60%	10%	28%	0.7%	0.1%	2.0%	n/a	4,000
Emeryville Workers								
Live Elsewhere	77%	13%	6.4%	1.3%	1.4%	0.7%	n/a	17,000

Source: 2000 US Census Transportation Planning Package

Planning Context

Several important planning efforts have recently been completed or are currently underway that will have a significant impact on the transportation system and its relationship with the built environment. The following section provides brief descriptions of these plans.

General Plan Update

In October 2009, the City of Emeryville adopted a new General Plan, which serves as the blueprint for the future growth and development of the City. The General Plan is based on a set of guiding principles expressing a vision for Emeryville. These principles include the following:

- The City is comprised of distinct neighborhoods and districts that are connected to each other and the region by a variety of modes, without need for an automobile for travel
- A diverse and inclusive community providing increased economic opportunity, education, and support for a variety of individuals, households, and families
- Strongly supportive of public health, environmental sustainability, and economic growth and stability

Transportation is recognized in the General Plan as fundamental and pivotal to achieve these goals. The Plan states that "a confluence of demographic, economic, and environmental trends are converging toward the necessity of creating a multi-modal transportation network in Emeryville."[6] Reasons cited include an aging population, increasing fuel costs, and concerns about climate change, with a wide range of other motivating factors expressed by stakeholders and the community, including opportunities to improve public and personal health; reducing environmental impacts of transportation; reducing housing and business transportation costs, while increasing access to jobs, education, and markets; and increasing social connectivity within the community.

The General Plan, as currently written, represents a shift in the City's approach to transportation. An emphasis is placed on not just automobiles and mobility, but rather access by all modes. Attention is given to the relative costs and benefits of policy decisions impacting transportation and their potential to support achievement of the goals of the Plan.

Fundamental transportation-related strategies in the General Plan include:

- Investments in transportation infrastructure and services to move towards a more equitable and efficient multi-modal transportation system
- Land use policies to encourage more compact, mixed-use development providing many amenities within walking distance and supportive of longer-distance travel by bicycle and public transit, rather than reliance on an automobile
- Design strategies for streets and public spaces to encourage more walking, by making it safer, more comfortable and convenient, and universally accessible to all

Several policy directives are proposed to support these strategies, including a street typology defining priority mode of access on various city streets, an expanded methodology to measure the impacts of proposed projects on all modes of transportation, a revised transportation impact

6 City of Emeryville General Plan, Transportation Element

fee providing funding for projects supporting alternative transportation, a commitment to better accommodate all modes of transportation on city streets through a "complete streets" policy, and further exploration of the potential for the City to implement transportation demand management policies and programs citywide. This plan is at http://ca-emeryville.civicplus.com/index.aspx?NID=307.

Design Guidelines

City-wide design guidelines adopted in December 2010 address the design of sidewalks with their landscaping and the design of streets by street type. These guidelines are at http://ca-emeryville.civicplus.com/index.aspx?NID=1193.

Bicycle and Pedestrian Master Plan Update

In July 2010, the City of Emeryville initiated an effort to update its Bicycle and Pedestrian Master Plan. The existing plan was adopted by the City in July of 1998 and included guidelines for pedestrian and bicycle facilities and a list of priority projects. The Bicycle and Pedestrian Master Plan Update process officially began in September 2010 and is scheduled to be completed in approximately one year's time. The strategies noted in the Sustainable Transportation Plan related to bicycle and pedestrian projects and programs are intended to complement improvements and programs that will be presented in the forthcoming Bicycle and Pedestrian Master Plan.

Parks and Recreation Strategic Plan

The Emeryville General Plan includes goals and policies for a parks and open space system. It also includes a map of parks, open space, and public services. The map identifies three sites for major parks and several generalized locations of other park opportunities. This plan is relevant to transportation as it includes projects such as trails and paths for pedestrians and bicycles that serve a recreational and a functional purpose. In 2010, MIG consultants were retained to help the City prepare a Parks and Recreation Strategic Plan to decide how to implement the General Plan goals and policies related to parks and recreation. The strategic plan was adopted in January 2011. This plan is at http://ca-emeryville.civicplus.com/index.aspx?NID=1438.

Other Relevant Studies and Plans

Climate Action Plan

In November 2008, Emeryville adopted a Climate Action Plan. It includes two government operations measures and five community-scale measures that directly address transit. These measures are listed below.

- Increase Emery Go-Round and AC Transit ridership – 10 daily City employees switch to bus
- Increase BART and Amtrak ridership – 10 daily City employees switch to rail
- Allow bicycles on trains and buses – 50 additional daily bicycle-transit trips
- Expand Emery Go-Round service in range and/or frequency – 1,000 additional daily passengers
- Implement bus rapid transit or shuttle programs – 1,000 additional daily passengers
- Increase AC Transit ridership – 500 additional daily passengers
- Increase BART/Amtrak ridership – 500 additional daily passengers

This plan is at http://ca-emeryville.civicplus.com/index.aspx?NID=332.

MacArthur BART Station Safe Routes to Transit Bicycle Feasibility Study

This study was conducted to "identify the optimal means for providing bicycle access to the MacArthur BART Station in the 40th Street/MacArthur corridor in Oakland, California." It was completed in June 2008.

The goal of the study was to provide improved bicycle and pedestrian access, while maintaining an acceptable level of vehicle operations and high-quality service by AC Transit and the Emery Go-Round along this corridor.

Bicycle lanes exist on 40th Street and other streets in the vicinity of MacArthur BART Station, but do not connect to the station itself. Bicycling is desirable as a significant mode of access to the station to reduce vehicle trips and increase overall patronage, especially as new development may occur at the station site and in its vicinity.

The primary conclusions and recommendations of the study were as follows:

- A reduction in number of vehicle lanes would result in unacceptable delays for both automobiles and transit vehicles
- Dedicated (Class II) bicycle lanes were recommended along the wider portions of West MacArthur Boulevard and 40th Street, and 41st Street in Oakland.
- The narrower segments of these streets, including the segments of 40th Street in Emeryville, were recommended for designation as Class III Arterial Bicycle Routes and a segment of 41st Street was recommended for designation as a Class III Bicycle Boulevard.

More than 75% of those surveyed as part of the North Hollis Parking Plan believe that both cost and availability are important. 41% were willing to pay a small fee per hour for on-street parking.

Major Developments Study

Formerly referred to as the "Big 4 Traffic Study," Fehr & Peers (F&P) and Kimley-Horn Associates (K-H) performed an evaluation of the expected traffic impacts of four major development proposals in Emeryville,[7] as well as already-permitted potential expansion of the Novartis site. These studies were supplemented by an independent evaluation by Nelson\Nygaard Consulting Associates and focused especially on opportunities to reduce vehicle trips produced by proposed developments through transportation demand management strategies such as those currently proposed for the Marketplace Redevelopment project.

The initial studies by F&P and K-H suggested a significant increase in automobile traffic in Emeryville over time, but the contribution from these specific projects would be a relatively small proportion of overall growth in automobile traffic. The K-H study also explored several potential traffic mitigation strategies, including changes to vehicle circulation patterns, increases in auto capacity, especially at certain intersections, changes to pedestrian signal activation, and a pedestrian/bicycle path on the Powell Street Bridge over the railroad tracks (through a widened bridge).

The Nelson\Nygaard evaluation focused on the relative costs and benefits of proposed changes to the circulation network. The analysis included consideration of the potential for increased roadway capacity to induce additional vehicle traffic, as well as opportunities for transportation demand management strategies (TDM), such as free bus passes and market-rate pricing for parking, to reduce the total vehicle trips generated by the proposed projects and possible expansion of Novartis. Overall, they found that the proposed changes would have a highly detrimental effect on pedestrians, bicyclists, and public transit in an area that is already heavily auto-oriented.

The evaluation's final recommendation was for the City to pursue TDM programs and strategies throughout the City, and identify other opportunities to reduce overall demand to enable existing roadway capacity to best serve both automobiles and other modes, without any expansion of vehicle capacity necessary.

After review of these various studies, and subsequent discussion with consultants and City staff, the City Council elected to proceed with vehicle capacity enhancements to maintain and increase automobile access to regional retail in the southwest area of the City, the area along Shellmound and 40th Streets between Powell Street and San Pablo Avenue. Other changes, such as adding additional lanes for turning vehicles, in areas with more residential and office employment uses, were not approved. A commitment, in principle, was made by City Council to further explore opportunities to reduce vehicle trips from these developments, and citywide, as is being pursued through the Sustainable Transportation Plan.

North Hollis Parking Plan

The City of Emeryville, with the support of Wilbur Smith Associates, developed a parking plan for the North Hollis area of Emeryville. The plan was initiated due to concerns expressed by the community about a shortage of on-street parking for local residents and off-street parking for local employees. The goals of the plan were to reduce solo driving and parking demand, coordinate and better manage the parking supply, and increase parking efficiency.

The Existing Conditions Report examined parking supply and availability in the North Hollis area, including both on and off-street facilities, as well as changes to parking demand expected in the near future, with a focus on weekday parking when employee demand is highest.

7 Projects are: Emeryville Marketplace Redevelopment, Transit Center, Bay Street Site B, and Gateway at Emeryville.

Figure 2-5 Emeryville Parking Management Plan

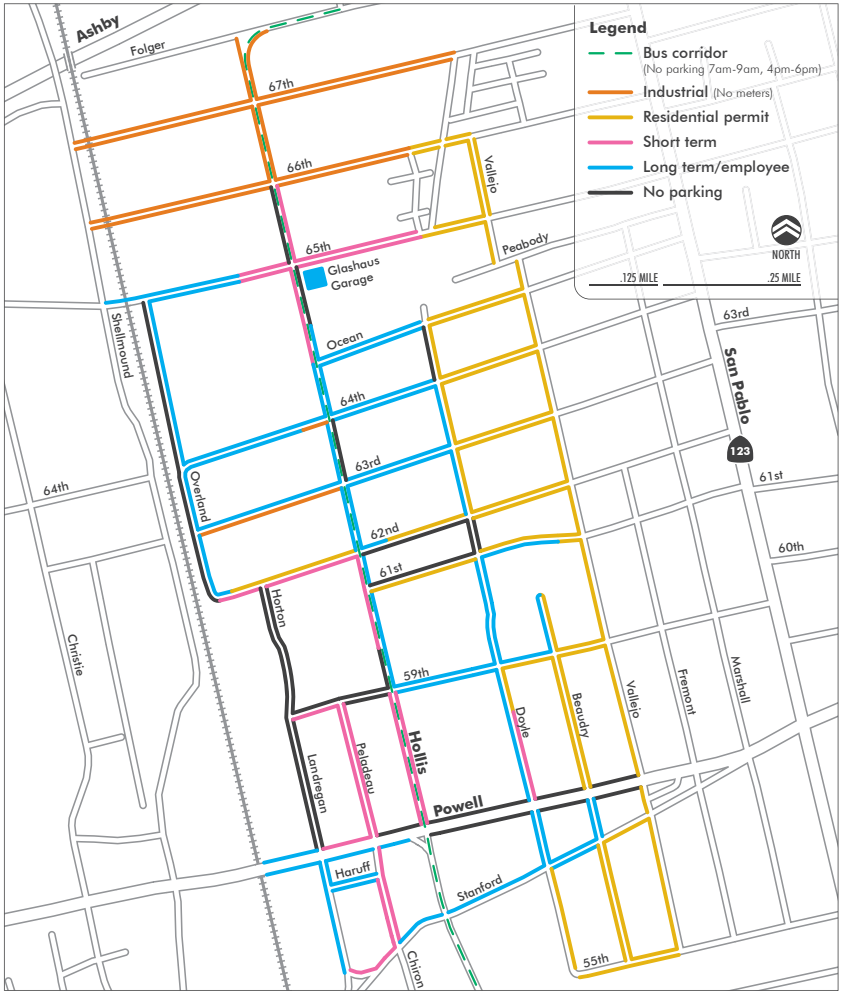


Image from Wilbur Smith Associates, North Hollis Parking Study

Key findings of the North Hollis Parking Plan:

- On-street parking occupancy peaks in late morning at almost 90% in Areas 1 and 2 and at 71% in the Residential Area (southwest corner). About 40% of vehicles remained parked for more than 6 hours.
- There are clusters of parking hotspots in high employment areas, but significantly lower occupancy a block or two away. Residential area hot spots appear during the midday and late afternoon.
- There is a perceived and seemingly real lack of public off-street parking in the northern study area, but there is significant variation in occupancy rates between lots in the full study area. There is ample off-street parking capacity, but mostly in lots which are restricted to certain buildings.
- Drivers spent significant time looking for parking while occupancy levels were at their peaks (from around 11:00 AM until 1:00 PM). About one-half of drivers surveyed believe on-street parking is difficult to find.
- More than 75% of those surveyed believe that both cost and availability are important. 41% were willing to pay a small fee per hour for on-street parking.
- In December 2008, when the North Hollis Parking Plan was presented, the City Council decided to expand the study to the rest of the city. The new analysis covered the area south of Powell Street, the Triangle Neighborhood and North Bayfront. Data from areas of high parking demand were examined to see if there were areas that would be suitable for a parking management plan. The only such area was the area immediately south of the North Hollis area; therefore, the North Hollis area was expanded.
- The parking management plan prepared by Wilbur Smith and Associates and presented to the City Council in August of 2010, recommends active management of parking in the area north of 55th and Stanford, between the railroad tracks and the eastern city limit, including use of the following tools:
  - Variable on-street pricing,
  - Short-term parking near retail,
  - Long-term parking near office uses,
  - No meters in the industrial areas,
  - A residential permit parking program, and
  - Restricted parking in the Hollis Street transit corridor.
- On September 7, 2010, the City Council approved the plan. The City Council directed staff to paint curbs for short-term parking immediately and defer other actions until office occupancy and retail sales increase.

This Plan is at http://ca-emeryville.civicplus.com/index.aspx?NID=586

Powell Street Urban Design Plan

The City hired a consultant team led by WRT Inc. to explore design solutions for the segment of Powell Street extending from the bridge over the railroad tracks, the intersection of Powell with Christie Avenue, and through to the west side of the freeway interchange. Key issues the plan seeks to address include:

- High volumes of vehicle traffic experiencing significant delay, including turning movements between Christie Avenue and Powell Street, to and from the freeway.
- Pedestrian and bicycle issues – potential conflicts with high traffic volumes, difficulty crossing wide intersections, especially for people moving more slowly due to age, disability, strollers or luggage, etc.
- Public transit (Emery Go-Round and AC Transit) vehicles experiencing significant delay due to mixed-flow travel with automobiles. Poor conditions for pedestrians here also make it more difficult to access transit stops.
- Proposed development in the vicinity of this segment of Powell and elsewhere is expected to exacerbate these issues as more vehicle, pedestrian, and trips by other modes are made along or across Powell Street.
- The goal was to develop design concepts that optimize conditions for all modes, maintaining or improving automobile traffic flow, while also improving conditions for pedestrians, bicyclists, and public transit.

The plan was presented to the Planning Commission in October 2010. A portion of that plan can be found in Figure 2-6.

Senior and Disabled- Transportation Needs Assessment

The City and Douglas J. Cross Transportation Consulting studied transportation for senior and disabled residents in Emeryville. The resulting report included recommendations regarding operation of the Senior Center Measure B transportation program, the Senior Center helping senior and disabled residents to use transportation resources, and City policies and improvements that would support transportation options for seniors and disabled residents.

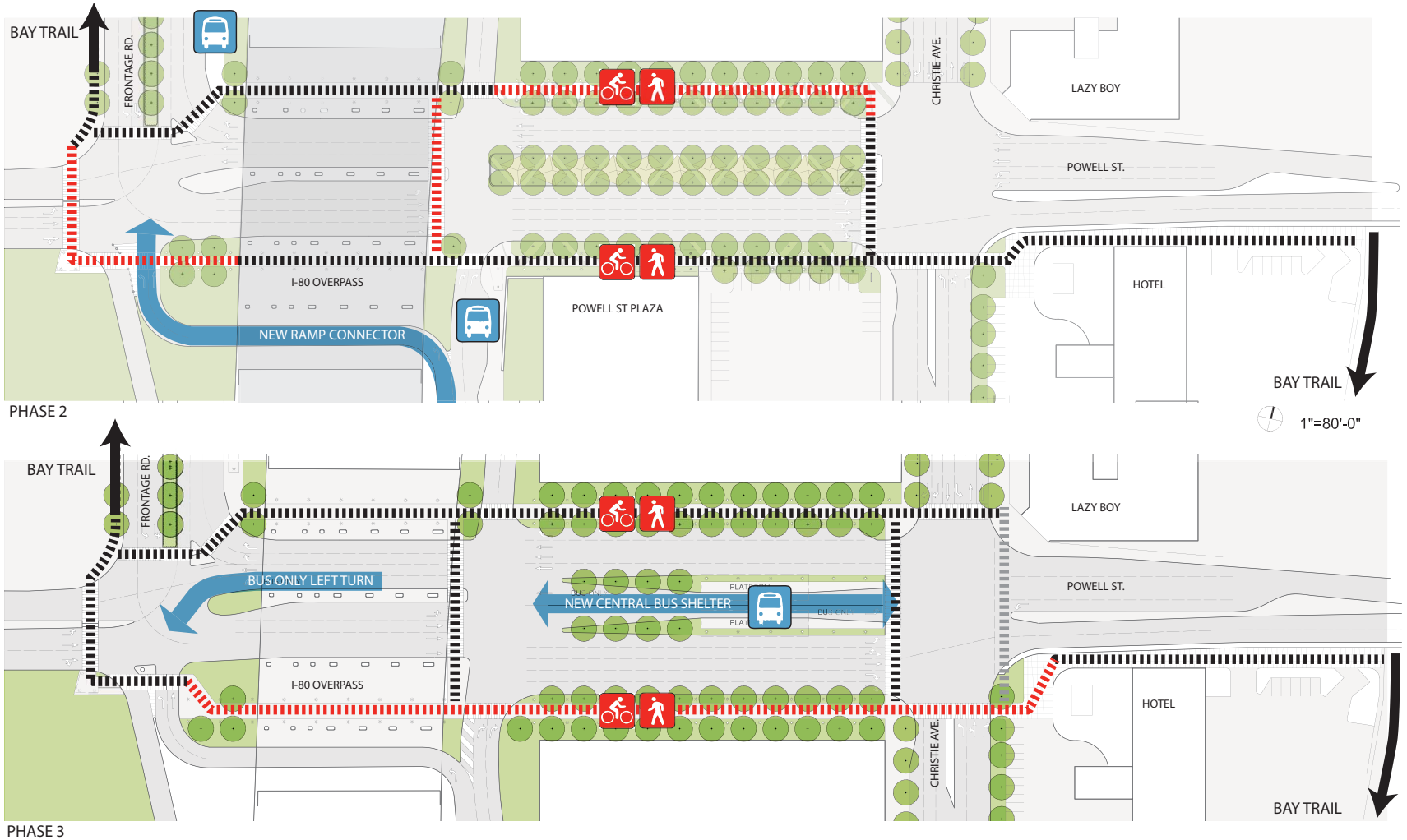
3-Ds of Travel Behavior

Several factors related to land use can have a dramatic influence on travel behavior. Often referred to as the "3-Ds", these principles will be important to ensure the urban environment in Emeryville evolves to be highly walkable, bicycle-friendly and supportive of public transit as an alternative to longer-distance travel by automobile. More than 40% of all trips in the U.S. are less than two miles – an ideal distance for biking, or taking public transit – and approximately 50% of commuters travel less than 5 miles to work.[8] A brief description of the "3-Ds" follows:

- **Density –** Locate as many potential riders within close proximity of a transit station as possible. Most people will not be willing or able to walk more than a half mile, some even a quarter mile. Structures should be built at relatively high densities, but with attentive design and construction that maintains privacy and reduces their perceived mass. Though not the only factor, the number of people within walking or biking distance of a transit station, or having direct access via transit, is a primary determinant of its patronage.
- **Design –** Pedestrians should be given highest priority in the station area, especially along primary paths of travel and in areas of potential conflict with automobiles, transit vehicles, and even bicyclists. Walkways should be wide and well taken care of and all crosswalks, especially at major intersections, should be designed following principles of universal access. Waiting areas should provide shelter and places to sit, and maps and information about transit services should be available. Sensitive and creative design will help place bus stops and rail stations within the community, and ensure that patrons feel welcome, comfortable, and safe. Providing these amenities is critical to developing and maintaining a strong ridership base and relationship with the surrounding community.
- **Diversity –** Perhaps the biggest factor in reducing automobile trips is a diversity of key amenities locally, within walking distance of an individual's home, especially if they are able to stop by on their way to or from work. Amenities may include a corner store or larger grocer, child-care, post office, restaurants and cafes, etc. Programming diversity into the landscape also reduces the geographic impact if a particular market sector is not financially strong.

8 Schiedeman, Jake (October 4, 2007), "Take it out for a ride," Napa Valley Register: http://www.napavalleyregister.com/articles/2007/10/04/go_green/doc470592efb06d3928890672.txt

Figure 2-6 Proposed Pedestrian Improvements at Powell Street and Interstate 80



PHASE 2 AND 3 DIAGRAM

DRAFT City of Emeryville Wallace Roberts & Todd, LLC.

Land Use Principles to Support a Sustainable Transportation Plan

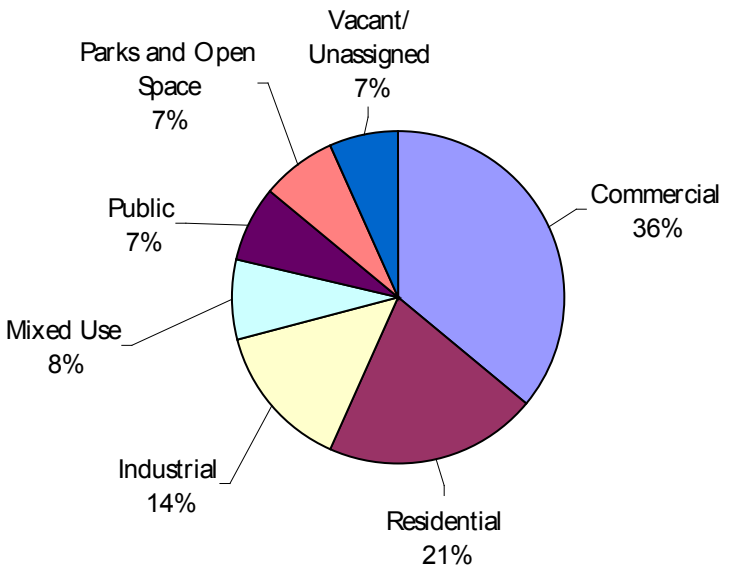
The City, through the update to the General Plan, has evaluated areas that are expected to redevelop and those that are expected to remain the same between now and 2030. Emeryville is already "built-out," with minimal vacant land. Older residential areas will be protected and demolition of architecturally significant buildings requires Planning Commission approval, but most former industrial land south of 65th Street is now considered underutilized and presents prime opportunities for redevelopment. The General Plan projects significant increases in the number of residents, new households, and jobs in the next 20 years. How the existing and new residents and employees will get from home to work, or to child care, or buy groceries, will be highly dependent on the way the City rebuilds itself.

Examples of Potential Achievement of 3-D's Land Use Principles

The commitments being made for the proposed Emeryville Marketplace Redevelopment exhibit a commitment to the 3-D principles defined on the previous page, including:

- Enhanced pedestrian connectivity to the site from surrounding streets and across the railroad tracks from the Emeryville Amtrak Station, as well as within the site
- Short-term bicycle parking near retail and other amenities and long-term bicycle parking for employees and residents
- Attractive bus shelters and other public transit amenities
- Reduced parking supply through shared parking, unbundled and market-price parking, and additional support for travel by other modes
- High-density development to support increased use of public transit for local and regional travel
- Mixing of uses on site and in combination with other proposed developments nearby to develop synergy and an urban "core" district providing many daily needs within walking distance

Figure 2-7 Proportional Area of Existing Land Uses



Existing and Future Development

The City of Emeryville was once primarily an industrial city, especially adjacent to the railroad tracks. The City has evolved over time with increasing employment in other sectors, including research and development and general office. It has also become a major regional retail destination, with stores such as IKEA and Home Depot and the Bay Street Center. Significant new housing development continues to occur – in 1980 there were 3,714 people living in Emeryville, whereas in 2010 the population was estimated to be 10,227. Nonetheless, compared to most Bay Area cities, the proportion of land in Emeryville used for residences is quite small.

Figure 2-7 shows the relative amounts of land in Emeryville dedicated to various primary land uses as of 2008; some of the vacant sites are now residential.[9]

The General Plan defines land use primarily by two categories: its use (e.g. residential, office, retail, industrial) and intensity (amount of building per unit of land area, e.g. how many dwelling units per acre will there be or what floor area ratio non-residential development will have). A third variable is whether – and to what extent – mixing of uses is allowed or

9 Emeryville General Plan, Chapter 2: Land Use (November 2008).

Figure 2-8 General Plan Development Potential at 2030, by Land Use

	Residential	Non-Residential (square feet)			
	(Dwelling units)	Retail	Hotel	Office*	Industrial
Approved Development	907	34,461	0	1,313,000	0
Gross New Development	2,930	1,075,400	324,600	1,569,700	76,200
Existing Lost Due to Redevelopment	- 70	- 468,598	- 14,375	- 509,740	- 855,377
Net New Development (A+B-C)	3,767	641,263	310,225	2,372,960	- 779,177
Existing Development	5,988	2,441,660	464,500	4,852,118	4,132,675
City at 2030 (D+E)	9,755	3,082,923	774,725	7,225,078	3,353,499
Percent change	63%	26%	67%	49%	-19%

* Office includes R&D development.

Source: Land Use Element – General Plan (November 2008)

New developments will continue to place increasing demands on the City's Transportation System

encouraged in a particular area. For example, a few corner markets are considered acceptable in the General Plan in older residential neighborhoods, but new residential complexes have many stories and may be able to support a stronger retail base.

These variables help define the physical form and massing of new development and, to a certain extent, their ambient impacts (noise, vehicle traffic, etc.). As shown in Figure 2-8, the City expects a dramatic increase in housing, significant increases in hotel and office development, and a decline in land dedicated to industrial uses in the next 20 years. Since the City is already "built-out," change will occur through the redevelopment of existing land uses considered underutilized. More redevelopment is expected to occur over time, as land values rise. Through the General Plan process, areas which are expected to change in the next General Plan period have been identified and mapped, in Figure 2-9. The development potential of these areas was then combined with existing development in other areas to estimate the development potential for the City by 2030, under the General Plan.

A preliminary analysis of expected development intensities, mix of uses and multi-modal access strategies at "build-out" in 2030 suggests significantly increased support for local and regional travel by sustainable transportation modes (walking, bicycling, and public transit). It will be important to ensure that proposed development is firm in its commitments and contributes its fair share of funding to invest in alternative modes of transportation. The updated traffic impact fee will do this.

The City of Emeryville appears to be developing land use policies and strategies through its General Plan and its review of proposals for individual development projects that will support these principles for a more balanced transportation network in Emeryville. Increased density centralized around key transit hubs, such as the Emeryville Amtrak Station and the San Pablo Avenue/40th Street bus hub, will have the most effective impact on travel behavior.

An additional challenge is to identify opportunities to enhance existing and already-approved development (such as at the Novartis site) so that it also enhances and encourages access by other modes. Existing development is at a relatively low density, compared to proposed development, and if considered a "non-change" area, is currently expected to remain at these densities.

Significant parking is dedicated to existing development, and required of new development (currently almost one space per employee and a high level for retail development, especially regional retail). Although this maintains sufficient availability of parking to ensure support for these vital economic contributions to the City, construction costs for parking are high, especially for multi-level garages. If less parking were required, this money could be used to implement sustainable transportation strategies.

Implications, Challenges, and Opportunities

The Emeryville General Plan includes, as one of its guiding principles, a commitment to foster and provide "incentives for alternative transportation modes, including transit, car/vanpooling, bicycling, and walking. Residents will be able to access stores, offices, the waterfront, or regional transit network without needing a car."

An important question, therefore, is whether this increase in development and expected density will be sufficient and located in the appropriate locations to support use of public transportation as an alternative to the automobile. Furthermore, the design of adjacent streets and public space will influence the level of pedestrian and bicycle travel.

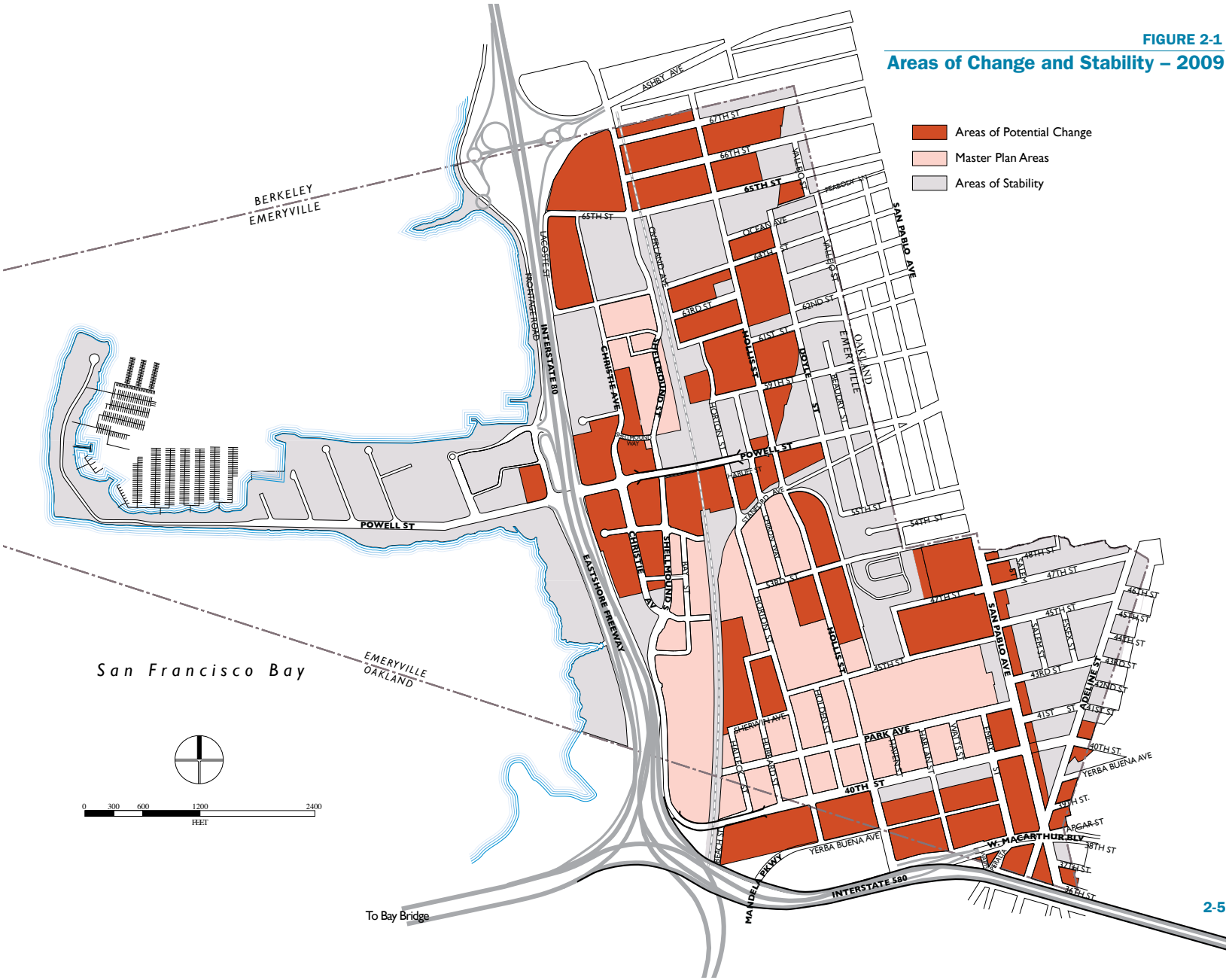
The following estimates of future land use intensity are available:

- The expected citywide density of residential uses is expected to increase dramatically, from 7.8 dwelling units per acre in 2008 to 13 dwelling units per acre in 2030, as measured by the gross residential density for all land in the city, a 67% increase.
- The expected citywide density of employment is expected to increase from 27 jobs per acre in 2008 to 39 jobs per acre in 2030, a 44% increase.[10] Here again the densities in employment areas are higher, though not nearly as high as residential areas given the larger percentage of employment land.

This represents a substantial increase in the intensity of urban development in Emeryville, as industrial uses convert to residential and commercial uses. The mixing of uses and location of focused efforts to increase density around transit nodes suggests that this will strongly support the provision of high-quality transit service both locally and regionally, as well as provide funding for additional infrastructure, programs and services to support alternative modes of transportation. Developing and implementing these

10 Calculated from data provided by Dyett & Bhatia Consulting Associates, December 2008.

Figure 2-9 Emeryville "Change" Areas per Emeryville General Plan



programs and services, through city policies and funding strategies, will be critical to achieving desired travel behavior in Emeryville.

Circulation and Parking Network

This section reviews the design, operation, and performance of streets in Emeryville. It also reviews current city policies and proposed new policies in the recent update to the General Plan. Conditions and performance of city streets for each primary mode are also reviewed. At the conclusion of this section is a brief discussion on parking.

Street Network

The network of streets in Emeryville is based somewhat on an orthogonal grid, with several strongly defined corridors meeting at large intersections. With the exception of older residential developments in the Doyle and Triangle areas of the City, blocks tend to be long and wide with limited connectivity, especially east-west (see Figure 2-9). The following are the primary travel corridors for automobiles and transit vehicles:

- **North-South:** San Pablo Avenue, Hollis Street, Horton Street (at Amtrak), Shellmound Street, and the I-80 freeway
- **East-West:** 40th Street, Powell Street, and 65th Street

The railroad tracks and freeway limit east-west travel – only a few streets cross the railroad tracks, and Powell is the only street providing direct access to the freeway. The next freeway access point to the north is Ashby Avenue in Berkeley. South of Powell Street, the next access point is MacArthur Boulevard in Oakland.

Street Design and Operations

The streets of a city serve multiple purposes. They allow local property access, accommodate public utilities, and allow for people to move throughout the city and region. In addition, they are part of the neighborhoods and districts through which they pass, and provide open space for social interactions, recreation, sunlight, and fresh air. Travel can be via a variety of modes, including private automobiles, public transit, bicycles, and on foot.

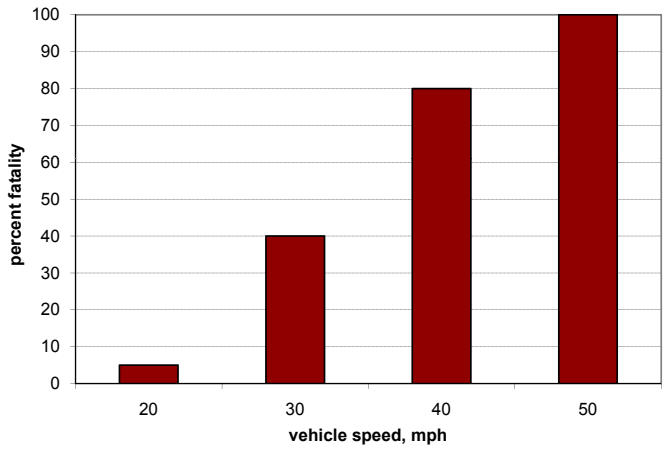
Current Practice

Historically in Emeryville, as in most other locales in the United States, the design and operation of streets has been defined primarily by their role and function in the circulation of automobiles. This street classification scheme, based on guidelines published in the AASHTO "Green Book," includes the following categories, with guidelines for the effective implementation of each:

- **Arterial –** Provides the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control.
- **Collector –** Provides a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials.
- **Local –** Consists of all roads not defined as arterials or collectors; primarily provides access to land with little or no through movement.

The emphasis on the efficient movement of automobiles has led to the design and operation of streets optimized for travel by automobile and not necessarily people, often with significant consequences for pedestrians and bicyclists. Speed limits are high to minimize travel times for automobiles, and lane widths are designed for travel at these higher speeds.

Figure 2-10 Impact of Vehicle Speed on Pedestrian Injury Severity



Source: Leaf, W. and Preusser, D. Literature Review on Vehicle Travel Speeds and Pedestrian Injuries, US DOT NHTSA (DOT HS 809 021), 1999, p.4.

Figure 2-10 demonstrates that the risk of fatality for a pedestrian hit by a car increases dramatically with the speed of the car. In addition to these safety considerations, the focus on vehicle throughput also reduces the overall efficiency of the circulation network for other modes with increased travel time and cost and decreased safety and comfort levels.

We see the impact of this approach in Emeryville, with wide streets able to carry large volumes of traffic but considered hazardous for pedestrians to cross or bicyclists to ride along. Street corners have wide turn radii to facilitate high speed right-turn movements by vehicles, leading to long crossing distances and reducing the visibility of pedestrians. Signals are timed for the movement of vehicles, often at the expense of public transit vehicles, which also become stuck in traffic though they are much more efficient at carrying people along the same corridor.

Alternative Approach

The 2009 General Plan addresses this issue by defining a street typology more inclusive of other modes of transportation. Streets, or segments thereof, would be designated based on which mode will receive priority treatment. Most streets would allow all modes, but they would each be designed and operated to optimize performance for the priority mode (or modes). For example, for a transit priority street, the following description is given:

> *"Transit Street – These are primary routes for AC Transit, Emery Go-Round, and other public transit providers. Signal preemption for transit vehicles, bus stops, and, where appropriate, bus lanes, are provided. Other travel modes, including automobiles, bicycles, and trucks, are accommodated in the roadway, but if there are conflicts, transit has priority. These streets accommodate moderate to high volumes of through traffic within and beyond the city. Pedestrians are accommodated with ample sidewalks on both sides of the street, and pedestrian amenities are enhanced around bus stops (e.g. shelters, benches, lighting, etc)."*

The General Plan also includes a commitment to "complete streets," whereby streets would always be designed in consideration of all modes that will use them. The proposed street typology and complete streets policy represent important first steps towards the design and evaluation of city streets from a multi-modal perspective that focuses on movement of people – and how it impacts them individually and the community – not just on movement of vehicles. This approach more firmly supports the goals of the Sustainable Transportation Plan as well as the broader goals of the General Plan. Appendix A provides a summary of each street type and the current language of the Complete Streets policy in the General Plan.

Street Performance

Overall, the streets of Emeryville are designed well for the movement of motor vehicles, but at a cost to pedestrians, bicycles, and public transit. Long blocks and ample right-of-way dedicated to vehicles result in relatively high vehicle speeds, long crossing distances for pedestrians, and minimal space reserved for bicyclists, who must travel in mixed-flow traffic on most city streets. Streets have minimal amenities for pedestrians such as lack of shelters and other amenities at bus stops. Long blocks and barriers such as the railroad tracks and freeway place strong limits on connectivity for all modes, especially for pedestrians who are less able to travel longer distances to crossing points. Compliance with the Americans with Disabilities Act (ADA) is limited – some street segments do not have complete sidewalks on both sides, curb ramps at crosswalks, or other basic elements of street design for universal access. The impact of these conditions on pedestrians, and therefore, connectivity to transit, is discussed in detail later in this section.

High levels of vehicle traffic on major travel corridors limit the functionality of these streets for automobiles and public transit alike. Currently, the

Some streets in Emeryville provide difficult conditions for pedestrians and bicyclists due to high traffic volumes and limited amenity for non-motorized modes.

Emery Go-Round experiences variations in travel times of up to 30% due to traffic congestion during peak travel periods.[11] Three intersections currently operate at a level considered substandard by the City, and conditions are expected to worsen if housing and job growth continues to generate new vehicle trips at a rate comparable to existing development.

The Emery Go-Round experiences variations in travel times of up to 30% due to traffic congestion during peak travel periods.

Methodology for Analysis

There are various ways to analyze the performance of the transportation system for automobiles. The methodology historically in use in Emeryville was based primarily on an estimate of the delay experienced at an intersection. The LOS grading system ranges from LOS A, indicating free-flow conditions with little or no delay, to LOS F where traffic flows exceed design capacity, resulting in long queues and delays. LOS E represents the point where traffic volumes are at or near design capacity and where substantial delays begin to occur. LOS D or better is considered acceptable according to the standard methodology used by the City. The Major Developments Traffic Study found that current traffic conditions meet or exceed the City standard at that time of LOS D, except for three intersections. Anticipated future growth in the City and region is expected to lead to substandard traffic conditions along significantly more corridors and at intersections. This analysis determined that these conditions would exist even if Emeryville does not approve the major development proposals. It also, however, did not fully consider the potential to reduce vehicle trips from existing and proposed development by increasing levels of transit service and various transportation demand management strategies.

The City's General Plan mandates that the City develop an updated methodology that evaluates the performance of streets for multiple modes of transportation, including automobiles, transit, bicycles, and pedestrians. Instead of LOS, Quality of Service (QOS) would be determined, based on both a quantitative and qualitative analysis. For example, automobile quality of service might not include intersection delay, but instead would include average travel speed point-to-point and variation in travel speed, to indicate how often a car must stop and go. Likewise, pedestrian quality of service might include presence of sidewalks on both sides of streets, accessibility to transit stops and key amenities desirable within a neighborhood, and the design of crosswalks and intersections to increase pedestrian safety. Thus, a multi-modal methodology will enable the City to consider the appropriate balance between modes and identify opportunities to achieve mutual benefits for all modes of travel.

Bicycles

According to the U.S. Department of Transportation, one quarter of all trips are less than one mile in length, and 40% are less than two miles. Especially with the flat topography in Emeryville, bicycles could be a convenient, healthy, and enjoyable alternative to driving. Furthermore, bicycles offer faster access to regional transit at locations such as MacArthur BART Station and the Emeryville Amtrak Station, compared to walking. In addition to the need for secure parking and other amenities, a well-connected network of streets and paths designed to accommodate bicycles is needed, especially to provide access to jobs, schools, and transit hubs.

The General Plan and existing Bicycle and Pedestrian Plan for the City of Emeryville includes an overarching goal to establish a network of continuous north-south and east-west bikeways to provide access to the major features and attractions of the City, provide recreational benefits, and reduce dependence on automobiles. The update to the General Plan affirms this commitment and includes an update to the bicycle network.

11 Presentation by Emeryville Transportation Management Association in October 2008.

Class II bicycle lanes are currently provided on 40th Street, Shellmound Street, portions of Horton Street, 59th Street, Stanford Avenue, and 65th Street. Regional bike facilities include the San Francisco Bay Trail, included in the 2006 Alameda Countywide Bicycle Plan. The Bay Trail turns east at Powell Street, and cyclists must travel inland through busy intersections to reach Shellmound Street before traveling south to Mandela Parkway in Oakland. Access to the Bay Trail is constrained and compromises safety conditions due to heavy traffic on Powell Street. Planned pedestrian street improvements will increase safety of pedestrians crossing Powell.

A key issue to address for bicycle circulation is increased connectivity across the railroad tracks and freeway. Currently there is only one crossing of the freeway, on Powell Street, which is considered an unsafe route for bicyclists due to high volumes of traffic making turns on and off the freeway. Planned improvements will increase safety of cyclists and pedestrians crossing the bases of freeway ramps that intersect Powell Street. A second crossing is indicated in the General Plan at 65th Street. Emeryville is currently working with Caltrans to complete studies required for funding. There are five crossings over the railroad tracks – the 40th Street Bridge, the Amtrak pedestrian-bicycle elevator crossing, and at-grade crossings at 65th, 66th and 67th streets. A pedestrian-bicycle bridge over the railroad tracks between Bay Street Center and Horton Street is funded and in the design stage.

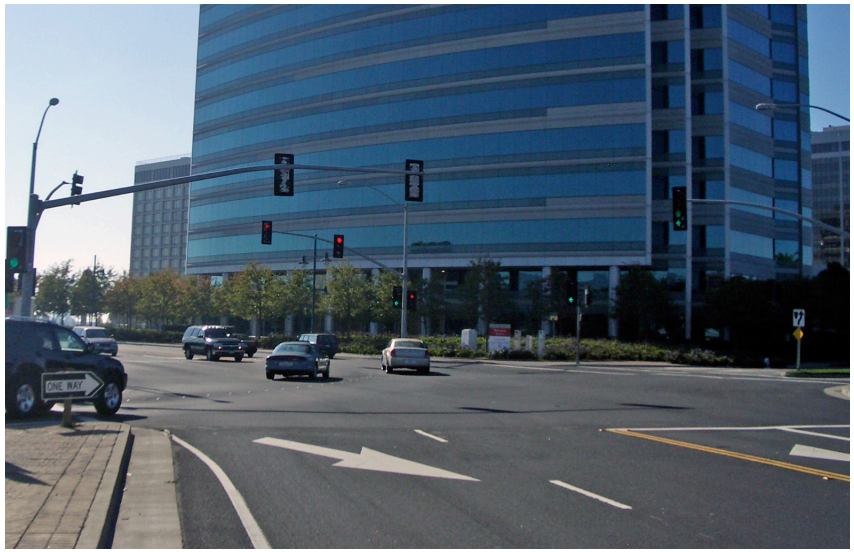
Connections to regional transit are also important. The General Plan does not distinguish between Class II dedicated bike lanes and Class III bike routes, but it indicates routes to MacArthur BART Station, West Oakland BART Station, and Emeryville Amtrak Station. The updated bicycle plan (currently underway) will need to determine which streets are appropriate for dedicated bicycle lanes. On high-volume or high-speed streets, bicycle lanes are safer and attract more cyclists than streets simply designated as bicycle routes. Bicycle routes without lanes that are designed as bicycle boulevards, however, are also attractive if carrying relatively low traffic volumes and having limited stops along their route. Horton Street is currently designated as a bicycle boulevard, improving access to the Emeryville Amtrak Station, but several blocks are also planned as a primary transit route. Addressing potential conflicts between buses and bicycles will therefore be important along these segments of Horton Street.

Public Transit

Public transit vehicles currently travel in mixed-flow traffic with other vehicles. Though primary corridors in Emeryville have significant capacity, transit vehicles are impeded by the high volumes of automobile traffic, especially during peak travel times. As noted earlier, the Emery Go-Round experiences variations in travel time of up to 30% during peak hours. Transit ridership is diminished when walking to bus stops seems to be difficult and dangerous on wide or fast streets. Transit services and their operations are discussed in detail in the next section.

Automobile Traffic

Congestion-related delays on the streets and highways in Emeryville impact public transit and automobiles, reducing the overall functionality of the transportation system. The City of Emeryville is perceived to have significant traffic congestion issues along primary transportation corridors and at key intersections, especially the western section of Powell Street including the intersection with Christie Avenue and the freeway interchange. As noted earlier, the LOS methodology to evaluate traffic conditions indicates that future conditions will be significantly worse, independent of the level of infill and redevelopment that occurs, due to overall population and job growth in the Bay Area. Opportunities to sup-



port this growth in travel demand, through increased transit service and other transportation demand management strategies, are not yet fully included in the evaluation. The proposal for a multi-modal transportation impact analysis is expected to help the city do this more effectively. The updated traffic impact fee study is likely to measure development impact on all modes in terms of motor vehicle trips generated. Fees will be used for improvements for all modes.

Congestion accumulates in Emeryville in predictable ways and locations throughout the City. Each area is described below:

- **Freeway on-ramps.** Much of Emeryville's local congestion originates with the freeway.
- **Freeway off-ramps.** Even when the freeways are free-flowing, congestion also accumulates at the freeway off-ramps, as the one large pipe of a freeway ramp meets the many small pipes of city streets, and motorists make many turning movements to sort themselves out into the grid.
- **North-south through streets.** While Emeryville generally has a fine grid of inter-connected streets, the grid breaks down in several places, particularly in the north-south direction.
- **East-west boulevards.** Emeryville's east-west boulevards were better designed to carry traffic flows than the north-south streets, but these get congested, too, largely due to motorists trying to get over the Bay Bridge.
- **Employment.** Emeryville is a significant regional employment center, with many commute trips, coming from outside the City, being made by automobile.

Traffic Origins and Destinations

Limited information exists about the origins of vehicle traffic in Emeryville, currently. The most recent U.S. Census journey-to-work data is from 2000, and is discussed in this chapter. In addition, the Major Investments Transportation Study conducted for the City of Emeryville included an analysis of the percentage of traffic that is local or regional (the latter defined as being carried by major freeways away from the city). The study estimated that only 30% of traffic is local, with the remaining being regional. It did not distinguish, however, regional "pass-thru" trips not having a local origin or destination.

Parking

Though automobile parking supports an important mode of transportation, it is itself a type of land use, occupying space whether or not the space itself is occupied by a vehicle. Parking lots sometimes are built upon but often remain for long periods of time, just like a structure. Multi-level parking garages have a lifespan of several decades and then are often replaced with a new garage.

There is a significant opportunity cost for the use of land for parking, especially with real estate as valuable as in Emeryville (more than $4.2 million an acre). Even as Emeryville attempts to increase density and increase travel by more sustainable modes of transportation, there is a perceived necessity to provide parking – free to the user – to enable employees to go to work, shoppers to go to the store, students to get an education. Current city policy requires at least one space per dwelling unit, plus guest spaces, and approximately one for every teacher, office or industrial worker at their place of employment, and even more for retail uses.

These policies enforce a development pattern that is heavily auto-oriented, since most employees have access to a free or heavily subsidized parking space. A typical office worker occupies about the same amount of space in the building as does his or her car in the lot outside. This will double the land rent for a business and can increase housing prices dramatically. Furthermore, the dedication of so much space to the auto-

Emeryville retains a high supply of surface parking as a percentage of land area

mobile can result in population densities too low to support high quality public transit, even if employees want to opt out of their parking space and choose transit.[12] In addition, large areas of parking ("seas of parking") create an urban form which is inhospitable for pedestrians to use.

About 75% of employees in Emeryville who live outside of the City drove alone to work in 2000, the most recent year for which this data is available. This is higher than the Bay Area average of less than 70%. Free parking is cited as one of the primary reasons for the high drive-alone rate cited in the Opportunities & Challenges Report for the General Plan Update.

12 Donald Shoup, "The High Cost of Free Parking," American Planning Association (March 2005)

Parking Requirements

As noted earlier and shown in Figure 2-11, the City's off-street parking requirements for new development result in approximately one parking space per employee and somewhat less per resident, though multi-unit residential developments must also provide shared guest parking. These requirements are much higher than some other cities. For example, Portland, Oregon has set the maximums for new office and retail development to 1 space per 1000 square feet. Berkeley has lower parking requirements in most if not all categories, and Oakland has lower requirements in high density zones. These cities have rapid rail stations.

Figure 2-11 Off-Street Parking Requirements

Land Use	Parking Requirement
Residential: Single dwelling unit (detached)	Two covered parking spaces per unit
Residential: Multi-unit buildings (studios and one bedroom units)	One space per unit, plus one guest space for each four dwelling units for buildings with five or more units for a total of 1.2 per unit
Residential: Multi-unit buildings (two or more bedrooms per unit)	One and one half spaces per unit
Commercial: Administrative, business and professional offices (including offices within a mixed-use complex)	Three spaces for every 1,000 square feet
Commercial: Financial institutions	Four spaces for every 1,000 square feet
Commercial: Retail serving primarily local customers	Three spaces for every 1,000 square feet
Commercial: Retail serving primarily regional customers	Four spaces for every 1,000 square feet
Commercial: Multiple tenant structure	Four spaces for every 1,000 square feet
Commercial: Lodging: Hotels & motels	One space for each guest unit, plus two for a manager's unit and one-half space for each employee
Commercial: Eating/drinking establishment*	One space for every 125 square feet
Schools	One space for each classroom; plus one space for every 35 square feet of non-fixed seating in the auditorium
Libraries/cultural facilities	One space for every 300 square feet
Industrial: All types, except those listed below	One space for every 1,000 square feet
Industrial: Warehouses/storage facilities	One space for every 1,000 square, plus one space for every 333 square feet of office or sales area
Industrial: Wholesaling/distribution facilities	Three spaces for every 1,000 square feet of gross floor area

* For commercial uses, "fronting on San Pablo Avenue with existing building coverage of at least fifty percent (50%), the Planning Commission may waive a like percentage of the required off-street parking spaces for a commercial use if the proposed commercial use will not in the Commission's determination, significantly increase the demand for parking over the previous use. If that part of the lot not covered by a building or structure is less than two thousand (2,000) square feet, then, regardless of building coverage, the commission may waive all or a portion of the required off-street parking spaces." (Emeryville Code: Commercial Use Types, Section 9-4.55.5)

In-Lieu Fees

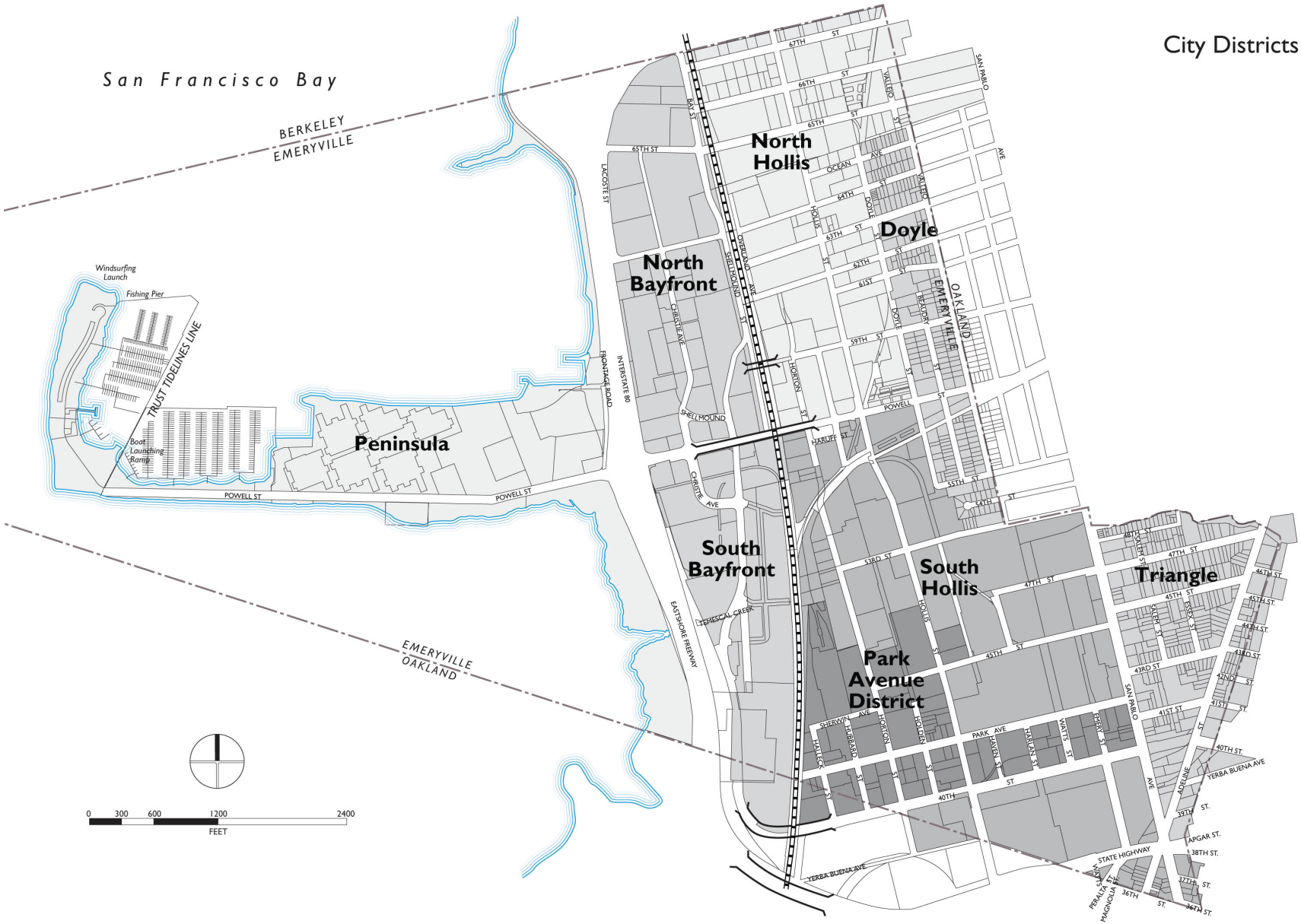
The requirement for parking or an in-lieu fee is based on the assumption that more parking is needed and the only question is where, rather than whether the added parking is needed at all. The fact that parking variances have been granted leads to the question of whether parking requirements are too high or too rigid. Variances have generally been granted when the use is changing in an existing building, the business moving in has fewer employees than assumed in trip generation manuals, and there is ample on-street parking.

Free parking is cited as one of the primary reasons for the high drive-alone rate cited in the Opportunities & Challenges Report for the General Plan Update

Parking Supply vs. Availability

Currently, much of Emeryville's existing parking supply exists in off-street parking facilities. Most facilities operate under private ownership and are inaccessible to the general public. Moreover, the few public facilities that do exist (Amtrak and Glashaus) are located within the same area. This spatial arrangement is problematic because it makes access for many patrons difficult. Occupancy data collected for the North Hollis Parking Study found significant variation in occupancy of off-street facilities, with some being significantly underutilized throughout much of the day. Anecdotal information suggests that employees are not aware of parking availability somewhat further from their place of work, or are concerned about personal safety walking the further distance, especially after dark.

Figure 2-12 City Blocks in Emeryville



Existing Transit Services

This section provides an overview of existing transit services in the City of Emeryville and the surrounding area. A description of each service follows. Existing transit services are summarized in Figure 2-17 at the end of this section, on page 2-31. A map of the transit services in the City of Emeryville is provided as Figure 2-18.

Although there is not a BART station in Emeryville, there is frequent local and regional bus service, with service to six BART stations. Many Transbay buses go through Emeryville, including AC Transit's only reverse commute line. Transit thus connects to the three largest employment centers in the area—Downtown San Francisco, Downtown Oakland and UC/Downtown Berkeley, although these connections could be more direct between downtowns.

Most addresses in Emeryville are within one-fourth mile of a bus stop, and improvements to pedestrian connectivity could expand this level of access. Emery Go-Round and AC Transit in combination provide a high level of local transit service, especially on weekdays. Amtrak provides a direct connection to Sacramento and San Jose and national destinations served by the Amtrak network. Additional information on these existing transit services may be found in Chapter 4 Sustainable Transportation Strategies, under the Transit header.

Public Fixed-Route Transit

Emery Go-Round

The Emery Go-Round is a free fixed-route shuttle service funded by commercial property owners in Emeryville. The service is administered by the Emeryville Transportation Management Association (ETMA), a non-profit organization whose purpose is to increase access and mobility to and from Emeryville businesses. The ETMA is funded through a property-based business improvement district, with all commercial, industrial, and rental residential property owners in the City paying a fee to the ETMA to support services.

Approximately 80% of all Emery Go-Round trips begin or end at MacArthur BART Station, supporting a significant increase in patronage at the station and a shift in primary mode of access.

The Emery Go-Round (EGR) is free to all passengers and provides service throughout Emeryville, with stops at the Emeryville Amtrak Station, Bay Street Center, and major employers such as Pixar and Novartis. The MacArthur BART Station in Oakland is a key transfer point for connections to regional transit and all routes stop at this BART station. The Emery Go-Round routes are summarized in Figure 2-13 on page 2-24.

Weekday service runs from 5:45 AM to 10:30 PM, Saturday service is provided from 9:25 AM to 10:40 PM and Sunday service is available from 10:20 AM to 7:15 PM. Headways range from 12 to 15 minutes during weekday peak hours to 20 to 60 minutes on weekends depending on route. Real time arrival information for all routes is provided by NextBus. Riders can get arrival times either online or by calling a phone number and entering the code associated with a particular bus stop.

The Emery Go-Round has 13 buses in its fleet that have between 24 and 36 seats, and one van with nine seats. The ETMA owns seven of these buses and leases the other six. Labor for the shuttle is provided through a contract with SFO Shuttle Bus Company. Maintenance is provided through full operating leases and contract maintenance with Idealease and Penske Truck Leasing. During the peak hour 10 buses are in operation. Operating expenses in 2009 were $2.1 million, and the cost per passenger trip was $1.52. Operating revenue for 2010 is budgeted at $2.4 million.[13]

13 Emeryville Transportation Management Association. Email Correspondence July 16 2010.

Emery Go-Round stopping at MacArthur BART station

Ridership on the Emery Go-Round has grown steadily since service began in 1997. Ridership in 2003 was 775,392, with an anticipated 1.3 million passenger trips in FY 2008. The largest percent increase occurred between 2007 and 2008, with an 18% growth in ridership. In 2008, through September, the shuttle has carried about 5,000 passengers a day, with an additional 1,000 passengers each Saturday and 500 each Sunday. Approximately 80% of all Emery Go-Round trips begin or end at MacArthur BART Station, supporting a significant increase in patronage at the station and a shift in primary mode of access.[14]

14 2005 BayCap BART Shuttle Rider Survey, Bay Area Air Quality Management District (2005).

Figure 2-13 Summary of Emery Go-Round Routes

Route	Days and Hours of Operation		Frequency of Service		Key Stops
			Peak Hour	Mid-Day	
Shellmound/Powell	Mon-Fri:	5:47 AM – 10:30 PM	15 min.	15 min.	Bay Street Ikea East Bay Bridge Emeryville Public Market MacArthur BART Powell Street Plaza Woodfin and Sheraton Hotels Watergate
	Sat:	9:24 AM - 10:40 PM	15 min.	15 min.	
	Sun:	10:04 AM - 7:17 PM	15 min.	15 min.	
Watergate Express	Mon – Fri:	7:10 AM – 10:03 AM 3:15 PM – 7:00 PM	15 min.	15 min.	MacArthur BART Hilton Garden Inn Watergate
Hollis	Mon – Fri:	5:45 AM – 10:18 PM	10 min.	20 min.	East Bay Bridge MacArthur BART Pixar Courtyards at 65th Apts. Emery Station Novartis Emeryville Amtrak Glashaus Heritage Square Hollis Business Center Hollis Street and 65th Street National Holistic Institute

2006 and 2008 Passenger Surveys

The Emery Go-Round conducted a survey of its passengers in 2006 and again in 2008, providing insight into trip purpose and how often individuals use the service. A summary of the data is provided in Figure 2-14. Data were collected over the course of one week, sampling passengers at BART during one or two time periods each day. During the peak hours, a majority of passengers are going to or from work. Mid-day travel still carries a significant percentage of commuters, but half of the passengers have other trip purposes including shopping and school.

Most passengers who use the shuttle during the peak hours use it at least once a week, with many using it daily. Mid-day travelers do not use it quite as frequently, but most still are frequent passengers.

During the AM peak, in 2006, most passengers came from either San Francisco or Contra Costa County (32% each). Depending on time of day, a significant number of passengers also live in Oakland, Berkeley, El Cerrito, and Richmond. The 2008 survey indicated changes in where most passengers came from, with more passengers living closer to Emeryville than in 2006. It is also worth noting, however, that the surveys were only conducted of passengers getting on the shuttle at MacArthur BART Station in morning or mid-day. Passengers traveling the opposite direction were not surveyed in 2006.

The surveys report that the vast majority of passengers find it easy to use, appreciate courteous drivers and overall are very or extremely satisfied with the service.

Figure 2-14 Summary – Emery Go-Round Passenger Surveys

Destination	2006		2008
	Peak Hours	Mid-Day	
Work	90% or more	51%	65%
Shopping	Less than 1%	23%	12%
School	6% (AM only)	15%	9%
Frequency of Use			
Daily	53-61%	41%	51%
Up to 4 times per week	27-34%	33%	31%
Occasional	n/a	n/a	11%

AC Transit

AC Transit provides fixed-route bus service throughout western Alameda and Contra Costa Counties and Transbay service to downtown San Francisco. Some level of service is available 24 hours a day, seven days a week, ranging from ten minutes to one hour. Annual ridership in FY 2007 was about 67 million passengers.

AC Transit Routes Serving Emeryville

Five of AC Transit's local bus routes run through Emeryville, connecting the City to Oakland, Berkeley, Alameda, and Richmond. In addition, four AC Transit Transbay routes connect Emeryville to San Francisco. There are 53 trips per weekday between Emeryville and San Francisco. The transfer point in Emeryville is the intersection of 40th Street and San Pablo Avenue. The eight AC Transit routes that directly serve Emeryville are summarized in Figure 2-15 on the following page. Transbay lines cross the San Francisco – Oakland Bay Bridge to connect with the Transbay Terminal in San Francisco. There are several Transbay routes that pass through on the I-80 or I-580 freeways but do not stop in Emeryville, including lines FS, G,H, L, LA, B,E, NX, P and V. These lines originate in nearby cities, such as Piedmont, El Cerrito, and Berkeley, and take the San Francisco – Oakland Bay Bridge to the Transbay Terminal in San Francisco.

Figure 2-15 Summary of AC Transit Bus Routes Serving Emeryville

Line	Service Area	Key Connections / Destinations	Service Hours	Headways	Key Emeryville Stops
Local Service					
72R San Pablo Ave **72 / 72M** San Pablo Ave	Oakland Emeryville Berkeley El Cerrito Richmond	12th, 19th St BART, Jack London Sq 40th St, Powell/Stanford Ashby Ave, University Ave, Marin (Albany) El Cerrito, El Cerrito Del Norte BART Richmond BART	72R Mon-Fri: 6:03 AM - 7:19 PM 72 / 72M* Sat-Sun: 5:09 AM - 1:16 AM Mon-Fri: 4:46 AM – 12:23 AM	Peak & Off-Peak: 72R: 12 min 72 / 72M: 20-30 min combined	40th St. Powell/Stanford Alcatraz Ave
57 40th St	Emeryville Oakland	40th St at San Pablo MacArthur BART, Piedmont and MacArthur Blvd	Mon-Fri: 5:06 AM - 12:40 AM Sat-Sun: 5:06 AM - 12:58 AM	Peak: 15 min Off-Peak: 15-30 min	40th Street/San Pablo
31 Shellmound St	Emeryville Oakland Alameda	West Oakland BART, 12th St BART, Jack London Sq, Bay Street Center, Marina Village Center,	Mon-Fri: 6:00 AM - 10:47 PM (No weekend Emeryville service)	30 min	Emeryville Amtrak Station, Bay Street Center, 40th and Hollis, East Bay Bridge Center,
26 40th Street	Emeryville Oakland	San Pablo Ave at 40th, MacArthur BART, West Oakland BART, 12th St BART, Lake Merritt BART	Mon-Fri: 5:57 AM – 10:42 PM Sat-Sun: 5:51 AM - 10:47 PM	Peak: 20 min Off-Peak: 20-30 min	40th St and San Pablo, 40th St and Hollis
Transbay Service to San Francisco					
C 40th St, Shellmound, Powell, I-80	San Francisco, Emeryville, Oakland, Piedmont	Transbay Terminal in San Francisco for Muni, SamTrans, Golden Gate Transit services	Mon-Fri: 5:56 AM - 8:22 AM 6:06 PM - 6:48 PM 4:34 PM – 7:21 PM	25-86 min	40th St & San Pablo, 40th & Hollis, Powell Plaza, MacArthur BART
F 40th St, Shellmound, Powell, I-80	Berkeley, Oakland, Emeryville, San Francisco	Transbay Terminal in San Francisco for Muni, SamTrans, Golden Gate Transit services, Ashby BART	Mon-Fri: 5:32 AM - 12:29 AM Sat-Sun: 5:36 AM - 12:10 AM	30 min	40th & San Pablo, 40th & Hollis St and Shellmound & Bay St (westbound)
J 40th St, Shellmound, Powell, I-80	Berkeley, Emeryville, San Francisco	Transbay Terminal in San Francisco for Muni, SamTrans, Golden Gate Transit services	Mon-Fri: 6:05 AM- 9:09 AM (to SF) 4:45 PM-7:32 PM (from SF)	20-36 min	40th St & Hollis, Powell Plaza, 65th St & Hollis
Z Christie, 65th, Hollis	San Francisco, Emeryville, Berkeley, Albany	*Weekday Reverse Commute:* Transbay Terminal for Muni, SamTrans, Golden Gate Transit	Eastbound: 7:26 AM, 8:26 AM Westbound: 4:45 PM, 5:45PM	Two trips each direction	Emeryville Public Market (64th & Christie), 65th St. and Hollis St.

* Line 802 runs 12:07 AM - 5:21 AM along San Pablo Ave from 14th St and Broadway in Oakland, through Emeryville, to Third St and University Ave in Berkeley.

Fares

The local cash fare on AC Transit local or transbay buses is $2.10, and a transfer can be purchased for $0.25. A discount fare of $1.05 is provided for youth (5-17), seniors (65+), and people with disabilities. Using a Clipper Card, AC Transit offers a 10-ride fare as a convenience but without a discount compared to cash fares. A 31-day rolling fare provides unlimited rides and is available for $80.00. Youth can get a 31-day rolling fare for $20.00, and a similar fare is available for seniors for $20.00.

The adult cash fare for a Transbay trip is $4.20, with a 50% discount available for youth, seniors, and people with disabilities ($2.10). A 31-day rolling fare is also available for $151.20, with no discounted fares available. Transfers from Transbay buses to local buses are free. With a transfer ticket obtained inside a BART station, the local AC Transit adult cash fare is $1.85 and $0.80 for youth, seniors, and people with disabilities. Figure 2-16 summarizes fares on AC Transit.

AC Transit also offers an annual transit fare called the EasyPass at a steep discount if purchased in bulk quantities by a sponsoring organization such as an employer, school, housing complex, government agency, etc. The cost per annual pass ranges from $41 to $115, depending on the number of passes purchased by the organization and the level of service AC Transit provides the recipients. Please refer to the TDM section of this chapter for additional information.

Image from Nelson\Nygaard

Figure 2-16 Fares on AC Transit

	Cash	31-Day Fare
Local Service to all locations in East Bay		
Adult (18-64)	$2.10	$80.00
Youth (5-17)	$1.05	$20.00
Senior (65+) & Disabled	$1.05	$20.00 calendar-month
Transbay Service to Downtown San Francisco		
Adult (18-64)	$4.20	$151.20
Youth (5-17)	$2.10	Not Offered
Senior (65+) & Disabled	$2.10	Not Offered
Transfers*		
Local Bus-to-Bus	$0.25	$0.25
Local BART-to-Bus (with transfer issued at BART)	Add $1.85	Add $0.80
Transbay-to-Local Bus-to-Bus**	Free	Free

* All transfers are issued at the time a fare is paid. Good for one use and 1½ hours.

** Also good for local-to-Transbay transfers with payment of Transbay fare on the first bus.

BART

Bay Area Rapid Transit (BART) is a regional rail service that spans Alameda, Contra Costa, San Francisco, and San Mateo Counties. In the East Bay, BART service extends south to Fremont, southeast to Dublin/Pleasanton, northeast to Pittsburg/Bay Point and north to Richmond. BART also runs to San Francisco and then south to Millbrae and the San Francisco International Airport. BART has five lines, with three running through MacArthur station and four running through West Oakland. The only stations requiring a transfer from MacArthur BART are Castro Valley and Dublin/Pleasanton. One-seat service is available from West Oakland BART to all stations. The West Oakland BART station has more frequent service to San Francisco than the MacArthur BART station, because more lines traverse the West Oakland station. In FY 2007 the annual ridership for BART was over 100 million passengers. MacArthur BART has about 7,000 weekday boardings and West Oakland has about 5,000 weekday boardings.

On weekdays BART trains run from 4:00 AM to 12:00 AM. Weekend service begins between 6:00 AM and 8:00 AM and runs through 12:00 AM. Headways range from 5 to 20 minutes. While there are no BART stations in Emeryville, MacArthur and West Oakland stations are nearby. MacArthur Station is 0.7 mile east of Adeline Street (the eastern border of Emeryville) along 40th Street, and West Oakland BART is two miles south of Emeryville along Mandela Parkway.

MacArthur Station has connections to Emeryville via both AC Transit and the Emery Go-Round. The AC Transit Line 57 and Line 26 buses both provide service between Emeryville and MacArthur BART Station, with peak service having headways of 12 and 15 minutes. All Emery Go-Round routes serve MacArthur BART, with most having 12-15 minute peak hour headways. A 2006 intercept survey found that 39% of BART patrons entering or exiting at MacArthur Station used transit to access the station, with about half of those patrons using the Emery Go-Round.[15]

Comparatively, there are also two transit connections between Emeryville and the West Oakland BART station. The AC Transit Line 26 travels there from Emeryville, with 30 minute headways from 5:00 AM to 10:30 PM seven days a week. Line 31 also serves Emeryville and the West Oakland BART Station daily with 30 minute headways.

BART fares are distance-based with one-way fares out of MacArthur ranging from $1.75 to $8.45. Transfer coupons can be obtained at BART stations providing a $0.25 discount on AC Transit.

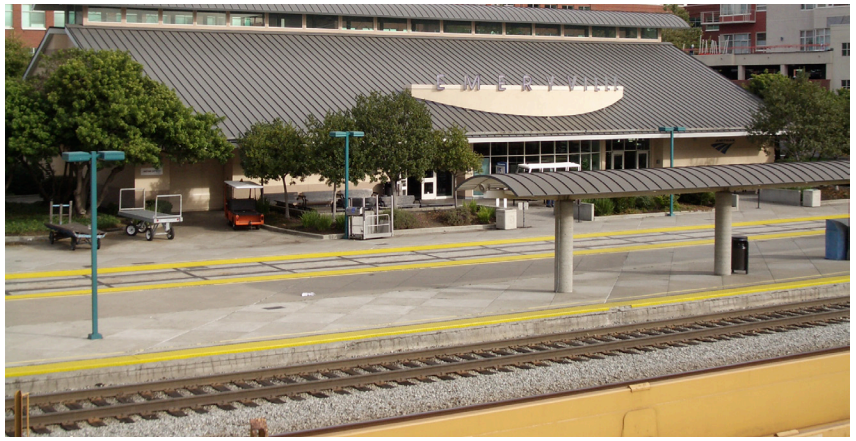
Amtrak

Amtrak is a nationwide passenger rail service. In FY 2007 annual ridership for Amtrak was 25.8 million passengers. The Amtrak station in Emeryville serves nationwide and California-based routes. California routes include the Zephyr, Coast Starlight, San Joaquin, and Capitol Corridor. The Capitol Corridor commuter train, running from Sacramento to San Jose, with stops including Berkeley and Oakland, has the third highest ridership of all lines in the Amtrak system. Since August 28, 2006, the Capitol Corridor route has run 32 trains per day (16 in each direction) on weekdays, reflecting a substantial increase over the prior service frequency. Ridership on the Capitol Corridor trains tripled between 1998 and 2005. Emeryville is the 5th most trafficked Amtrak station in California, with more than 482,777 passengers for FY 2007.[16] Most passengers at Emeryville originate from San Francisco, taking an Amtrak bus to or from the city.

Fares vary based on distance and date purchased. Fares out of the Emeryville station can range from $7.50 to $300 for a one-way ticket. The typical cost for a patron traveling between Emeryville and Sacramento is $25.00 for a one-way ticket. Monthly passes and discounted trip tickets are available. Routes passing through the Emeryville station vary from one train per day up to 16 trains per day, arriving as early as 4:40 AM and departing as late as 10:50 PM. Emeryville is the transfer point for passengers going to San Francisco. Amtrak buses transport passengers between San Francisco and Emeryville. Passengers must be connecting to or from an Amtrak train in order to use the Amtrak bus. Tickets for just the bus portion between Emeryville and San Francisco are not available. This could be because the Amtrak station is within a quarter-mile of AC Transit's transbay bus stop on Shellmound Street near Shellmound Way.

A Capitol Corridor rider from Sacramento can transfer to BART within the station at Richmond BART. A Capitol Corridor passenger from San Jose can transfer to BART at Coliseum, where the Capitol Corridor station is one block from BART.

The Amtrak station is on a Bicycle Boulevard and has bicycle lockers. Bicycles are allowed on the trains.



Emeryville Amtrak station.
Image from Nelson\Nygaard

15 Draft MacArthur BART Access Feasibility Study, March 2008 (available online at http://www.bart.gov/docs/planning/MacArthur_BART_Access_Feasibility_Study.pdf)

16 Amtrak Fact Sheet, Fiscal Year 2007. State of California.

ADA Paratransit Services and Shuttle Services

8-to-Go Senior Shuttle

A senior shuttle service named "8-to-Go" commenced in December 2008 and is funded by a LIFT grant from the Alameda County Transportation Improvement Authority (ACTIA). The service provides free door-to-door, shared ride transportation service for individuals living in the 94608 zip code to destinations in the 94608 zip code. Funding for this service is through ACTIA's Paratransit Measure B Gap Grant Funds.

The 8-to-Go shuttle typically operates between 9:00 AM and 5:00 PM with specific service hours based on customer demand. The shuttle service is for those age 60 years and above or persons between 18 and 59 that are ADA qualified. The van can carry four passengers at a time or three with one wheelchair.

East Bay Paratransit

East Bay Paratransit is a demand-response service for people who are unable to use AC Transit buses or BART trains because of a disability. East Bay Paratransit is sponsored by AC Transit and BART to meet the requirements of the Americans with Disabilities Act (ADA). Service is available within a 1½ mile corridor of all AC Transit routes in the East Bay, as well as to San Francisco. Sedans and wheelchair accessible vans are used to provide shared-ride service from a passenger's origin to their destination. Service is available during the hours when AC Transit buses or BART trains are running in each particular area. Fares are distance-based and range from $3.00 to $7.00 per one-way trip. Passengers must be certified as eligible for paratransit under the rules of the ADA before using the service.

Medical Shuttles

Kaiser and Alta Bates operate two shuttles between the MacArthur BART Station and Kaiser Hospital in Oakland and the Alta Bates Summit Medical Center – Summit Campus in Oakland. However, neither shuttle serves Emeryville.

Lawrence Berkeley Lab Shuttle

Lawrence Berkeley Lab runs an hourly, weekday shuttle from Joint BioEnergy Institute at 5885 Hollis Street (at Powell Street in Emery Station East) to downtown Berkeley and Gayley Road.

Private Taxi Service

Numerous taxi services operate in Emeryville. Several are located within Emeryville, and many are located in nearby cities such as Oakland and Berkeley. Taxi services operate 24 hours a day, seven days a week. Fares are based on distance traveled. Many taxi services specialize in airport service, transporting passengers to the Oakland International Airport, the San Francisco International Airport, and even as far as the San Jose International Airport.

Four taxi companies participate in a free taxi voucher program, providing services to disabled and senior residents of Emeryville. The participating taxi companies are: Yellow Cab of the East Bay, Friendly Cab Company, Metro Yellow Taxi Cab, and Veterans Cab Company. Emeryville's taxi voucher program is open to all Emeryville residents over age 18 who are ADA certified. Program participants receive a certain number of vouchers per year, based on their transportation needs. Each voucher is worth $5, and most rides require more than one voucher. Wheelchair accessible van taxis are available to those who need them, but must be requested at least 24 hours in advance.

Image from Nelson\Nygaard

Access to Transit

Transportation analysts universally agree that when it comes to the traveler's experience, "the last mile is the longest mile." This creed especially rings true for travel by mass transit, where every transit trip begins and ends with a different mode – from the origin of the trip to a transit stop and from another transit stop to the destination.

Trips to and from transit are most commonly made as a pedestrian for at least one leg of the trip. Bicycles are also commonly used, or desirable, because of their low cost, health and recreation benefits, and the increased distance one can travel to and/or from a transit stop. The experience of these connecting trips can have a fundamental impact on whether an individual uses transit to make that trip, or makes the trip at all. Important factors include distance, safety (and perception of safety), comfort levels, and the presence of a clear path of travel. For individuals without access to a vehicle, transit may be their only option for longer-distance trips. For persons with a disability affecting their mobility, certain barriers may make it extremely unsafe or uncomfortable, or even physically impossible, for them to access fixed route transit.

Image from Nelson\Nygaard

The quality of connections has a strong influence on one's decision whether or not to use transit. If people have other options, such as access to a private automobile, then their tolerance for negative factors such as no sidewalks or lack of connectivity to a bus stop will be especially low and may discourage transit use. Investment in a safe, comfortable, convenient environment for pedestrians and bicyclists, along with the provision of key amenities, can achieve significant reductions in dependence on automobile travel. Moudon, et al (1996)[1] found that walking is three times more common in a community with pedestrian friendly streets than in otherwise comparable communities that are less conducive to foot travel. According to Cervero and Radisch (1995) residents in a pedestrian friendly community walk, bicycle, or ride transit for 49% of work trips and 15% of their non-work trips, compared to 31% and 4% for residents of a similar automobile oriented community.[2] Additional information about factors affecting access to transit can be found in the Appendix.

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1 Moudon, et al. (2003) Effects of Site Design on Pedestrian Travel in Mixed Use, Medium-Density Environments, Washington State Transportation Center, Document WA-RD 432.1.

2 Cervero, R. & Radisch, C (1995) Travel Choices in Pedestrian Versus Automobile Oriented Neighborhoods, UC Transportation Center, UCTC 281.

Figure 2-17 Summary of Existing Transit Service

Service Provider	Service Area	System Service Hours	Frequency	Key Transfer Points	Annual Ridership	Fare Structure	Transfer Policy
Emery Go-Round Fixed-Route Bus Transit	City of Emeryville MacArthur BART Station	Weekdays: 5:45 AM-10:00 PM, Saturdays: 9:30 AM-9:30 PM, Sundays: 10:20 AM-6:40 PM	12-15 min (weekday peak) to 20-60 min (weekends)	MacArthur BART, Amtrak Station, 65th St and Hollis St	1.1 million (1)	Free	No transfer discounts between systems
AC Transit Fixed-Route Bus Transit	Western Alameda and Contra Costa Counties Transbay service to downtown San Francisco	24 hours per day	Varies by time and route, from 10 minutes to 1 hour	40th St. and San Pablo Ave, MacArthur BART	69 million (2)	Local fare: $2.10 Transbay: $4.20 31-day pass available. Youth, seniors, disabled: 50% discount or more (most fare types)	Local bus to bus transfer: $0.25
BART Regional Rail	Alameda Contra Costa San Francisco San Mateo Counties	Weekday: 4 AM-12 AM, Saturday: 6 AM-12 AM, Sunday: 8 AM-12 AM	Varies from 5 to 20 minutes	MacArthur BART, West Oakland BART	92.8 million (3)	Distance based: $1.75-$8.45, no passes available.	$0.25 discount to or from BART to AC Transit
Amtrak Heavy Rail	Nationwide and statewide, Capital Corridor Commuter Rail	4:40 AM - 10:50 PM (Emeryville station)	Routes going through Emeryville range from 2 trains per day to 32 trains per day	Emeryville Amtrak Station	25.8 million (4)	Varies based on distance and advance purchase: $7.50-$300	Must have valid Amtrak ticket to use Amtrak bus between Emeryville and San Francisco
East Bay Paratransit Demand Response	Alameda and Contra Costa Counties	During hours of AC Transit and BART service in the area	On demand	To travel beyond the service area, passengers may transfer to other paratransit services	689,000 (5)	Distance based: $3-$7	No transfer discounts between services
8-to-Go Senior Shuttle Demand Response	Riders in the 94608 Zip Code	Weekdays: 9:00 AM-5:00 PM	On demand	To travel beyond the service area, passengers may transfer to other paratransit services	N/A	Free	No transfer discounts between services

(1) 2007 (2) FY2009 (3) FY2005 (4) FY2007 (5) FY2009

Figure 2-18 Map of Transit Routes

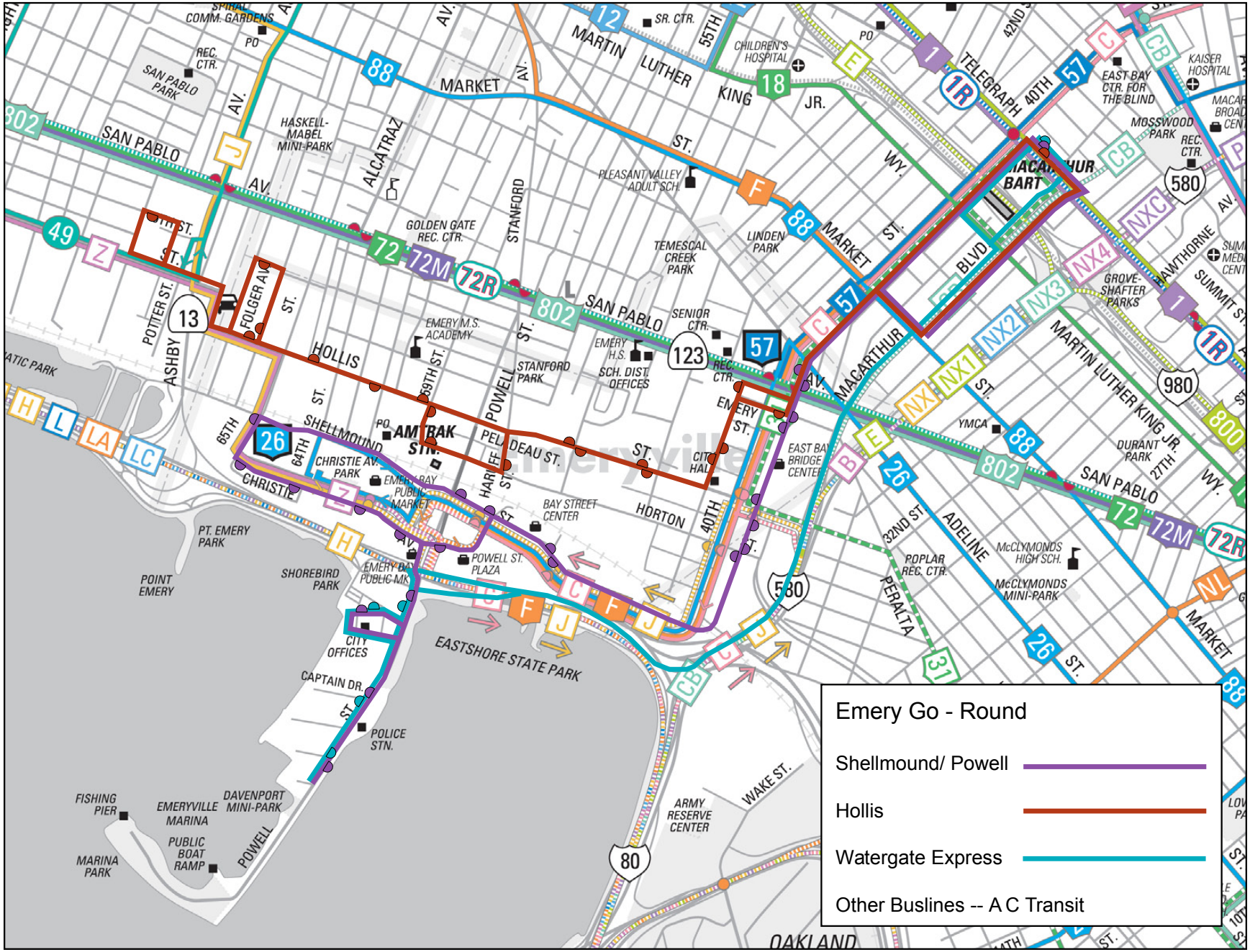

Figure 2-19 Map of Bus Stops

August 2010

adopted 3.15.2005 reso. no. 05-46

Figure 2-20 Bus Stop Amenities and Ridership

Map No.	Stop	Direction	Has Shelter	Has Bench	Has Trash Bin	Combined Est. Daily Riders	EGR Est. Daily Riders	AC Transit Daily Riders
1	40th at Horton	Eastbound	No	No	No	53	40	13
2	Hollis at 40th - Yerba Buena / Home Depot	Southbound	No	No	Yes	46	0	46
3	Hollis at 40th - Yerba Buena / Home Depot	Northbound	Yes	Yes	Yes	65	0	65
4	40th at Hollis	Eastbound	No	No	No	136	72	64
5	40th at Harlan	Eastbound	No	No	No	16	0	16
6	40th at Harlan	Westbound	No	No	Yes	44	0	44
7	40th at Emery	Westbound	Yes	Yes	Yes	184	115	69
8	40th at Emery	Eastbound	No	No	Yes	215	141	74
9	San Pablo at 40th	Southbound	Yes	Yes	Yes	700	0	700
10A	40th at San Pablo	Eastbound	No	Yes	Yes	788	160	628
10B			Yes	Yes	No			
10C			No	No	Yes			
11A	40th at San Pablo	Westbound	No	Yes	Yes	403	217	186
11B			No	Yes	No			
12	San Pablo at 40th	Northbound	Yes	Yes	Yes	527	0	527
13	Park at Watts / Pixar	Eastbound	No	Yes	No	27	27	0
14	Emery at 40th	Southbound	No	No	No	19	19	0
15	Park at San Pablo / IHOP	Northbound	No	No	No	78	78	0
16	Hollis at 45th	Southbound	No	No	No	59	59	0
17	Hollis at 45th	Northbound	No	No	No	67	67	0
18	Hollis at 53rd	Southbound	Yes	No	Yes	133	133	0
19	Hollis at 53rd	Northbound	No	No	No	88	88	0
20	Hollis at 59th / Emery Station	Southbound	No	Yes	Yes	256	256	0
21	Horton at 59th / Amtrak	Northbound	No	No	Yes	268	268	0
22	Horton at 59th / Amtrak	Southbound	No	No	No	0	0	0
23	Hollis at 59th	Northbound	No	No	No	92	92	0
24	40th at Hollis	Westbound	No	No	Yes	110	85	25
25	Hollis at 64th	Northbound	No	No	No	85	85	0
26	Hollis at 65th	Northbound	No	No	No	171	171	0
27	Vallejo at 66th	Southbound	No	No	No	87	87	0
28	65th at Hollis	Westbound	No	No	Yes	26	26	0
29	65th at Shellmound	Westbound	No	No	Yes	215	202	13

Map No.	Stop	Direction	Has Shelter	Has Bench	Has Trash Bin	Combined Est. Daily Riders	EGR Est. Daily Riders	AC Transit Daily Riders
30	Christie between 64th and 65th	Northbound	No	No	No	0	0	0
31	Christie at 64th	Southbound	No	No	No	146	100	46
32	Christie between 64th and Marketplace	Northbound	No	No	Yes	128	0	128
33	Christie / Public Market / Pacific Park Plaza	Southbound	No	No	Yes	195	175	20
34	Christie at Shellmound / FedEx Kinko	Southbound	No	No	No	83	83	0
35	Shellmound at Marketplace / Ped Bridge	Southbound	No	No	No	0	0	0
36	Shellmound / Woodfin	Northbound	No	No	Yes	155	70	85
37	Shellmound at Christie / Bay St. Site B	Northbound	Yes	Yes	No	130	130	0
38	Christie / Trader Joe's / Powell St. Plaza	Southbound	No		Yes	155	155	0
39	Hollis at 63rd	Southbound	Yes	Yes	No	71	71	0
40	Shellmound / Bay Street / IKEA	Northbound	Yes	Yes	No	574	379	195
41	Shellmound / Bay Street / Marriot	Southbound	Yes	Yes	Yes	495	345	150
42	40th at Horton	Westbound	No	No	No	82	49	33
43	Powell / Police and Fire Station	Eastbound	Yes	Yes	Yes	97	97	0
44	Powell / Watergate Market / Condos	Westbound	No	Yes	Yes	86	86	0
45	Powell / Hilton Garden Inn	Westbound	No	No	No	86	86	0
46	Powell / Watergate Towers	Westbound	Yes	Yes	No	396	396	0
47	Christie at 65th	Northbound	No	No	No	26	0	26
48	Christie at 65th	Southbound	No	No	No	60	53	7
49	San Pablo at 37th	Northbound	No	Yes	No	58	0	58
50	40th at Adeline	Eastbound	No	No	No	48	0	48
51	40th at Adeline	Westbound	No	Yes	Yes	53	0	53
52	San Pablo at 45th	Northbound	No	Yes	Yes	53	0	53
53	San Pablo at 45th	Southbound	No	No	No	51	0	51
54	San Pablo at 47th	Northbound	No	Yes	No	25	0	25
55	San Pablo at 47th	Southbound	No	Yes	Yes	40	0	40
56	Hollis at 67th	Northbound	No	No	Yes	3	0	3
57	Hollis at 67th	Southbound	No	No	No	2	0	2
58	Park at Pixar / Watts	Westbound	No	No	No	25	25	0
59	Stanford at Horton / Novartis	Southbound	No	No	No	25	25	0
60	Powell at Admiral / Watergate (Unofficial)	Eastbound	No	No	No	24	24	0
61	65th at Hollis	Southbound	No	No	No	34	0	34
62	65th at Shellmound	Eastbound	No	No	No	-	-	-

Transportation Demand Management

There are several programs and services available in Emeryville that are designed to manage transportation demand by providing alternatives to the single occupant automobile. This section reviews these programs – their background and objectives, a description of the services provided, and their funding sources and costs. The specific services reviewed are:

- The Emeryville Transportation Management Association (ETMA), which funds and administers the Emery Go-Round and several other services
- The AC Transit EasyPass program, offering annual passes allowing unlimited rides on all AC Transit bus routes at a discount when purchased in bulk quantities
- NextBus – a service providing estimated time of arrival for the next bus along a particular route of the Emery Go-Round.
- Carsharing service
- Casual carpool
- 511 program of MTC, providing Information about transportation conditions and services throughout the Bay Area via the telephone and online

Additional information on these existing TDM services can be found in Chapter 4 Sustainable Transportation Strategies, under the TDM header.

Emeryville Transportation Management Association

Formed in 1997, the Emeryville Transportation Management Association (ETMA) is a non-profit organization "whose primary purpose is to increase access and mobility to, from, and within Emeryville while alleviating congestion through operation of the Emery Go-Round shuttle program."[17]

The ETMA began as a two year demonstration project, funded by a Congestion Mitigation and Air Quality (CMAQ) grant. In 2000, the ETMA began to be funded through a citywide Property-based Business Improvement District (PBID), which was renewed in 2006. Fees are assessed on all commercial and industrial property (including rental apartments), based on total square footage and use. Property owners pay the assessment through their property tax bills twice a year. The County of Alameda transfers the funds to the City, which in turn, transfers funds to the ETMA. Rates may be adjusted a maximum of 5% annually by the ETMA Board of Directors and subject to final approval by the City Council, on a calendar year basis. Rates as of November 2008 are as follows:

- Commercial/Retail Use $0.21 per square foot per year
- Industrial Use $0.10 per square foot per year
- Residential (For Rent) $105.00 per unit per year

For-sale residential units are not subject to the PBID; however, several new properties are mandated to participate in the ETMA through their Conditions of Approval for their Conditional Use Permits and pay equivalent rates.

The ETMA is governed by a Board of Directors, comprised of the seven largest commercial property owners in the City, one at-large property owner, one representative from the Chamber of Commerce, and one residential representative. The at-large and residential members are elected by the membership. The City of Emeryville has an ex-officio (non-voting) representative on the Board. The Board determines the tax rates for the PBID as well as makes decisions about the Emery Go-Round and other services of the ETMA.

17 http://www.emerygoround.com, accessed on November 11, 2008

Emery Go-Round

The ETMA operates the Emery Go-Round, a private, publicly-accessible and free fixed-route shuttle service that has been in operation since about 1996. It began with two routes running during peak commute hours, and has subsequently added midday-weekday and Saturday service. Ridership on the Emery Go-Round has grown steadily over time, with 1.3 million passenger trips estimated in 2008.[18]

Guaranteed Ride Home

The Guaranteed Ride Home program (GRH) provides commuters who regularly vanpool, carpool, bike, walk, or take transit with a reliable ride home when one of life's unexpected emergencies arises. A common reason given by commuters for driving alone to work is that a vehicle is needed in case of an emergency. The GRH program allows commuters to take an alternative form of transportation to work but gives them the peace of mind that if an unexpected circumstance arises, they will have a reliable transportation option available.

Once an employer is enrolled in the program, its employees may individually enroll. Each enrolled employee receives a voucher good for either a free car rental or a free taxi ride. The employee may use the voucher on any day that they do not drive to work and have an emergency. After the voucher is used, the employee returns a copy of the voucher and a completed questionnaire in order to receive a subsequent voucher. A program participant may receive up to six vouchers per year.

The GRH program is free for both employers and employees. The program is funded through a Transportation Funds for Clean Air (TFCA) grant through the Bay Area Quality Management District (BAAQMD). The Alameda County Congestion Management Agency (ACCMA) administers the program in Alameda County, which includes the City of Emeryville. The GRH program has been operating in Alameda County for thirteen years.

In 2008 GRH formed an informal partnership with the ETMA in order to initiate a pilot program. There was no cost to the ETMA. Typically, businesses located within Alameda County must have 75 or more employees in order to register for the GRH program. However, through the pilot program in Emeryville, this requirement was waived, so that any business located within the boundaries of the City of Emeryville could register for the program.

Although the GRH program operates in seven of the nine Bay Area counties, a common issue is low program membership. This is typically due to limited marketing efforts. The pilot program in Emeryville was an effective solution to this problem by partnering with a local entity in order to spread the word about the program and encourage membership. The ETMA's GRH unit was one of the fastest growing units of the GRH program.

AC Transit EasyPass

In the fourth quarter of 2008, AC Transit initiated a program offering annual passes at a bulk discount, good on all local and Transbay routes. The passes are available to aggregate organizations that purchase 100 or more passes for their employees, residents, students, etc. As of November 2008, one multi-unit residential complex in Emeryville was participating in the new program. Passes were given to the residents for free, subsidized by a grant from MTC.

The price of the annual pass varies from $41 to $115 per participant. This is 3-7% of the equivalent cost for a year of 31-day rolling passes. The EasyPass program follows the same principles as group health insurance: not all those offered the pass will use them often, and an increase in use due to the availability of the pass does not necessarily lead to an increase in operating costs for the service provider.

The price varies based on the number of eligible recipients as well as the level of service available in the vicinity of the location of the participating organization. AC Transit requires that a pass be purchased for each eligible recipient. An eligible recipient is someone who lives within the AC Transit service area. An option is available to purchase one pass for each eligible household in a housing complex, rather than individual residents.

The EasyPass program is expected to support a variety of benefits:

- A reduction in vehicle trips, vehicle miles traveled, and traffic congestion
- A reduction in parking demand and automobile ownership costs
- Reductions in environmental impacts and overall transportation costs
- A tax-free benefit for the sponsoring organization and/or recipients of the pass

18 Data provided by the Emeryville Transportation Management Association on November 11, 2008.

- An amenity attractive to home buyers or renters seeking a more urban lifestyle
- An increase in transit ridership, with a resultant decrease in cost-per-rider and ability to provide increased service without increased operating costs

NextBus

Both the ETMA and AC Transit contract with a private company named NextBus to provide real-time estimates of the arrival time of the next bus along all Emery Go-Round routes and many AC Transit routes, including the 31, 26 and F routes, which have stops in Emeryville, as well as the 72-Rapid route along San Pablo Avenue. Someone wishing to ride either Emery Go-Round or AC Transit can either call a phone number or go online to view estimates of the arrival time of a bus along the route they choose. The AC Transit Rapid Bus stop on San Pablo Avenue has a NextBus display.

NextBus offers several benefits to encourage use of public transit:

- Increased knowledge of the potential to take a trip by transit, especially on short notice
- Reduced waiting times at stops for the next bus or train
- Improved service through the tracking of vehicle locations and travel times between points

No recent audit of NextBus technology has been conducted for the Emery Go-Round or AC Transit services. Potential operational issues include the reliability of vehicle tracking technology and ability to accurately predict arrival times, as well as the ability to provide information to potential transit riders. Many transit stops in San Francisco now have information posted within the bus shelter, available to all waiting passengers.

CarSharing

Carsharing is a rental car service that offers vehicles for rent by the hour or a similar shorter time period than conventional rental car services. The service reduces the need for businesses or households to own their own vehicles, or as many of them, reducing transportation costs and vehicle miles traveled (VMT). Carshare vehicles available near a person's place of work (or school) can enable them to commute to work via other means, and use a car during the day only as needed. According to the Transportation Research Board, each carsharing vehicle takes nearly 15 private cars off the road. Carshare members have been found to make fewer trips and their total mileage driven decreases substantially, compared to their travel behavior before joining. A UC Berkeley study of San Francisco's City CarShare found that members drive nearly 50% less after signing up with City CarShare. This reduces the associated negative impacts of travel by automobile significantly and allows for reductions in parking requirements for commercial and residential development.[19]

There are two carsharing providers in the San Francisco Bay Area: City CarShare, a local non-profit organization that opened for business in 2001, and Zipcar, a for-profit business that began operation in 2005. A third provider, Flexcar, was purchased by Zipcar in 2007 due to financial difficulties.

In early 2008, the ETMA negotiated with Zipcar to initiate and help fund carsharing services at several locations throughout Emeryville. The ETMA was under a license fee agreement with Zipcar to provide free membership and corporate rates to ETMA members, and helps advertise the services to employees at commercial properties near the Zipcar Pods. Any business that paid into the ETMA (including residential complexes) can join Zipcar for free. At first, users received a discount on the standard usage rate (subsidized by the ETMA). Other residents of Emeryville could join Zipcar and use the cars at the Emeryville pods at the regular Zipcar rates. All members of Zipcar can also use their services elsewhere at the standard rate.

The ETMA is no longer subsidizing carsharing pods. Zipcar has expressed appreciation for the support the ETMA has provided in helping them expand their market. Further information on carsharing can be

19 TCRP (2005) Car-Sharing: Where and How it Succeeds, TCRP Report 108. 2005. Accessed on August 25, 2006 at http://www.nelsonnygaard.com/articles/article_carsharing.htm

found in Chapter 4 under the Transportation Demand Management Section.

The following are locations of Zipcars in Emeryville:

- Shellmound Street, in front of the Emeryville Public Market
- 59th Street & Horton Street (Emeryville Amtrak Station)
- 53rd Street & Hollis Street (Novartis)
- 45th Street & Doyle Street (Pixar)
- Powell Street & Captain Drive (Watergate Office Towers)
- Courtyards at 65th Apartments

Casual Carpooling

Casual carpool is an informal arrangement where people with access to an automobile pick up passengers from a common location, typically individuals who do not know each other or do not know each other well. The advantage for the driver and passenger is that they are then able to use carpool lanes to reduce travel time, and the process is completely flexible and convenient. Sometimes the parties share the cost of gas and tolls. In the San Francisco Bay Area, carpools are charged a $2.50 toll during commute hours. Most casual carpool users travel one-way – from the East Bay to San Francisco in the morning – and then take public transit home in the evening. Emeryville has two established casual carpool locations: at Christie Ave and 64th Street (in front of Pacific Park Plaza at 6363 Christie Ave), and at the Emeryville Marina (on Powell Street between Admiral Drive and Commodore Drive). No information is currently available on the number of people using casual carpool each day. Potential casual carpooling enhancements are discussed later in Chapter 4.

511

511 is a free phone and internet service providing information about transportation for all modes in the San Francisco Bay Area. Real-time traffic information is available, as well as scheduling and trip planning for transit. The site also has an online service to help people find rides via carpool and vanpool and a link to casual carpool sites in the East Bay including Emeryville locations. For some transit systems, real-time information about transit arrival times using NextBus technology is also available. 511 is funded by the Metropolitan Transportation Commission, the regional planning organization for the Bay Area.

Pedestrian Connectivity and Safety

Walking is a fundamental building block of transportation and is a mode that nearly every individual uses at some point of the day regardless of their primary mode of transport. Emeryville's mild climate, recreational facilities, flat topography, and numerous other factors make it an attractive place for walking for purposes of either business or pleasure.

In many sections of Emeryville, particularly its residential neighborhoods, Emeryville's street network includes complete sidewalks and appropriate traffic calming devices to help create a pedestrian-friendly environment for locals and visitors. Yet, there are several areas of specific focus where pedestrian conditions could be improved. Examples include the Powell and I-80 intersection and the challenges in crossing major arterials such as Shellmound south of Powell. A 2005 study conducted on four of the major arterial intersections in Emeryville included a survey of pedestrians crossing at these locations. Among those surveyed, 47% indicated that they did not feel safe when crossing the intersection in question and 41% stated that they encountered a "near miss" with a vehicle at the respective intersection. There were 13 reported pedestrian-related collisions in 2008 in Emeryville.

Bicycling Connectivity and Safety

Many portions of Emeryville offer pleasant places to bicycle for both recreational and utilitarian purposes. Separated facilities such as the Bay Trail and Greenway provide an opportunity for cyclists to be removed from the hazards of vehicle traffic, and numerous streets with bicycle lanes provide adequate space for riders to feel safe while traversing the city. Despite these high-quality facilities, there remain numerous places in Emeryville where challenging roadway configurations and high traffic volumes make cycling difficult. While these types of conditions may not affect some cyclists, others may be deterred from using their bike.

Wayfinding

Currently, Emeryville has some wayfinding signage to direct the public to specific destinations although there are some signs that are not well coordinated. For example, there are a few signs at the start of the Bay Trail that are intended to guide users to the continuation of the trail, bicycle signage along Horton Street that is consistent with Berkeley's purple bicycle boulevard scheme, signs for the local Amtrak Station, and signs on San Pablo Avenue for the Emeryville Senior Center.

One of Emeryville's greatest challenges is the numerous barriers that divide the city. These include Interstate 80, the UP/Amtrak railroad tracks, and several high-volume arterial roadways. Although some signage does exist, directing users to bridges and points of access to cross these barriers, it is often only at the point of crossing. Thus, finding the route to safe points of crossing/access points is a considerable challenge.

Accessing public transit can be difficult for first time users who are unfamiliar with the services because there are no signs directing individuals to transit stops. AC Transit stops are identified with either shelters or bus stop signs and Emery Go-Round stops are also identifiable with many sharing the same bus stop location. Bus stop signs and/or shelters are typically the most highly visible means of finding transit although transit vehicles themselves, if properly marked, are also often an effective way to market the service. However, many bus stops in Emeryville lack bus shelters.

Chapter 3 Stakeholder Interviews and Summary of Needs


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CHAPTER 3. STAKEHOLDER INTERVIEWS AND SUMMARY OF NEEDS

An extensive stakeholder interview process was conducted to reach out to various Emeryville policy makers and community leaders to garner opinions, interests, and needs with regard to transportation. This information was used to generate common themes and develop a needs summary that assisted the team in developing recommendations for Emeryville's Sustainable Transportation Plan.

Stakeholder Interviews

An important step in developing this plan was to solicit input from a variety of stakeholders in Emeryville and utilize that information to understand and prioritize community needs. In coordination with City staff, Nelson\Nygaard contacted more than 30 people representing a diversity of perspectives. A series of face-to-face and telephone interviews were held to gather input on key issues and the transportation challenges and opportunities facing Emeryville.

Stakeholders were asked for their personal and constituents' perspectives regarding the goals of the Plan, current transportation conditions in Emeryville, priority issues and potential opportunities for improvement. Stakeholders were asked to focus on certain topics and they were given the opportunity to talk about a selection of other topics. Appendix B lists the stakeholders contacted and their affiliations, followed by a list of questions asked of each stakeholder.

All stakeholders agreed that transportation is a primary issue for Emeryville to address, especially as its population and economy continue to grow. Several common themes and priorities emerged from the interviews, and many issues appear to be commonly understood among stakeholders. However, the relative importance and priority of these issues varies between stakeholders, especially with limited funding for transportation improvements.

All stakeholders agreed that transportation is a primary issue for Emeryville to address, especially as its population and economy continue to grow.

Common Themes

- **A Walkable Emeryville**

Improvements to pedestrian safety, connectivity, and comfort are a high priority for nearly all stakeholders. This is considered an important issue throughout Emeryville—in residential areas, in employment areas, and even at regional retail destinations. Two locations frequently noted were the intersection of Powell Street with Christie Avenue and the freeway exchange and overpass further west on Powell. The lack of sidewalk connectivity in various locations was frequently raised, including a section of Shellmound Street near the Bay Street Center. The limited number of streets crossing the railroad tracks was also frequently noted as limiting pedestrian access. Stakeholders also commented that many intersections are poorly designed and unsafe for pedestrians, with long crossing distances and wide turning radii that encourage high speed turns by vehicles.

- **Targeted Improvements to Public Transit**

Overall, stakeholders familiar with available transit services expressed appreciation and support for them. However, specific unmet needs

were frequently noted, as described below. These included increased service in select areas and later evening and more weekend service. Stakeholders also mentioned that transit providers should invest more to market and provide information about available services, especially at transit hubs, as well as attempt to better coordinate services, such as timed arrivals between routes and service providers at key transfer points. Support was also expressed by some stakeholders for employer subsidies of transit passes, suggesting that there may be a market in Emeryville for the AC Transit EasyPass program (see Chapter 4) and opportunities to increase transit mode share for employees.

The Emery Go-Round is widely supported and appreciated. There is a desire for extending service hours later in the evenings and on weekends and providing service to residential areas, particularly the Triangle. As potential funding sources, some stakeholders suggested charging a nominal fare, while other suggested establishment of a residential property tax, similar to the PBID that currently funds the service.

While stakeholders definitely support investment in sustainable modes of transportation, the continued need to accommodate automobiles, both on city streets and with sufficient parking, was a perspective voiced by a significant number of stakeholders

AC Transit. Overall, stakeholders feel that AC Transit has limited service in Emeryville, with many stakeholders considering the Emery Go-Round a superior service for meeting local transit needs. Two desires were raised by a significant number of stakeholders: (1) provide better access in Emeryville to Transbay service, such as a stop off the freeway at Powell, and (2) introduce service on Adeline between the Triangle area and central Berkeley, which some stakeholders believe will have significant demand if the San Pablo Avenue and south Adeline Street redevelop as planned into a higher-density, more affordable, mixed-use corridor.

Emeryville Streetcar. There appears to be significant interest in a study to determine the feasibility of establishing a streetcar to connect Emeryville to MacArthur BART Station. Stakeholders noted a variety of important questions about investment in a streetcar – travel need (origins, destinations and travel times), cost, ridership potential, impact on traffic conditions along the rail corridor, and potential funding sources. Some stakeholders who doubt that a streetcar would be feasible still supported funding a study at a level of detail sufficient to provide more information needed for a decision to be made.

Transit Hubs. Even though some transit hubs already are active, many stakeholders noted a need for improvements to access, intermodal connectivity and visibility at these hubs. The hubs should also be integrated with their surrounding land uses, and contribute to the identity of the City. These focal points include MacArthur BART (in Oakland), the Emeryville Amtrak Station, which is adjacent to the site for the planned Transit Center, and the intersection of San Pablo Avenue and 40th Street.

- **Support Bicycling, But At What Level of Investment?**

  Most stakeholders are supportive of improved conditions for bicycles. However, given the current relatively low percentage of trips taken by bicycle, some stakeholders believe that too much investment is being made in bicycling, at the expense of other modes including walking and driving. Some stakeholders noted that older adults are less likely to ride a bicycle, and would prefer investments to improve conditions for pedestrians and travel by automobile. Other stakeholders, however, noted that a complete, connected and safe bicycle network is vital to encouraging people to ride bicycles more often. There has been a significant level of support for the installation of bicycle racks on the front of Emery Go-Round Buses, though usage data is not available.

  Ultimately, there is not complete consensus regarding the appropriate level of investment in bicycling as a mode of transportation. Recent high-profile plans and projects appear to have energized stakeholders from both ends of the spectrum.

- **Cautious Support for Higher Densities**

  Infill development at moderately high densities appears desirable to most stakeholders, but they also noted a need to address vehicle traffic that might be generated by new development. Stakeholders expressed support for new development to help fund investments in infrastructure and transportation services, though some doubted the ability to accommodate travel demand by any mode other than the automobile, especially to regional destinations beyond City limits.

- **Continued Support for Automobiles – A Balanced Transportation System**

  While stakeholders definitely support investment in sustainable modes of transportation, the continued need to accommodate automobiles, both on city streets and with sufficient parking, was a perspective voiced by a significant number of stakeholders. Their perspective is that this mode of transportation will remain dominant, highly desirable and necessary in Emeryville. Others, however, noted that there is an inherent conflict between continued accommodation of automobiles at current levels, and attempts to shift travel to other modes, firmly believing that travel mode must shift significantly to achieve the social, economic and environmental goals of the City. There was also a point made by several stakeholders that much of the traffic may merely be passing through, not stopping anywhere in Emeryville.

  This is clearly a high priority issue to address with stakeholders and the greater Emeryville community, seeking balance between two different perspectives on how Emeryville should invest in transportation:

  1. A desire by a significant number of stakeholders for continued support for auto access to regional retail, which currently provides a strong economic foundation for Emeryville, while still also seeking improved access to retail by other modes
  2. A desire by others to explore strategies that maintain the economic growth and stability in Emeryville, while more aggressively encouraging a shift away from automobiles as a primary mode of travel

  Stakeholders also identified a need to better understand the origin, destination and purpose of trips on Emeryville's street network, including what proportion are merely passing through without an origin or destination in Emeryville.

- **Polarized Perspectives on Parking Policies**

  Support for parking policy concepts varied among stakeholders. Support was indicated from some stakeholders for a residential permit program or other strategy to protect some on-street parking in residential neighborhoods for residents. There is also some support for metered on-street parking in areas where there is a shortage of short-term parking for employees or retail customers. Some stakeholders stated that parking revenue should pay only for construction and maintenance of parking facilities, whereas others would like to see some of it go towards local improvements to safety and security for pedestrians, bicycle racks, etc. Perceived safety is an important concern for many people who drive, especially walking along streets at night; they thus feel a need to park close to their place of work.

  Additional feedback was received from stakeholders on two types of parking policies that have been proposed for either local or citywide implementation:

  – *Unbundling of Parking* – Unbundling is separating the lease or purchase of parking from the lease or purchase of habitable space. There is mixed support for the unbundling of parking, with stakeholders expressing a concern that it will lead to a shortage of residential parking, and difficulty selling units which may not have any parking available.

  – *Charging for Parking* – Some stakeholders support charging for parking, including using the revenue to support sustainable modes of transportation. Their perspective is based on the concept that subsidized parking undervalues the cost to drive, making sustainable modes unfairly less cost competitive. Furthermore, local commercial districts have limited ability to increase parking supply, and thus increasing the number of trips made by other modes maintains or increases their customer base while still providing parking spaces for those who are able and willing to pay a fee in exchange for more easily finding a parking space.

- **Increased Role in Regional Planning**

  Stakeholders noted that despite its small size and population, Emeryville is a major destination for employment and regional retail, with easy access to freeways as well as BART via the Emery Go-Round. Stakeholders would therefore like Emeryville to have a stronger voice in regional transportation planning, to support access to and from the City, as well as address traffic traveling through the City.

- **Use a carrot, not just a stick.**

  Several stakeholders suggested that shifts to sustainable modes of transportation should be achieved by providing incentives that are more convenient, safe, and affordable, rather than simply implementing policies intending to force people to change their behavior.

- **Phased Approach. Pilot Projects. Conduct more detailed studies.**

  Most stakeholders expressed caution in moving forward aggressively with new services and programs without first testing their acceptance. A prudent strategy might be to begin with pilot projects and evaluate them before making a longer term commitment. They also expressed support for more detailed analysis of major infrastructure investments to determine their feasibility, especially plans for a streetcar. Some stakeholders noted that interim projects, however, may not be a good test of the feasibility of a more complete project, such as bus rapid transit being implemented with the intent that it will demonstrate a subsequent investment in a streetcar or light rail system. Some improvements, such as any system with a dedicated transit lane, cannot successfully be done in increments. Stakeholders further noted that it will be important in all efforts to include the expertise and experience of people who have worked in, lived in, and have a long-term investment in Emeryville.

Short-Term Priorities for Improving Sustainable Transportation

Stakeholders were asked to identify their top three priorities for improving sustainable transportation services in Emeryville in the next three years. They gave a wide variety of responses, focusing on all modes – transit, walking, bicycling and automobiles. Their responses are summarized below, but it should also be noted that some issues mentioned in the previous section but not listed below were still considered by many stakeholders to be important issues.

Public Transit

Continued support and expansion of the Emery Go-Round, and targeted enhancements to AC Transit service, were top priorities expressed by a majority of stakeholders. Specific suggestions for ongoing support and enhancement of the Emery Go-Round are summarized in Figure 3-1.

Figure 3-1 Stakeholder Suggestions to Enhance Transit Service in Emeryville

Service-Related Improvements

Emery Go-Round

- Provide service to residential areas not served; increase service to residential areas currently served
- Expand service hours – later evening service is desirable
- Increase service frequency during off-peak

AC Transit

- Improve Emeryville access to Transbay service to San Francisco

Other Enhancements

- Provide bus shelters, signage, lighting and other key amenities
- Explore the possibility of charging a nominal fee on the Emery Go-Round
- Keep MacArthur BART as transfer point for Emery Go-Round (not West Oakland)
- Explore ways for buses to avoid being stuck in traffic (e.g. signal prioritization)
- Conduct a feasibility study of enhanced transit access to MacArthur BART, including perhaps a streetcar

Pedestrian Improvements

Stakeholders also expressed strong support for planning efforts to improve walking conditions throughout Emeryville. They placed emphasis on certain locations considered particularly problematic, including Powell Street at Christie Avenue, and improved access across the railroad tracks and freeway (at Powell Street and elsewhere), as well as continued efforts to improve pedestrian conditions throughout the City.

Other Improvements to Sustainable Transportation

Stakeholders also expressed strong support for additional efforts to support sustainable transportation, even though the type or level of support they considered appropriate might vary.

Stakeholders expressed strong support for improved walking conditions and connectivity throughout the city.

Proposed Development Projects

- Ensure that the major developments make firm commitments to implement transportation demand management strategies, to reduce vehicle trips and parking demand, with monitoring and enforcement of adopted programs.

Automobile – Balance Between Modes

- Conduct a study of citywide traffic patterns, especially to determine what proportion of traffic is passing through without an origin or destination within Emeryville.
- Increase availability of parking through both supply and demand management. Explore opportunities to charge for on-street parking to increase turn-over and availability of short-term parking.
- Continue to accommodate the automobile, even as efforts continue to support sustainable modes.

Funding Sustainable Transportation

- Identify and pursue new funding opportunities. Ensure funds are sufficient and spent effectively and efficiently.
- Discuss appropriate use of funds from the Transportation Impact Fee when the next fee study is conducted – should it be limited to automobiles or investment in other modes to mitigate impacts from vehicle traffic?
- Consider implementing a property tax for residential development similar to that of the PBID for commercial property

Support Coordination with Other Planning Efforts

The Sustainable Transportation Plan should be developed in coordination with the update to the General Plan and other localized plans such as the North Hollis Parking Plan, to ensure consistency.

Plans should all have a clear, achievable strategy for implementation. It will also be important to increase coordination between local and regional governments, transit and other agencies.

Longer-Term Priorities for Improving Sustainable Transportation

The major themes stakeholders identified for longer-term priorities include:

- An increased role in regional planning for the City, given its importance as a retail and employment destination. Increased connectivity to regional rail, at the Amtrak Station and MacArthur BART Station, is a longer term priority.
- A streetcar for the City is considered by some stakeholders to be a promising possibility, though others suggested caution, due to concerns about whether there would be sufficient ridership to justify capital and operating costs, and the shifting of resources from other transit improvements.
- Comprehensive design strategies should be pursued to ensure all modes are accommodated, especially in areas with higher potential for conflicts between modes. Examples include the intersection of Powell Street and Christie Street and freeway interchanges.

Essential Elements to Support Plan

Stakeholders were asked to identify the necessary elements to support the City's Sustainable Transportation Plan. The major themes that emerged are:

Practical Plan with Clear First Steps. We heard from several stakeholders that the Sustainable Transportation Plan needs a clear vision to create a foundation for both short and longer term projects. It should not be "watered down" and while it may not get 100% support, it should "aim high" and be visionary. The Plan should use straightforward language and be easily understood by a cross section of stakeholders. It should include implementable first steps to establish and maintain a momentum for moving forward and getting things done.

- **Increased Mobility.** There was nearly unanimous support from stakeholders that the Plan must increase mobility for pedestrian and bicycle travel as well as public transit. The priority for bikes and pedestrians is on safety and connectivity. Many stakeholders commented that there needs to be an increased investment in public transit, especially the Emery Go-Round. At the same time several stakeholders noted that auto access and parking must also be acknowledged as an important mode, especially to accommodate commercial and retail markets.
- **Continued Support for New Development.** While not all, a majority of stakeholders commented that Emeryville should continue to support new development. An important element in moving forward with new development is to ensure that opportunities are pursued to fund transportation improvements such as developer agreements, conditions of approval, and transportation impact fees that are essential revenue sources to pay for transportation investments.

Summary of Needs

This section summarizes the major issues that have surfaced during the initial process of community and stakeholder outreach. These needs essentially fall into seven categories, described below and summarized in Figure 3-2.

Address High-priority Pedestrian Safety and Connectivity Issues

A need to improve the pedestrian environment was expressed as a priority issue almost universally by stakeholders and supported strongly by consultant observation. There are fundamental connectivity and safety issues to address, with many street segments lacking complete sidewalks, having sidewalks in significant disrepair, and not fully accessible to all individuals. Walking or waiting for transit or a ride at night is considered unsafe by many due to lack of appropriate lighting and other safety considerations. Pedestrian safety and access could be improved at many intersections, especially where major vehicle arterials meet.

Addressing these issues could improve pedestrian access to transit, supporting a reduction in driving, as well as improving the overall walkability and sense of community for the City of Emeryville.

Public Transit Services

The Emery Go-Round is a highly successful transit service for the City, providing an attractive, convenient alternative to driving. Ridership is mostly work-commute oriented, serving employment destinations in the city. Stakeholders expressed strong support for expanded service to more residential areas. Extended service hours were also expressed as a priority need, both in evenings and on weekends, to enable more trips to be made via transit instead of driving. New funding sources will need to be identified to support expanded service.

Increased connectivity to regional destinations, via Amtrak and AC Transit Transbay service, is also a high priority. General access to Amtrak buses could require state legislation. There is also strong interest in conducting a more detailed feasibility study for a streetcar or other major investments in public transit in Emeryville, especially to connect to MacArthur BART Station in Oakland although there are some reservations about investment in a streetcar system.

To optimize transit service in terms of the number of streets covered, frequency and hours, it might be advisable for AC Transit and the Emery Go-Round to analyze their combined coverage and adjust routes to provide more efficient service.

Bicycling

There is a need to find consensus regarding the level of investment in bicycling, compared to other modes of transportation, even though stakeholders expressed strong support for continued improvements to the bicycle network. Connectivity to key destinations within Emeryville and the regional bicycle network are especially important, as are smaller targeted improvements. Connectivity across the freeway on Powell Street is an especially high priority. This segment connects the peninsula and Bay Trail to the rest of the City.

Consensus on levels of investment in bicycle facilities has yet to be found.

Automobiles

While stakeholders firmly support sustainable transportation strategies for Emeryville, many also believe automobiles must continue to be supported as a highly desirable mode of transportation for many individuals and types of trips. Continued support for regional retail, which is currently an economic foundation for Emeryville and considered to be most easily accessed by automobile was often noted. Other stakeholders are equally firm in their conviction that shifting support from automobiles towards other modes will be the fundamental approach necessary to achieve the economic, social, and environmental goals of the community.

Stakeholders often indicated provision of sufficient automobile parking as an important need, with certain commercial areas, as well as the North Hollis area of Emeryville considered high priority to ensure sufficient availability of short- and long-term parking for local businesses, employees, and residents. It was noted that the amount of parking supplied has impacts on the ability to support sustainable modes of transportation, due to the decrease in land use densities and local access for pedestrians and other non-auto modes that is typically associated with high parking requirements.

Balance between Modes

Overall, stakeholders agree that balance among all modes must be found. The challenge is determining where that balances lies, based on dedicated right-of-way, economic costs and associated benefits, and the social, environmental, and other impacts of these decisions.

Development Density and Design

Many stakeholders agreed that an increase in density through redevelopment is a desirable and effective strategy to support sustainable transportation in Emeryville. Some stakeholders expressed concerns about the potential vehicle trips generated by new development, especially if it occurs at higher densities that have an associated increase in vehicle trips.

Identify strategies to increase role of city in regional transportation planning

Emeryville is a small city – just over one square mile in size. It is, however, a major destination in the Bay Area for regional retail and a robust employment center as well. Stakeholders agreed that local planning needs to be complemented with an increased role in regional planning – both transportation and land use, to enable more people to travel to Emeryville on transit for work and other trips. Figure 3-2 outlines the transportation priorities in Emeryville and examples.

Figure 3-2 Transportation Priorities in Emeryville

Pedestrian Safety and Connectivity

- Powell Street and Christie Avenue Intersection
- Powell Street at I-80 Freeway Interchange
- Shellmound Street (south of Powell) – lack sidewalk and connectivity to desired bus stop location
- Leverage new development to increase investment in local pedestrian amenities

Public Transit Services

- Address potential conflicts between buses and bicycles along Horton Street near planned Transit Center (adjacent to Amtrak Station)
- Keep MacArthur BART as a transfer point from Emery Go-Round
- Explore enhanced access to MacArthur BART along 40th Street
- Explore coordination of routes between Emery Go-Round and AC Transit

Emery Go-Round/Emeryville Transportation Management Association

- Expand service area to residential areas, including Triangle neighborhood
- Expand service hours to later evenings and increase service frequency during off-peak time periods

AC Transit

- Estimate existing and future demand for AC Transit Transbay Service between Emeryville and San Francisco, and feasibility of implementation. Options proposed include: (1) create a stop at Powell Street and (2) alter the routing of the Transbay Line F to synchronize in-bound and out-bound stops
- Address demand for transit connection between Emeryville and downtown/central Berkeley, perhaps through increased marketing of existing F-route service or increased service hours and/or frequencies

Amtrak

- Explore opportunity for local passengers to travel between Emeryville and San Francisco

Bicycling

- Powell Street - improve crossings of I-80 freeway and railroad tracks
- Provide additional crossings north and south of Powell Street
- Enhance Horton Street as a north/south bicycle boulevard
- Provide increased short-term bicycle parking near retail – both local and regional
- Provide secure long-term bicycle parking in existing residential and employment-based development; require this in all new development
- Close gaps in bicycle network

Automobiles

- Circulation – explore opportunities to address existing circulation issues without compromising safety and access by other modes; ensure new development does not result in increased congestion, but is still supported by programs to increase citywide access by other modes
- Parking – ensure sufficient parking availability to support existing and new development; ensure any parking charges are fair and supportive of economic stability and growth, including both regional retail and local businesses
- Maintain carshare and expand outreach efforts to Emeryville market
- Explore opportunities to provide shared and unbundled parking, in addition to programs such as carshare, that maintain auto access without increased demand for parking supply

Balance Between Modes

- Planning and design for new infrastructure and development should include goals of improved access and safety for all modes and evaluation of sustainable strategies to determine best balance between modes

Density

- Continued infill and redevelopment should be at sufficient intensities to support high level of transit access and enhancements to the pedestrian realm, but not too high to (a) avoid undesirable growth in vehicle trips and (b) develop a human-scaled urban environment

Identify strategies to increase role of City in regional transportation planning

- Collaboration with neighboring cities (Berkeley, Oakland)
- Collaboration with transit agencies—BART, AC Transit, Amtrak
- Collaboration with all of Bay Area to increase ability of regional transit network and local access improvements to support greater percentage of regional trips, especially journey to work and other trips during peak time periods

Chapter 4 Sustainable Transportation Strategies

CHAPTER 4. SUSTAINABLE TRANSPORTATION STRATEGIES

Based on an assessment of high priority transportation needs and insight gained through interviews with a diverse group of stakeholders presented in Chapter 3, the project team developed a comprehensive set of transportation strategies for Emeryville's consideration. The strategies complement the City's 2009 Updated General Plan and many of the strategies mirror the General Plan since this study was conducted during the General Plan process. The strategies are intended to help Emeryville move toward a more balanced transportation system, shifting travel demand toward transit, bicycling, walking, ridesharing and other alternative and sustainable transportation modes—especially among in-commuters. The strategies address Emeryville's overall goal to establish a more balanced multi-modal transportation network.

The strategies in this Plan are outlined in several sections, each pertaining to a different transportation focus area.

Transit Services

Emeryville is currently served by AC Transit and Emery Go-Round, Amtrak, and BART (two-thirds of a mile from Emeryville). The Senior Center operates the 8-To-Go paratransit van for seniors and disabled residents. The strategies presented in this plan focus on how to improve services for the major markets transit serves including local trips within Emeryville, sub-regional trips for travel between Emeryville and Oakland and Berkeley, and transbay trips.

The General Plan recognizes that an efficient multi-modal transportation plan, coupled with wise land use planning, is essential to improving quality of life, supporting economic vitality, and reducing greenhouse gas emissions. The Transportation Element seeks to create a well-connected transportation network that accommodates cars, public transit, walking, and biking.

Transportation Demand Management (TDM)

TDM programs come in a wide variety of shapes and sizes. In Emeryville, several TDM programs currently exist including some administered by the City, others offered through the ETMA, and other measures provided by private sector employers. The TDM section addresses a wide array of strategies to reduce single occupant driving and include carsharing, expansion of casual carpooling, and establishment of an employer bicycle sharing program among other ideas.

Parking

Parking policies play a key role in influencing individuals' choice of how to travel and land use development patterns. Parking requirements can lead to an oversupply of parking, contribute to low-density development and at the same time, can discourage the use of more sustainable transportation modes. For example, when there is ample parking and it is no or low cost, it is difficult to support public transit especially for employees who may choose driving and parking over transit service.

The section on parking recommends parking strategies to appropriately size the parking supply for Emeryville.

Pedestrians

Among potential strategies to improve sustainability, providing attractive and safe facilities for walking is a critical component of the transportation network. Regardless of type of trip, origin, or destination, walking is a part of every trip. This section investigates strategies that will encourage walking through the development of a safer, more attractive pedestrian network and programs that are designed to incentivize walking. The suggested strategies in this section are meant to complement proposed improvements as part of the forthcoming Bicycle and Pedestrian Master Plan.

Bicycles

Bicycling has seen significant increases in the past decade across US cities. Given Emeryville's small size and flat terrain, bicycling in the city should be easy and convenient; however, there are several barriers which make it challenging for cyclists wishing to travel around town or outside the city limits. This Plan suggests several strategies intended to encourage bicycling in Emeryville by increasing safety and convenience and other bicycle-friendly policies. The suggested strategies should complement proposed improvements as part of the forthcoming Bicycle and Pedestrian Master Plan.

Wayfinding

The wayfinding section touches on a specific city improvement that would likely influence all transportation modes. While Emeryville initiated a wayfinding strategy in the past, the project team believes that it should be re-visited to support all strategies in this plan. This section outlines the importance of a wayfinding plan and cites several successful examples from other cities.

Open House

The final section in this chapter summarizes an Open House that was held in Emeryville in May 2010 to showcase and inform the public of the suggested strategies developed as part of the Sustainable Transportation Plan.

A policy in the 2009 General Plan calls for the City to undertake a study to enhance transit mobility, including feasibility of transit-only lanes, especially along congested transit streets, to provide walking access from most of the city, and connect major destinations within Emeryville and to BART.

Transit Services

Transit is a critical element of a mobile pedestrian-friendly community, and the City of Emeryville understands this. Transit provides links both within the City and beyond it, allowing local residents to leave their cars at home to travel to work and shopping, and providing options for people who live outside of Emeryville to commute to jobs or go to stores without driving their car to Emeryville. Emeryville is home to a major Amtrak Station and is near the busy MacArthur BART station. AC Transit and Emery Go-Round buses provide connections to these important multimodal hubs, while also providing circulation within the city.

Emeryville's transit strategy includes maintaining existing or expanding Emery Go-Round service, consideration of some minor routing or service changes, improvements in public information, and facilitating connections via transit.

Changes During the Planning Process

When this Sustainable Transportation Plan was initiated, the consulting team made several recommendations to the City and Transportation Management Association staff about potential service needs or system improvements, based on an analysis of service and field observations. The following recommendations have since been addressed by Emery Go-Round:

- **The need for a bus stop at 40th Street and San Pablo Avenue.** 40th Street and Emery Street was the first stop after leaving MacArthur BART and the last stop before returning to MacArthur BART. While only a block away, 40th Street east of San Pablo Avenue allows passengers to transfer directly to AC Transit's 72 Rapid and other AC Transit lines. This stop was added as part of the April 2010 service restructuring.
- **The justification for separate North Hollis and South Hollis Routes.** When the study was initiated, the separate Hollis North and South routes operated between about 7:00 AM and 7:00 PM. During early morning hours and after 7:00 PM, a single route – "Hollis" – operated along the full length of the route. The April 2010 service adjustments combined the two Hollis routes midday (in addition to

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the morning and evening combination that already operated) and provided for separate North Hollis and South Hollis routes during peak commute hours (and on the shoulders of those hours). In November 2010 the routes were combined all day.

- **The value of the City Shopper Route.** The City Shopper operated only four runs on weekdays and ten on Saturday, partly duplicating some of the service provided on the more robust Saturday BART Shopper. Emery Go-Round has since discontinued the City Shopper Route, although some City Shopper Bus Stop signs remained as of April 23, 2010.

These service changes are welcomed. The City of Emeryville and the ETMA are encouraged to monitor their impacts and evaluate whether additional changes should be made.

Service Concerns and Considerations

The following concerns were identified which serve as the basis for the alternatives discussed in this chapter. These include concerns noted through consultant observations, from stakeholders, and from Emery Go-Round operators:

- **Consideration of Emery Go-Round service to additional BART stations (Ashby and/or West Oakland).** Staff and stakeholders discussed the potential for new Emery Go-Round links between Emeryville and either Ashby Station or West Oakland Station.
- **Service requests/demands for service within the Marina** (e.g., to Captain, Commodore or Admiral Drive). Staff and stakeholders noted concerns that service to housing developments in the Marina is limited to Powell Street as far west as Anchor Drive. AC Transit once had service to Marina Park.
- **Service requests/demands for service within the Triangle Neighborhood.** It was noted that this residential neighborhood bounded by San Pablo Avenue, Adeline Street and 53rd/48th Streets has no access to Emery Go-Round service (however, by stopping at San Pablo and 40th, the Emery Go-Round provides a stop that may better meet the needs of some Triangle Neighborhood residents).
- **Consideration of additional weekend and late night service.** Some stakeholders commented on the need to provide transit service for movie-goers and people going to other entertainment venues, as well as the people who work in these places. Data are not available to indicate whether this demand can be substantiated, and therefore no service expansions are currently recommended.
- **Effectiveness of signal prioritization.** Emery Go-Round staff raised concerns about whether the signal timing was really effective and whether buses had more reliable running times due to the priority. AC Transit Rapid buses have signal priority on San Pablo Avenue, but other AC Transit buses do not.
- **Connections between Emery Go-Round and BART.** Emery Go-Round schedules do not necessarily match BART schedules when both Emery Go-Round and BART service is more limited (weekends and late evenings). A comparison of the two schedules shows many Emery Go-Round runs are scheduled to arrive at the same time that BART trains arrive and depart, resulting in close or missed connections. On Saturdays, the BART Shopper has an irregular schedule.
- **Public information about Emery Go-Round, BART, and AC Transit in Emeryville.** In the past, schedules, maps, and route naming conventions were not always clear. Maps did not note where AC Transit bus routes operate, where stops were located, and the direction of travel for all loops on the map.

- **Congestion concerns:**
  - **40th Street and Emery**. The Hollis route stops at the northwest corner of the intersection and the Shellmound/Powell route stops on the southeast corner of the intersection. According to drivers, passengers will run across the intersection, against red lights, to get to the bus, depending on which bus arrives first. For eastbound runs, drivers expressed concerns about buses blocking traffic at this location.
  - **Overcrowding**. All routes get crowded at peak times.
  - **Shellmound/40th Street Overpass.** The overpass from Shellmound to 40th Street used to be four lanes but was converted to two lanes (one in each direction) to accommodate a wider bicycle lane. According to Emery Go-Round drivers and some stakeholders, this has led to increased traffic congestion, especially on the weekends. City Public Works staff maintains that the congestion is due to intersection delays, not delays on the bridge.
  - **Congestion at the MacArthur BART Station**. With multiple shuttles and taxis competing for limited space – as well as pedestrians crossing the roadway – some safety hazards exist at the BART station. Based on observations and some input from Emery Go-Round operators, passengers are often allowed to exit the vehicles on 40th Street – in spaces reserved for AC Transit buses – to allow them to avoid the congested area outside the station. BART is remodeling shuttle and pedestrian access to solve these problems.
  - **Crosswalks**. A crosswalk at Pacific Park Plaza was identified as a hazard by drivers. This crosswalk now has a traffic signal.

Proposed Transit Strategies

Based on a review of operations and the information noted above, a few service changes are suggested for consideration. An important transportation policy in Emeryville's General Plan states: The City will support the expansion of the Emery Go-Round to accommodate workers, residents, and visitors.

An important transportation policy in Emeryville's General Plan states: The City will support the expansion of the Emery Go-Round to accommodate workers, residents, and visitors.

Image from Nelson\Nygaard

Service in the Triangle Neighborhood

Existing Practice:

Triangle Neighborhood residents have access to AC Transit service along San Pablo Avenue, including Route 72 and 802; service along 40th Street, including the Emery Go-Round, and AC Transit Routes 57, 26 and C; and service to the east along Market Street (Routes 88 and F). No service operates along Adeline Street between Martin Luther King Jr. Boulevard and 32nd Street, where there are bicycle lanes. A walk from the Senior Center to the Emery Go-Round stop at 40th Street and San Pablo Avenue is about one-fourth mile, but parts of 49th and 48th Streets are one-half mile from that stop.

Based on Triangle Neighborhood demographics and densities, it is not anticipated that the neighborhood residents alone would generate significant ridership. The consulting team reviewed options to stop at the senior center on Salem Street but due to new traffic calming measures within the Triangle Neighborhood, and lack of traffic signals on San Pablo, none were deemed preferable at this time. The ETMA Board will consider options for Emery Go-Round service in the longer-term for east-west connections across the city.

It should be noted that the Emeryville Senior Center provides taxi rides for eligible residents, as well as subsidized paratransit tickets for some Emeryville residents. Working with the ETMA, the Emeryville Senior Center also provides a service known as the 8-to-Go shuttle, providing fare-free door-to-door service not only within the Triangle Neighborhood (and to the Senior Center), but also to and from destinations throughout the 94608 ZIP Code. The service operates from approximately 9:00 AM to 5:00 PM on weekdays for seniors and people with disabilities. The seniors who would travel to the Senior Center would be eligible for these Alameda County Measure B-funded transportation programs, suggesting an Emery Go-Round route deviation is unwarranted.

Strategy: Add 40th/San Pablo Stops to Emery Go-Round Hollis Route

Although the Shellmound/Powell route stops on 40th Street at San Pablo Avenue, the Hollis route does not. The stops on the Hollis route closest to the Triangle neighborhood are on Park Avenue and Emery Street, across San Pablo Avenue from the Triangle neighborhood. Adding 40th/San Pablo stops to the Hollis route would increase frequency of the service to the southern portion of the Triangle neighborhood, as well as better serving the San Pablo/40th bus hub.

Efficiency of Emery Go-Round Routes

Existing Practice:

Until recently, the bus stop at the Amtrak Bridge and the Public Market has been out of service due to construction of a major storm drain pipe line. The ETMA plans to restore this stop. Some Emery Go-Round stops are close together and some do not have many riders.

The Shellmound-Powell buses run north on Shellmound Street and south on Christie Avenue, enabling them to use the one-way part of Christie Avenue to Powell Street Plaza shopping center. These buses often have to wait in traffic at 65th Street. The ETMA has studied the option of reversing direction, running north on Christie Avenue and south on Shellmound Street. That option does not work because there is no good way to get from Shellmound Street to Christie Avenue, and such a route would skip the Trader Joe stop at Powell Street Plaza.

Strategy: Optimize Emery Go-Round Routes

Now that the storm drain construction is completed, the ETMA plans to restore the Emery Go-Round stop on Shellmound Street at the Amtrak pedestrian bicycle overcrossing. The ETMA does not plan to make any stop changes in the short term. However, if changes are considered in the future, the ETMA could consider combining stops that are close together where one has few riders, and there is not a reason for the extra stop, such as older population, a major ETMA member, or an AC Transit stop.

Emery Go-Round East-West Connection

Existing Practice:

Emery Go-Round has no east-west connection across the freeway and railroad tracks north of 40th Street. Emery Go-Round does not serve the part of town along San Pablo Avenue north of 43rd Street very well.

Strategy: Provide an East-West Connection on Powell and Serve Northern San Pablo

A new Powell route from the MacArthur BART station to Western Emeryville via 40th Street, San Pablo Avenue and Powell Street would provide an east-west connection over the railroad tracks and under the freeway in the center of town. It would also loop onto Christie and Shellmound, and serve the north San Pablo area. This is a long-term strategy because it will require a new funding source. This route should stop at San Pablo/Stanford to facilitate transfers to AC Transit.

Service to Ashby or West Oakland BART Stations

Service to Ashby and West Oakland BART Stations was considered, but is not recommended at this time. The MacArthur BART Station provides a good anchor for Emery Go-Round service because it is located between the Ashby and West Oakland Stations, and is in close proximity to the City. Significant congestion along Ashby Avenue, increased shuttle operations outside the City of Emeryville's boundaries (if service were operated via Powell/Stanford and Martin Luther King, Jr. Boulevard) and only two BART lines at Ashby (compared to three at MacArthur) make Ashby less desirable for BART connections. Likewise, no operational efficiencies were noted by extending service to West Oakland station. It is to Emeryville's advantage to have BART carry passengers as near to Emeryville as possible rather than allocating additional in-service hours to Emery Go-Round operations outside the Emeryville City Limits.

Crossing the Railroad Tracks at 64th or 65th Street

Existing Practice:

The Emery Go-Round route network hub is MacArthur BART. To make a transfer between routes operating on the west side of the rail tracks (Shellmound/Powell) and Hollis Route requires a transfer along 40th Street or at the BART station.

Strategy: Consider One-lane Bus-only Bridge over Railroad Tracks on 64th or 65th Street

The Emeryville Transportation Management Association stopped running buses on at-grade railroad crossings because freight trains can delay buses for up to ten minutes. There is interest in east-west service across the railroad tracks at the north end of town. Two AC Transit transbay routes, the J and Z lines, cross the railroad tracks on 65th Street. A one-way bus-only bridge in the middle of 64th or 65th Street would be only 12-14 feet wide, and would not have the traffic and visual impacts of a full-street bridge. Removing on-street parking would provide space for the bus bridge, and approaching buses could turn a red light green.

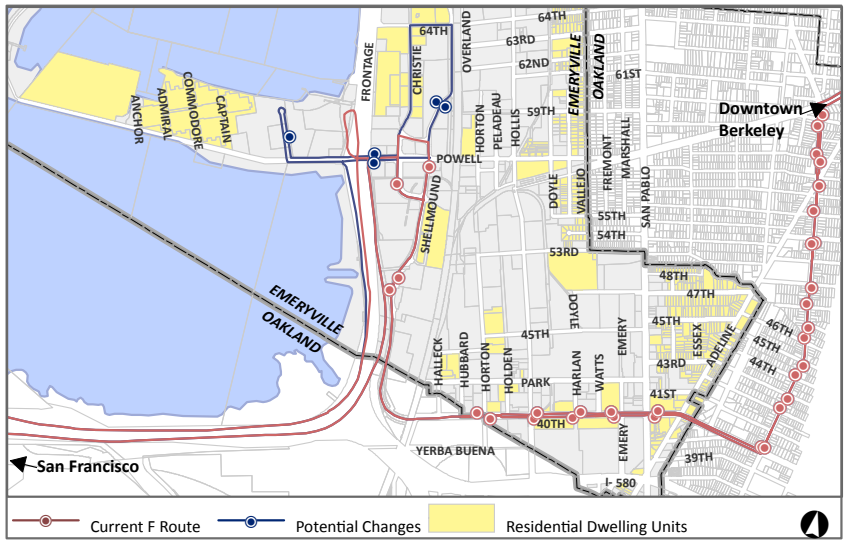
The City's General Plan supports transit priority on Transit Streets through features such as traffic signal priority, bus queue jump lanes at intersections, exclusive transit lanes, and other techniques as appropriate, with adjustments to technology as conditions change.

AC Transit Service to Berkeley and San Francisco

Existing Practice:

AC Transit's Route 72 provides connections to West Berkeley with approximately 15 minute headways on weekdays. For residents and employees living or working west of the railroad tracks, walking distance to major bus stops along this route is about one-half mile, typically a longer walk than people are willing to make to access transit. AC Transit's Route F provides half hourly service to downtown Berkeley and San Francisco. This service is more than a half-mile from people north of 64th and west of the freeway. The stop on Shellmound at the Amtrak bridge has been temporarily moved south to Christie/Shellmound.

Figure 4-1 AC Transit F Route and Potential Changes



Strategy: Modify AC Transit F Route to Better Connect North Bayfront and Towers to Downtown Berkeley and San Francisco; Publicize Local Fares on Transbay Routes

To reduce F route trip time and add stops near Powell, the City could add stops at the freeway ramps; AC Transit could consolidate stops on 40th and Market, and loop into the Towers and into the San Francisco-only ramp on the south side of Powell. AC Transit Route F could run on Powell Street if stops were created, but would no longer serve 40th. The stop on Shellmound at the Amtrak bridge should be restored. The City and AC Transit should publicize local fares on transbay buses.

AC Transit Service West from 40th Street in Oakland

Existing Practice:

Another consideration for sub-regional travel is east-west access into Emeryville. AC Transit Route 57 travels on MacArthur from the east end of Oakland and terminates at San Pablo and 40th. Prior to AC Transit service cuts, the route extended to Shellmound Street. This service was cut because it duplicates Emery Go-Round routes. Travelling from east of the BART station to Shellmound Street now requires a transfer; however, if AC Transit can increase service in the future, the City may have higher

Image from Nelson\Nygaard

priorities than restoring this service. Improving the 40th/San Pablo bus hub will facilitate transfers.

40th Street/San Pablo Transit Hub

Existing Practice:

The set of stops at 40th and San Pablo is considered a major transit hub in MTC's Transit Connectivity Evaluation and is recommended for significant improvements, although due to lack of funding, no progress has been made to date.

Strategy: Improve 40th/San Pablo Bus Hub with Shelters, Signs and Information Kiosk

When funding becomes available, this is a high priority because it is a major hub in Emeryville. Improvements could include shelters, signs, and an information kiosk, coordinated to form an attractive and easy-to-use transit mall.

Emery Go-Round Signal Priority on Hollis Street

Existing Practice:

Emeryville's General Plan calls for signal preemption for transit vehicles. At this time, a limited Transit Signal Prioritization (TSP) program is in place for the Emery Go-Round at some intersections along Hollis Street, although detection rates may not be as high as desired by the Emery Go-Round.

Strategy: Improve Signal Priority on Hollis Street for Emery Go-Round

Due to high levels of congestion in portions of Emeryville — particularly at peak hours, on weekends and when trains cause backups — an effective TSP system is desirable to allow Emery Go-Round vehicles to maintain their schedules and reduce the likelihood of bunching, particularly if the services along Hollis Street are combined into one route.

AC Transit Signal Priority on San Pablo Avenue

Existing Practice:

AC Transit's Rapid Bus Service on San Pablo Avenue has signal priority but the other AC Transit buses on San Pablo Avenue do not.

Strategy: Expand Signal Priority on San Pablo Avenue to Local AC Transit Buses

In the future, AC Transit and the City could consider signal priority for all of AC Transit's buses on San Pablo Avenue.

Bus-Only Lanes

Existing Practice:

General Plan policies T-P-30 and T-P-33 call for a transit study including exclusive transit lanes. The adopted North Hollis parking plan calls for peak-hour transit-only lanes on Hollis Street. This is a high priority for the ETMA.

Strategy: Consider Bus-only Lanes on Hollis Street

The City should conduct a block-by-block engineering feasibility study to determine what changes would be required for bus-only lanes to be implemented, identifying parking that would be removed and considering the limitations at intersections that have turn pockets and no parking. The study should include traffic engineering analysis and on-street geometry.

Images from Nelson\Nygaard

F Bus Stops on or Near Powell Street

Existing Practice:

The AC Transit F bus route does not stop on Powell Street due to lack of a good place for a bus stop. The Powell Street urban Design Plan shows a bus stop on the I-80 ramps at Powell Street in the short term, and in the middle of Powell Street between the ramps and Christie Avenue in the long term. AC Transit has expressed a desire to work with the City to refine the design of these stops.

Rerouting the F bus onto Powell Street could also mean establishing stops on Powell Street at Christie Avenue and/or Hollis Street. Creating these stops could require acquiring property, restriping travel lanes or both.

Strategy: Work with AC Transit on Design of F Bus Stops

Working closely with AC Transit as the City moves into detailed design of the bus stops near the I-80/ Powell intersection and to the east will ensure efficient bus service at this location.

BART Station Access

Existing Practice:

Congestion at MacArthur BART is an existing challenge and will continue to grow as the nearby area and community grows.

Strategy: Improve Emery Go-Round Access to MacArthur BART Station

BART and the Oakland Redevelopment Agency have worked with ETMA, AC Transit and the Cities of Oakland and Emeryville to improve the transit access at the station, improve pedestrian crossings, and eliminate vehicle conflicts that may exist with taxi, automobile passenger drop-offs, and other specialized shuttles. Construction is expected in 2012.

Emery Go-Round Scheduling with BART Schedule

Existing Practice:

During off-peak and weekend periods, the current Emery Go-Round schedules are not as convenient to passengers making a transfer between BART and the Emery Go-Round as one could wish. Based on a comparison of schedules, most Emery Go-Round connections require waits of more than 5 minutes – some up to 20 minutes – and a number of trips are scheduled to arrive or depart the MacArthur BART station at the same time (or within one minute) of a BART departure.

The ETMA looks at the BART schedule when updating the Emery Go-Round schedule, which occurs about every quarter. Matching is only possible for a few times. BART is only one factor in scheduling the Emery Go-Round. Several trains (at least three BART routes) arrive at MacArthur within a few minutes of each other; it is impossible to match all three. The ETMA also tries to provide consistent headways for the Emery Go-Round, so that riders have a consistency for Emery Go-Round arrival times and reliability for when the next bus will arrive. This breaks down BART/Emery Go-Round matching on later runs.

Accessibility of Buses

Buses need to be accessible to everyone, including people in wheelchairs and people with strollers or luggage. Ease of movement in the aisles improves accessibility.

Existing Practice:

Some of the existing Emery Go-Round buses have lifts, which take a while to lower and raise. The newest bus has a ramp for wheelchair access, which is easier and faster to operate. The older buses have only a front door; the newest one has front and rear doors.

Strategy: Include Ramps and Rear Doors on New Emery Go-Round Buses

Ramps will make the buses more readily accessible, and rear doors will relieve crowding near the fronts of the buses.

Marketing and Public Information

AC Transit, Emery Go-Round, and Amtrak have overall good public information and signage. Buses are clearly identifiable and stops are well marked. The Emery Go-Round offers NextBus real-time arrival and departure information for its riders, allowing them to access information on the NextBus website and from mobile phones/mobile devices. Emery Go-Round stops are not equipped with real-time electronic message signs. Amtrak and BART platform signs show number of minutes until next train arrives in each direction.

Smart Phone Application

Existing Practice:

A growing number of transit agencies provide cell phone applications to help riders plan trips. The ETMA is considering developing an application.

Strategy: Develop an Emery Go-Round Smart Phone Application

A smart phone application would make Emery Go-Round information available while people are traveling.

Websites

Existing Practice:

The Emery Go-Round website has updated maps and schedule information.

Strategy: Add BART Stop Location to Emery Go-Round Website

The Emery Go-Round website could be more useful if it showed where in front of the BART station the Emery Go-Round stop is located. The NextBus link could also be more clear for the user. However, this issue would need to be solved in cooperation with NextBus.

Maps

Existing Practice:

The Emery Go-Round map shows stops where transfers can be made to AC Transit buses, locations where riders can transfer between Emery Go-Round routes, and pedestrian accessways over the rail lines. The map includes street names and key landmarks. Maps also include bus stop codes so riders can enter the stop number on their mobile device for real-time bus arrival information. There is no map that shows both AC Transit and Emery Go-Round.

Strategy: Create an Emeryville Transit Map (Paper and Web) and Coordinate Marketing

The City should create a map showing Emery Go-Round, AC Transit, BART, and Amtrak routes within about three miles of Emeryville. This would help passengers coordinate trips using multiple services. The map should be published on paper and on the City website. It should advertise local fares for East Bay trips on transbay buses. The City could also work with all four service providers to coordinate marketing of transit services.

Signs and Displays

Existing Practice:

An information board at the MacArthur BART Station provides a list of schedules and bus maps (AC Transit, Emery Go-Round, and other shuttles) for transit riders who arrive via BART. There is a map but no schedule at the Emery Go-Round stop, outside of the BART Station. The

ETMA has NextBus displays in several businesses, and has a grant to install more: Many buses only have route signs on the front.

Strategy: Add Emery Go-Round Signs and Displays

Emery Go-Round staff should ensure information in the BART station is updated regularly and that a schedule is posted where BART passengers board the Emery Go-Round. An electronic sign that provides real-time information would also be appropriate in this location, and its installation is included in the BART renovation. Emery Go-Round has NextBus displays at six businesses. Additional real-time information displays could be installed in more local businesses and office buildings. For example, a computer monitor can inexpensively be installed in cafes, supermarkets or building lobbies to show NextBus data from the Internet. Route signs could be added to all sides of buses—low-tech route signs in the short term and better route signs on new buses.

Amtrak Arrival Time Information

Existing Practice:

Amtrak platform displays show the number of minutes until the next train arrives in each direction; however, real-time Amtrak arrival times are not available outside of Amtrak stations.

Strategy: Provide Off-Site Amtrak Arrival Information

Amtrak arrival signs at the Public Market would enable passengers to wait at the market, and cross the pedestrian-bicycle overcrossing to the station when their train approaches.

Emery Go-Round Data Collection

Existing Practice:

As noted in this chapter, the Emery Go-Round does a generally good job of providing service, making logical route adjustments and updates, and marketing the service. One area for improvement is in collecting data. Many of the service changes that have been implemented by Emery Go-Round are based on driver-collected ridership data. The newer vehicles have automatic passenger counters.

Strategy: Include Automatic Passenger Counters on New Emery Go-Round Buses

Half of the existing buses have automatic passenger counters. When new buses are purchased, they will have automatic counters too. ETMA members, and agencies such as BART and AC Transit may be able to use the data for service planning. This data can be used by Emery Go-Round to address some of the planning, service, and operational issues it encounters on a day-to-day basis, including the following:

- Elimination of unproductive stops where few passengers board or alight
- Addition of new stops between stops where there are high levels of activity
- Investments in passenger amenities such as benches and shelters
- Investments in operational enhancements such as vehicle pull-outs or TSP investments at locations where high numbers of boarding or alightings impact on-time performance
- Better monitoring of passenger loads (for vehicle assignment, vehicle purchases and route restructuring)
- Determination of whether later evening or more frequent weekend service is warranted

A Permanent Yard for Emery Go-Round

Existing Practice:

The TMA has been leasing property for its bus storage and maintenance, and it is not certain how long that property will be available.

Strategy: Assist the ETMA in Acquiring and Securing a Permanent Yard

The City could assist the ETMA in securing a bus yard through either providing a site for long term lease or assisting with purchase, and/or assisting with tenant improvements/relocation expenses.

Property-Based Business Improvement District

Since 2006, the Emery Go-Round has been funded by a city-wide property-based business improvement district (PBID). The City administers this assessment district on behalf of the TMA. The district is approved for a

Figure 4-2 Congested Intersections on Transit Streets: Seconds of Delay During PM Peak

	2007		2030		
Intersection	Weekday	Saturday	Weekday	Saturday	Service
I-80 NB/Powell	73	46	75	66	EGR, AC
Powell/Christie	38	73	60	156	EGR, AC
Shellmound/Ohlone	23	17	83	250	EGR, AC
Powell/Hollis	51	26	87	32	EGR
40th/Horton	36	NA	92	NA	EGR, AC
40th/San Pablo	41	40	57	58	EGR, AC
65th/Shellmound	31	NA	59	NA	AC

Source: Emeryville General Plan Draft Environmental Impact Report

ten-year term, so it has to be renewed in 2016, 2026, etc. Community support will be needed for reauthorization of the PBID. The ETMA will need to work on this. The City administers the balloting process, and may not advocate a position.

Bus Stop Amenities

Existing Practice:

Nine of Emeryville's 60 bus stops have shelters, 21 have benches, and 25 have trash bins. Some of the stops with the most riders do not have all of these amenities. The City has requested inclusion of Emeryville bus shelters in the Regional Transportation Plan.

Strategy: Install Shelters, Benches and Trash Bins at Bus Stops

Amenities could be added incrementally, prioritizing by ridership. The City could use regionally allocated funding sources for amenities at the busiest bus stops in the short-term, and at the less busy stops in the medium-term. Bus stop guidelines are shown in Appendix C.

Bus Mobility with Traffic Congestion

Existing Practice:

Traffic congestion currently affects Emery Go-Round and AC Transit, especially at the I-80 northbound off-ramp/Powell, Powell/Christie, and Powell/Hollis intersections. With General Plan build-out, traffic congestion on transit streets will increase, as shown in Figure 4-2.

Strategy: Engineer Streets To Help Buses through Congestion

The City should complete an engineering analysis of long-term capital needs for bus mobility, followed by design and construction of street improvements to mitigate the impact of traffic congestion on bus circulation, in consultation with AC Transit and the TMA. These features could include signal priority improvements and bus-only lanes as mentioned above, bus queue jump lanes (bus and right turn only lanes) at intersections, bus stop bulb-outs (curb extensions), strategic parking restrictions in key locations especially at corners and/or peak hours, high occupancy vehicle (HOV) lanes, and other measures as appropriate. Each congested segment of a transit street could require a unique combination of improvements to facilitate bus mobility.

Late-Night Service

Existing Practice:

Currently, Emery Go-Round service ends soon after 10:00 pm. Most AC Transit routes end just after midnight, and one bus runs hourly on San Pablo after midnight. Both services begin around 5:30 a.m. This arrangement responds to current low demand in the wee hours.

Strategy: Expand Late-night AC Transit and Emery Go-Round Service

To support parking reduction strategies and wean people away from car ownership, Emeryville will need extensive, frequent all-night transit service. As development densities increase pursuant to the 2009 General Plan, gasoline prices rise, and regional transportation planners shift their emphasis to transit, demand for late-night service could increase. The transit agencies could begin moving toward this goal by extending service hours incrementally over time, as much as possible given options for the structure of driver shift schedules. They could begin by extending schedules to midnight, to match BART's schedule.

BART Station Name

Existing Practice:

The MacArthur BART station is only two-thirds of a mile from Emeryville, and it serves thousands of Emeryville workers, residents, students and visitors. Yet, it is not clear from looking at BART system maps or stop lists which station is closest to Emeryville or which station is served by the Emery Go-Round.

Strategy: Work with BART to Add "Emeryville" to the MacArthur Station Name

Emeryville General Plan Policy T-P-41 calls for renaming the station "North Oakland/Emeryville". Two other potential names are "MacArthur/Emeryville" and "Temescal/Emeryville". The station is the focus of the MacArthur Transit Village, which is expected to be under construction soon. The station is also on the southern edge of the Temescal neighborhood. The City has an application form for applying for BART approval to rename the station. If the name change is approved, the requesting organization is required to pay for the changes in signs, maps schedules and website reflecting the change.

Tri-City and Transit Link Service

Existing Practice:

General Plan policy T-P-40 is to investigate and implement, if appropriate, fixed guideway transit systems, such as streetcars or personal rapid transit. Several stakeholders felt that the City should conduct a feasibility study of streetcar service. This points to a need for enhanced last-mile, neighborhood-level service to link Emeryville to West Berkeley and North Oakland, as well as to regional transit providers, including BART, Amtrak, Capital Corridor, and AC Transit. The best way to meet this need could be a rail system, enhanced rubber tire service, or some other form of transit.

Strategy: Study Enhanced Link to Berkeley, Oakland, BART, Amtrak, and AC Transit

The City should conduct an inter-jurisdictional community process for transportation enhancements that will provide last-mile, neighborhood-level service to link Emeryville to West Berkeley and North Oakland as well as to regional transit providers including BART, Amtrak Capitol Corridor, and AC Transit. The study should address which mode would provide the highest level of service for the lowest operating cost.

Amtrak Bus to San Francisco

Existing Practice:

Amtrak passengers can travel between Emeryville and San Francisco by bus. Only Amtrak passengers are allowed on the bus. Amtrak fares to San Francisco are $1.50 higher than Amtrak fares to Emeryville.

California Governmental Code 14035.55 states that the state may fund Amtrak intercity buses only for rail passengers, except on the San Jose-Gilroy-Monterey, Sacramento-South Lake Tahoe, and Lebec-Santa Clarita routes, and that Amtrak bus-only service on an excepted route must cease if a private carrier establishes service on that route.

Local Amtrak Potential

Existing Practice:

Amtrak Capital Corridor runs trains with stops at University Avenue in Berkeley and Jack London Square in Oakland. The one-way fare between Emeryville and Berkeley is $7.00. The fare between Emeryville and Jack London Square is $6.50.

Lower fares between adjacent stops could introduce people to Amtrak who might not otherwise ride these trains, and provide a link between the western portions of Berkeley, Emeryville, and Oakland. However, one-stop fares are not feasible. Local travel is AC Transit's market. Capital Corridor's fare is based on longer rides to cover costs, and the crew would not have time to lift all the one stop tickets.

Transit Service Goals

Transit connections should be made from large concentrations of Emeryville residents directly to MacArthur BART station and downtown Berkeley, Oakland and San Francisco.

Transit frequencies should be 15 minutes or less to BART and 20 minutes or less to downtown Oakland, Berkeley and San Francisco during peak periods. Off-peak service should be at least as frequent as 20 minutes to BART and 30 minutes to downtown Berkeley, Oakland and San Francisco.

Transit trip times should be 15 minutes to BART and 20 minutes to the three neighboring downtowns.

Connections from Emeryville's residential concentrations to BART and neighboring downtowns are described below:

- **BART-** Emery Go-Round service to MacArthur BART station is available within a half-mile of all Emeryville residents.
- **Oakland-** The AC Transit 26 route connects to downtown Oakland from the Christie/64th corner, which is near the Hollis/65th area. The AC Transit 72 route connects to downtown Oakland from the San Pablo/40th intersection. This route also stops on San Pablo Avenue near the Hollis/65th area. The AC Transit 88 bus connects to downtown Oakland from Market/40th.
- **Berkeley -** AC Transit 49 route connects Ashby near Hollis/65th to downtown Berkeley. AC Transit F route on 40th and AC Transit 88 route on Market connect the San Pablo/40th area to downtown Berkeley. AC Transit F route on Shellmound connects Christie to downtown Berkeley.
- **San Francisco -** AC Transit J route, which runs only during peak period, connects Hollis, 65th and Christie to downtown San Francisco. AC Transit F route connects 40th and Christie to downtown San Francisco; during peak periods the C route fills in between F runs.

Figure 4-3 Bus Connections to BART and Neighboring Downtowns

Current Service From Area	To BART	To Downtown Oakland	To Downtown Berkeley	To Downtown San Francisco
Christie/64th	EGR Shellmound	AC 26	ACF	ACF, J peak
Watergate	EGR Shellmound		ACF with stops at ramps	ACF with stops at ramps
Hollis/65th	EGR Hollis	AC (72), (26)	AC (49)	J peak
San Pablo/40th	EGR Shellmound, Hollis	AC 72, (88)	AC F, (88)	AC F, C peak

Frequency goals to BART are met by Emery Go-Round service. AC Transit 72 and 26 routes meet the frequency goals to downtown Oakland. AC Transit 88 route, which connects 40th/Market to downtown Oakland and downtown Berkeley, runs every 20minutes all day, meeting both goals. AC Transit meets the frequency goal to San Francisco because the C and J fill in between the F bus during peak period. The gap is peak service to downtown Berkeley between the 30-minute F runs.

The longest trip times from the farthest point are shown in Figure 4-4. Trip time goals are met by Emery Go-Round for BART service except for the Watergate loop in the Shellmound route. AC Transit 72 route meets the goal for service to downtown Oakland from points in Emeryville east of the railroad tracks. However, from west of the tracks, AC Transit 26 route is circuitous, taking 32 minutes from 64th to downtown Oakland. AC

Figure 4-4 Bus Frequencies and Trip Times

			Frequencies		
Provider	Route	Connection Point	Peak	Off-peak	Trip Time
EGR	Shellmound	MacArthur BART	15	15	22
EGR	Hollis	MacArthur BART	10	15-20	12
EGR	Watergate	MacArthur BART	13	--	13
ACT	72	Downtown Oak.	15	15	13
ACT	26	Downtown Oak.	20	30	32
ACT	88	Downtown Oak.	20	20	15
ACT	88	Downtown Berk.	20	20	18
ACT	F	Downtown Berk.	30	30	26
ACT	F	Downtown SF	30	30	21
ACT	J peak	Downtown SF	30	--	21
ACT	C peak	Downtown SF	28	--	26
Goal		BART	15	20	15
Goal		Downtowns	20	30	20

Transit F route almost meets the goal to San Francisco at 21 minutes and the goal to Berkeley at 26 minutes.

Planned AC Transit F bus stops at the freeway ramp would put service to downtown Berkeley and San Francisco within a half-mile of half of the eastern half of the Watergate Condominiums. The remaining gap is service from Watergate to downtown Oakland. The remaining frequency deficiency is from western Emeryville to Oakland. Studying an enhanced link to Berkeley Oakland and regional transit could identify ways to resolve these issues.

Service for Senior and Disabled Residents

Existing Practice:

The Emeryville Senior Center manages the City's transportation services for senior and disabled residents. These services include the 8-To-Go minivan (which has a ramp for wheelchairs and provides on-demand service from 8:30 to 5:30 daily), group trips throughout the Bay Area on the Go-Van-Go (a wheelchair accessible, 22-passenger bus), taxi ride reimbursement program, a rider guide (including information on discount passes and medical center shuttles at MacArthur BART station), joint trips and coordination with neighboring cities, travel training, and discounted East Bay Paratransit and BART tickets for low-income senior and disabled residents.

Strategy: Expand and Maintain Paratransit for Senior and Disabled Residents; Match Drivers with Passengers Needing Help

The 8-To-Go shuttle service is nearing capacity, and longer hours would enable it to serve more passengers. The 8-To-Go and Go-Van-Go vehicles are entering their fourth and fifth year, and will need replacement soon. Some passengers need assistance entering the building at their destination, such as trips to medical appointments. The Senior Center would like to establish a volunteer program to match driving residents with passengers who need through-the-door assistance.

Transportation Demand Management

Transportation Demand Management, or TDM, is a general term for strategies that increase overall system efficiency by encouraging a shift from single-occupant vehicle (SOV) trips to other modes of travel such as transit, walking, or bicycling. TDM measures focus on reducing transportation demand as compared to the alternative solution of increasing transportation capacity. It emphasizes the movement of people and goods, rather than motor vehicles, and so gives priority to more efficient modes (such as walking, cycling, ridesharing, public and private transit, and telecommuting).

TDM programs come in a variety of different forms and most individual TDM strategies only affect a small portion of total travel. However, the cumulative impacts of a comprehensive TDM program can be significant. Ultimately, TDM seeks to reduce auto trips – and total vehicle miles – for individuals to accomplish their daily needs. This is done by increasing travel options, by providing incentives and information to encourage and help individuals modify their travel behavior and use sustainable travel options, at least one day a week. The cumulative impact of a comprehensive set of TDM strategies can have a significant impact on travel behavior, system efficiency, and SOV rates.

TDM in Emeryville Today

TDM programs are typically implemented by public agencies, private employers, and public-private partnerships. Given Emeryville's unique characteristics of a small residential population and large daytime population of employees working at large companies, several Transportation Demand Management (TDM) strategies contribute to reducing peak-hour vehicle trips. Emeryville has implemented several TDM strategies including many that are administered by the ETMA such as the Emery Go-Round, a small number of casual carpool sites, carsharing pods, and promotion of the Alameda County Guaranteed Ride Home (GRH) Program. Large corporations within Emeryville may also administer their own internal TDM programs.

Proposed TDM Strategies

Enhancement of existing TDM services as well as additional TDM strategies are proposed to further support a more balanced transportation system. Strategies with the potential for moving Emeryville towards a more sustainable future are described below.

Image from Nelson\Nygaard

Casual Carpooling

Casual carpooling refers to the sharing of a ride with a driver and one or more passengers, where the ridesharing between the individuals is not established in advance but coordinated on the spot. Casual carpooling provides an alternative to traditional ride-matching programs. It differs from traditional carpools in that it is designed as an instant match by maximizing flexibility and accommodating last minute requests to share a ride. Casual carpoolers typically do not exchange money, however this is beginning to change with the implementation of a $2.50 charge on carpools traveling over the Bay Bridge. The major benefits are that it requires minimal advance planning and accommodates changing travel times, reducing the barriers to traditional carpooling.

While there may be a variety of motives for carpooling, casual carpooling is primarily used for commuting where the driver is incentivized to pick up passengers in order to allow for the use of high occupancy vehicle (HOV) lanes or reduced tolls – resulting in a savings of both time and money. Casual carpooling is characterized by informality and lack of governance. Meeting sites tend to evolve where there is reasonable parking (for passengers who may drive to the site and leave their cars), a safe waiting area for queuing cars, proximity to major transportation corridors, and is often near public transportation stops.

Figure 4-5 Casual Carpool Sites in Emeryville

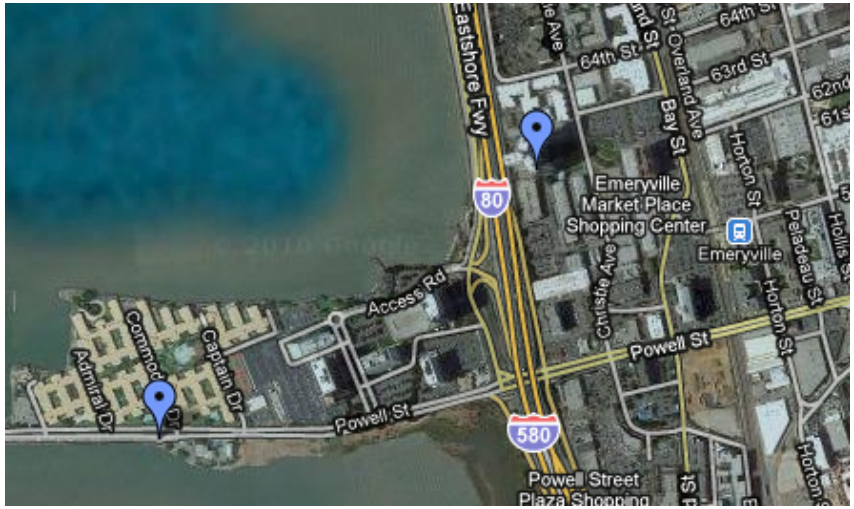


Image from Google Maps

Goal: Reduce single-occupancy vehicle trips and incentivize transit use

Existing Practice:

In San Francisco, about 6,000 people a day get carpool rides that were not pre-arranged. Commuters in the Bay Area began to use casual carpooling in order to bypass the heavy congestion on the Bay Bridge during the peak hours. HOV lanes offer significant time savings over the general purpose lanes. There are four conditions that led to casual carpooling's success in the San Francisco Bay Area:

- Sufficient driver time savings to warrant picking up and dropping off passengers
- Pick-up locations are easily accessed by both drivers and passengers
- Downtown San Francisco is a common drop-off point
- Good transit service exists for evening return trips

Within Emeryville, the two sites for casual carpool pickup are:

- Christie Avenue near 64th Street
- Emeryville Marina Peninsula, including Marina and Powell Street

For the most part, casual carpooling is a one-way phenomenon providing passengers a free ride to San Francisco in the morning, and passengers use BART and Emery Go-Round, and/or AC Transit for their return trip.

One of the largest attractions of casual carpooling is its mutual cost savings for drivers and passengers. On July 1, 2010, carpools and vanpools were assessed a new charge of $2.50 per vehicle and FasTrak is now required for payment. Initially, it appeared that the new fare for carpools caused carpooling to slightly decrease, however, the long-term implications of the $2.50 carpool charge is yet to be known.

Best Practices

In addition to the Bay Area, casual carpooling is also practiced in Houston, TX and Washington D.C. Some of the experiences from these cities are outlined below.

Houston, Texas

Casual carpooling is newer to the Houston, Texas area than in San Francisco or Washington D.C. As of 2009, approximately 900 people use casual carpool in Houston on a daily basis. Casual carpooling in Houston occurs at three locations: Kingsland Park-and-Ride lot, Addicks Park-and-Ride lot, and Northwest Station Park-and-Ride lot. Each park-and-ride facility is used primarily for transit and offers direct-connect ramps to an HOV lane. If casual carpool passengers are unable to join a carpool, they also have the option of using transit, which runs throughout the day from the park-and-ride facilities.

The vast majority of casual carpool formation occurs between 6:00 AM and 9:00 AM. Casual carpooling in Houston occurs exclusively on the city's two HOT lanes. The vehicle occupancy requirement on I-10 and US 290 is HOV2+ for most of the day, but as part of the QuickRide program it is raised to HOV3+ from 6:45 AM to 8:00 AM and 5:00 PM to 6:00 PM on I-10 and from 6:45 AM to 8:00 AM on US 290.

Washington D.C.

In Northern Virginia, about 6,500 people use casual carpool everyday (also known as "slugging"). Slugging is an unofficial way to shares rides, rather like hitchhiking. For many people who don't wish to be involved in formal carpooling or vanpooling they use slugging for sharing rides.

Commuters have been utilizing casual carpooling in the Washington, D.C. area since the early 1970s. It is believed that slugging began with people waiting at bus stops on their way to the Pentagon, which is a major transportation hub. When the HOV lanes on Shirley Highway (I-95) opened in 1971, the first slug lines emerged. The Shirley Highway HOV lane is a 28-mile long lane that runs from Virginia Route 234 to Arlington, Virginia, less than two miles from downtown Washington, D.C. Because the new high occupancy lanes were strictly enforced, drivers had to abide by the HOV-4 rule (later changed to HOV-3) or pay high fines. When drivers did not have enough passengers for the HOV, they would pull up to a line of commuters waiting for the bus and offer a ride to anybody in the line. Word spread as drivers found an easy solution to meeting the HOV requirements, and bus riders found a faster, cheaper alternative to the bus. However, the existence of a back-up mode was necessary in case a passenger failed to join a casual carpool. As this mode of travel grew in popularity, lines began to form that were specifically for casual carpooling.

According to the Transportation Research Board, each carsharing vehicle takes nearly 15 private cars off the road.

There are now approximately 20 casual carpool formation sites in Northern Virginia for the morning commute period. Casual carpooling in the Washington, D.C./Northern Virginia area is entirely non-regulated. Casual carpool users have created resources to access information, including the website, http://www.slug-lines.com. The website offers information on carpool formation locations, general rules of etiquette, the process of carpool formations, and a message board.

In a study of casual carpooling in the Washington D.C. area, survey results indicated that casual carpoolers accounted for approximately 10% of the person movement along the HOV lanes during the peak period and between 25 and 50% of carpool passengers. The results showed that unlike in San Francisco, many casual carpool passengers also formed casual carpools for the evening commute trip. However, they noted that transit was still frequently used for the return trip. Transit ridership was found to be significantly higher in the evening than in the morning peak periods.

Strategy: Expand Casual Carpooling Pick-up Sites and Promote Casual Carpooling

Based on Emeryville's close proximity to the Bay Bridge and numerous points of freeway access, it is desirable to expand the number of casual carpool pick-up locations and promote its use. Currently, the two casual carpool sites are located in the western portion of the City. Currently, there is no formal strategy for "opening" a casual carpool pick-up location. Most sites are created through a slow process of achieving a critical mass of both drivers and passengers. It is important for the pick-up and drop-off locations to have certain amenities so users feel safe and comfortable while waiting for a ride. Amenities such as benches, shades, and lighting can affect behavior and perceptions, and may directly or indirectly affect the success of casual carpooling.

The City of Emeryville could support this process by ensuring casual carpool locations have good access to transit, passenger waiting amenities, appropriate curb restrictions, and signage indicating a carpool location.

Casual carpooling is currently integrated in the 511 website with a wealth of information including a map of all the sites in the Bay Area, a Casual Carpool Newsletter, Frequently Asked Questions (FAQs), and a Discussion Board. Casual carpooling could be further promoted through social networking sites (Facebook, Zimride, etc.), and outreach to existing carpool user lists via employers.

Watergate residents and users of the park and shoreline access points on the Peninsula would like to see a residential permit parking program at Watergate Condos and a 2-hour limit at key recreational sites. If such restrictions are established, it will be important to retain and designate carpool parking on the Peninsula.

The carpool area on Christie Avenue is 400 feet south of the AC Transit Zone bus stop. It is too far from the bus stop for passengers to board the bus at Avenue 64. The carpool area is seven parking spaces long. There are 12 parking spaces north of the bus stop. The carpool area should be moved to immediately north of the bus stop and the current carpool area converted to parking.

Image from Nelson\Nygaard

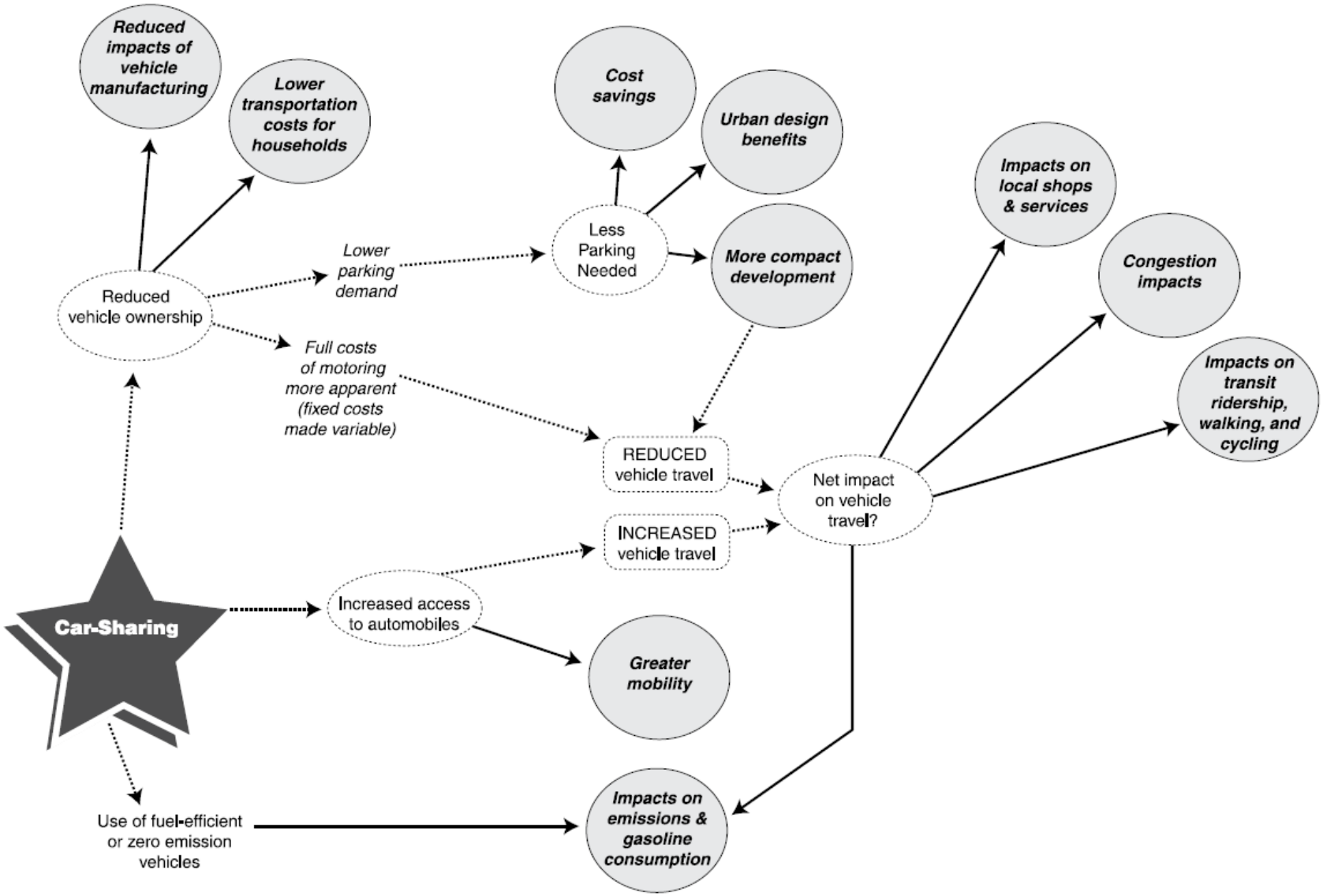
Carsharing

Carsharing programs allow people to have on-demand access to a shared fleet of vehicles on an as-needed basis. Usage charges are assessed at an hourly and/or mileage rate, in addition to a refundable deposit and/or a low annual membership fee. Carsharing is similar to conventional car rental programs with a few key differences:

- System users must be members of a carsharing organization.
- Fee structures typically emphasize short-term rentals rather than daily or weekly rentals.
- Vehicle reservations and access is "self-service."
- Vehicle locations are widely distributed rather than concentrated.

Vehicles must be picked up and dropped off at the same location. Shared cars also generate social, environmental, and economic development benefits. Carsharing creates an affordable alternative to ownership for lower-income workers, students, and seniors. With on-demand access to safe and reliable vehicles that include full insurance coverage, those otherwise at risk of being marginalized can affordably maintain their mobility and participate fully in society. According to PhillyCar-share, the combination of driving hybrids, driving less, owning fewer cars, and making fewer cold starts can yield an impressive 95% reduction in auto emissions per participant. From an economic development perspective, shared vehicles are an attractive amenity for both residential and commercial customers. By adding an additional transportation alternative, carsharing can provide urban properties with increased accessibility, making them more attractive sites for tenants who might otherwise look for a suburban location. Carsharing also helps to reduce parking demand at participating transit stations, employer sites, and residential locations. Figure 4-6 summarizes the potential benefits from carsharing.

Figure 4-6 Potential Benefits from Carsharing



Source: Millard-Ball, Adam, et al. 2005. TCRP Report 108 – Carsharing: Where and How it Succeeds. Transit Cooperative Research Program, Transportation Research Board. Washington, DC. Used with permission.

Goal: Reduce overall vehicle trips by enabling reduced personal car ownership through carsharing

Existing Practice:

Emeryville has six Zipcar pods.

Best Practices

Carsharing is overwhelmingly concentrated in metropolitan cores – around 95% of members are found in these areas. Moderate to high land use densities, a good pedestrian environment, a mix of uses, and parking pressures all help carsharing to succeed. Most important appears to be the ability to live without a car (or with just one vehicle): lower-than-average vehicle ownership rates are the best predictor of a strong market for carsharing. University campuses can also provide an important market niche. Other "success factors" for successful carsharing pilot programs appear to be community support, a strong champion, and involvement by members (e.g. word-of- mouth marketing).

Arlington, Virginia

The City of Arlington helps to subsidize carsharing membership and offers a promotion to residents and businesses. The incentive reimburses up to $105 of membership and application fees for residents. For business, it funds up to $50 for membership fees plus half of each employee's application fee of up to $20. Low-income households, who are disproportionately transit dependent, have also become a significant target group. Reduced carsharing membership costs can make it financially possible for them to join, in turn improving mobility by providing access to a vehicle. For higher-income "choice" commuters, a temporary financial subsidy can provide an incentive to try a new "transit + carsharing" commute option that they might not otherwise consider.

Arlington County also offers generous reductions in parking requirements as part of the overall site plan approval process and for the entire Transportation Demand Management (TDM) package, rather than for carsharing specifically. The County prefers encouraging carsharing with memberships and uses credits for tenants instead of dedicating a certain number of carsharing vehicles in the site plan agreement. By doing so, carsharing parking does not necessarily have to be located in the new development, but can be on-street or in other complexes instead.

Analysis of carsharing activity in Arlington, Virginia (a suburb of Washington D.C.) found the following:

- Carsharing membership in Arlington has been growing rapidly and totaled nearly 3,500 individuals in 2006.
- 5% of Arlington residents living in the Metrorail (transit-oriented development) corridors are Zipcar members.
- Carsharing has allowed members to reduce their vehicle ownership rates and overall vehicle-miles traveled while increasing transit use and walking. Members also have generally been able to postpone buying a vehicle.

Chicago, Illinois

I-GO Carsharing was founded in March of 2002 by the Center for Neighborhood Technology (CNT) – a non-profit organization dedicated to building more livable, sustainable urban communities. Inspired by the success of carsharing in Europe, CNT introduced carsharing to Chicago to reduce greenhouse gas emissions and air pollution from the transportation sector, urban traffic congestion, and household transportation costs.

The City of Chicago Department of Transportation agreed to apply as the sponsoring government agency for federal Congestion Mitigation and Air Quality Improvement Program (CMAQ) funds after the CNT had been turned down by others. The City of Chicago provided I-GO's initial financing, allowing the organization to begin operations with four cars in two Chicago neighborhoods. With the CMAQ grant, the City was awarded $250,000 to start I-GO by providing CNT with the operating costs for 11 vehicles. In 2005, Chicago was awarded a second CMAQ grant of $419,000 to expand the program with more vehicles, totaling $1 million in federal grant funds for I-GO. The City continues to be involved in monitoring and reporting on the grant to the Federal Transit Administration. Since that time, the organization has grown to serve more than 8,000 members with cars in 32 Chicago neighborhoods, as well as the adjacent suburbs of Oak Park and Evanston.

I-GO works closely with city planners, other government entities, and the private sector to maximize the public benefits of carsharing. The city's Department of Planning coordinates with city planners and private developers to incorporate carsharing into planned developments. In addition, developers throughout the city are incorporating I-GO as a component of achieving LEED certification for their buildings. Carsharing providers rely primarily on surface lots and garages to secure parking for carsharing vehicles. I-GO has taken an approach which integrates carsharing into the regional transportation network, and emphasizes close collaboration with planners, government agencies, elected officials and the private sector.

The City Council of Austin, Texas, included carsharing in their parking reduction policy, allowing for minimum off-street parking reductions of 20 spaces for every carsharing vehicle provided.

Strategy: Expand and Incentivize Carsharing Programs

Several mechanisms that could be employed to expand and incentivize carsharing in Emeryville are described below.

- **Add carsharing pods.** Although Zipcar has recently increased the number of pods to five throughout the city, the City of Emeryville should continue to encourage the establishment of additional carsharing services in Emeryville with more shared vehicle "pods" strategically located around the city. Furthermore, it may be prudent for the City to work with City CarShare to add additional carsharing options for both residents and employers.
- **Provide marketing support.** The City of Emeryville could assist in marketing carsharing with minimal costs to help promote the services and for better understanding of carsharing among the public. Assistance can be of many different types, such as information on websites and in newsletters; distribution of materials at transportation fairs; issuing press releases; and providing additional on-street parking spaces.
- **Replace City vehicle fleet.** The City of Emeryville could consider replacing some or all of its vehicle fleet with carsharing and allow employees to use carsharing instead. This would provide a guaranteed level of baseline use and enable residents and other employees to use the cars in the evenings and weekends. Many other cities have done this to a) save taxpayer dollars, b) demonstrate "proof of concept" to private-sector organizations, and c) subsidize the expansion of carsharing. Public- and private-sector fleet replacement could benefit sponsors by reducing vehicle maintenance and administration costs and the need for on-site vehicle fleet storage and help meet the City's goals for making it easier to live and work in Emeryville without a car by significantly expanding the supply of shared vehicles especially during evenings and weekends. Philadelphia and Berkeley provide good examples; Philadelphia projects savings of $9.1 million over five years through replacing 500 City-owned vehicles with carsharing.
- **Establish carsharing through new development.** In return for reduced parking requirements or to mitigate traffic impacts, a developer could provide parking and subsidize start-up costs.

Typically, a $1,200 to $1,500 monthly revenue guarantee would be required, with the developer making up any shortfall in user fees. Parking reduction policies are most effectively codified in zoning or building codes, making them easy for developers to use. While they can be managed on a case-by-case basis through the variance process, the bargaining adds difficulty and reduces the likelihood of action. Some examples of where parking policies support carsharing include:

- Seattle's Municipal Code allows for a reduction of one parking space for each parking space leased by a carsharing program for small-scale developments (City of Seattle 2008). For larger-scale developments, Seattle's municipal code allows for a reduction of three required parking spaces or 15% of the total number of required spaces, whichever is fewer.
- Parking by-laws in Vancouver, British Columbia, give officials the option of substituting carsharing vehicles and parking spaces at a 1:3 ratio, up to one carsharing vehicle for each 60 dwelling units (City of Vancouver 2005).
- The city council of Austin, Texas, included carsharing in their parking reduction policy, allowing for minimum off-street parking reductions of 20 spaces for every carsharing vehicle provided. For multi-family residential uses in the University Neighborhood Overlay District Section, off-street parking requirements are reduced to 40% of regular standards with participation in a carsharing program (City of Austin 2008).

Employer Bicycle-Sharing

Bike sharing is a form of bicycle rental where people can have access to a shared fleet of bicycles on an as-needed basis. Bicycle sharing programs provide safe and convenient access to bicycles for short trips, such as running errands or transit-work trips. The international community has experimented with bicycle sharing programs for nearly 40 years. Until recently, bicycle sharing programs worldwide have experienced low to moderate success; in the last five years, innovations in technology have given rise to a new (third) generation of technology-driven bicycle sharing programs. These new bicycle sharing programs can dramatically increase the visibility of cycling and lower barriers to use by requiring only that the user have a desire to bicycle and a smart card, credit card, or cell phone.

Bicycle sharing programs, such as systems in Paris and Lyon, France have helped to increase bicycling mode share, provide access to the public transit system, reduce a city's travel-related carbon footprint, and provide additional 'green' jobs related to system management and maintenance. In the U.S., many cities are considering bicycle sharing programs. Initial examples have rolled out in U.S. cities such as Washington D.C. and Denver, CO within the past year. These programs are still in their infancy, thus no formal evaluations have been completed at this time.

A station in Denver's bicycle sharing pilot system
Image from AndrewDuvall.org

Goal: Reduce short-distance vehicle trips by providing easy access to a shared bicycle

Existing Practice:

In Emeryville, Pixar and Clifbar have bicycles for employee use, and another employer is considering them. No modern (technology-driven) public bicycle sharing programs currently exist in Emeryville or in the larger East Bay although some small bicycle sharing programs do exist at UC Berkeley and other small employers throughout the area. However, the City of Emeryville does have several bicycle-related projects underway that will increase the ability to bicycle through the City with greater ease and safety. These include the Greenway and the South Bayfront Pedestrian-Bicycle Bridge. These capital projects in addition to other projects underway such as bicycle lanes and bicycle parking will provide a necessary foundation to ensure cycling is both safe and an attractive mode of transportation within Emeryville.

Since 40% of all vehicle trips are less than two miles, bicycle sharing offers an opportunity to substantially reduce demand for parking and travel by automobile and can achieve a *significant* reduction in the negative environmental impacts associated with automobile travel. Bicycle sharing in Emeryville can be very attractive given the short distances residents and employees alike need to travel to get around town. A review of the experiences of other bicycle sharing programs presented below provided insight into the opportunities and challenges for the City of Emeryville to pursue a bike sharing program.

Best Practices

Long Beach, California

The City Bike Share program in Long Beach, California is a free program targeted toward City employees and managed by the Department of Public Works. The program is a partnership with Bikestation, a company that provides high-quality bicycle parking facilities. The main goals of the program are to: "reduce the number of local trips made by automobile, lessen traffic congestion in the downtown area, and help employees get active and healthy the easy way."

Employees can easily register for the program online. They receive a key fob, which provides them access to the key to the bike lockers. Bicycles must be returned to the same locker they were removed from at City Hall, and cannot be checked out overnight. All bicycles are equipped with front and rear lights, a rear rack and front basket, a kickstand and a warning bell. The first 50 users to register received a helmet.

In order to register for the program, participants must sign a release and wavier form. Brochures are available, which outline how to register for the program, as well as rules and regulations about bicycling in Long Beach. These include a warning about bicycling on the sidewalk and usage of bells and horns. The brochure also highlights key safety issues, such as helmet use and avoiding the 'door zone' (the area along the parking lane that a parked car's driver-side door swings into).

Bikestation installed the security access control and reporting software system, as well as procuring and assembling the bikes and bike accessories. The group also manages registrations, the user database, and maintenance, among other day-to-day operational activities. The capital expenses of the Long Beach program were $30,000, and annual administration, operations and maintenance costs were estimated at $10,000 for the first pod and $6,000 thereafter. The program is provided in accordance with Rule 2202 Air Quality Investment Program. It is funded through AQMD AB2766 funds.

A key fob provides access to locker keys for the Long Beach City Bike Share Program.
Image from City of Long Beach. Used with permission.

Strategy: Explore Employer and Public Bicycle Sharing

Bicycle sharing can be a cost-effective sustainable mode of transportation that increases access to many destinations around town while improving personal fitness and health and reducing traffic congestion, pollution, and other environmental impacts of transportation. However, several key factors, as previously noted, are important to consider before implementing a bicycle sharing program. These factors include environmental conditions, the need to provide a comprehensive, well-connected bicycle network, and there being sufficient potential demand for the service.

Although conditions may not be perfect for a citywide bicycle sharing program at this time, employer-based bicycle sharing may be a first step to increase the share of bicycle trips made by employees. Many employers have large campuses throughout Emeryville and not all are well served by local amenities such as a market, post office, day-care center, etc. An employer-based bicycle sharing program would provide a new travel choice for employees for local trips during the lunch hour and for other mid-day errands. Such a program would reduce mid-day vehicle trips, increase the presence of bicyclists on Emeryville streets, and also serve as a foundation for other bicycle-related programs and improvements in the future. As a first step, a pilot bicycle sharing program for City employees could be initiated, to provide proof-of-concept to other employers, and as an initiative to increase non-motorized mode share and improve City employee health.

Overall, current conditions suggest that some change needs to occur in Emeryville for an employer bicycle sharing program to be successful. In particular, two broad changes will be most important:

- Expansion and completion of a more comprehensive bicycle network, to provide improved access and safety citywide
- Continued provision of bicycle amenities such as racks/parking at key destinations

The City is currently planning and implementing major projects that will support efforts to improve bicycle conditions in Emeryville including an update of the Pedestrian and Bicycle Plan. It is assumed that the critical components discussed above will be analyzed in depth and appropriate recommendations will be made. Another major plan includes a bicycle/pedestrian bridge that would span Interstate 80, linking the Emeryville Greenway with the Bay Trail.

With these components in place, the city may be interested in a larger-scale bicycle sharing program in the future. Overall, three basic types of programs could be pursued, with further evaluation necessary to determine which would be expected to be most successful:

- Citywide, sponsored by the City and/or ETMA
- Multi-jurisdictional, co-sponsored by Emeryville and one or both neighboring cities of Oakland and Berkeley, and/or AC Transit/BART. This might be advantageous due to the small size of Emeryville and the frequent trips made between the three cities.
- Location-specific, sponsored by property owners or managers, employers or institutions, either alone or co-sponsored with the City or ETMA. These programs most likely will offer bicycles for round-trip use over a longer period of time.

AC Transit EasyPass

AC Transit has three EasyPass programs tailored to employers, residential communities, and colleges that offer a discounted group rate compared to regular AC Transit bus fares. Each one is easy to administer with extraordinary benefits.

The EasyPass works like an insurance plan by paying for a large group of program participants; the per-participant costs are shared. By sharing in the costs, all the group's participants have an opportunity to use their EasyPass–whether they're daily AC Transit riders, use the service occasionally, or use it for the first time. The EasyPass works in conjunction with the Clipper regional fare card.

The EasyPass program requires that a participating organization:

- Have at least 100 participants—employees, residents or households
- Identify a site coordinator for communication and coordination with AC Transit

A developer, property owner, or homeowners/renters association may choose to purchase one pass for each household in the residential property. In this case, each household is considered to be the equivalent of one "participant."

AC Transit also encourages participating organizations to execute an online survey of participant travel behavior before and after the passes are purchased and distributed. Information from the surveys helps AC Transit develop marketing materials and evaluate the effectiveness of their service in meeting travel demand, and increasing customer satisfaction with the service.

Existing Practice:

The EasyPass Program provides a strong incentive for existing and prospective tenants or buyers who want to live in a place that offers discounted passes and enables tenants to forgo a second car. For employers it offers an employee benefit, recruitment, and retention tool.

Strategy: Promote AC Transit EasyPass Program

Large employment centers in Emeryville, such as Novartis and Pixar, IKEA and the Bay Street Center, as well as nearby educational centers are excellent candidates for participation in the EasyPass program. These business and employment centers have large numbers of potential transit riders close to frequent transit service. AC Transit can connect employees and residents in Emeryville to San Francisco, Oakland, and Berkeley.

The AC Transit EasyPass program offers a promising opportunity for the City of Emeryville to realize goals established in the General Plan – a more balanced transportation system that maintains and improves mobility and access while also reducing traffic congestion, automobile trips, and the environmental impacts associated with travel by automobile.

The City should encourage employers, apartment owners, schools, and homeowner associations to set up an EasyPass program. The City can identify primary candidates for participation in the program and facilitating communication and coordination with AC Transit. Furthermore, as demonstrated elsewhere, participation in the program can help realize significant reductions in parking demand. This can reduce construction costs for housing and commercial development and costs to build and maintain public parking. In the development review process, or through their zoning ordinance, the City could reduce parking requirements if a commitment is made to participate in the EasyPass program. The increased mobility for program participants could also support local businesses and a subsequent increase in sales tax revenue for the City.

A study of UCLA's universal transit pass program similar to the EasyPass found that a new parking space costs more than 3 times as much as a free transit pass ($223/month versus $71/month).

The City is encouraged to promote the EasyPass program and require new development to participate in this program as a condition of approval, or grant bonus points. This program would be especially beneficial for low income and elderly residents and commuters who ride express AC Transit service into San Francisco. It is acknowledged that many commuters who work in Emeryville ride both BART and Emery Go-Round and would not benefit from this program. Although Emery Go-Round is free of charge, BART does not offer a monthly pass nor bulk discounts.

As of November 2008, one multi-unit residential complex in Emeryville was participating in the new program. Passes were given to the residents

for free. The response was enthusiastic, but a change in management ended participation.

A study of UCLA's universal transit pass program similar to the EasyPass found that a new parking space costs more than 3 times as much as a free transit pass ($223/month versus $71/month).

Employee Origins and Destinations

Existing Practice:

Although many Emeryville residents use sustainable transportation modes, most people working in Emeryville drive alone to work. To ascertain the best ways to serve these employees, the City needs to know where their work trip begins in the morning and ends at night. Figure 4-7 provides information on employee residences for those working in Emeryville.

The Federal Longitudinal Employer Household Dynamics Program combines data from state and federal agencies to show where employees live. The most recent information is for 2009. As shown in Figure 4-7, 42% of Emeryville workers live within the AC Transit District service area. Of those, 1.4% reside in Emeryville. Another 26% live outside the AC Transit service area but within the BART area or near a bus to BART. Another 12% live within the Capitol Corridor rail or bus service area. Only 12% live in areas with no transit access to Emeryville. The 6% who fly here could take transit to the airport; these people and some of the driving-distance commuters clearly do not make daily trips here. This information shows that there is potential for shifting drivers to AC Transit, BART and Capitol Corridor.

Commuter Checks

Commuter check companies offer employers a way to allow employees to buy monthly transit tickets on a pre-tax basis through payroll deductions.

Strategy: Use Commuter Checks for Bonus Points or Condition of Approval in Employer Projects

When employers build or expand workplaces, commuter checks could be added as conditions of approval or for bonus points.

Figure 4-7 Where Emeryville Workers Live

Where Emeryville Workers Live - Census County Divisions - 2009				
Within AC Transit Area			**8,190**	**42.42%**
Oakland CCD (Alameda, CA)*	3,445	17.80%		
Berkeley CCD (Alameda, CA)	1,017	5.30%		
Alameda CCD (Alameda, CA)	552	2.90%		
West Contra Costa CCD (Contra Costa, CA)	1,573	8.10%		
Hayward CCD (Alameda, CA)	1,152	6.00%		
Fremont CCD (Alameda, CA)	451	2.30%		
BART Area beyond AC Transit Area			**4,686**	**24.27%**
San Francisco CCD (San Francisco, CA)	2,448	12.70%		
Central Contra Costa CCD (Contra Costa, CA)	1,843	9.50%		
South San Francisco CCD (San Mateo, CA)	395	2.00%		
Livermore-Pleasanton CCD (Alameda, CA)	264	1.40%		
Antioch-Pittsburg CCD (Contra Costa, CA)	191	1.00%		
Bus to BART			**183**	**0.95%**
San Rafael CCD (Marin, CA)	183	0.90%		
Capitol Corridor Area beyond BART Area			**1525**	**7.90%**
San Jose CCD (Santa Clara, CA)	952	4.90%		
Sacramento CCD (Sacramento, CA)	393	2.00%		
Fairfield-Suisun City CCD (Solano, CA)	180	0.90%		
Davis CCD (Yolo, CA)	52	0.30%		
Roseville CCD (Placer, CA)	35	0.20%		
Auburn CCD (Placer, CA)	9	0.00%		
Capital Corridor Bus Area			**796**	**4.12%**
Driving Distance beyond Capitol Corridor Area			**2244**	**11.62%**
Flying Distance - Southern California			**739**	**3.83%**
Flying Distance - Out of State			**397**	**2.06%**

*268 (1.4%) live in Emeryville.

Source: Longitudinal Employer Household Dynamics Program, http://lehdmap.did.census.gov./m/

Home Delivery Services

Existing Practice:

Many Bay Area residents travel to Emeryville for its shopping and retail options. Many of the retail trips involve goods that cannot be transported easily without a car, therefore forcing customers who might otherwise be able to take transit, bike, or walk for the trip to have to drive simply to transport their larger purchases on the return trip.

Strategy: Explore Consolidated Home Delivery Service for High-Volume Retailers

If home delivery service were simplified and provided at a nominal cost or for free to the shopper, it would be an incentive for shoppers who travel to Emeryville to ride transit or to reduce or eliminate a vehicular trip. While some big box retailers in Emeryville do offer delivery service for a significant fee (e.g. $50 for IKEA), the cost for a consolidated delivery service could likely be lower if shared among the many retailers in Emeryville. Consolidated delivery service could also reduce the number of vehicle trips generated by large item or high-volume retailers.

Turnover analysis from the North Hollis Parking Policy and Management Implementation Plan indicates that many employees use on-street parking spaces for all day vehicle storage; reducing the availability of parking for visitors, vendors, and retail customers.

As an example of home delivery service, Home Depots in Manhattan provide delivery service for those within Manhattan, and deliveries are completed within three hours of purchase. The cost for home delivery is minimal:

- $21.00 Flat Rate
- $33.00 if over 85 lbs
- $47.00 if a truck is needed for delivery (bulky item)

Those living outside of Manhattan are charged a fee. Based on feedback from Home Depot, approximately 80% of customers use the service. Emeryville could be a leader in initiating a program for the purposes of reducing vehicle trips and pursuing its goals for sustainable transportation.

Parking Strategies

The supply, utilization, management, and regulation of parking are major factors that influence:

- Multi-modal access to and mobility within Emeryville
- The affordability and choices of housing and commercial space in the City
- The potential for the City to grow and develop as planned and desired

The availability of parking, including both public and private, on- and off-street parking, influences the accessibility of homes, businesses, and civic and educational institutions in Emeryville by all modes of transportation. Where on-street parking is filled up by commuters parking all day at no cost, visitors and shoppers arriving by car from outside the city can be forced to circle the block multiple times to find an open space or available off-street parking. This search for parking congests streets and reduces mobility for other drivers, transit riders, and bicyclists using city streets.

Parking supply and management practices also influence choices about how to travel to, from, and within Emeryville. For example, where the cost of building and maintaining off-street parking is bundled into a standard lease agreement and therefore hidden from commercial tenants, it is usually not passed on to employees and customers. This means that drivers effectively receive a subsidy in the form of “free parking,” a benefit which is not necessarily available to them if they walk, bike, or ride the bus. This is a strong economic incentive that encourages driving instead of using more sustainable transportation options. When parking costs are made evident to drivers through parking pricing and/or other parking policies, people are more likely to choose another option such as transit; thus good parking policies can help increase transit ridership.

Moreover, existing City requirements that property owners provide a minimum number of parking spaces can result in an oversupply of parking spaces. Once constructed – at great cost to the developer – the expense of providing excess parking is usually passed on to tenants and/or buyers in the price of their lease or sale agreements. This results in significantly

increased costs, reducing the affordability and choices of housing and commercial space in the city.

Finally, the regulation and supply of parking influence how the city grows and develops. As the city continues to grow, land currently dedicated to surface parking becomes more valuable and is increasingly attractive for development. With limited land area, Emeryville will need to employ smart parking management strategies and sustainable transportation alternatives to maintain access and thrive in the face of growth.

The parking strategies included in this Sustainable Transportation Plan are necessary both to guide growth in the city and to serve as a primary means of reducing traffic congestion and enhancing multi-modal access.

Image from Nelson\Nygaard

Parking in Emeryville Today

Key to developing appropriate parking strategies for the future is understanding existing conditions by collecting and analyzing comprehensive data on patterns of occupancy and turnover of on- and off-street parking throughout the City. A recently completed parking study provides such data for the North Hollis area: similar studies revealed that parking is not as tight in other parts of the city, including the South Hollis, Park Avenue, Triangle and Bayfront Districts.

Proposed Parking Strategies

Overview

To improve parking availability, multi-modal accessibility, and mobility, support planned mixed-use development, and reduce costs for housing and commercial space, the following parking strategies should be pursued:

- Revise off-street parking standards to meet city goals
  - Reduce minimum requirements for off-street parking; establish maximums
  - Increase incentives for payment of in-lieu fees
  - Incentivize or mandate shared parking
- Manage public parking prices to ensure availability
  - Adopt vacancy goals for public on-street and off-street parking (Recommended 15% and 10% respectively)
  - Grant staff administrative authority to establish and adjust parking fees and/or time limits as necessary to meet these vacancy goals
  - Where paid parking is necessary, install smart meters that allow adjustable rates
  - Monitor parking occupancy and adjust rates accordingly
  - Implement an efficient permit parking program
- Establish Permit Parking Areas
- Establish Parking Benefit Districts
  - Dedicate all parking meter/permit revenue to improvements within the Parking Benefit District
- “Unbundle” Parking from Commercial and Residential Lease/Sale Agreements
  - Implement General Plan Policy TP-59 by adopting a local ordinance requiring line item separation of parking costs in lease and sale agreements.
- Require Employers to “Cash-Out” Parking Subsidies
  - Implement General Plan Policy TP-53, by adopting a local ordinance requiring that local employers comply with the state parking cash-out law and expanding requirements to businesses with 10-50 employees at worksites in Emeryville.

The strategies provided herein represent a package of reforms that should be implemented together to achieve city goals and objectives. For example, the effective management of on- and off-street public parking and the expansion and conversion of the Residential Permit Zone into a Residential Permit Parking District, with a limited supply of available permits, can ensure that on-street parking is available both in mixed-use commercial districts and adjacent residential districts. With these reforms in place, the City will no longer have to require developers to provide a minimum number of off-street parking spaces to prevent spillover parking impacts in the surrounding area. This means that the city can replace its minimum off-street parking requirements with maximums, thus reducing development costs and facilitating mixed-use transit-oriented development consistent with the vision of the General Plan.

The last two strategies are especially important in a city such as Emeryville, where many property owners have built and tenants have leased a supply of parking that meets city code requirements, but which exceeds their specific needs and purposes. By separating the cost of parking from rents and providing incentives for the use of alternative modes, these requirements (in combination with flexible off-street parking requirements) can help create a private market for the more efficient use of existing underutilized off-street parking supplies.

The following section describes each of the proposed parking strategies in greater detail, providing for each a summary of (a) existing conditions, including current City practices and regulations, (b) brief case studies of how the strategy has been implemented in other cities, and (c) discussion of the benefits, implementation requirements, and special challenges and opportunities of implementing the strategy in Emeryville.

Off-Street Parking Standards

City policy regarding off-street parking is a key determinant of (1) the cost of housing and commercial space (for both tenants and property owners), and (2) the mode(s) of transportation used by residents, employees, shoppers, and visitors. In many cities, code requirements for the minimum number of off-street parking spaces that must be provided by property owners and developers for each land use and activity were originally intended to prevent congestion of on-street parking and spillover parking impacts in areas surrounding land uses that generate high volumes of vehicle trips. However, such requirements are being reduced or abandoned by an increasing number of cities that have determined that they are not the best means of maintaining the availability of on-street parking. In addition, these policies can have serious impacts, including (a) worsening traffic congestion and (b) increasing housing costs and commercial rents. Such requirements increase costs when and where property owners are required to provide more parking than they or their tenants actually use. To manage parking demand and maintain on-street parking availability, many cities are instead turning to smart parking management practices including pricing via meters, permits, and/or time limits.

Goals:

- **Facilitate mixed-use, pedestrian and transit-oriented development in accordance with the adopted General Plan (2010).**
- **Facilitate and encourage bicycling, walking, use of transit, and carpooling, by reducing effective subsidies for driving.**
- **Reduce waste of land and financial resources on excess/ underutilized parking.**
- **Improve housing affordability.**
- **Preserve land for other uses more consistent with the goals of the General Plan (2010) by establishing maximum off-street parking requirements.**

Figure 4-8 Surface Parking in East Baybridge Center Park Avenue District and Pixar

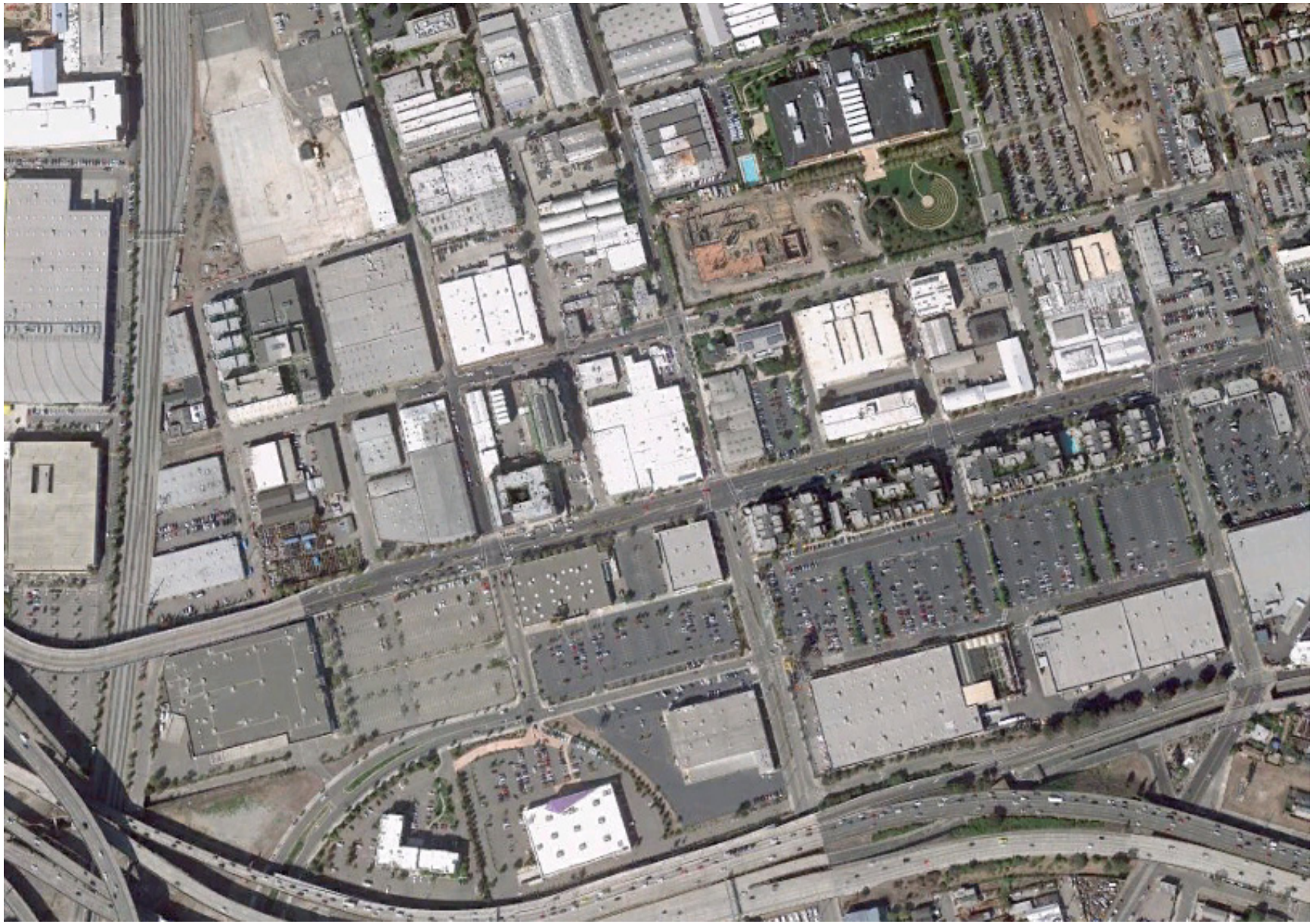
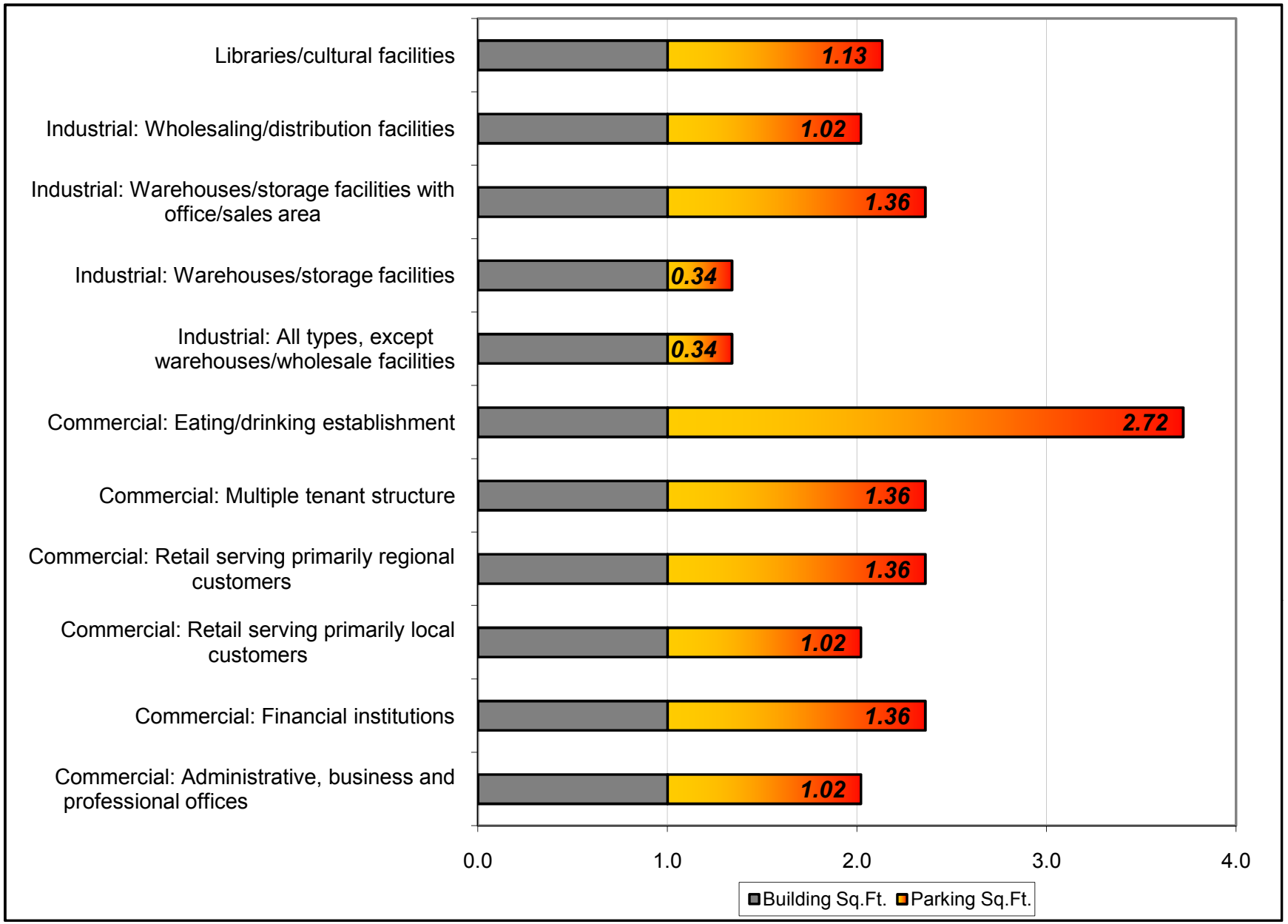


Figure 4-9 Space Required for Parking for Each Square Foot of Land Use*



*Assumes that an industry standard 340 square feet are required for each parking space.

Image from "The Dimension of Parking," 4th Edition, published by the Urban Land Institute (ULI), and the National Parking (NPA), in Washington, DC, 2001.

Existing Practice:

Currently, the City of Emeryville has minimum off-street parking requirements that are slightly lower than the standard parking generation factors published by the Institute of Transportation Engineers (ITE). For many sites and land uses in Emeryville, these standards may be unnecessarily high because they do not account for all mitigating factors that can reduce parking demand (such as site density, the mix of uses in the immediate area, access to transit, availability of non-motorized transportation facilities, and ridesharing opportunities).

For many land uses and activities, these standards require so much off-street parking that resulting developments actually have more land, or in the case of structured parking, more total built floor area, dedicated to parking facilities than to the associated land use or activity on-site. Figure 4-9 graphically demonstrates the effective area required for parking for each square foot of selected land uses regulated by code.

Currently, the municipal code gives the City discretion to reduce parking requirements for specific applicants, based on land use, access to public transit or public parking, availability of parking in nearby areas, and/or shared parking arrangements (Shared parking arrangements are explicitly supported in the Emeryville General Plan, policy T-P-56, which states: "The City supports shared parking between multiple uses to the extent possible, and will encourage private property owners to share their underutilized off-street parking resources with the general public."). Nevertheless, such reductions are permitted only on a case-by-case basis, rather than specific reductions granted by right. Moreover, other factors affecting site and/or use specific parking demand are excluded from the analysis entirely.

Emeryville does not currently have any codified limit on the maximum number of off-street parking spaces that a property owner or developer may construct or provide.

Best Practices

Many cities have determined that reducing or eliminating minimum parking requirements is essential to achieving development goals. Cities that have eliminated such requirements include:

- Stuart, Florida, eliminated all on-site parking requirements, which were preventing developers from renovating existing buildings. After four years, the number of downtown businesses had risen by 348, and the town was able to lower its tax rate.
- Eugene, Oregon, abolished minimum parking requirements in several districts and introduced maximum parking standards in order to promote high intensity, mixed-use development, historic preservation, and help meet environmental goals.
- Spokane, Washington, eliminated all minimum parking requirements in its downtown, and introduced parking maximums.
- Portland, Oregon, eliminated all minimum parking requirements in its downtown and introduced parking maximums for specific land uses, as well as a cap on the number of parking spaces for the entire downtown area. The city has established maximum parking limits instead of minimum requirements for various reasons, including Portland's planners hope to "…improve mobility, promote the use of alternative modes, support existing and new economic development, maintain air quality, and enhance the urban form of the Central City".

These cities' intent to create more walkable districts and promote sustainable transportation is consistent with Emeryville's goals.

Figure 4-10 lists several successful downtown districts with no minimum parking requirements. It illustrates that reducing or eliminating minimum parking requirements can be done even in neighborhoods and whole cities without high capacity transit alternatives, and does not require that all (or even any) off-street parking be provided by the City.

Figure 4-10 Downtown Districts without Minimum Parking Requirements

City	Parking standard for mixed-use buildings downtown (Number of off-street parking spaces required)	Downtown area served by High Capacity Transit?	Single Occupant Vehicle commute mode share	Share of off-street parking downtown owned by the City
Pittsburgh, PA	0	Yes	32%	17%
San Francisco, CA	0	Yes	38.5%	20%
Phoenix, AZ	0	Yes	72%	30%
Madison, WI	0	No	71%	10%
Indianapolis, IN	0	No	74%	0%
San Antonio, TX	0	No	80%	25%
Winston-Salem, NC	0	No	90%	42%
Greenville, SC	0	No	99%	33%
Emeryville, CA	TBD by Planning Commission**	No	74%	Not Available

Source: Transit Cooperative Research Program (TCRP) Report 95, Traveler Response to Transportation System Changes, Chapter 18: Parking Management & Supply, pp. 18-39.

**Emeryville Municipal Code, Section 9-4.55.10, "Methods of Compliance"

#US Census 2000, Census Transportation Planning Package, Journey-to-Work Data

One of the most important reasons for providing greater flexibility in the administration of off-street parking requirements is that it is necessary to allow existing property owners and developers – who have dutifully supplied parking as required by code – to lease or sell their underutilized/excess parking for use by other property owners and employers. This allows the existing supply of private off-street parking to be used more efficiently, reducing the need for and cost of constructing additional off-street parking.

Minimum parking requirements were adopted by many cities to "alleviate or prevent traffic congestion and shortages of curbside parking spaces".

With implementation of the other proposed strategies – allowing on-street parking meter/permit prices to be adjusted by administrative action to ensure at least one or two vacancies per block (and conversion of Residential Permit Zone to Parking Benefits Districts with a limited supply of on-street parking permits) – off-street minimum parking requirements will no longer be needed to prevent shortages of on-street parking. Instead, they would only continue to worsen traffic and to discourage developers, employers, residents, and other property owners from implementing programs that can reduce traffic and parking demand.

Strategy: Reduce Parking Minimums; Establish Maximums

In concert with the adoption of tools for managing the supply of on-street parking to ensure availability, the city should reduce off-street parking requirements to bring them in line with actual usage. In addition to revising parking minimums downward, the city should also establish parking maximums, to be set at 10% above demand. This will help prevent the unlimited expansion of parking within city boundaries and will help keep land available for more productive uses.

For non-residential uses, the minimum number of off-street parking spaces should be reduced (City staff have recommended requiring provision of two-third of the number of spaces currently required for each land use); while preserving existing minimum parking requirements for residential uses. Flexibility should be provided to allow developers to provide fewer parking spaces than the minimum requirement, or more than the maximum requirement by issuance of a conditional use permit or variance. For example, developers should be able to provide fewer parking spaces than the sum of the number that would be required for each land use by implementing TDM measures to reduce auto usage. Likewise, to go above the maximum, the Planning Commission or City Council would have to make findings that this would not lead to a dependence on automobiles, or limit access by other modes of transportation.

Reduction of minimum parking requirements could be phased in over time, with oversight of parking provision by planning staff and appointed and elected officials remaining part of the process.

In-lieu Parking Fees

Emeryville is one of many cities throughout the Bay Area that provide property owners with the option to pay a fee in lieu of providing some or all of the off-street parking spaces currently required by City code. Revenue collected from this fee is used to fund construction of public parking facilities. Because the parking can be shared by multiple land uses and activities within walking distance of each other – for example, spaces used by office workers during the day may be available for use by theater-goers at night – the total supply of public parking required to serve a neighborhood would be significantly smaller than the total supply that might be constructed if each individual property owner constructed the amount of parking required by code.

Goals:

- ◊ **Provide funding for development of efficient shared parking facilities and other access improvements, allowing parking expansion in a manner that meets the city's long-term goals**
- ◊ **Reduce waste of land and both public and private sector financial resources associated with single-use parking facilities that may be underutilized.**

Existing Practice:

The City's existing in-lieu fees are set at $7,300. The program is undermined, however, by the issuance of many parking variances. These variances have generally been granted when the use is changing in an existing building, the business moving in has fewer employees than assumed in trip generation manuals, and there is ample on-street parking. It is far less expensive and therefore more attractive to developers to obtain a variance than to pay in-lieu fees. Through 2011, no developer in the City of Emeryville has paid an in-lieu fee for parking.

Best Practices

The City of Pasadena, California's "Parking Credit Program" allows property-owners in Old Pasadena to pay a small fee in lieu of satisfying minimum parking requirements on site. This is particularly important in allowing adaptive reuse of historic buildings that were built without parking, where minimum parking requirements would be triggered by a change in use. Since few of the buildings in this historic part of the city have off-street parking, this approach removed one of the major barriers to adaptive reuse. The fee is annual, rather than the lump sum common for similar fees in many other cities, allowing developers to avoid financing problems. (On the downside, this has created some revenue collection issues, particularly where property has changed owners.) The fee is set at an extremely low rate ($127 per year per space in 2004), to encourage developers to pay for shared public parking instead of providing more reserved, single-purpose parking, as per code.

Figure 4-11 below shows the amount of the fee, procedures for fee adjustments, and eligible expenditures of fee revenue for other California cities with relatively low in-lieu parking fees. Other cities such as Boulder, Colorado have dedicated a portion of fee revenue to fund transportation demand management (TDM) programs in the area.

Higher usage of the in-lieu fee would result in more funding available for construction and management of city-owned parking facilities which could be strategically located, constructed more efficiently, and shared among multiple uses compared to requiring each property owner to provide a stand-alone single purpose parking facility. By developing policies that encourage the public and private parking supply to be used most efficiently, the city can meet the same or greater parking demand in a smaller parking footprint.

Strategy: Reduce and/or Incentivize Parking In-Lieu Fee

So long as Emeryville maintains minimum off-street parking requirements, the City should:

- Reduce in-lieu fees and permit annual, rather than lump-sum payments
- Authorize use of fee revenue on parking, TDM programs, and other transportation programs and services that directly enhance multi-modal access to the property
- Limit the use of variances or waivers for the provision of minimum parking to applicants that implement site specific TDM programs and other improvements which enhance multi-modal access, or for properties that can be expected to have lower parking demand as a result of the multi-modal accessibility of the property and the density, design, and diversity of land-uses on site and in the surrounding area

Shared Parking

Shared parking is joint use of parking facilities by land uses whose peak parking demands are at different times of day.

Goals:

- ◊ **Reduce the provision of excess/underutilized off-street parking (and consequent waste of land and financial resources) in the development process**
- ◊ **Encourage use of non-auto access alternatives by reducing parking subsidies in the form of excess parking**

Existing Practice:

Currently, the City of Emeryville encourages shared parking, but does not mandate or incentivize its use. At the same time, existing requirements that property-owners maintain access to a minimum number of off-street parking spaces can discourage or prevent property-owners from sharing their underutilized parking with adjacent uses. In addition, Emeryville does not require any provision of parking for CarShare vehicles in new residential or commercial developments. Based on the current portfolio of parking throughout the city, there appear to be numerous opportunities to

Figure 4-11 In-Lieu Fees in Selected California Cities

City	Fee Amount*	Year Initiated	Fee Adjustments	Fee Revenue Expenditures
Davis	$4,000	1970's	Adjusted on an as-needed basis	Held in a consolidated off-site parking fund program, spent on construction of public parking resources and parking structures downtown
Millbrae	$12,313	1987	Adjusted annually based on CPI	Used to improve parking in the city's commercial district. Have been used to enhance and modify the city's three municipal lots and for re-striping of the downtown area
Monterey	$8,710	1960's	Adjusted annually based on CPI	Transportation demand management; operating funds for a free downtown shuttle "the Wave".
Mountain View	$26,000	1988	Adjusted as needed based on cost of construction	Used to construct parking garages in downtown, provide shared parking facilities
Pasadena	$146.53 per year	1987	Adjusted annually based on CPI	Used to build parking garages

*One-time fee unless otherwise noted.

better utilize large excesses of public and private off-street parking supply during the day or evening through shared parking strategies.

Best Practices

In Arlington County, Virginia, the Columbia Pike District Parking Strategy encourages sharing spaces by setting a limit on the number of reserved, single-purpose parking spaces allowed, while placing no limit on the amount of shared parking allowed on-site. Sites over 20,000 square feet in land area have the following off-street parking requirements:

A maximum of two spaces per residential unit may be made available as reserved parking.

- There are no maximum limits on shared parking.
- Up to 100% of all required parking may be provided off-site if these parking spaces are located within a ¼-mile of the subject site, and a legally binding parking agreement meeting zoning code standards is provided to the Zoning Administrator.

Arlington County also explicitly requires sharing residential parking spaces. Sites over 20,000 square feet in land area have the following requirements:

- A minimum of 1.125 parking spaces per residential unit, of which a minimum of 0.125 parking space per residential unit shall be provided as shared parking.
- New on-street parking spaces created in conjunction with the development may be counted toward the minimum requirement for shared parking.

Such policies could be implemented in Emeryville as a means of facilitating planned growth without the need for additional parking, while more efficiently using existing supply. Practice has shown that new parking construction can be reduced significantly while parking demand continues to be met if shared parking is available. Another approach taken by communities looking to encourage shared parking is to have no minimum off-street parking requirement, but a low maximum for single-purpose parking, and a higher minimum and no maximum for shared parking.

Strategy: Incentivize or Mandate Shared Parking

Allow, encourage, and potentially require property owners to satisfy off-street parking requirements by:

- Constructing new shared parking facilities (publicly accessible, and/or shared with compatible land-uses and activities in the immediate area), or
- By reaching agreement with other property owners for the shared use of existing, underutilized parking facilities nearby (with City approval, including a waiver of minimum off-street parking requirements for participating property owners, as necessary).

One option is to have lower maximum off-street parking requirements for single-purpose parking (with no minimums) than for shared parking (with lower than existing minimums). In addition, the City can directly promote shared use of limited parking resources by requiring that all new developments with more than a fixed number of housing units provide parking for shared vehicles. The vehicles would be owned and administered by one of several reputable and certified regional carsharing service providers, such as Zipcar and/or City CarShare. This strategy can reduce individual vehicle ownership – in turn reducing vehicle trips, vehicle miles traveled, and the number of parking spaces needed – by making a shared car available on-site. More information on carsharing as a transportation demand management (TDM) strategy was presented in the TDM section of this chapter.

Public Parking Prices

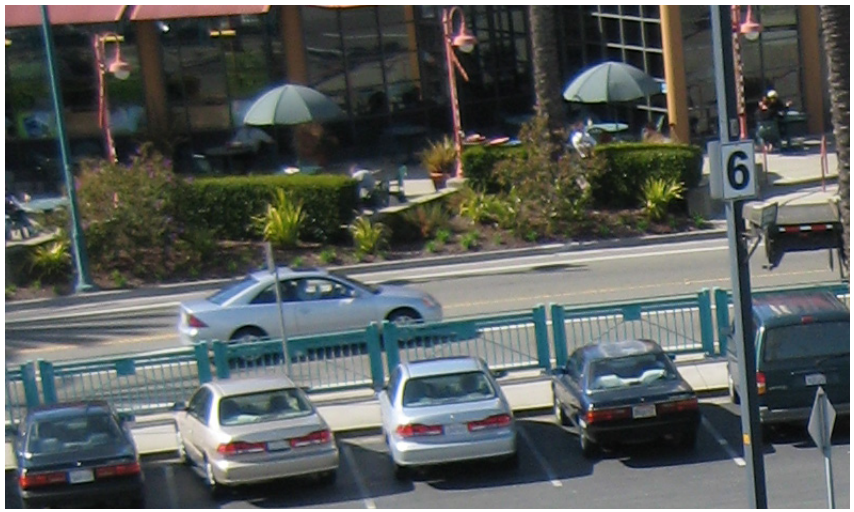
One common source of excess traffic in Emeryville is cruising for parking, that is, people searching and circling to find a free or below market-rate curb parking space. This problem adds more traffic to an already congested street network. In these circumstances, managing parking prices to ensure that there are available curb parking spaces at all times of day is an important strategy both for improving auto access and reducing traffic.

Goals:

- **Ensure availability of on- and off-street parking**
- **Reduce parking search traffic**

Existing Practice:

Currently, Bay Street is the only street in Emeryville with paid parking on-street. On-street rates are the same as those for the 1900 off-street parking spaces at Bay Street: $2.00 for the first three hours, $3.00 for 3-4 hours, and $2.00 more per hour up to $11.00 for eight hours, and $12.00 for any length of time between 8-24 hours. The City plans to install meters in the North Hollis area when business is better. Other areas have been surveyed and are not ready for parking meters.



Best Practices

Redwood City's parking ordinance requires its Parking Manager to measure parking occupancy in its Downtown Meter Zone at least annually, but not more frequently than quarterly. Based on the survey results, the Parking Manager is required to adjust rates up or down in twenty-five cent ($0.25) intervals in an effort to attain the city's 85% target occupancy rate (equivalent to a 15% vacancy rate). Rates vary by street, block, and direction. Meters are active from 10 AM to 6 PM; however, meters are active on some street segments and directions only on weekdays, while others meters are also active on Saturdays. The ordinance establishes a maximum hourly rate of $1.50, without City Council approval. Similar provisions are in place for nine metered off-street public parking lots and garages. In three of the lots or garages, a higher peak rate of $2.50 - $5.00 applies on weekdays from 6:00 PM– 11:00 PM and on Saturdays, Sundays, and holidays from 10:00 AM – 11:00 PM, although validation is allowed.

The installation of parking meters will enable the City to efficiently manage demand for on-street parking while accommodating customer, employee, resident, and commuter parking needs. By creating vacancies and turnover of the most convenient "front door" curb parking spaces, availability for customers and visitors will be ensured.

With perceived parking supply shortages in certain parts of the city, parking pricing in other areas where on-street parking is congested at peak hours will not only improve parking availability, it could also provide a significant local revenue stream for the other multi-modal transportation and streetscape enhancements recommended in this plan.

As the city continues to grow, such a revenue stream could be used for other transportation related improvements, TDM programs, or neighborhood improvements within locally established parking benefits districts, (parking benefit districts allow some portion of parking revenues to be dedicated to the area where the revenues were generated to fund improvements that residents and businesses want). As on-street parking demand grows and parking availability becomes a more serious issue, appropriate pricing and using state-of-the-practice metering and enforcement technologies, can help ensure that parking is available even during peak hours.

Strategy: Manage Public Parking Prices to Ensure Availability

In parking management areas, except on industrial blocks, the following strategies should be used.

- **Set a policy goal of keeping occupancy rates at an optimal 85% (so that 1 in 8 spaces, or about one per block, will always be available).** This rate is a widely-accepted industry standard that provides a high level of convenience for parkers and largely eliminates the circling for parking which contributes to increased driver frustration, traffic congestion, and collisions. This policy will also ensure turnover of the most convenient curb-parking spaces and availability for customers, particularly where there are concentrations of ground floor retail businesses.
- **Grant City staff authority to establish and adjust hourly rates based on City Council-adopted optimum occupancy standard (85%).** In order for fair market rate pricing to be effective, staff need to be able to respond quickly when occupancy rates dip well below or go over the optimal standard (85% of stalls occupied), rather than having every adjustment to prices be a lengthy political event. Under this policy, the City Council sets the overall goal and then delegates to staff the responsibility of achieving that goal.
- **Plan regular occupancy checks and adjust rates.** Check occupancy and adjust rates (if necessary) at a minimum on a quarterly basis. With new meter technologies, the City should have the capability to monitor hour-by-hour occupancy. Meter rate changes could then be made from the City control center without any need for expensive on-street surveying or staff to adjust meter pricing displays.

Permit Parking

In addition to charging for on-street parking, parking permits are another way to manage demand for on-street parking to ensure that a few parking spaces are available on each block face at all times (i.e. occupancy rates do not exceed 85% at the peak hour). Most often, permit parking districts are established in residential areas adjacent to major traffic generators (e.g. commercial areas, schools and universities, transit stations). This prevents non-residents from occupying on-street parking, and thus maintains the availability of parking spaces for residents and their guests. Permits are issued to residents and their guests, who are able to park all

day, while non permit holders are limited to short-term parking (typically two hours or 90 minutes). Permit districts may also be used to manage the use of parking in commercial and mixed-use districts.

Goals:

- ◊ **Prevent spillover parking in residential neighborhoods**
- ◊ **Preserve the availability of on-street parking for residents of the North Hollis and Doyle Street neighborhoods and other areas where surveys show that parking occupancy regularly exceeds 85%**
- ◊ **Provide the option for limited commuter and/or commercial use of on-street parking in these districts at market rates, without reducing parking availability for local residents/businesses**

Existing Practice:

The City of Emeryville currently has a parking permit area for residents and business owners in "live-work" buildings located on 61st and 62nd Streets and for residents on Beaudry and 59th Streets. Permits are available only to residents, their guests, and businesses located in this area, with the following conditions and exceptions:

- A maximum of three annual permits may be purchased for each address ($20 per year).

- Annual permit holders may buy 1-day (up to 10 per year at $1 each), 2-week (up to 2 per year at $5 each), and/or one 52-week visitor parking permit ($50).
- Contractors with valid building permits for addresses within a permit zone may park at no cost.

Residents of other areas may "opt in" to establish new parking permit areas, or be annexed to existing areas, subject to the following key conditions (among others) :

- Street must be predominantly residential (except for business districts with live-work buildings).
- Parking occupancy in the area must be at least 75% during peak hours.
- A petition to establish the permit area, signed by 66% or more of eligible households and businesses in live-work buildings, must be submitted to the City.
- If the number of requests for permits drops below 50% of eligible units, the City will consider terminating the program on the participating street.

Best Practices

Establishment of Permit Parking Areas

Boulder, CO has established a program of parking permits for specific neighborhoods. The City of Boulder states that "The Neighborhood Permit Parking Program is designed to make Boulder neighborhoods safe and pleasant places to live, work, and attend school by encouraging less driving and reducing on-street parking congestion." Permits are sold to *residents* of a parking zone for $17 per vehicle per year, to *businesses* located within a zone for $75 per year, and to *commuters* for $78 per quarter ($312 per year). Each permit is valid on a specific block, and a maximum of four non-resident permits are issued on any given block face within a zone, but only if the vacancy rate is greater than 25% during daytime. Vehicles without a permit can park once per day but may not re-park on the same day in the zone after the initial time limitation. The program is currently revenue neutral with all revenue from nonresident permits being used to reduce the price of the resident permits.

Santa Cruz, CA has modeled its permit parking program after Boulder's program and provides residential permits in certain districts at a cost between $15 and $20 per year. Commuters can purchase monthly permits at an annual cost of $240; each permit is only valid on a specific block face. The City only sells commuter permits on streets that have resident parking occupancies of less than 75% during the daytime restricted parking hours.

Other examples include Aspen, CO; Tucson, AZ; and West Hollywood, CA.

Establishing a permit parking program can complement the elimination of minimum parking standards by providing the city with a targeted and flexible mechanism to address possible spillover of parking demand. To make paid permit parking politically feasible, the city may elect to "grandfather in" certain existing residents and businesses, charging them lower permit fees or no fees at all.

Conventional residential permit districts often issue an unlimited number of permits to residents without regard to the actual number of curb parking spaces available in the district. In such districts, a permit functions solely as a "hunting license"; a right to search for a parking space with no guarantee of finding one. An opposite problem occurs in areas with a surplus of parking spaces (especially during the day, when many residents are away), but where regulations prevent commuters from parking even when spaces are available, demand is high and motorists would be willing to pay to park. In both cases, conventional residential parking permit districts prevent curb parking spaces from being used most efficiently.

Strategy: Implement a "Residents Plus" Parking Permit Program

Implementation of an efficient permit parking program will differ from conventional parking permit zones in four key ways:

1. Limit the number of permits issued to residents to a number that results in a peak hour occupancy of 85% or less, as determined by an initial city survey supplemented by periodic surveys thereafter (at least biannual). Residents and businesses located in the district should be issued a limited number of permits for a nominal fee.
2. Rather than entirely prohibit nonresident parking, as with many conventional residential parking permit districts, the City should sell permits for any surplus parking capacity to non-resident commuters at fair market rates, up to 90% of available parking supply.
3. Allow residents and visitors to buy non-resident/commuter parking permits by cell phone, with enforcement using license

plate recognition technology, rather than using adhesive permits or rearview hangtags. This supports variable pricing options, and networking capabilities.

4. Finally, prices for non-residents' parking permits should be set at fair market rates as determined by periodic surveys, and all net revenues above and beyond the cost of administering the program should be dedicated to pay for public improvements in the neighborhood where the revenue was generated.

Parking Benefit Districts

Parking benefit districts are areas where net parking revenue – including revenue from parking meters or parking permits, as described below – is returned to the area where it was collected to fund access improvements, streetscape enhancements, and other local priorities.

Existing Practices:

Currently, all revenue collected from parking meters on Bay Street and parking permit sales is allocated to the City general fund. General Plan policy T-P-55 supports parking benefit districts.

Best Practices

Pasadena, CA: The City of Pasadena was the first city in the entire United States to create a Parking Benefit District. In Old Town Pasadena, the city chose to divert all meter revenues collected in this area back to it in the form of public improvements. This approach was key to overcoming resistance of local business owners to charging for parking. The resulting improvements to the streetscape, including conversions of its alleys into walkways with access to shops and restaurants, have transformed the district into a vital shopping, dining, and entertainment area. The choice to fund local improvements in this district benefited the City of Pasadena by vastly increasing property values and resulting property tax revenues. In other cities, similar improvements have been funded using parking benefit districts in which a smaller proportion of the meter revenue is dedicated for improvement in the area where the revenue was generated. For example, San Diego has a 45% local return policy in its three parking meter benefit districts.

Boulder, CO: In Boulder, all downtown parking meter revenue -- more than $1 million per year – is returned to the downtown's business improvement district. Among other things, the revenue is used to fund more than $325,000 per year worth of transportation demand management programs, including a free universal transit pass for all downtown employees, a Guaranteed Ride Home program, ride-matching services, bicycle parking and a number of other benefits.

Portland, OR: In Portland, Oregon's Lloyd District, revenue from the district's meters is given to the district's Transportation Management Association (TMA), providing the funding needed to support the district's universal transit pass program and other services for its member employees.

Goal: Provide revenue for local access improvements and streetscape enhancements

Returning parking revenue to the District is critical to ensure the political viability of using meters and/or permits to manage parking demand, and to expand and enhance alternative modes of access. If parking revenues seem to disappear into the General Fund, where they may appear to produce no direct benefit for the District, there may be less support for installing parking meters, establishing permit parking zones, or for raising rates when needed to maintain decent vacancy rates and prevent cruising traffic. But when District merchants, property owners, residents, and visitors can clearly see that the monies collected are being spent on locally selected projects and programs – especially those which expand transportation choices—for the benefit of their blocks, they are more likely to support parking pricing.

Strategy: Consider Establishing Parking Benefit Districts

Establish Parking Benefit Districts with approval of a majority of property owners and commercial and residential tenants, in areas where it is necessary to maintain 15% on-street vacancy, with all parking revenues returned to benefit local residents and businesses. This strategy involves the following key elements:

- Dedicate all net parking revenue to public improvements and services that benefit the tenants and property owners in the areas where the revenue was raised.
- Define and establish geographically specific Parking Benefit Districts to implement these recommendations.

"Net revenue" means total parking revenues from the area, less collection costs, such as purchase and operation of the meters, enforcement, and the administration of the district.

"Unbundled" Parking

Typically, residential and commercial space is packaged, or "bundled" with the cost of associated off-street parking spaces when it is leased or sold in Emeryville. Where this is done, consumers are not aware of the high cost of building, operating, and maintaining parking. As a consequence, many businesses and residents in the city may own or lease more parking than they actually need (at great cost to themselves and to the city). Most importantly, if parking is not a separate line item in their lease agreement, even those who are aware of the true costs of parking may not be able to realize cost savings by reducing their own parking demand (e.g. by facilitating, subsidizing, or promoting the use of carpooling and non-auto alternatives, or by passing parking costs on to visitors and/or employees).

To facilitate shared parking, employer-based TDM, and other sustainable modes, the City can adopt a requirement that property owners separate, or "unbundle" parking from the lease or sale of residential or commercial property in the city. With the cost of parking revealed, consumers (buyers or lessees of commercial or residential space) can realize cost savings by reducing the amount of parking they use.

Goals:

- ◊ **Increase the use of non-auto modes of access**
- ◊ **Remove hidden and inefficient subsidies for little used parking**
- ◊ **Facilitate a private market for parking services**
- ◊ **Increase housing affordability**
- ◊ **Lower businesses' costs to lease commercial space in the city**
- ◊ **Reduce vehicle ownership and use**

Existing Practice:

A few properties in Emeryville currently offer parking separately as proposed. Policy T-P-59, of the adopted Emeryville General Plan, states that "Development will be required to "unbundle" parking spaces from lease payments and condominium purchases, so that property lessees and buyers can choose whether to pay for parking spaces." This requirement has not yet been codified by ordinance.

Best Practices

Several cities on the West Coast have adopted ordinances requiring the separation of parking costs in commercial and residential lease and sale agreements. The following can serve as models for the development of a similar ordinance and associated enforcement measures in the City of Emeryville:

Required unbundling of parking in commercial lease agreements, Bellevue, WA

Bellevue "requires building owners to include parking costs as a separate line item in leases and to charge a minimum rate for monthly long-term parking that is equal or greater than the cost of a bus pass. This makes it easier for employers to determine the value of their current parking subsidies [when employers are establishing employee parking charges or parking cash-out programs]." Additionally, this policy means that employers who successfully reduce parking demand and traffic to their work sites are able to reap financial benefits by leasing fewer parking spaces. As part of its downtown transportation management program ordinance, Bellevue requires that:

> *1. The owner of a building with 50,000 gross square feet or more of office shall… perform or cause to be performed the following elements….*
>
> *c. Identification of parking cost as a separate line item in such leases and a minimum rate for monthly long-term parking, not less than the cost of a current Metro two-zone pass….*
>
> *2. Duration. The programmatic requirements shall continue for the life of the building.*
>
> *Source: City of Bellevue, Section 14.60.080, http://www.bellevuewa.gov/bellcode/Bellevue14/Bellevue1460.html*

Required unbundling for residential developments, San Francisco, CA.

In April 2008, the City of San Francisco expanded its previous unbundling ordinance to require all residential developments in Downtown Residential Districts (DTR), Downtown Commercial Districts (C-3), Residential Transit Oriented Neighborhood Districts (RTO), and Neighborhood Commercial Transit Districts (NCT) to unbundle parking costs from housing costs. Previously, unbundled parking requirements were done on an ad-hoc basis through the conditions of approval process under the jurisdiction of the Planning Commission or required under a neighborhood specific plan (e.g. Rincon Hill, Downtown and Market\Octavia).

Under Section 167 of the San Francisco Municipal Code, "all off-street parking spaces accessory to residential uses in new structures of 10 dwelling units or more, or in new conversions of non-residential buildings to residential use of 10 dwelling units or more, in the aforementioned districts, shall be leased or sold separately from the rental or purchase fees for the life of the dwelling unit." Currently, there are no tracking and enforcement procedures in place.

Parking costs are generally subsumed into the sale or rental price of offices and housing for the sake of simplicity, and because that is the more conventional practice in real estate. But although the cost of parking is often hidden in this way, parking is never free. Each space in a parking structure can cost upwards of $30,000; in Emeryville, given land values, surface spaces can be similarly costly.

Unbundling parking costs changes parking from a required (and hidden) purchase to an optional amenity, so that households and employers can freely choose how many spaces they wish to lease. Especially among households with below average vehicle ownership rates (e.g., low income earners, singles and single parents, seniors on fixed incomes, and college students), this choice can provide a substantial financial benefit. Unbundling parking costs means that these households no longer have to pay for parking spaces that they may not be able to use or afford.

Strategy: Unbundle Parking from Commercial and Residential Lease/Sale Agreements

To implement General Plan Policy TP-59, the City should adopt an ordinance establishing specific "unbundling" requirements for commercial and residential property-owners, and associated enforcement measures. Sample ordinance language is provided below.

Sample Ordinance Language: "Unbundled" Parking Costs Required

Separation of Parking Costs Required. All off-street parking spaces accessory to commercial and residential uses shall be leased or sold separately from the rental or purchase fees for the life of the use, such that potential renters or buyers have the option of renting or buying at a price lower than would be the case if there were a single price for both the commercial and/or residential space and the parking space. The cost of parking shall be clearly itemized from the cost of commercial and/or residential space. The minimum price for a parking space shall be the full cost of providing the space, including construction costs (hard and soft), land costs, and operating costs, adjusted annually by the California Construction Cost Index.

A. Owners of all tenant occupied buildings shall not lease parking for a longer period than one year and tenants shall be allowed to reduce their number of leased parking spaces at any time without penalty

B. If the Owner is found not to be in compliance with these tenant lease requirements, the Owner shall be found out of compliance with code, and may be subject to a fine payable to the City, at an amount not to exceed the product of each non-compliant tenant's total employees, times the number of days not in compliance, times the average all-day parking rate at the nearest paid parking facility.

Monitoring and Enforcement

Compliance with this requirement for the separation or "unbundling" of parking costs may be monitored by one or more of the following methods: (1) self, or "voluntary" implementation (with no government oversight or verification), (2) audits (either regular or "spot") by City staff, or (3) submission of an affidavit affirming compliance.

In light of the simplicity of compliance with such a requirement, we recommend that the City use either method (2) audits, or (3) affidavit submission, or a combination thereof to monitor and enforce the proposed code language above. At a minimum, occasional "spot" audits shall be conducted to ensure that property-owners (under threat of penalty as provided for in proposed code Section B), are unbundling, and that they are using appropriate methods to determine the "market value" of parking, separate from that of the primary commercial and/or residential space leased.

Property owners and employers may be fined (as provided for in the Proposed Code Language, above). If fines alone are insufficient to compel an employer to comply, the City may opt to (a) shut down any and all parking facilities that are owned by the property owner/employer deemed to be in violation, or (b) to revoke the municipal business license of such violators.

Employer "Cash-Out" of Parking Subsidies

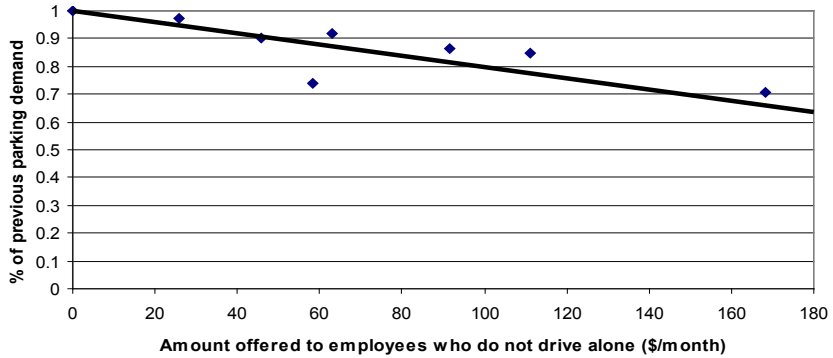
The majority of employers in the Bay Area provide free or reduced price parking for their employees as a fringe benefit. Under a parking cash-out requirement, employers are allowed to continue this practice *on the condition that they offer the cash value of the parking subsidy to any employee who does not drive to work*. The primary benefit of a parking cash-out program is its proven effect on reducing auto congestion and parking demand (See Figure 4-12).

Other benefits of parking cash-out are numerous, and include:

- Provides an equal transportation subsidy to employees who ride transit, carpool, vanpool, walk or bicycle to work.
- Provides a low-cost fringe benefit that can help individual businesses recruit and retain employees.
- Employers report that parking cash-out requirements are simple to administer and enforce, typically requiring just one to two minutes per employee per month to administer.

Figure 4-12 illustrates the effect of parking cash-out at seven different employers located in and around Los Angeles. It should be noted that most of the case study employers are located in areas that do not have good access to transit service, so much of the reduced parking demand that occurred with these parking cash-out programs resulted when former solo drivers began carpooling.

Figure 4-12 Effects of Parking Cash-out on Parking Demand



Source: Derived from Donald Shoup, "Evaluating the Effects of Parking Cash-out: Eight Case Studies," 1997. Based on the cost in 2005 dollars.

Figure 4-13 Plan for Eastern Approaches to the South Bayfront Pedestrian-Bicycle Bridge

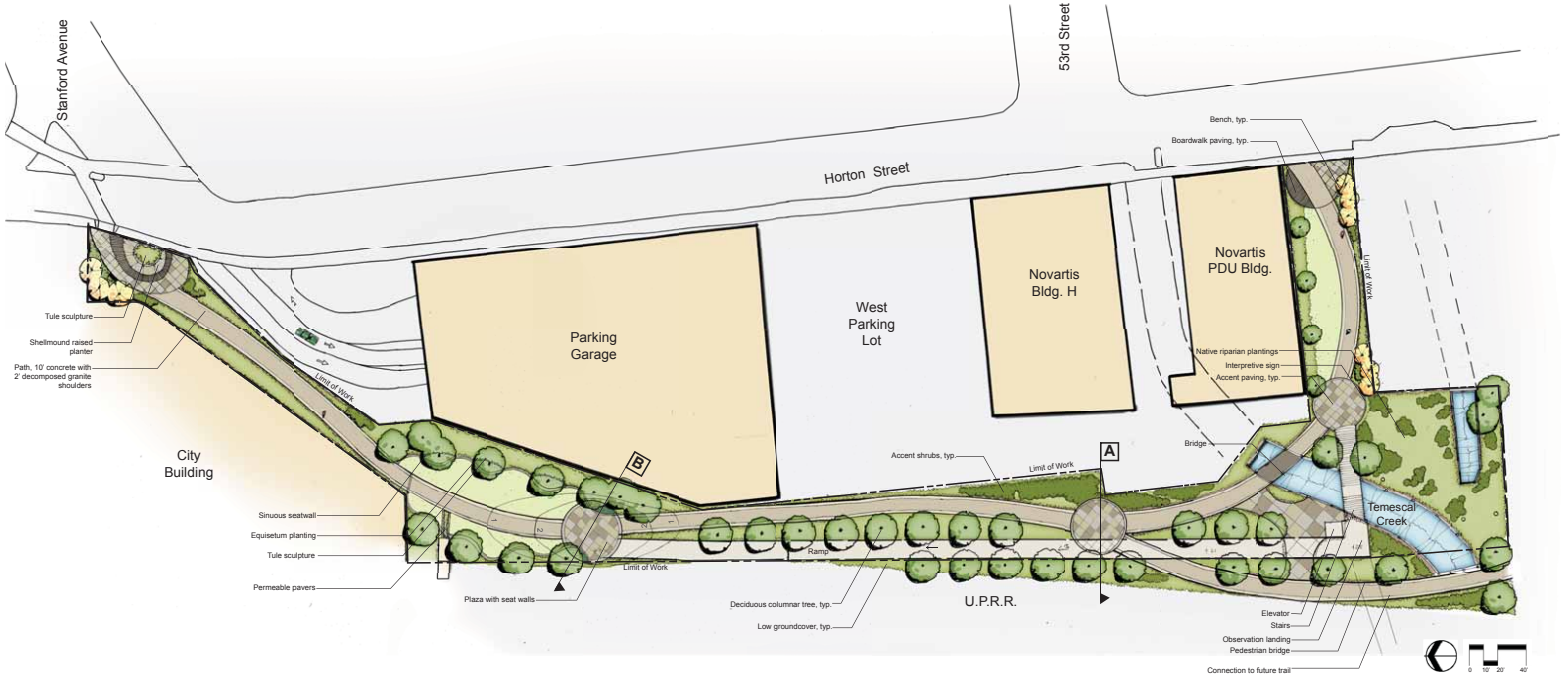


Image from City of Emeryville

The benefit is particularly valuable to low-income employees, who are less likely to drive to work alone. It also provides a low-cost fringe benefit that can help individual businesses recruit and retain employees.

Where implemented, parking cash-out has proven especially cost-effective at encouraging travelers to shift from driving alone to more sustainable modes of transportation (the study of seven Southern California employers referenced in Figure 4-12 demonstrated that cash-out reduced commute vehicle miles traveled, and associated CO2 emissions, per employee, per year, by 12%). However, the impact of the state parking cash-out law is muted by several factors:

- State law currently only applies to about 8% of employers (those with 50+ employees who lease, rather than own their own parking facilities), and
- The California Air Resource Board (CARB) does not have authority to enforce the law (currently, many employers may not even be aware that they are subject to the law).

Goal: Subsidize all employee commute modes equally and create incentives for commuters to carpool, take transit, and bike or walk to work.

Existing Practice:

California State Law requires employers with 50 or more employees that lease parking to "cash-out" parking subsidies for their employees; that is, to provide employees with the option of receiving cash or other non-taxable transportation benefits of equivalent value to and in lieu of subsidized parking. In addition, the law also encourages all employers to adopt this practice, regardless of size. This practice is supported by the Emeryville General Plan as well.

State law provides no means of enforcing compliance with this requirement, so enforcement is left up to local governments. Many Emeryville employers are subject to this law, but neither the City of Emeryville nor Alameda County has adopted or implemented a local means of monitoring or enforcing compliance with this important state law. No data are available on the number of employers subject to the law, or current rates of compliance.

California State Law requires employers with 50 or more employees that lease parking to "cash-out" parking subsidies for their employees; that is, to provide employees with the option of receiving cash or other non-taxable transportation benefits of equivalent value to and in lieu of subsidized parking. However, no data are available on the number of employers subject to the law or levels of compliance.

Best Practices:

Since 1996, the City of Santa Monica has required all employers subject to California's parking cash-out law to include parking cash-out as part of their local vehicle trip reduction plan. The City requires proof of compliance with the State of California's parking cash-out law before issuing occupancy permits for new commercial development. Another enforcement mechanism that has been considered in San Francisco (but not yet implemented) is to require employers to provide proof of compliance, via an affidavit signed by a company officer, when they apply for, or renew their business license or pay their annual business taxes. This method ensures that all employers are in compliance with parking cash-out requirements on an ongoing basis, rather than limiting proof of compliance to a one-time enforcement action for employers occupying new or renovated commercial buildings.

Strategy: Require Employers to "Cash-Out" Parking Subsidies

To implement General Plan Policy T-P-53, regarding the encouragement of parking cash-out, and T-A-19, regarding the study and implementation of a Citywide Transportation Demand Management Program, the City should adopt a local ordinance requiring all employers with 10 or more employees at worksites in Emeryville to offer cash or other non taxable transportation benefits in-lieu of and equal to the value of subsidized parking to all employees who do not drive alone to work.

One option for enforcement of such a requirement is to add an ordinance provision requiring that employers demonstrate, by submission of an affidavit with their application for renewal of their business license, that they offer cash in-lieu of free or subsidized parking at the workplace to all employees who use sustainable transportation modes to commute to and from their worksite(s) in Emeryville.

Enacting a local means of enforcing that state parking cash-out law, as was authorized in the 2010 legislative session by adoption of SB 728 (Lowenthal), would

expand the vehicle trip reduction and parking demand reduction benefits of parking cash-out in the City of Emeryville, and help the City meet its climate protection goals. Moreover, adding a local requirement that employers with 10-50 employees offer cash in lieu of parking subsidies, would further expand the impact of cash-out up to 500% by making a much higher share of employers subject to the requirement.

These programs can be implemented at little to no cost to employers and the City.

Electrical Vehicle Charging

Existing Practice:

Emeryville's zoning ordinance currently allows the Planning Commission to require electrical charging stations in parking lots containing 50 or more parking spaces.

Strategy: Provide Electric Vehicle Charging Circuits for Residential Parking

Plug-in electric vehicles ranging from plug-in hybrid cars to golf carts to electric bicycles are becoming more available and popular. People need a place to recharge these vehicles. Electric bicycles and golf carts can be recharged from common 110-volt wall outlets. Some electric cars can charge at a dedicated 120-volt or a 240-volt outlet. Others use 240-volt charging stations. A separate electric meter can apply lower billing rates for charging at night. To prepare for electric vehicles, the City could require dedicated 120-volt and 240-volt circuits in residential projects. This would allow an electric car and an electric bicycle or golf cart to charge at the same location.

Parking Stall Sizes

Existing Practice:

Emeryville allows 60% of parking stalls to be compact; the other 40% must be standard size. Drivers of standard-size cars tend to park in the compact spaces, crossing the lines and blocking adjacent spaces. To solve this problem, some developers use a higher percentage of standard stalls than required, and some cities allow some development projects to have all universal or uniform parking stalls. These stalls are intermediate between compact and standard size. These cities require case-by-case approval for this approach or limit it to multi-level parking garages.

Strategy: Consider Uniform Parking Stall Sizes

The City could consider allowing uniform parking stall dimensions in parking garages on a case by case basis. Uniform parking stalls would reduce the amount of space devoted to parking compared to voluntary provision of more than 50% standard spaces, and would avoid the problem of larger vehicles parking in compact stalls. They would, however, be a bit tight for larger vehicles.

Location of Car and Bicycle Parking and Walkway Access

Existing Practice:

The Emeryville Design Guidelines address pedestrian entries, bicycle parking location, and motor vehicle parking location. However, they do not address the relative distance between residential units and pedestrian, bicycle and motor vehicle access. Historically, development projects have made motor vehicle parking as convenient as possible, and addressed pedestrian and bicycle access as something of an afterthought.

Strategy: Locate Walkway Access and Bicycle Parking Closer to Occupied Spaces in Buildings than Auto Parking

Designing development projects so that residential units, offices, stores, classrooms, and industrial and laboratory spaces are closer to sidewalks, paths and bicycle parking than they are to motor vehicle parking could help to shift transportation mode choices. The City could require this as a part of design review, and perhaps eventually add it to the Design Guidelines.

Pedestrian Connectivity and Safety

In addition to being a mode most people use, walking also serves as a critical component in promoting various sustainable strategies. As an example, walking is a free means of accessing public transportation and is a practical option given the level of transit service within Emeryville. Furthermore, it will be challenging to increase transit usage, carsharing, and other sustainable strategies if the means of accessing these services are unsafe or circuitous.

Pedestrian Planning Framework

Currently, there are several planning documents that directly relate to the pedestrian experience and future pedestrian plans in Emeryville. These include:

- Emeryville General Plan Transportation Element
- Emeryville Parks and Recreation Strategic Plan
- Bicycle and Pedestrian Master Plan Update *(In Progress, due for completion in 2011)*
- Design Guidelines

Emeryville's existing traffic calming devices help reduce traffic speeds in residential neighborhoods, improving pedestrian safety.

While these four documents all touch upon different means to shape the pedestrian environment, the goals outlined in the General Plan Transportation Element may best summarize Emeryville's vision for the pedestrian realm:

- A walkable city—A universally accessible, safe, pleasant, convenient, and integrated pedestrian system that provides links within the City and to surrounding communities and reduces vehicular conflicts.
- Walking will be encouraged through building design and ensure that automobile parking facilities are designed to facilitate convenient pedestrian access within the parking area and between nearby buildings and adjacent sidewalks. Primary pedestrian entries to nonresidential buildings should be from the sidewalk, not from parking facilities

Safe pedestrian walkways that link to streets and adjacent bus stops will be required of new development.

Pedestrian Network and Infrastructure in Emeryville

Several essential pedestrian facilities help bridge major connectivity gaps created by barriers in Emeryville such as Interstate 80 and the Union Pacific/Amtrak railroad tracks. These include six crossings over the railroad tracks:

- The 40th Street Bridge
- Powell Street pedestrian overpass
- Amtrak pedestrian-bicycle elevator crossing
- At-grade crossings at 65th, 66th, and 67th streets

Efforts have been implemented to improve the connectivity and aesthetics of the Interstate 80 underpass including a pedestrian path that has been separated from the roadway and art installations that help illuminate the facility at night. These crossing points are critical for Emeryville pedestrians and should be given appropriate support to ensure that they are safe, easily legible in terms of wayfinding, and well-maintained. Such steps will ensure that these "community connectors" are effectively utilized.

While numerous achievements in further developing the pedestrian network have been attained, there are several areas in Emeryville where sidewalks do not yet exist on one or both sides of the street (e.g. portions of Overland Street), areas where sidewalks are not complete (e.g. por-

tions of Shellmound Street), and key locations where pedestrian conditions could be improved (e.g. Powell Street overpass). These issues and subsequent examples are those that would be appropriate to note within the forthcoming Pedestrian and Bicycle Plan Update and should be addressed based on the goals outlined in the Emeryville General Plan.

In addition to the efforts to update the Pedestrian and Bicycle Plan, there are also other significant projects that are underway that could provide substantial improvements to the pedestrian realm. The first project is the South Bayfront Pedestrian-Bicycle Bridge over the railroad tracks between Bay Street Center and Hollis Street. This link will provide users on the east side of the railroad tracks a safe and direct link to the retail options at the Bay Street Center, IKEA, and other nearby stores. This project is funded and in the design stage. Another bicycle pedestrian bridge is currently being studied to cross Interstate 80 near 65th Street, which would provide a critical link between the Emeryville Greenway and the Bay Trail. In January 2010, CalTrans approved the Project Study Report (PSR), which was an initial step in moving the project forward. Currently, the City of Emeryville is investigating potential alternatives and environmental analysis. A final important project investigates the pedestrian challenges at the intersection of Interstate 80, the I-80 Frontage Road, and Powell Street. On June 2010, a design was presented to Emeryville City Council that proposed circulation changes that would improve pedestrian safety at this intersection. Projects such as these further validate Emeryville's commitment to pedestrians and should be fully supported.

Proposed Pedestrian Strategies

This section highlights key tools and strategies that could be employed in the City of Emeryville to improve pedestrian connectivity and safety and to promote walking as a healthy and efficient mode of access and mobility. Any or all of the following tools and strategies could be implemented as pilot projects, particularly those under the programmatic category. Specific locations and implementation details of each could be determined in the forthcoming update to the Bicycle and Pedestrian Master Plan, which will apply these and other strategies to make Emeryville a more accessible, convenient, and comfortable place to walk.

Access to Bus Stops and Across San Pablo Avenue

Existing Practice:

Two of Emeryville's bus stops lack crosswalks, while four crosswalks lack stop signs. Half of the bus stops have adequate sidewalk access. Most of the others are on sidewalks that are about five feet wide between tree wells but only about three feet wide at tree wells. Six stops lack good wheelchair access. Other stops have obstacles such as trash bins, plantings, a light pole, and changing pavement material. Two stops lack continuous sidewalk access. Some but not all of Emeryville's signalized intersections have countdown signals.

San Pablo Avenue serves several bus stops and divides the Triangle Neighborhood from the rest of the city, notably Emery Secondary School. Crossing San Pablo Avenue can be a challenge, especially at the intersections with no traffic signals.

Strategy: Improve Crosswalks and Sidewalks and Install Countdown Signals

Crosswalks, crosswalks stop signs, wheelchair access and removal of obstacles at bus stops should take high priority. This goal can help to prioritize implementation of Emeryville's Americans with Disabilities Act compliance plan. Crosswalk improvements could include pavement markings, signs, curb extensions, reduced curb radii, pedestrian refuges, flashing lights, and pedestrian-activated signals. The more visible improvements could be useful on San Pablo Avenue and other busy streets. Countdown signals should be installed at the signalized intersections that lack them. The City could look for ways to widen sidewalks around tree wells; those on 40th Street could be filled in because the trees are well away from the sidewalk. Countdown signals help pedestrians gauge whether they have time to cross on the current cycle or need to wait for the next cycle.

Wait Time at Signals

Existing Practice:

At Emeryville's traffic signals, pedestrians have to press a button to get a walk light. If the pedestrian arrives soon after the light turns green, the walk light will not come on until the next cycle. At some signals, the walk light only flashes for 2-3 seconds.

Strategy: Reduce Pedestrian Wait at Signals

The City has three options for reducing walk time: give the walk light enough time so the walk light can come on if the button is pressed soon after the green light comes on, provide two walk lights per cycle, or provide a walk light during each cycle without the need to push a button. In any case, walk lights should be given enough time so that they can stay on for four or five seconds before they begin flashing.

Street Design Manual

The public right-of-way is one of the most important factors that impacts pedestrian connectivity and safety. It is also one of the larger—if not the largest—public assets that the city controls and owns that has direct influence on pedestrian conditions. While street-design guidelines exist at the state, federal, and local levels, these may not adequately address specific issues and priorities that have been voiced by the City and its residents, employees, and visitors. In addition to the sidewalk and street sections of the Design Guidelines, the forthcoming Pedestrian and Bicycle Plan Update will make recommendations that affect street design. A street design manual tailored to local conditions could serve as a reference for building, operating, and maintaining new and existing roads for both public streets and publicly-accessed private streets. Such a document would ensure that over time, all streets that are constructed or reconfigured would be completed to consistent standards that meet City goals and would represent the best designs for purposes of promoting safety for both vehicles and non-motorized users.

Goals:

- ◊ **Establish consistent design standards for public rights-of-way that reflect city goals of multi-modal connectivity and safety.**
- ◊ **Advance best-practices in street design, including traffic calming and "complete streets."**
- ◊ **Provide guidance to City departments, other public agencies, and community stakeholders on design and operational priorities to help resolve the inherent tensions and trade-offs between different users of public rights-of-way (e.g. the needs of bicyclists and transit vehicles on Horton St.).**
- ◊ **Provide guidance for new developers who wish to include publicly-accessible private streets and ensure these streets are consistent with multi-modal design standards.**

Existing Practice:

Although the sidewalk and street sections of the Design Guidelines address street design, there is no detailed street design manual developed by the City of Emeryville. The City of Emeryville currently derives its street design details from Caltrans and other state or federal guidance.

Best Practices:

Currently, numerous other cities across the country have developed street design guidelines and/or manuals that place emphasis on pedestrian safety and provide guidance on best practices to ensure consistent and appropriate design of streets for users of all modes. These include Charlotte, New York City, Los Angeles, and Portland to name a few. San Francisco has also developed an extensive street design manual called the "Better Streets" Plan, which is currently in draft form and under environmental review.

Figures 4-14 and 4-15 are excerpts from other cities' street design guidelines and/or manuals.

The plans noted and depicted above represent expansive documents that may contain more detail than what would be required for a smaller community such as Emeryville. However, regardless of depth or breadth of analysis, these manuals provide baseline level of guidance for public and private stakeholders in these cities and illustrate communities' desire to develop a street network that reflects multi-modal policy priorities.

Strategy: Develop a Street Design Manual Incorporating "Complete Streets" Concept

While it is understood that many of these cities are larger in scale and in size as compared to Emeryville, their work and research efforts can be utilized for developing similar guidelines in Emeryville. Additionally, the level of detail and specificity within a street design manual may vary widely. For example, a street design manual could simply outline general principles and priorities for street design, could include conceptual level street designs and treatments based on a variety of typical streets, or could provide detailed designs for preferred geometries and dimensions for each street. In addition to design guidance, a street design manual can include performance measures for each street based on its land use context and operational characteristics; this information can help City agencies evaluate the performance of existing and proposed street designs. Defining a level of specificity for a potential street design manual for the City of Emeryville would be a City decision based on current needs and goals. The manual should incorporate ideas from AC Transit's *Designing With Transit* and the Congress for New Urbanism's *Context Sensitive Design Manual*.

Pedestrian Crossings and Amenities

In addition to planning and developing new pedestrian facilities, one of the most cost-effective ways to enhance the pedestrian environment in Emeryville would be to enhance the numerous pedestrian facilities that currently exist.

Goal: Utilize existing pedestrian facilities to the fullest extent by ensuring they have appropriate amenities.

Existing Practice:

Crosswalk treatments include striped crosswalk markings at signals, countdown signals, pedestrian-activated signals with audio warnings, bulb-outs and median refuges. In terms of signal phasing, one intersection has a leading pedestrian interval and one has an all-way pedestrian phase. The City's Americans with Disabilities Act (ADA) plan details needed improvements to curb cuts and crosswalks to meet ADA requirements.

Figure 4-14 San Francisco Better Streets Plan

COMMERCIAL THROUGHWAYS

Commercial throughways such as Van Ness Avenue or Divisadero Street move significant volumes of people across town in a variety of travel modes and attract them to shop, eat, and play from across the city. Vehicular traffic on these throughways tends to be relatively fast and continuous and transit service is often frequent. These streets should have a comfortable pedestrian realm with significant pedestrian amenities and public spaces.

Typical section

CONSIDERATIONS

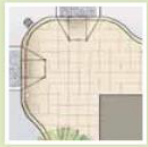
- High levels of pedestrian activity
- Desire for generous pedestrian environment and public realm
- High volume and speed of through traffic
- Important transit functions
- Access needs for local businesses

Commercial throughways attract a high volume of pedestrians and visitors, and are also significant transportation corridors

STANDARD IMPROVEMENTS

Marked crosswalks with curb ramps (Section 5.1)

Pedestrian signals (countdown and APS) (5.2)



Corner curb extensions (5.2)

Street trees (6.1)

Sidewalk planters (planter boxes) (6.1)

Stormwater control measures (6.2)

Pedestrian-scale lighting (6.3)

Special paving in furnishings zone (6.4)

Site furnishings (6.5)

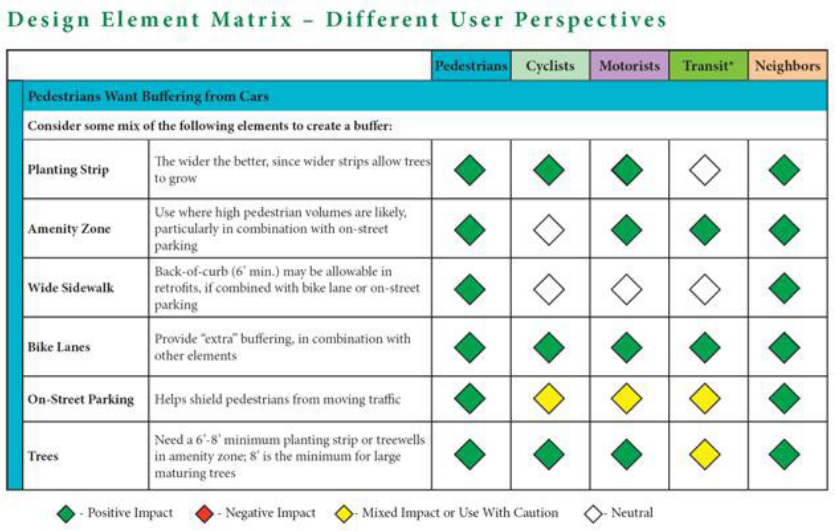
ADDITIONAL GUIDELINES

- Tree grates should be considered in high pedestrian volume areas, or where capital and maintenance budgets allow.
- For specific stormwater control measures, see Section 6.2.

The San Francisco Better Streets Plan provides guidance on a variety of street treatments that benefit pedestrian safety.

Source: San Francisco Better Streets Plan Draft

Figure 4-15 Charlotte Urban Street Design Guidelines



Design Element Matrix – Different User Perspectives

		Pedestrians	Cyclists	Motorists	Transit*	Neighbors
Pedestrians Want Buffering from Cars						
Consider some mix of the following elements to create a buffer:						
Planting Strip	The wider the better, since wider strips allow trees to grow	◆	◆	◆	◇	◆
Amenity Zone	Use where high pedestrian volumes are likely, particularly in combination with on-street parking	◆	◇	◆	◆	◆
Wide Sidewalk	Back-of-curb (6' min.) may be allowable in retrofits, if combined with bike lane or on-street parking	◆	◇	◇	◇	◆
Bike Lanes	Provide "extra" buffering, in combination with other elements	◆	◆	◆	◆	◆
On-Street Parking	Helps shield pedestrians from moving traffic	◆	◆	◆	◆	◆
Trees	Need a 6'-8' minimum planting strip or treewells in amenity zone; 8' is the minimum for large maturing trees	◆	◆	◆	◆	◆

◆ - Positive Impact ◆ - Negative Impact ◆ - Mixed Impact or Use With Caution ◇ - Neutral

Charlotte's Urban Street Design Guidelines provides various strategies and analyzes their effects on other modes.

Source: Charlotte Department of Transportation

Strategy: Enhance Pedestrian Facilities with Crossing Treatments and Amenities

Enhancements could include crossing improvements such as curb cuts and crosswalk markings, and amenities such as trees, plants, benches and trash bins.

Planting and Maintenance of Freeway and Railroad Buffers

Existing Practice:

There are several "no man's lands" between the freeway or railroad tracks and the pedestrian realm, where the City is not responsible for planting or maintenance. The adjacent pedestrian realm suffers from the lack of planting or maintenance of the buffer area owned by Caltrans or Union Pacific Railroad. An example is the sidewalk and bus stop across Shellmound Street from Bay Street Center. This pedestrian infrastructure fronts a Caltrans-owned freeway buffer, which is not necessarily designed or maintained with pedestrian comfort or amenity in mind.

Strategy: Work with Caltrans and the Railroad To Plant and Maintain Buffer Land

The City could propose agreements with Caltrans and Union Pacific Railroad allowing the City to plant and maintain the property. Making small improvements and improving maintenance could provide an additional level of pedestrian comfort and a sense of safety and security.

Pedestrian Environment Under the Freeway

Creating a pedestrian-friendly environment on sidewalks and paths that cross under freeways is a challenge. The I-80 freeway is a major barrier separating much of Emeryville from its waterfront, and separating Peninsula residents and workers from the rest of the City.

Existing Practice:

Emeryville has installed art and lighting on Powell Street under I-80, along the sidewalk and in front of the Bay Trail mixed-use path. Caltrans has installed colored pavers under the center of the freeway, and planted roses under the edges. The walls of the underpass are some distance from the sidewalks and path.

Best Practices:

The photos at right show pedestrian environments under freeways that have been enhanced as a result of small aesthetic and lighting improvements. For example, the lower photo illustrates recent improvements at the MacArthur BART Station and shows how lighting and artwork can dramatically improve the pedestrian experience of a previously substandard link in the pedestrian network. Poetry is written on the underpass rafters between 4th Street and the Amtrak station under University Avenue in Berkeley.

Strategy: Improve and Activate the Pedestrian Environment on Powell Street under I-80

Implementing the Powell Street Urban Design Plan will enhance the underpass environment. Phase I includes straightening the mixed-use path to provide a clear view under the freeway, placing bus stops on the I-80 ramps, providing lighting and/or art features that convey the Bay Trail connection. Phase II includes creating a pedestrian-bicycle path on the north side of Powell, adding a motor vehicle ramp connector south of the path, adding a crosswalk on Powell at the east side of the overcrossing, adding new decorative light fixtures on both sides of Powell, and creating new opportunities for more public art on the paths. Art could include light art such as neon or beam splitters creating multicolor beams of light. Poetry could be added to the underpass as a community project.

Maintenance of Pedestrian Facilities

The costs for enhanced maintenance are low compared to the costs of capital projects, and can be implemented relatively quickly (without the long lead time associated with capital projects for planning, design, environmental review, approval, and construction). In a word, improved maintenance to existing pedestrian facilities can immediately help bridge connectivity gaps and improve pedestrian comfort and safety. Examples of these types of maintenance improvements includes increased sidewalk cleaning and improved maintenance of street trees and pedestrian lighting.

Goal: Ensure that maintenance protocols regarding the pedestrian realm are consistent with the city's goals and priorities regarding pedestrians.

Existing Practice:

Currently, the Public Works Department has a direct line to field questions regarding maintenance of any of their facilities. However, at this time there is no stated feedback mechanism or standardized timeline or protocol for how these questions are handled.

When the Public Works Department sees a trip-and-fall hazard, they grind down the sidewalk if that will solve the problem. If the sidewalk needs to be rebuilt, it waits until it can be incorporated into a larger project. For example, several sidewalk segments have been rebuilt as part of the Triangle Neighborhood traffic calming project. Sidewalk improvements are often made as adjacent properties redevelop; developers must provide disabled access from the nearest bus stop. The Public Works Department inspects all of the street lights at night once a month and has problems addressed right away. The Department is setting up a street light contract to add immediate response to calls. Fallen trees are removed immediately.

Lighting and art can be used to enhance pedestrian facilities under freeways.

Best Practices:

Arlington County in Virginia conducts routine surveys of concrete facilities in the public right-of-way and replaces deficient sidewalk, curb, gutter and handicap ramps as necessary.

Strategy: Consider Defining and Reviewing Pedestrian Facility Maintenance Protocol

Create a stated feedback mechanism and a standardized timeline and protocol for handling questions regarding maintenance of City facilities. Work with Caltrans and Union Pacific Railroad on maintenance of buffer property, possibly proposing an agreement allowing the City to maintain the property.

In order to ensure that existing protocols for maintenance of the pedestrian realm are appropriate, the City should conduct a top-to-bottom review of its maintenance practices for pedestrian infrastructure. Questions to be addressed could include:

- How are damaged sidewalks, worn crosswalk markings, dead or missing trees, and broken street lights identified? How quickly are these issues remediatied?
- How often are key pedestrian facilities like sidewalks and bus transit shelters cleaned or maintained?

The findings of this audit can be used to revise maintenance protocols, adjust department responsibilities, institute greater accountability for outcomes, and prioritize funding. Although a comprehensive audit of these issues may take time to complete, there are several steps that the City could take now to improve maintenance attention on the pedestrian realm as discussed below.

Online Technology for System Monitoring

To help locate maintenance needs and to also help engage residents in improving pedestrian conditions, online tools such as SeeClickFix can be utilized to help improve communication and collaboration.

Goal: Leverage technology and citizen knowledge in order to identify pedestrian conditions, issues, and problem areas

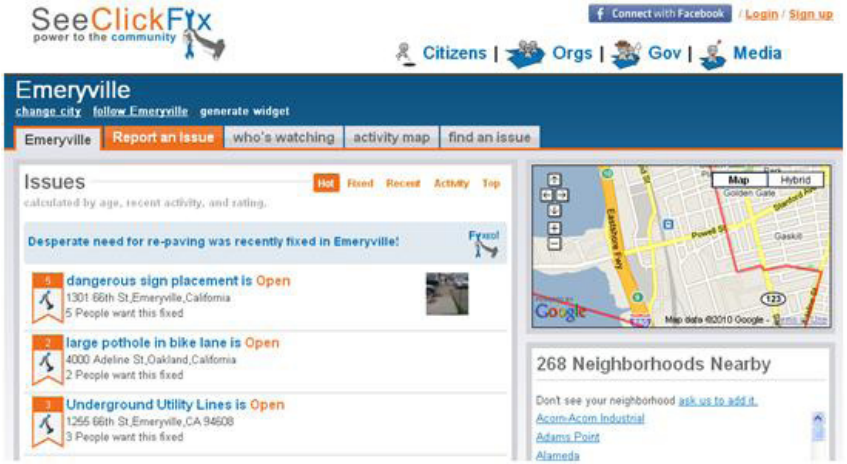
Existing Practice:

Based on initial observation, it appears that local users and the City have had limited dialogue on SeeClickFix, but no formal mechanism of integrating the website as a tool has been developed. In addition, the SeeClickFix tool has not been publicized via the City of Emeryville website or other City communication channels as a means of providing public feedback on maintenance needs in the pedestrian realm.

Best Practices:

A great benefit of an online service such as SeeClickFix is that it enables smaller cities with limited resources to provide its residents and businesses with a public feedback tool similar to 311 in San Francisco or New York City. It is able to do so without high levels of overhead for program maintenance or administration. The tool in some ways is more effective than dial-in numbers because it provides an online record that is transpar-

Figure 4-16 SeeClickFix Online Tool



SeeClickFix is an online tool that can be used to help local governments identify local issues from online users

Image from Nelson\Nygaard

ent for both contributors and viewers. While this tool is free, if not utilized, it provides no additional benefit. Thus, if the City were to utilize such a tool, it must establish policies that incentivize effective responses to user-provided requests. In doing so, it would further promote usage of the system and civic engagement from businesses and residents who wish to improve conditions in Emeryville.

Strategy: Utilize Reporting Technology for System Monitoring

Study, adopt, and publicize an online tool such as SeeClickFix to help the public report maintenance needs of sidewalks and paths. Look into potential for a smart phone application for reporting problems.

Repurposing On-Street Parking

Temporary or semi-permanent pedestrian amenities could be placed in parking lanes that are not always highly utilized. The space could be repurposed to be café seating, parklets, or bicycle parking, among other creative uses.

"Parklet" Used to Replace On-street Parking in San Francisco.
Image from San Francisco Planning Department

Goal: Allow the usage of roadway capacity to benefit pedestrians and other modes

Existing Practice:

The City is using the sidewalk café ordinance for a parklet.

Best Practices:

While repurposing existing on-street parking lanes or stalls for the benefit of pedestrians is a somewhat new concept, pilots have been emerging throughout the country as an example of how parking spaces can be reused for a variety of things. Examples include space for additional café seating and general space for additional sidewalk width during high-pedestrian traffic times.

The photo at left shows a "parklet" in San Francisco that was developed to replace two parking stalls in the city's North of Panhandle neighborhood. While this facility was designed to be a semi-permanent installation, some cities are developing guidelines to enable parking lanes to be used as pedestrian spaces during lunch, afternoon, and evening hours while allowing on-street parking and deliveries during other times. As an example, San Francisco's Draft Better Streets Plan presents guidelines for flexible use of parking lanes in settings where it is appropriate.

Strategy: Repurpose Some On-Street Parking Spaces for Pedestrian Amenities

During peak travel periods such as morning and evening commutes and during the day on weekends, many of Emeryville's large arterial streets are fully filled with vehicle traffic. Yet, during other portions of the day, these roadways have less vehicle travel or parking demand placed on them and potentially could be repurposed for other uses that benefit pedestrians. An example that would be both straightforward and have little costs would be the conversion of on-street parking to other uses. Such a strategy would support pedestrian safety by creating a buffer between sidewalks that are often adjacent to the street and faster-moving vehicle traffic. In addition, on-street bicycle parking may be beneficial to meet specific high-turnover parking demands of certain types of retail and restaurant functions.

Pedestrian Programs

While the built environment and street design play an integral role in providing facilities that encourage walking, there are numerous other strategies that may influence the propensity of an individual to walk. This section will focus on different programs and initiatives that may help improve the pedestrian environment in Emeryville but through different programs and initiatives unrelated to the built environment. The major benefit to these types of programs is that they could help boost walking in the city without any significant capital improvement costs.

Goal: Improve pedestrian conditions through increased awareness and education programs geared towards making walking a safer and more attractive mode choice.

Existing Practice:

As of September 2010, there are no ongoing city sponsored pedestrian safety or recreation programs.

San Francisco's Sunday Streets has seen participation numbering in the thousands per event. This and similar events help promote walking and outdoor activity in general.

Examples of Joint On-street Parking and Pedestrian Space
Image from City of Vancouver

Best Practices:

While many may attribute pedestrian safety issues to city departments such as public works, planning, or transit agencies, other organizations such as the police department are directly related to pedestrian safety through their responsibility to enforce motor vehicle laws. The following programs include examples of pedestrian safety programs that have been established in other areas around the country and could be implemented in Emeryville.

- **Citywide Safety Walk:** In neighborhoods in cities such as Los Angeles and Seattle and smaller cities such as Roseville, Wisconsin, City staff, police, elected officials, business owners, organization members, and other citizens have walked to identify and address traffic and personal safety issues.
- **Intersection/Crosswalk Enforcement/Stings:** Cities from Ventura to Chicago to Orlando have set up crosswalk stings. Ventura announced the city-wide operation and posted relevant laws on the City website.

An additional way to promote pedestrian activity involves events designed to encourage people to take to the streets and walk for the simple enjoyment of being outside. These types of events could be sponsored by the City while others have been initiated through local community groups or non-profit organizations. Events like those described below are marketed to everyday individuals and promote walking by making it a social event and provide an opportunity to experience a city in a recreational fashion.

- **Street Closure Festivals:** Locally, San Francisco's Sunday Streets is an example of such a street closure. On various Sundays throughout the summer, a segment of a street in San Francisco is closed to automobile traffic. The lengths of these streets are often a few miles in order to give participants a chance to experience a corridor of the city to the fullest extent possible. The Sunday Streets event in San Francisco and similar events in other cities are inspired by Bogota Colombia's Ciclovia, where on each Sunday, streets are closed between 7:00 AM and 2:00 PM. In San Francisco, event participation has numbered in the thousands per date. Sunday Streets' purpose is to enable participants to take advantage of the public space that is typically reserved for the automobile while encouraging them

to be outside and walk, bike, skate, or take the other means of transportation that they desire. In 2010, the City of Oakland held its first street closure festival dubbed "Oaklavia" which took place on June 27, 2010. Farmers Markets also provide car-free pedestrian space.

- **Organized Recreational Walks:** An example of an event that could help promote additional pedestrian activity is the Peak2Peak Walk in San Francisco. This event is organized on an annual basis by Walk San Francisco (WalkSF), a local community advocacy group for pedestrians. The event takes its participants on a 12 mile guided hike through the city while providing snacks and a gourmet lunch. In 2009, the event had over one hundred participants and was able to raise funds for WalkSF and awareness about pedestrian issues throughout the city.

Strategy: Establish Pedestrian Programs

- **Citywide Safety Walk:** A "safety walk" would involve citizens and law-enforcement officials. Such an event would be a collaborative effort to identify areas where pedestrians feel threatened by real or perceived threats to their safety. Issues to identify could be related to personal safety or safety from motorized vehicles that may consistently perform illegal movements.
- **Crosswalk Enforcement Stings:** To reinforce laws that are designed to protect pedestrians from vehicle collisions, law-enforcement officials could conduct targeted observations at various high volume intersections and crosswalks around Emeryville. The purpose of this effort would be to provide warnings or tickets to motorists who fail to obey pedestrian safety laws such as yielding to pedestrians in crosswalks or making right turns when prohibited by a red signal. While it may be impossible to cite all violators, doing such enforcement during visible times of day will help convey the importance of pedestrian safety and may help reinforce safe driving.
- **Street Closure Festivals:** While it is common for events like farmers' markets, neighborhood fairs and street festivals to temporarily close streets, recent street-closure events have sprung up in cities across the country. Such events involve the closure of entire streets to automobile traffic in order to promote other outdoor activities. In

Participants in the 2009 Peak2Peak Walk
Image from WalkSF

View from within Powell Pedestrian Overpass
Image from flickr user mlinksva via a Creative Commons License

place of automobiles, participants often bicycle, run, or skate, among other forms of transportation.

- **Organized Recreational Walks:** Another way to promote walking in Emeryville would be through organized walks that take advantage of the numerous recreational facilities in the city. Similar to street closures, events like this could be marketed as a social event that encourage physical activity and provides the opportunity for residents to connect and see the sites that Emeryville has to offer.
- **Area Walking Tours:** The City or another organization could provide walking tours of various neighborhoods. For example, the Park Avenue District is rich in early 20th Century industrial buildings.

Bridges Over Railroad Tracks and Freeway

The major pedestrian barriers in Emeryville are the railroad tracks and the freeway. Although bridging them will be costly, it is key to creating a pedestrian-friendly city.

Goal: Provide visible, spacious, accessible pedestrian bridges over the freeway and railroad tracks.

Existing Practices:

Emeryville has three at-grade and two elevated pedestrian crossings over the railroad tracks. The at-grade crossings are at 65th, 66th, and 67th Streets. The elevated crossings are the elevator bridge between the Amtrak station and Shellmound Street, and the stair-accessed walkway on the north side of the Powell Street bridge. This walkway feels unsafe to pedestrians, because it is hidden below street level on the bridge. There is one at-grade crossing under the freeway at Powell Street. The General Plan calls for a pedestrian-bicycle bridge over the railroad tracks to replace the walkway on the north side of the Powell Street bridge, a pedestrian-bicycle bridge over the railroad tracks between Bay Street and Horton Street at 53rd Street, and a pedestrian-bicycle bridge over the freeway between Frontage Road and the intersection of LaCoste and 65th Streets.

Bicycle Lane Signage Near Emeryville City Hall
Image from Nelson\Nygaard

Strategy: Build Pedestrian-bicycle Bridges Over the Railroad Tracks and Freeway

The new bridges should be a pleasure to use for people walking, using wheelchairs, and cycling. They should have views in and out, feel safe, and accommodate reasonably expected volumes of pedestrians and cyclists.

Bicycle Connectivity and Safety

Bicycling is one of the most efficient modes of transportation and given Emeryville's flat terrain and mild climate, it is accessible for residents and visitors alike. Bicycling requires far less space as compared to an automobile for movement and parking, a benefit in a city constrained for space such as Emeryville. Moreover, as an active mode of transportation, bicycling contributes to making Emeryville a healthier city.

An update to the City's Pedestrian and Bicycle Plan is underway with the intent of making bicycling a more attractive, convenient, and comfortable option for getting to, through and around Emeryville. The City's recently adopted General Plan considers bicycling a high priority and has an overarching goal of establishing a network of continuous north-south and east-west bikeways to provide access to the major attractions of the city, provide recreational benefits and reduce dependence on automobiles. Emeryville should continue to place a high priority on incentivizing bicycling and ensuring that safe facilities exist for those who bicycle in and through Emeryville. The recommended strategies presented below are intended to complement the policies and guidelines contained in Emeryville's General Plan and forthcoming Pedestrian and Bicycle Master Plan.

Currently, Horton Street serves as one of the primary north-south bicycle routes in Emeryville and as signed as a bicycle boulevard. However, it also serves as a primary transit route.

Bicycle Planning Framework

The following General Plan goals demonstrate that bicycling is an important city priority:

- A safe, comprehensive, and integrated bicycle system—A system and support facilities throughout the City that encourage accessible bicycling for all community members
- Bicycling will be promoted through public education, including the publication of literature concerning bicycle safety and the travel, health and environmental benefits of bicycling
- The City will establish equal priority to bicycles and public transit (and discourage through-traffic by other modes) on streets in the vicinity of the Amtrak Station

To make sure that new connections are supportive of a citywide network of bike facilities, the new Pedestrian and Bicycle Plan Update should determine which streets are appropriate for bicycle lanes or signage as bicycle routes. On high-volume or high-speed streets, bicycle lanes are perceived by many to be safer and can attract more cyclists—and especially novice or occasional cyclists—than streets simply designated as bicycle routes with signage. Bicycle routes that are designed as bicycle boulevards or shared travel lanes with narrow travel lanes and sharrows are also attractive if carrying relatively low traffic volumes and having limited stop signs or signals along their route.

Horton Street, one of the primary north-south bicycle routes in Emeryville, is currently signed and designated as a bicycle boulevard and provides access to the Emeryville Amtrak Station as well as connections to north-south bike routes in Oakland and Berkeley. However, the central segment of the corridor is also designated in the General Plan as a primary transit route, connecting to the Amtrak station. In addition, several blocks of Horton Street are currently striped with bicycle lanes, in addition to its designation as a bicycle boulevard.

Emeryville has taken several steps to improve bicycling conditions within the City such as adding bicycle lanes and marking bicycle routes and local bicycle boulevards and integrating bicycle and transit connections with bicycle racks provided on Emery Go-Round buses and bicycle lockers/racks located at the Amtrak and BART stations. Emeryville should be commended for these efforts and should consider the following strategies as it updates the City's Pedestrian and Bicycle Plan to provide a bicycle network with supporting facilities to significantly increase the mode share of bicycling as a part of the City's goal to shift to more sustainable forms of transportation.

Proposed Strategies

This section highlights key tools and strategies that can be employed in the City of Emeryville to enhance bicycle connectivity and safety and to promote cycling as a healthy and efficient mode of access and mobility. Any or all of the following tools and strategies could be implemented as pilot projects or programs. The specific location and implementation details of each will be determined in the forthcoming update to the Pedestrian and Bicycle Plan, which could apply these and other strategies to make Emeryville a more accessible, convenient, and comfortable place to bicycle.

Bicycle Boxes and Advanced Stop Bars

Bicycle boxes, with advanced stop bars, as shown in the photo at right, are pavement markings which provide a dedicated and visible area for bicyclists to stop and wait in front of vehicular traffic at signalized intersections. Bike boxes allow bicyclists to get up to normal speed when a light turns green before vehicular traffic begins to pass them and can reduce the incidence of right-hook collisions.

Goals:

- **Enhance the visibility and safety of bicyclists at signalized intersections**
- **Reduce right-hook collisions (right turning vehicles colliding with straight through traveling bicyclists)**
- **Provide bicycle priority at signalized intersections, enhancing speeds, access, and mobility for bicyclists**

Existing Practice:

There are no bike boxes or advanced stop bars in Emeryville.

Best Practices:

In the United States, bike boxes and advanced stop lines have been implemented in Portland and Eugene, Oregon; New York City; Madison, Wisconsin; and Cambridge, Massachusetts. A few bike boxes have recently been implemented in San Francisco and Berkeley. Bike boxes were first implemented in Europe and have been in widespread use in Copenhagen, Denmark – one of the world's most bicycle friendly cities – since 1990. Danish engineers report that bike boxes in that city significantly reduce collisions between bicyclists and right-turning vehicles.

Bicycle boxes and advance stop bars work in tandem to create safer spaces for cyclists at signalized intersections. Bicycle boxes are painted at signalized intersections in front of an advanced stop bar to provide cyclists a place to stop in front of traffic. The safety benefit of bike boxes is that they allow cyclists to begin riding, after a green signal, in front of a traffic platoon, where they can be easily seen by vehicles. Bike boxes also reduce the risk of conflicts and collisions between straight through traveling bicyclists and right turning vehicles, including "right hook" collisions and right turn on red collisions, which represent 4.7% and 3.6% of bicycle collisions respectively. Bike boxes also make it easier for bicyclists to position themselves safely to make left turns. Without bicycle boxes, cyclists may often be caught on the right side of traffic or in-between vehicles where their visibility is reduced and the consequent risk of collision with motor vehicles is higher.

Bike boxes may be most effective at enhancing bicyclist safety and priority where they are implemented in combination with other treatments, including full color painted bicycle lanes. At a minimum, bike lanes should be painted in advance of the box, and through the intersection, so that right turning motorists are aware that many bicyclists may not be turning but rather proceeding straight through.

A 'bike box' provides colored pavement and an advanced stop line for automobiles. The bike box reduces conflicts at intersections by providing space for bicyclists to visibly position themselves ahead of motor vehicle traffic for either through or turning movements. Note also the pigmented/dotted bike lane treatment carried through the intersection.

Source: www.bikeportland.org

Because bike boxes are a relatively new treatment in many American cities (although Portland, OR has been using colored bike lanes for over a decade), they must be implemented with proper signage and with a well coordinated and executed campaign to educate drivers and cyclists about their purpose and use. Before installing bike boxes at more than 15 intersections, the City of Portland DOT engaged in an aggressive outreach and education campaign with signs, billboards, and distribution of brochures.

Strategy: Install Bicycle Boxes and Advanced Stop Bars

The pending Pedestrian and Bicycle Plan Update will identify intersections where bicycle boxes and stop bars would be appropriate. Signs and educational brochures and web pages could be used to inform cyclists and drivers about bicycle boxes.

Install Bicycle-Only Signal Phases

In areas with high levels of bicycle activity, and/or high volumes of cross traffic, cyclists may require their own signal phasing to ensure safe cross-

ing of streets. Under the appropriate conditions, bicycle-only signals provide certainty and safety for cyclists and motorists alike. If the bicycle-only phase is bicycle-actuated, it will only occur when a bicycle is present.

Goal:

- ◊ **Enhance bicycle safety**
- ◊ **Prioritize bicycle access and mobility at congested intersections (as planned for specific corridors in the Emeryville General Plan)**

Existing Practice:

Currently in the City of Emeryville, there are no bicycle-only signals.

Best Practices:

An example of a bicycle only signal was recently installed in San Francisco to aid cyclists in crossing a busy road on the way to Golden Gate Park. Another variant of this concept is having signals that can be actuated by a bicycle. An example of this can be seen in Berkeley where a protected bicycle lane also has a signal actuator.

- In areas of high potential for bicycle-vehicle conflicts, one of these strategies may be appropriate to ensure safe crossing of cyclists through intersections. As a less costly alternative for prioritizing bicycle movement at intersections, the City may install a push button signal actuator within arm's reach of the cyclist.

Strategy : Consider Installing Bicycle-Only Signal Phases with Signal Actuators

The pending Pedestrian and Bicycle Plan Update will identify intersections where bicycle-only signal phases with signal actuators are appropriate.

Public and Employee Bicycle Parking

Secure and conveniently located bicycle parking facilities are essential for cyclists to have the ability to reach their destinations with ease.

There are two key markets: (1) long-term bicycle parking, including bike storage for residents and employees, and (2) short-term parking, serving shoppers, students, recreational users, and other visitors.

A Bicycle-activated Signal Actuator in Berkeley, CA
Image from City of Berkeley

Long-term Bicycle Parking

- Long-term parking is best in secure, weather-protected, restricted access facilities. This may include:
  - **Bicycle racks inside garages.** These primarily serve employees.
  - **Bicycle cages in garages primarily serve residents.** The cage is typically secured with a locked gate (ideally using an electronic keycard).
  - **Bicycle lockers.** Lockers can provide an additional option for the most security-conscious bicycle users. (These are more expensive since they require the most floor space, and could be made available for a modest fee.)

Short-term Bicycle Parking

- In addition to security, location is a key factor of the utility of short-term bike parking. If parking is not conveniently located, bicycles are often locked to poles or fences closer to their final destination.
- On-street bike racks are best located immediately adjacent to high-demand locations, such as on retail frontages, next to primary transit stops, and elsewhere where the presence of bicycles locked to fences or railings indicates unmet demand.

Goal: Ensure usable parking facilities are available and accessible for bicyclists

Existing Practice:

Currently the City of Emeryville has on-street bicycle and off-street bicycle parking per its existing bicycle parking policies.

Best Practices :

In areas with high volumes of bicyclists, or where sidewalks are narrow, it may be appropriate to replace one on-street parking space with bicycle racks on each block face. This has been done with success in selected locations in Berkeley and San Francisco, and can prevent bicycles from blocking pedestrian rights-of-way.

Strategy: Expand Public and Employee Bicycle Parking

The City of Emeryville is encouraged to expand the supply of public bicycle parking in convenient locations to meet demand. On-street parking spaces should be provided for short-term bicycle parking near destinations that are bicycle trip attractors/generators (e.g. shopping areas, schools, and City facilities). The City should provide long-term bicycle parking for its employees.

Bicycle Stations

Bicycle stations are secure, attended bike parking facilities – often serving commuters who access a nearby transit station by bike. Bike stations typically offer bicycle services, including rental, repairs, and information. Bicycle storage is attended, meaning that cyclists do not have to reserve space in advance and can be sure the bike will be guarded in a secure location throughout the day. Designed well, bike stations have been shown to dramatically expand the "catchment area" of a transit station by removing a key obstacle to increased bicycle use, the fear of having a bike stolen or damaged by weather or vandalism.

Short-Term bicycle parking in front of the Emeryville City Hall
Source: Nelson\Nygaard

Goal: Enable bicycle access by ensuring the availability of safe and protected bicycle parking facilities.

Existing Practice:

Currently in the City of Emeryville, there are no bicycle stations. Wareham in Emeryville has shown plans to develop a bike station in their Emery Station West building next to the Amtrak station.

Best Practices:

Bicycle stations operate at rail stations throughout the US, including the Palo Alto Caltrain Station, Embarcadero and Berkeley BART stations, Long Beach Blue Line station in California, Pioneer Square in Seattle, and Millennium Park in Chicago.

Strategy: Establish Bicycle Stations at Emeryville's Transit Hubs and Shopping Areas

In locations like transit stations that potentially have high levels of bicycle access, bicycle stations should be provided to further incentivize bicycling by ensuring safe and weather-protected parking. Future bike stations could be appropriate near other major bus stops, such as the 40th Street/ San Pablo Avenue bus hub and Bay Street center.

Strategy: Work with BART To Create a Bicycle Station at the MacArthur BART Station

The pending renovation of the MacArthur BART station and plaza will include expanded bicycle parking. The City could advocate for BART to convert this parking into a bicycle station in the future by establishing attended bicycle parking.

Land Use Specific Bicycle Parking Standards

Many potential cyclists have said they would ride their bicycles more if they had a safe place to park their bicycles. Bicycle parking requirements by land use type can help to ensure that private development projects include adequate bicycle parking.

Goal: Enable bicycle access by ensuring the availability of off-street bicycle parking at destinations throughout the City.

Existing Practice:

To ensure private bicycle parking, the Emeryville municipal code currently requires the provision of on-site bicycle parking with the construction or renovation of any building in the city. This requirement calls for 1 long-term and 1/16 short-term bicycle parking spaces per residential unit and 1/20 long-term and 1/20 short-term bicycle parking spaces per non-residential required automobile parking space.

Carefully located bicycle parking provides bicyclists (and the district) great benefits for a relatively small amount of space (Eugene, OR)

Image from Nelson\Nygaard

Best Practices:

The Columbia Pike Special Revitalization District in Arlington County, Virginia has the following bicycle parking requirements:

- For office development, the developer must provide 1 employee bicycle parking rack or bicycle locker (2-bike capacity) per 7,500 square feet of floor area and 1 visitor/customer bicycle parking rack (2-bike capacity) per 20,000 square feet of floor area.
- For residential development, the developer must provide 1 tenant bicycle parking rack or bicycle locker (2-bike capacity) per 3 units and 1 visitor bicycle parking rack (2-bike capacity) per 50 units.
- For retail development, the developer must provide 1 employee bicycle parking rack or bicycle locker (2-bike capacity) per 5,000 square feet of floor area and 1 visitor/customer bicycle parking rack (2-bike capacity) per 12,500 square feet of floor area.

Strategy: Provide Land Use Specific Bicycle Parking Standards

If automobile parking requirements are modified in response to new General Plan policies, non-residential bicycle parking would subsequently need to be updated.

The general bike parking requirements in the Emeryville Municipal code should be amended to specify the quantity of storage capacity of bicycle parking facilities required for each type of land use or development.

There have been bicycle thefts at Emeryville shopping centers. The City and shopping centers should consider more secure temporary bicycle parking, such as bicycle lockers or valet bicycle parking for shoppers, drivers and movie-goers.

Signage and Intersection Crossings

Signs are used to identify bicycle routes, lanes, paths and boulevards, and to provide directions and distances to major destinations. Techniques to help cyclists cross intersections include bicycle-only turn lanes, pavement markings showing cyclists' path of travel through the intersection, and signs reminding drivers to watch for cyclists.

Goal: Ensure safety for cyclists at intersections by visual enhancements and design improvements

Existing Practice:

Presently, the City of Emeryville has few areas with specific signage geared towards bicycles or signage to make motorists aware of the presence of bicycles. Certain intersections are particularly problematic for cyclists due to multiple vehicle turn lanes, high traffic volumes, and limited exclusive right-of-way for bicycles.

Best Practices:

Portland uses bicycle-only center turn lanes to help cyclists cross arterials through offset intersections. The Federal Highway Administration's Manual on Uniform Traffic Control Devices identifies markings for designated bicycle lanes with left-turn areas and for intersections with heavy turn volumes.

Strategy: Improve Intersection Crossings of Bikeways and Busy Streets

Bike access to and within Emeryville will be enhanced by intersection improvements. Bikeways are only as good as their worst gap. If an excellent bike path suddenly ends at a busy roadway with no accommodation for crossing it, the bike path has little utility. It is important, therefore, to ensure high quality design where minor bikeways connect to major bikeways and where bikeways cross major arterials.

Speed Limits on Bicycle Boulevards

Research has shown that higher vehicular travel speeds are directly related to increased pedestrian fatality rates on the same roadways. Although not proven, the same relationship is assumed to exist between vehicle speeds and bicycle fatality rates. That is: the higher the average speed of traffic on a roadway, the greater the risk of fatality for a bicyclist involved in collisions on the roadway.

Goal: Reduce likelihood of severity of injuries and overall collisions by the reduction of vehicular speed limits on certain roadways.

Existing Practice:

The low-traffic volumes on some of Emeryville's streets that make them attractive for bicycling also make them attractive for vehicle speeding. As compared to Berkeley, Emeryville's bicycle boulevards do not have sufficient traffic calming devices to ensure low speeds.

Best Practices:

This year New York City is tripling the number of 20 mph speed limit zones by adding 75 low-speed zones.

Strategy: Reduce Speed Limits on Bicycle Boulevards

Bicycle Boulevards in Emeryville should have lower speed limits than other corridors where transit, freight, or vehicular mobility is prioritized, such as transit streets and connector streets as delineated in the General Plan.

Traffic Calming

To reduce motor vehicle speeds and volumes and to establish and maintain bicycle safety and priority, the City of Emeryville should install traffic diverters and other traffic calming devices in bicycle priority corridors. Such devices would also provide benefit to pedestrians.

Goal: Reduce vehicular speed limits on certain roadways where lower speeds are desired

Existing Practice:

Traffic calming devices currently exist in some of the residential neighborhoods in Emeryville.

Best Practices:

Berkeley's traffic calming devices include diverters, bulb-outs, and traffic circles.

Strategy: Consider Installing Diverters and Other Traffic Calming Devices on Bicycle Boulevards

Emeryville may use any or all of the following measures to slow traffic and enhance bicycle and pedestrian safety in selected corridors, especially Bicycle Boulevards:

- Diverters
- Chokers
- Speed humps
- Mechanical bollards that result in full or partial closure of the street to motor vehicles (i.e. only let buses, taxis, and emergency responders through)

In corridors where diversionary measures are required to reduce traffic volumes, an operational measure that could be implemented would be "forced right turns" at strategic locations for all private and commercial vehicles (transit vehicles and taxis should be exempted). Such a measure would reduce through traffic volumes while still preserving critical access to key destinations for all modes of transportation. This concept also has the advantage of being less capital intensive and permanent than design measures (i.e. forced right turns could be implemented at very little cost on a trial basis in order to assess the impacts and then made permanent if proven effective). This approach might be appropriate on Horton Street.

Color-Filled Bicycle Lanes

Existing Practice:

Emeryville does not have any color-filled bicycle lanes.

Examples of traffic diverters in Berkeley, CA
Image from City of Berkeley

Strategy: Consider Color-Filled Bicycle Lanes

Full color-filled bicycle lanes have been implemented in New York City and Portland, Oregon. New York uses green, and Portland uses blue. Colored bicycle lanes are especially helpful in communicating bicyclists' likely paths through major intersections to motorists and other road users. The Federal Highway Administration granted interim approval for green colored pavement in marked bicycle lanes in April 2011.

Other Bicycle Strategies to Consider

Each of the following strategies is worthy of consideration and evaluation for cost and utility in promoting bicycle comfort and connectivity. These could also be investigated as part of the forthcoming update to the Bicycle and Pedestrian Master Plan.

- **Ensure bicycle priority streets are safe and appropriate for bicyclists.** Selecting streets that are appropriate elements of a citywide bicycle network may be challenging in Emeryville due to the

previously mentioned barriers. The network of signed bike routes and bicycle boulevards in the General Plan should be further examined to ensure all portions of those streets provide the "as advertised" benefits for bicycles. Segments of those streets that may need to share priority with other modes such as transit or commercial loading, should provide adequate warning to cyclists. Careful, context-sensitive planning will be needed to provide bicycle safety and amenity, while balancing current traffic patterns, and other city transportation priorities in these and other corridors.

- **Barrier Separated On-Street Bicycle Lanes may be appropriate for segments of the bicycle network with high traffic volumes and/or high traffic speeds and a limited number of driveways to enhance cyclist comfort and priority.** Physical barriers can only be installed on street segments with few driveways or other curb cuts. Separation from traffic may be achieved with:
  - A six inch or wider curb
  - On-street parking relocated from the curb of the sidewalk to a location between the bicycle lane and general purpose traffic lanes (with a sufficient buffer to keep bicyclists out of the "door zone"). This type of separated bicycle lane has been implemented in New York City and Eugene, Oregon.
  - Bollards
  - In all cases, the barrier separation should be removed in advance of each intersection to make bicyclists fully visible to traffic, facilitate left turning movements by bicyclists, and to prevent collisions between bicyclists and right turning motor vehicles.
  - Implementation of separated on-street bicycle lanes would require a design-exception in California. However, such facilities are common in many European cities, where lessons can be drawn regarding the specific design elements of separated bicycle lanes and appropriate routes and locations for their implementation.
- **Dedicate funding for bicycle facilities and services to fund expedited buildout of the planned network of bikeways and ongoing maintenance.** A dedicated funding source is necessary because the current share of state and federal transportation funding spent on bike facilities and services is disproportionately small relative to the share of injurious and fatal collisions involving bicyclists. Emeryville is updating its Traffic Impact Fee to include pedestrian bicycle and transit improvements.
- **Develop a Street Design Manual (as recommended in the pedestrian portion of this chapter) to provide for "Complete Streets," including routine accommodation for bicyclists.** The manual should include design specifications for the other physical design measures highlighted in this report (including all traffic calming devices). The guidelines in this manual should be applied to new public roadways and roadway retrofitting projects. The guidelines should also apply to new private developments with internal publicly-accessible roadways.

Wayfinding

Wayfinding refers to how people orient themselves and navigate from place to place and the types of information they use to do so. For locals and visitors alike, finding one's direction and orientation around Emeryville can be a daunting challenge. A combination of one-way streets with high traffic volumes, a complex street layout, and several significant connectivity barriers make it difficult to find one's destination. Given Emeryville's small footprint and close connections with Berkeley and Oakland as well as being a regional destination, it could serve as a model for a highly legible and effective wayfinding system.

Wayfinding is more than just signage. Indeed the best wayfinding systems use signage only as an option of last resort, an admission of the failure of more intuitive techniques. The broad and notable silver "Emeryville" sign located above the Amtrak station platform is a more powerful indicator of this important destination than a sign that says "Amtrak Station." Similarly, the rows of trees along Hollis Street between Stanford and 53rd Street are a more effective tool for noting a place of civic importance than a sign that says "Important Street." Wayfinding uses unique buildings, landscaping, lighting, vistas, pavement materials, banners, artwork, and other tools to orient travelers and give them clues about the type of place they are navigating.

The challenges of wayfinding are not limited to automobile traffic; they are distributed across all modes of travel. This is particularly true in Emeryville as the city is moving toward a more balanced and sustainable transportation system.

Wayfinding is a civic improvement where benefits are difficult to quantify. Yet, it could be said that a built environment without wayfinding is akin to a map without a compass. Without providing effective signage for pedestrians and cyclists to guide them to their respective destinations, Emeryville may be constrained in its goal of developing a more balanced transportation system as residents, employees, and visitors alike will have difficulty in finding the nearby BART station, a bus stop, or a bicycle boulevard.

Goal: Help people find their way into, around and out of Emeryville, whatever travel mode they are using.

Based on our field observations and discussions with City staff, we understand that the City of Emeryville sponsored a wayfinding project that was not competed because of funding constraints and other high priorities. This proposed wayfinding scheme may not have been designed to fully accommodate the needs of all transportation modes.

Within Emeryville, the most effective and detailed signage is found within private developments. Most notable, the large Bay Street shopping district displays a comprehensive wayfinding scheme that includes provisions for pedestrians, auto traffic, and parking.

Existing Practice:

Some directional signs exist, but some of them are not well coordinated. Barrier overcrossings are marked but routes to them are not. The Public Art Committee is considering placing art signs at the City boundaries.

Best Practices

Effective wayfinding programs are those that are easily recognizable, legible, and have a sense of local branding. The following case studies provide examples of public wayfinding that fulfill these requirements and provide a model for Emeryville.

London, UK

Most known for its underground subway branding, London features city-wide consistency in its wayfinding. Some of the examples shown below include signage used at London's bus stops and directional signage geared towards pedestrians. These signs work in combination with London's comprehensive wayfinding strategy that includes a website, information campaign, and other signs that exhibit consistency in design and format. London's wayfinding plan comes with significant costs as the city spends approximately 20 times more than the amount spent in adjacent cities in the UK. However, the end result is a highly effective and memorable wayfinding plan.

Seattle, WA

The City of Seattle provides neighborhood walking maps for pedestrians highlighting all the goods and services within walking distance.

This sign is located at Emeryville's Bay Street shopping center. It shows store locations in addition to bicycle parking, transit shops, among other amenities.

Atlanta, GA

Within the last five years, the City of Atlanta has unveiled a wayfinding plan emphasizing its Midtown and Downtown districts. The signage focuses on both vehicular and pedestrian traffic. The intent of the wayfinding plan was to make Atlanta more user friendly for first time visitors and increase emphasis on public transportation in the area. The signage also includes local area maps, in addition to general directional signs. The wayfinding plan gave the city a more explicit "brand" for different neighborhoods, providing a benefit to local residents/merchants who wanted to create a strong neighborhood cohesion and bond. An example of a local area map is shown on page 4-68.

Berkeley, CA

As a nearby neighbor, Berkeley provides an excellent example of effective bicycle wayfinding. When the Berkeley Bicycle Plan was adopted in 1999, it came with specific recommendations for bicycle wayfinding and signage, which was implemented and depicted below. The plan called for the creation of numerous "bicycle boulevards" that provided added safety benefits for cyclists traveling throughout the city. These boulevards have specific branding and can be easily recognized by cyclists and motorists alike. Berkeley has selected the color purple to be a consistent indicator of bicycle facilities throughout the city. This color can be seen on the city's many bicycle boulevards and all directional bicycle wayfinding signage.

Proposed Strategies

Based on our field observations and best practices, we recommend that the City of Emeryville consider several strategies for improving its wayfinding as it strives to achieve a more balanced and sustainable transportation system. An effective wayfinding strategy alone can by no means create a safe and easily navigable city. It should be implemented in concert with other mechanisms to ensure residents and visitors alike can easily navigate around Emeryville and neighboring cities. In all wayfinding programs, work to maintain and build upon existing color schemes and design templates, supplementing existing signage rather than creating new systems. A comprehensive wayfinding plan should have the following major components.

Strategy: Install Signs and Markings Consistent with Neighboring Cities

Wayfinding systems aimed at cyclists are already in place in portions of the region's trail system, directing cyclists to key destinations and offering distance information. Emeryville could fill in its gaps in these systems.

Ensure bicycle and pedestrian wayfinding is consistent with neighboring Berkeley and Oakland, including destination-oriented signage, special color street signs on Bicycle Boulevards, sharrows and other techniques. Destination signs could include purple signs on Bicycle Boulevards, green signs on other bikeways, and black pedstrian-oriented signs similar to those in Oakland on other streets in pedestrian priority zones. Destinations should include shopping areas, parks, schools, and public buildings.

Strategy: Provide Bus Shelters with Maps and Displays

Transit users could better orient themselves through high quality bus shelters complete with system maps, a detailed local walking map and real-time bus arrival displays.

Strategy: Mark Gateways with Art and Continue Signs Across Borders

Collaborate with the Cities of Berkeley and Oakland to better mark Emeryville's gateways and ensure that wayfinding signage is seamless across the borders. Gateways should be marked with public art on major streets and bicycle and pedestrian facilities that cross the City boundary.

Strategy: Install Neighborhood Walking Maps for Pedestrians

Neighborhood walking maps for pedestrians can highlight streets, paths, parks, schools, employment centers, residential complexes, hotels, transit stops, bicycle parking, goods and services within walking distance. Walking maps should be placed first at the Amtrak station and the San

This photo illustrates London's consistent signage at bus stops around the city.

This post represents some of London's pedestrian wayfinding that can easily point one in the direction of a nearby destination. The small icons on each sign also inform a user about nearby transit stations.

Purple signage in Berkeley, CA represents bicycle facilities. Signage in the city include identification signs and directional signs.

Source: City of Berkeley.

Pablo Avenue/40th Street bus hub. Second priority locations should be in the Pedestrian Priority Zone as shown in the General Plan.

Strategy: Install Bay Trail Signs on Entire Bay Trail

Install Bay Trail signs at least at the Berkeley border, Point Emery Shorebird Park, the Towers Shoreline access point, Davenport Mini Park, Emery Cove, Emeryville Marina, the Police Station, Eastshore Park, I-80, Christie Avenue, and Shellmound Street. Install new signs if and when the trail is rerouted.

Strategy: Require Well-signed Construction Detours with Advance Notice for Cyclists and Pedestrians

When utility companies, street contractors, adjacent property owners or anyone else blocks sidewalks and/or streets for construction or repairs, the City should require them to provide safe, well-signed detours specifically for cyclists and pedestrians as well as motor vehicles. Pedestrian detours should be accessible to persons with disabilities.

Figure 4-17 Wayfinding Map in Atlanta, GA

A typical wayfinding map used in Atlanta; they are typically placed in pedestrian locations with high levels of activity.

BART Station Access, Wayfinding and Stops

Existing Practice:

The Emery Go-Round currently experiences congestion at the MacArthur BART station. As part of the MacArthur Transit Village project, the BART station plaza has been redesigned, and will be remodeled in 2011-2012.

The shuttle drop-off interface has been redesigned, and motor vehicle, bicycle and pedestrian access have been relocated. Cars will only be allowed on a small portion of the station frontage road; most of it will be for shuttles and bicycles only. The design of the frontage road is intended to accommodate shuttle buses at the curb, with room for others to pass, since multiple shuttles will access that stop. There will be room for several shuttles to stop at the same time. The ETMA, BART and Oakland worked closely together on the shuttle layout. The new design should mitigate conflicts and congestion.

Emery Go-Round has three routes. Currently, there is no designated spot for each Emery Go-Round route at the BART station shuttle stop. This leads to confusion at the stop.

Strategy: Participate in Design of Emery Go-Round Wayfinding at the BART Station

The BART station plaza remodel will include new wayfinding within the station and plaza, including signs to direct BART passengers to the shuttle stop. The new signs have not yet been designed in detail. The City and ETMA could work with BART and Oakland on the design of the new signage, especially signs in the BART station directing passengers to the shuttle stop.

Separate spots for each Emery Go-Round route were considered, but are infeasible because multiple buses for one route are often present and space is limited.

The Open House included several boards that described the various topics included in the Draft Strategies Report.

Open House

On May 17, 2010 an open house was held to gather comments and feedback on the above strategies considered for the Sustainable Transportation Plan. This public open house was the first opportunity to showcase the proposed strategies and offered the public a chance to discuss their thoughts and reactions with the consulting team and City staff and provide feedback.

The event was scheduled in the early evening with the objective of maximizing attendance for those returning home from work or school. The open house was publicized through a mailed postcard, posted on the Emeryville website, and through flyers hung at local bus stops and distributed to local businesses and employers. A copy of the presentation and presentation boards can be found in Appendix D.

Input and Feedback from Attendees

The public open house provided a forum for members of the public to voice their opinions and to express their preferences on the proposed Sustainable Transportation Plan strategies. Nearly all of the comments at the open house focused on the major topics in this chapter.

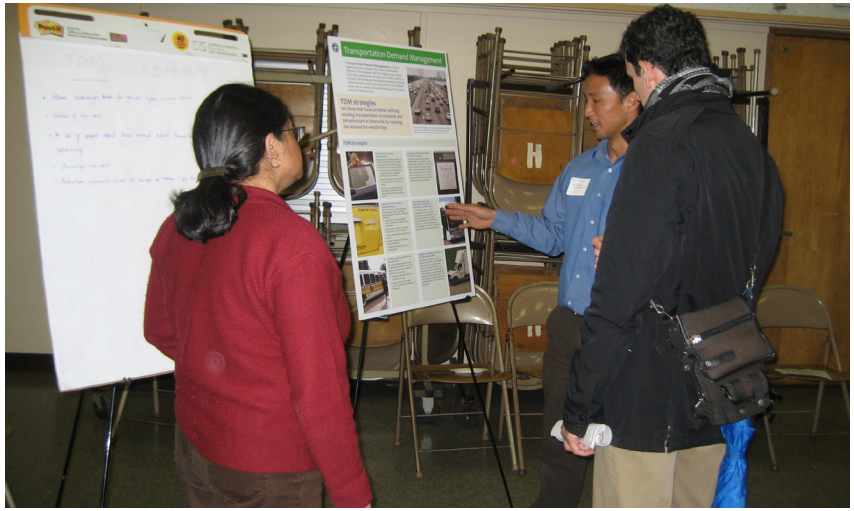
The following summary presents the major themes for each of the five categories.

Bicycling and Walking

- **Bicycle-related street improvements.** Most comments related to bicycling were bicycle-friendly street improvements. These included colored bicycle lanes, bicycle sensors at intersections, traffic calming on appropriate bicycle streets, and additional bicycle parking.
- **Bicycle and pedestrian connectivity improvements.** Several comments were about the need to improve connections in Emeryville's bicycle network. Suggestions were to complete the Greenway to the south of Powell Street and provide improved access to Bay Street for bicycles and pedestrians from the rest of Emeryville.
- **Safety education programs and events.** Some individuals stressed a need for continued safety education for cyclists and motorists alike and suggested hosting events similar to San Francisco's Sunday Streets to help encourage Emeryville residents to try bicycling.

Parking Policies

- **Reduction in surface parking.** Most people favored structured parking as compared to surface parking lots and that existing surface parking lots should be better utilized during off-peak hours.
- **Parking should be convenient.** Several individuals stated that finding parking should be convenient. Suggested strategies for making it easy to find parking included improved wayfinding and real-time information, centralized facilities that allow a "park-once" strategy and imposing a small fee for parking to increase turnover.
- **Parking policies should vary depending on district.** It was noted that different parts of Emeryville have varying parking needs and demands. Thus, parking policies, parking metering and other related requirements should be reflective of the specific area where they would apply in Emeryville.



Members of the public provide feedback on the plan's proposed strategies.

Transportation Demand Management

- **Expand carsharing.** Many individuals had positive comments about Zipcar and more generally, about carsharing in Emeryville. Specific suggestions were that Zipcar should be further marketed, additional pod locations should be considered, and that a larger variety of carsharing vehicles should be provided (e.g. pickup trucks). It was also suggested that City CarShare be brought to Emeryville to increase the number of total carsharing pods. A final comment was that carsharing parking spaces should be incorporated in new developments.
- **Create pilot for bicycle sharing.** Individuals agreed that a city-employee bike sharing program was a good idea to reduce vehicle trips. It was suggested that the city should initiate a pilot in the near future and share results with the public.

Wayfinding

- **Need for improved wayfinding.** Numerous comments cited a need for improved wayfinding to assist pedestrians and cyclists in navigating Emeryville. It was noted that major destinations such as Bay Street were isolated and key crossings such as the Powell Street pedestrian path are not clearly marked. Furthermore, it was noted that maps of the city should be placed in strategic locations to aid in orientation and navigation throughout the city.
- **Provide clear and consistent transit information.** Many individuals stated that Emery Go-Round's schedule and route system is complicated, and relevant signage for the system should be redesigned to be easier to recognize and understand.

Emery Go-Round

- **Need for route adjustments.** Although most comments regarding Emery Go-Round were very positive, including statements that praised the system's punctuality and professional drivers, several comments suggested route improvements. These included expanding the service to fill AC Transit service gaps, additional service to better serve residents and expanded operations during non-peak hours.
- **Routes and schedules are too complex.** While many individuals acknowledged that Emery Go-Round's routes and schedules cater to a broad audience with different needs, even local residents find them confusing. Some suggestions to help reduce this complexity include posting route names on all sides of vehicles, improving the paper schedule to be more legible and intuitive, providing next-stop announcements on-board vehicles, and providing route maps at high-usage stops.

AC Transit

- **Fill gaps left by service cuts.** Due to state budget cuts, AC Transit has been forced to reduce service. Attendees would like to see AC Transit (or Emery Go-Round) provide service from Emery Go-Round to downtown Berkeley, and from the bus hub at San Pablo Avenue and 40th Street westward into Emeryville, similar to the former AC Transit 57 route.

Open House Summary

Based on the feedback received, it was found that attendees of the open house were supportive of the sustainable strategies being proposed in the Sustainable Transportation Plan. While some of the strategies presented in the plan would warrant further investigation if implemented, the overall goals and aspirations of the plan appeared to be on target with community wishes and desires.

Chapter 5 Funding

CHAPTER 5. FUNDING

The recommended strategies in this Sustainable Transportation Plan provide numerous opportunities to help the City achieve its transportation goals of a more balanced and sustainable transportation network. To advance these strategies, the City will need to develop plans for funding. This chapter provides potential funding sources for the City of Emeryville to pursue.

Funding Considerations

This section identifies a series of potential funding opportunities to help pay for the various transportation strategies outlined in this Plan. The purpose is not to identify a specific funding source to fully fund each strategy, but rather to outline revenues that have potential applicability for the recommended strategies. Some small projects/programs may be fundable through existing funding streams that are already available to the City. However, for larger projects and programs, the City will have to both use existing funding options and access new funds at the local, state, and/or federal level. Figure 5-1 and Figure 5-2 review federal, state, regional, local and private sector funding sources, indicating their purpose, intended use and applicability to the recommended strategies. The focus of this section is to identify and provide an overview of all potential revenue sources, with particular attention paid to new and innovative revenue sources. Given the current economic climate of constrained city and county budgets, securing funding for transportation projects and programs is very challenging especially because of other community priorities. However, the Bay Area is unique and has some funding opportunities that are specifically intended for sustainable transportation strategies that are outlined in this Plan. The programs and projects noted in the figures below by no means cover the full extent of funding opportunities available; they are intended to represent a comprehensive sample of programs to assist in funding projects and programs that will help advance a sustainable transportation future in Emeryville.

Local and Regional Funding Programs

Many of the local and regional funding sources are programmed and allocated by the Metropolitan Transportation Commission and the newly formed Alameda County Transportation Commission (Alameda CTC). A description of the local and regional funding programs, their applicability to the various strategies and where to get more information on each source is presented in Figure 5-1.

State and Federal Funding Programs

In addition to local and regional programs, state and federal programs may offer potential funding for sustainable transportation strategies in Emeryville. Most of these funds are from Caltrans, the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA). Federal and state funding sources are typically available for one-time capital investments, are highly competitive and tend to have the most requirements such as matching funds.

Funding Summary

This section presented several opportunities to provide the financial resources for the recommended strategies. It identified traditional transportation and innovative funding programs and demonstrated that there is no one funding program or revenue stream that will necessarily fully fund individual strategies. There are several fund sources that could be pursued to "jump start" a strategy and/or provide support during a demonstration phase. For any of the strategies to be financially feasible in the short-term, it will require a lead agency or champion to cobble together a comprehensive funding strategy that incorporates a variety of funding sources including creative, innovative and bold revenue enhancements. In the longer term many of the strategies have the potential to be self-sustaining when minimal or no funds are needed for ongoing operations or there will be an established public/private partnership that largely covers day to day costs.

Figure 5-1 Local and Regional Funding Sources

Agency	Program	Description	Applicability to Strategies	Further Information
ETMA member commercial, public and industrial property owners	Property-Based ETMA Business Improvement District (PBID)	In 1965, the California Legislature passed AB 103 in response to declining economic activity in central business districts. BIDs provide a means for businesses to assess themselves to improve the surrounding areas. A property-based improvements districts (PBID) collects money from property owners rather than business owners. Owners of commercial, industrial and public properties within 1000 feet of Emery Go-Round stop and not in residential zones are assessed as PBID members.	The District can advance public/ private funding for any strategies provided they benefit within the District boundaries. Commercial, Industrial or public property owners.	The ETMA PBID funds the Emery Go-Round, as new properties are served, their fees help pay for the new service.
Private Developers and the Redevelopment Agency of Emeryville	Public/ Private Partnerships	Public/ Private partnerships can increase overall funding by leveraging "outside" dollars and is mutually beneficial to all parties. Emeryville is well positioned to work with private business/ developers to fund improvements that may provide mutual benefits in improved mobility through access to transit, aesthetics, non-motorized safety and others.	All strategies could benefit from public/ private partnerships, especially improvements on, near or serving the development site.	The City has several examples of successful public/ private partnerships.
Local Emeryville Businesses and Merchants	Merchants Contributions	Retailers may share in the cost of transportation improvements particularly for one-time capital improvements or contributions.	Potential contributions for many strategies especially for advertising and donating bicycles and related equipment during demonstration phase.	Potential follow-up could be with the Emeryville Chamber of Commerce to reach out to local businesses.
Local major employers	Employer Contributions	Employers may share in the cost of specific transportation improvements if beneficial to their employees; typically prefer to fund one-time contributions.	Primarily capital projects; also operations in some situations. As an example, Employers could subsidize carsharing membership cost for employees.	Many major employers already contribute to the Emery Go-Round as part of the city's business improvement district.
New developments in Emeryville	Traffic Impact Fee (TIF)	Transportation impact fees are assessed by the city governments on new development in order to pay for the increased services and new infrastructure necessary to serve the residents and/ or employees of the new development.	The fee must demonstrate a "rational nexus" between the impact of a new developments and the fee charged.	Emeryville is updating its TIF to fund all modes of transit.

Agency	Program	Description	Applicability to Strategies	Further Information
Participating or implementing agencies for sustainable strategies.	In-Kind Services	City, County, transit agencies and other public entities could provide in-kind services in the form of staff time to "jump start" a new service or program. This could include administrative support, marketing services, oversight, evaluation and other related activities.	Nearly all strategies could benefit from in-kind services whether provided by transit agencies, cities, or local organizations.	An effort on behalf of a public agency to provide in-kind services could support for any strategy with goal of longer-term sustainability.
Emeryville Public Art Fund	Developer Fee	Must be used for public art.	Has been and will be used to fund bus shelters featuring art.	Emeryville Public Art Committee staff in Economic Development and Housing Department.
Emeryville Redevelopment Agency	City Redevelopment Agency Funds	Funds can be used to eliminate economic, social, physical, and visual blight Provide for economic revitalization Preserve and improve existing residential areas Establish a more beneficial mix of land uses Restore the public infrastructure	Enhancing pedestrian and bicycle facilities and projects, and establishing pedestrian programs could be good candidates.	City of Emeryville Redevelopment Agency http://www.ci.emeryville.ca.us/index.aspx?nid=383
Alameda County Transportation Commission (CTC)	Measure B	Measure B is the County's 1/2 cent sales tax for transportation projects through March 2022. An update of the Countywide Transportation Plan (CTP) and Expenditure Plan (EP) is underway.	Several strategies could be eligible for the reauthorization of Measure B including transit, pedestrian and bicycle strategies. They must be identified in the updated CTP and EP.	The Alameda CTC is a newly consolidated organization comprised of the Alameda County CMA and the Alameda County Transportation Improvement Authority (ACTIA). http://www.alamedactc.com
Alameda CTC and Bay Area Air Quality Management District (BAAQMD)	Alternative Shuttles	BAAQMD has funding for existing and pilot feeder shuttles.	These funds can be used to purchase or lease clean-air shuttle vehicles to rail stations and must coordinate with rail schedules.	http://www.baaqmd.gov/Divisions/Strategic-Incentives/Alternative-Transportation/Shuttles-and-Ridesharing.aspx http://www.alamedactc.com
Alameda CTC	Vehicle Registration Fee	The Alameda County Vehicle Registration Fee could provide up to $11 million per year in new transportation funds through a $10 per year vehicle registration fee .This measure (known as Measure F) was approved by Alameda County on November 2, 2010 with 63% of the votes.	Measure F revenues will be used for projects in Alameda County including road repairs, new bike lanes and improvements to public transportation, Many strategies in this Plan would be eligible for these funds.	http://www.alamedactc.com

Agency	Program	Description	Applicability to Strategies	Further Information
Bay Area Air Quality Management District (BAAQMD)	Bicycle Facility Program	The Bay Area Air Quality Management District's Bicycle Facility Program (BFP) provides grant funding to reduce motor vehicle emissions through the implementation of new bikeways and bicycle parking facilities in the Bay Area.	The Bicycle sharing demonstration program, bicycle signals and bicycle parking are excellent candidates for these funds.	http://www.baaqmd.gov/Divisions/Strategic-Incentives/Alternative-Transportation/Bicycle-Facility-Program.aspx
Metropolitan Transportation Commission (MTC)	One Bay Area Grant Program	This Program will allocate the Highway administrations surface transportation Program/ Congestion Mitigation and Air Quality funds through County Congestion Management Agencies, largely to jurisdictions with Priority Development Areas and policies on affordable housing, parking pricing, bicycle-pedestrian facilities.	Alameda CTC may allocate funds for safe routes to school and transit, transit-oriented development, and bicycle, pedestrian and transit facilities.	http://www.mtc.ca.gov/funding/onebayarea
Property Purchasers and the City of Emeryville	Property Transfer Trigger	A property transfer trigger would take effect at the sale of a property and requires a landowner to meet certain requirements before any final transaction can occur.	On-site bicycle parking is a good candidate	This is not a new concept as some cities require certain building standards to be met before a property is sold.

Sources: ABAG, Alameda CTC, BAAQMD, City of Emeryville, MTC, Caltrans, TransForm

Figure 5-2 State and Federal Funding Programs

Agency	Program	Description	Applicability to Strategies	Further Information
Caltrans Division of Local Assistance	Transportation Local Assistance Program	Funding from various federal and state programs designed to assist in meeting the transportation needs of local agencies.	Funds can be used for infrastructure and service projects.	http://www.dot.ca.gov/hq/LocalPrograms
Federal Transit Administration	FTA Section 5309 Capital Program (Congressional Earmarks)	These are discretionary funds that are "earmarked" by Congress. These funds can be used for transit capital projects such as bus and bus facilities.	These funds could be used for a major capital project for the Emery Go-Round service such as bus procurements or bus stop improvements.	Work with Congressional delegation to secure federal funding of high priority large-scale capital projects in the next transportation bill (2011). Large projects and even small scale project may be positioned to receive "earmarks" in the next funding cycle if they have regional support. Projects should be included in the Bay Area's Regional Transportation Plan, and have political support to be well positioned for earmark funding. http://www.fta.dot.gov/grants
US Department of Transportation Federal Highway Administration (and Caltrans)	Transportation Enhancement Activities (TEA)	Three of the twelve eligible activities within the TEA program are directly related to non-motorized modes. They are: 1) pedestrian and bicycle facilities, which include: sidewalks, walkways or curb ramps; bike lane striping, wide paved shoulders, bike parking and bus racks; off-road trails; bike and pedestrian bridges and underpasses; 2) pedestrian and bicycle safety and educational activities; and 3) conversion of abandoned railway corridors to trails.	Funds can be used to fund non-motorized capital projects (bicycle/pedestrian projects including bicycle parking.	http://www.fhwa.dot.gov/environment/te/

Sources: Caltrans, FHWA

Appendices

APPENDIX A. STREET TYPOLOGY

The following street types are adopted as part of the Final General Plan to replace the conventional use of an auto-based street classification system.

Figure A-1 Street Typology in General Plan

Street Type	Description
Transit Street	• Primary routes for fixed-route transit • Signal preemption for transit vehicles, with bus lanes or queue jump lanes, where possible • Increased investment in sidewalks, bus stops, lighting, maps, and other amenities for pedestrians and transit users
Bicycle Boulevard	• Through streets for bicycles connecting to regional bicycle route network • Traffic calming to slow and discourage automobile and truck through traffic may be appropriate
Connector Street	• Automobiles, bicycles, and trucks equally accommodated • Incidental transit use • Moderate to high volumes of through traffic
Local Street	• Automobiles, bicycles, and trucks equally accommodated • Incidental transit use • Low volumes of local traffic, primarily to provide access to adjacent land uses • Through traffic discouraged • Traffic calming techniques may be appropriate
Auto Dominant Highway	• Freeways and approach roads with high volumes of high speed vehicle traffic • Accommodation of express and transbay buses • Bicycles and pedestrians prohibited
Intercity Rail	• Mainline Union Pacific/Amtrak railroad line • Used by both freight and passenger trains
Major Transit Hub	• Transfer points at intersection of high volume transit lines
Bicycle Path	• Class I bicycle path as defined by Caltrans standards • No motor vehicle access
Bike Route	• Class II (bike lanes) or Class III (bike routes) as defined by Caltrans standards
Pedestrian Path	• Exclusive walkways for pedestrians • Bicycles and motor vehicles prohibited
Pedestrian Priority Zones	• High volumes of pedestrian traffic encouraged along sidewalk • Zones near neighborhood centers, regional retail areas, schools and other public facilities • Wide sidewalks, ample amenities for pedestrians especially at intersections

APPENDIX B. STAKEHOLDER CONTACTS AND INTERVIEW GUIDELINES

The following stakeholders were offered an interview to provide their perspective and insight for this Sustainable Transportation Plan.

Figure B-1 Stakeholders Contacted

Organization	Title	Name
ETMA	Executive Director	Wendy Silvani
	Board Members	All Board members
City Council	Mayor	Ken Bukowski
	Vice Mayor	Ruth Atkin
	Council Members	John Fricke
		Richard L. Kassis
		Nora Davis
Emery Unified School District	Director	Stephen J. Wesley
	Board President	Joshua Simon
Planning Commission	Chairperson	Gail Donaldson
	Vice Chairperson	Arthur Hoff
	Commissioners	Lawrence C. (Buzz) Cardoza
		Frank Flores
		Patricia Jeffery
		James A. Martin
		John Scheuerman
Pacific Park Plaza	General Manager	Steve Scarborough
AC Transit	Transportation Planner	Nathan Landau
		A.J. Martin
BART	Director representing MacArthur and West Oakland Stations	Lynette Sweet

Organization	Title	Name
Recreation, Senior, and Child Development Centers	Director of Community Services	Melinda Chin
Chamber of Commerce	Chairman	Jason Crouch
	Immediate Past Chair	John Gooding
	President and CEO	Bob Canter
The Hilton Garden Inn	General Manager	Bill Murray
	Sr. Vice President	Dan Evans
Courtyard by Marriott Hotel	Jeff Given	General Manager
Liquid Sugar (or Glashaus)	Broker/Owner	Jason Crouch
Emery Bay Village	Property Manager	Michelle New
Bicycle/Pedestrian Advisory Subcommittee	Chair	Scott Donahue

To guide the conversation, stakeholders were asked the following questions:

1. What do you think should be the primary goals of the Alternative Transportation Plan?
2. What do you think are the major strengths and weaknesses of the current transportation system in Emeryville? (What is working well and what areas need improvement? How it could best support various markets – residential, employment, regional retail, local retail, etc.)
3. What feedback have you received from your constituents (employees/ students/ residents of Emeryville…) about transportation in Emeryville? What are the most important needs for improved transportation in Emeryville?
4. What do think are the top three priorities in the short-term (1-2 years) and longer term (3-5 years) for improving alternative transportation services in Emeryville?
5. Since new strategies may require additional funding, do you have suggestions for potential new funding sources to help pay for enhancing services and or initiating new programs?
6. What key elements, strategies and/or programs should be included in the City's Alternative Transportation Plan for you to support it? What elements would you have concerns about?
7. What other programs and strategies do you think could be especially effective in Emeryville to provide more balanced transportation options? Potential services include bike sharing, discounted or free transit passes, charging for parking, streets designed to prioritize public transit, etc.
8. What changes to parking policies in Emeryville would you support? Potential options include charging for parking in high-demand areas, use of parking revenue for local improvements and maintenance of pedestrian areas, reduced parking requirements for new development or elimination of parking minimums, shared parking and unbundled parking, etc.

APPENDIX C. BUS STOP GUIDELINES

The purpose of this memorandum is to provide assistance with the planning and design of bus stop improvements within Emeryville. The information presented here represents general guidelines that Emeryville can use to continue upgrading stops on a systemwide, rather than stop-by-stop, basis.

This memo begins with an overview of bus stops in Emeryville (location and amenities) based on the recently completed inventory of current bus stop conditions. The second section presents general guidelines for bus stop improvements in order to make stops safer, more comfortable and more appealing to users. The final section presents a tiered approach which provides Emeryville with the basis for making system-wide changes in a rational manner.

Emeryville Bus Stop Overview

The Emery Go-Round (EGR) and AC Transit provide a high level of transit service in Emeryville. Most addresses in Emeryville are within ¼ mile of a bus stop. The Emery Go-Round is free to all passengers and provides local service throughout Emeryville, with stops at the Emeryville Amtrak Station, Bay Street Center, and major employers such as Pixar and Novartis. AC Transit is the public transit system providing fixed-route bus service throughout western Alameda and Contra Costa Counties, and transbay service to downtown San Francisco. Some level of service is available 24 hours a day seven days a week, ranging from ten minutes to one hour. The MacArthur BART Station in Oakland is a key transfer point for connections to regional transit, with all EGR routes having a stop at this BART station.

The City of Emeryville has developed a database containing bus stop information for all stops within the city limits. This database has a record for every stop listing the location (cross streets), direction, lines, passenger amenities, sidewalk condition, signage, lighting and street condition. In the future, the database could be linked to a GIS based map of the route network showing the location and picture of each stop.

There are currently 58 bus stops in Emeryville; 17 of the stops are shared between EGR and AC Transit. AC Transit has 19 individual stops and EGR has 22 stops (one stop is shared with Berkeley Lab). The majority of the bus stops in Emeryville (46 stops) do not have bus shelters although 12 of the unsheltered bus stops provide benches for waiting riders. All of the bus stops (AC Transit and EGR) have signs that indicate the route at the location.[1]

The majority of bus stops contain some map/route information and/or timetables. An information board at MacArthur BART Station provides a list of schedules and bus maps (AC Transit, Emery Go-Round, and other shuttles) for transit riders who may be seeking information on any of these services. An electronic sign that provides real-time information would be highly desirable at this location and its installation could be coordinated with BART. Additional information kiosks with signs and real-time information could also be installed in local businesses and office buildings. For example, a computer monitor can inexpensively be installed in supermarkets or building lobbies to show NextBus data from the Internet.

The largest transit hub located in the City of Emeryville is near the intersection of 40th Street and San Pablo Avenue. 40th Street is a major east-west boulevard that connects the main business and residential areas of Emeryville with the MacArthur BART Station on 40th Street in Oakland. San Pablo is a major north-south boulevard that links Emeryville with Oakland and Berkeley.

1 The consulting team found some stops that include information about routes that have changed or no longer serve them. Emery Go-Round staff is encouraged to update these signs and monitor them to ensure they are accurate.

The following services are available:

- AC Transit routes on 40th Street include: 26, 57, and TransBay C and F;
- AC Transit routes on San Pablo include: 72, 72M and 72R, and All-Nighter service route 802. There are many transfers between the local and regional AC Transit routes that require a block or more of walking.
- EGR routes stop on 40th Street at Emery Street one block west of San Pablo Avenue. In addition, the Hollis and Hollis South routes stops in the northbound direction on Park Avenue at San Pablo Avenue, one short block north of the San Pablo/40th Street intersection.

The intersection of 40th Street and San Pablo was evaluated as part of the *AC Transit Hub Review* in order to better understand how to improve connectivity.[2] Since this area is currently not formally designated as a transit center, there are no formal boundaries, identification or wayfinding signs to assist passengers with finding the bus stops and different boarding platforms. Currently, two of the four bus stops at 40th Street and San Pablo Avenue have shelters and benches and provide some transit information. The other two stops that are shared between EGR and AC Transit do not have benches or shelters. The AC Transit Hub Review recommended that the area should be identified as a transit hub in order to better connect the various bus stops and other available services.

Factors Affecting Access to Transit

A variety of factors impact the ability and choice to use transit, including the distance and time to make the trip, the condition of sidewalk or bicycle path for accessing transit, traffic volumes and speeds, and one's ability to navigate within the surrounding environment. For bicyclists, the presence of secure parking and/or the ability to bring a bicycle on the transit vehicle are important. People will want to know that they are physically safe, especially if it is after dark and/or they are alone. The provision of shelter from sun, wind, and precipitation both at the transit stop and along the way are important considerations.

The *perception* of time, distance and safety is also highly relevant, causing variations in the distance someone is willing to walk from a block or two, if at all, to more than a half mile (approximately a ten minute walk). These perceptions are influenced by comfort levels, familiarity with the path of travel and surrounding area, and knowledge of how long until the next transit vehicle arrives. Physical barriers can be a critical factor, especially for individuals with disabilities limiting their mobility.

These considerations will be critical in the development of guidelines for bus stop improvements.

Bus Stop Components

When assessing conditions and amenities at bus stops, it is important to differentiate between "street-side" and "curb-side" factors and functions. Street-side factors and functions are those that primarily impact bus operations, including pavement condition, travel lanes, speed limits, bus bays, curbs, and ramps. Curb-side factors are those things that primarily impact a bus rider's comfort, safety and convenience, including shelters, benches, lighting, schedules and maps. This memo focuses primarily on curb-side factors which are critical in the development of strategies to encourage the use of transit.

Curb-Side Factors

Improving curb-side amenities is important for transit systems because making stops safer, more comfortable and more appealing can have an immediate, positive impact on ridership. There are several categories of curb side amenities:

Signs

Every bus stop needs a visible and clearly readable sign marking the stop. Bus stop signs indicate to passengers and drivers where buses stop, as well as publicize the availability of the service. A sign should be at least 12" x 18" and should be mounted at least six feet above the ground and ideally within 4 feet of the edge of the street. The sign should be placed perpendicular to the street so that it is visible from both directions. Each transit operator that serves the stop should be listed on the sign. Space permitting, the sign should also indicate the bus stop ID #, route number(s), hours/days of operations and a telephone number to call for more information.

2 AC Transit Hub Reviews. Prepared for AC Transit by Wilbur Smith Associates and Harley & Associates. May 29, 2009.

Here's an example of a sign with a reasonable amount of information:

BUS STOP

Stop # N01100

Emeryville Go Round – BART Shopper

M-F 7:00 AM – 7:00 PM, approx every 15 minutes

Sat 9:25 AM – 9:30 PM, approx every 30 minutes

Sun 10:20 AM – 6:40 PM, approx every 40 minutes

For more information call (510) 817-1716

Here is an example of an AC Transit and EGR sign that is currently near 40th St. and San Pablo Ave. All of the bus stops in Emeryville have signs that indicate the route at the location.

ADA Accessibility

It is important to properly design and integrate bus stops into their surrounding environment so that they are accessible to as many individuals as possible. Bus stops designed to be ADA accessible allow riders with disabilities, including those that are wheelchair bound, to ride fixed-route transit which in turn limits dependency on more costly paratransit services. Though most wheelchairs require only 3' of space for comfortable circulation around a bus stop, 4' has become the accepted standard. A bus stop design should also facilitate easy wheelchair ramp deployment from either the front or rear of a bus.

System Map

In theory, every bus stop should have a system map so that riders can be certain they are boarding the correct bus for their trip. System maps can help riders plan their trip efficiently, especially if it involves a transfer between two or more routes. The majority of bus stops in Emeryville contain some map/route information. Only eight stops do not have any map/route information posted.

Placing a full size system map at every stop may not be practical, usually because there isn't space to mount the map. Providing that space often requires installation of another piece of equipment and that can get expensive. In addition, installing maps at every site can place a tremendous burden on staff whenever those maps need to be changed.

Schedules

The absence of schedules at bus stops can leave riders guessing as to when a bus might arrive to take them towards their destination. The uncertainty of not knowing when a bus will arrive can be a major disincentive to using public transit. To that end it is recommended that every stop have a printed schedule for every route serving that stop. If the stop has a shelter then the schedules can be mounted on the wall. If there's no shelter then the schedules can be placed in a tube that attaches to the sign/pole.

The primary disadvantage to placing printed schedules at each stop is that somebody has to go into the field and change the schedules whenever they are updated, and this can require a good deal of staff effort.

At the very least the bus stop sign should list the days, hours and frequency of every route (see above). Most bus stops in Emeryville contain a posted timetable. Only eight stops do not have any schedule information posted. Real time arrival information for all EGR routes is provided by NextBus.

Sidewalks

Sidewalks are an important interface between transit riders and transit operations. The sidewalk must properly accommodate riders waiting for and boarding the bus, as well as passing pedestrians. At a minimum, 3' of uninterrupted sidewalk should be maintained to ensure proper circulation and wheelchair accessibility around a bus stop. Although shelters and benches may contribute to a safe, comfortable and accessible bus stop, their presence should not minimize accessible and uninterrupted sidewalk width to less than 3' (preferably 4').

Benches and Shelters

Benches and shelters represent two of the most frequently requested improvements listed by current and potential transit riders.[3] Ideally passengers would like to have them installed at every stop, but this can be prohibitively expensive for most transit systems. For example - the purchase and installation of an "off-the-shelf" bus shelter for a single bus stop can cost a transit system as much as $7,000. Most small-city transit systems simply don't have that much money available to spend on a shelter program, and thus must develop a policy for prioritizing shelter improvements.

Currently, 16 bus stops in Emeryville contain benches and ten bus stops have shelters. Many transit systems determine where to put shelters and benches by looking at the passenger boarding activity for each stop. This approach ensures that the greatest number of passengers will use the improvements, which in turn maximizes the cost - efficiency of the capital investment.

Every system needs to develop its own boarding activity parameters. The TCRP Report[4] recommends the following general boarding guidelines for determining whether a shelter is needed at a bus stop:

- Rural Areas 10 or more boardings per day
- Suburban Areas 25 or more boardings per day
- Urban Areas 50 or more boardings per day

Sometimes benches and shelters are installed at a stop for reasons other than boarding activity. For example, a transit board might instruct staff to install a bench and shelter at a location adjacent to a senior activity center, even though the stop only generates a minimal level of boarding activity. The Board may decide it wants to do this so that the seniors who use the stop won't have to stand while they wait for the bus. In another example, staff might be instructed to install a shelter next to a day care center so that parents picking up or dropping off children won't be exposed to the elements while they wait for a bus. The important thing to remember is that while the level of boarding activity is a good way to determine where shelters and benches should be installed, it's not the only method.

Shelters come in variety of shapes, sizes and price ranges. Many firms sell off-the-shelf, utilitarian models that can be installed in just a few hours. In some cases though, jurisdictions along a route may not want a utilitarian shelter design and may opt instead for something more unique that fits in better with the surrounding land uses or street themes. In these situations the jurisdiction and transit operator may wish to contact an architectural/design firm that specializes in street treatments to sketch out some ideas for a more unique looking shelter. The downside to using a unique shelter is that it could raise the cost of bus stop improvements by as much as 50%.

It's a good idea to put a distinct name on the shelter whenever possible. This could be something as simple as listing the adjacent cross streets (e.g., San Pablo Ave./ 40th St.). Giving a name to a shelter helps passengers to start thinking of the bus stop as a place, rather than just a "stop." Giving it a name also helps to convey a sense of "permanence" that is often critical to attracting long-term riders.

3 This observation is based on Nelson\Nygaard's experience with passenger surveys over the last ten years.

4 Transportation Cooperative Research Program's (TCRP) Report 19 - *Guidelines for the Location and Design of Bus Stops* (1996).

Lighting

Transit operators that run buses during early morning and late evening hours should consider how lighting at a bus stop might affect ridership during those hours. Lighting can enhance both actual and perceived safety by increasing overall visibility. A rider will be most comfortable and likely to use a bus stop when lighting is sufficient to indicate where they are relative to their surroundings. A well-lit bus stop will also help prevent conflicts between buses approaching the stop and riders waiting at the stop. Lighting will also increase a bus driver's vision, ensuring that riders will not be passed by without being picked up.

Lighting can be either direct (installed at the bus stop) or indirect (lighting from an adjacent overhead street lamp). The majority of bus stops in Emeryville have adequate lighting from overhead street lamps and nearby buildings.

The issue of lighting also covers "stop request" identification lights. These are flashing lights that are placed on top of the bus stop sign or the shelter. A passenger pushes the button and the light flashes for 30 seconds to signal the approaching bus to stop. These stop request lights can help reduce the incidents of "pass-bys" that can often occur at stops where visibility and lighting are poor.

Trash Receptacles

Customers often judge the quality, safety, and convenience of transit service solely on the appearance of bus stops. Scattered trash may indicate to a potential rider that a bus stop is so inactive that it is unworthy of maintenance. Trash receptacles are an inexpensive way of keeping bus stops tidy.

However, trash receptacles that are not emptied or maintained on a regular basis can become as much of an eyesore as trash found on the ground at those stops without a trash can. Keeping the receptacles clean usually requires an agreement between the transit operator and the local municipality to determine who'll be responsible for trash pick-up. In this case, the City of Emeryville and the ETMA and AC Transit would need to determine which entity is responsible for this function.

Nearly half (25) of the bus stops in Emeryville contain trash receptacles in close proximity to the bus stop.

Advanced Passenger Information Devices

More and more transit agencies are introducing advanced passenger information devices at high traffic bus stops (especially transfer centers). These systems include:

- NextBus™ – A digital overhead display that indicates the arrival time, route # and destination of the next bus approaching the stop
- Information Kiosks – These electronic kiosks, similar in size to a small Automated Teller Machine, have touch screens and can be used by passengers to call up information about schedules, transfers, fares and route maps.

These systems can be expensive to purchase, install and maintain and thus it is currently cost prohibitive to place them at more than a handful of locations in any given system. These systems frequently also require that the transit agency install GIS-based AVL systems. This can add yet another layer of cost to the equation.

Bus Stop Improvement Program

In a perfect world every bus stop would always be in perfect condition, would have every desired amenity, would be located in a manner which positively impacts bus operations, would have great linkages to adjacent bike facilities and would never negatively impact surrounding landowners. In the real world, however, Emeryville must balance the needs of passengers, adjacent landowners, emergency services, pedestrians and other motorists with the realities of available funding.

Instead of approaching bus stop improvements "one stop at a time" in the hope of bringing every stop up to the level of an "ideal stop", Nelson\Nygaard is proposing a tiered approach for the City's Capital Improvement Program (CIP) that will provide Emeryville with the basis for making system-wide changes in a rational manner. Nelson\Nygaard recommends four tiers of "improvements":

Tier 1 – Information, Accessibility and Operational Feasibility

Tier 2 – Lighting

Tier 3 – Shelters and Benches

Tier 4 – Advanced Passenger Systems and Specialized Services

Tier 1 – Information, Accessibility and Operational Feasibility

Tier 1 bus stops provide the minimum level of amenities necessary to make them useful for any passenger. A Tier 1 stop also meets all of the necessary operational requirements needed to safely accommodate EGR and AC Transit buses. This tier has three components:

Signage

Every stop must be signed. To a certain extent it doesn't really matter if the sign is mounted on pole or an adjacent structure (e.g., street lamp), as long as it is visible to both pedestrians and motorists approaching from either direction.

Signs should be at least 12" x18" in size. They should be double-sided and coated with reflective material.

At a minimum, each sign should include the following information:

- Bus Stop
- Stop ID #
- Routes Served (Route # and Destination)
- Days/Hours of service
- Approximate frequency
- Telephone # for information

It is also recommended that a route map be included in a pole tube-sleeve at every stop that has a pole.

Curb areas at each stop should be painted with the words "Bus Stop" in red, yellow, white or green (depending upon the requirements of the local jurisdiction).

Accessibility

Each bus stop, to the extent feasible and practical, should conform to the minimum accessibility guidelines outlined by the ADA. This means that every stop should have a level boarding/waiting area with a flat surface covered with a non-slip material, and an unobstructed, level travel path leading to a curb cut. Whenever feasible, there should also be an unobstructed and level path connecting the bus stop to any adjacent bicycle paths.

Operational Feasibility

This category is really more about what is unacceptable rather than acceptable. In terms of stop location, far-side stops should be the preference, but any location will be acceptable as long as it doesn't negatively impact operations.

A bus stop should never be placed in a location where buses might:

- Block traffic intersections
- Block high volume commercial driveways
- Block emergency service access
- Extend into multiple traffic lanes
- Block a crosswalk

In addition, stops should not be placed in locations that compromise a bus driver's visibility in either direction.

The use of right-side "Queue Jumper Lanes" is encouraged in those areas where it will save running time by allowing buses to avoid excessive peak period delays at traffic signals. However, the placement of bus stops in right-side turn lanes is not encouraged because of potential conflicts between buses as they merge back into traffic and vehicles that try to cut in front of them to access the turn lane. This might not always be possible, but it should be considered the preferred approach.

Tier 2 – Lighting

Once every stop has been brought up to the Tier 1 level Emeryville can turn its attention to implementing Tier 2 improvements. The focus of this second tier is security; more specifically lighting/visibility.

Safety and security is always an important issue for public transit. The typical passenger probably feels fairly safe once he/she is on-board a bus. The challenge is in helping people to feel safe while they are waiting for a bus. In some areas passengers might be standing at a bus stop up to 30 minutes. Safety becomes an issue when you're standing outside for this long, especially if it's early in the morning or late at evening and dark.

One way to improve the sense of safety and security at bus stops is to make sure that every stop is illuminated. This can be accomplished through the use of direct or indirect lighting. Direct lighting refers to lights installed directly at a stop for the express purpose of illuminating the stop. Indirect lighting can come from sources like overhead streetlamps or lights from an adjacent building.

Each Emeryville stop should be evaluated at night to determine whether it has a sufficient amount of lighting (this is a subjective, not an objective, process). In some cases simply moving the stop closer to an existing indirect source of light might solve the problem. For all other cases Emeryville should consider adding some source of direct lighting. This can be achieved by "hard-wiring" a new light source to an adjacent power supply, or by installing a solar powered light.

Tier 3 - Seating and Shelters

Once the Tier 2 improvements are in place Emeryville can move on to Tier 3. Tier 3 improvements are expensive to install and to maintain, and thus it's important that they be located at stops where they will be used on a regular basis. This helps ensure that Emeryville maximizes the use of its limited capital resources.

Nelson\Nygaard recommends that Emeryville consider installing shelters at locations which have an average of 25 or more boardings per day. Benches should be placed at stops with an average of 15 or more boardings per day.[5]

Transit shelter in San Francisco
Source: Lundberg Design

5 Transportation Cooperative Research Program's (TCRP) Report 19 - *Guidelines for the Location and Design of Bus Stops* (1996).

Tier 4 – Advanced Information Systems

Tier 4 represents the highest level of amenities at a bus stop. All EGR stops already have NextBus advanced passenger information systems which provides real time arrival information. Emeryville should consider whether there are opportunities to install NextBus display panels.

An example of SFMTA's new bus shelter design, now being rolled out at select locations around the city, is shown on the previous page. In this case, the cost of the shelter itself may be covered through San Francisco's advertising contract with Clear Channel Communications.[6] Emeryville may wish to provide its own distinctive shelter design that reflects community taste and values. High level unit cost estimates for each bus stop are provided in Table 1.

Figure C-1 Unit Cost Estimates for Bus Stop Amenities

Transit Amenities	Approximate Cost
Transit Shelter[1]	$ 7,000
Transit Signage	$ 400
NextBus Display	$ 1,200
Subtotal	$ 8,600
Pedestrian Amenities Costs	
Pedestrian-scale Lighting	$ 8,400
Street-scale Lighting	$ 3,500
Trash Receptacles	$ 2,000
Enhanced Crosswalk Treatment[2]	$ 5,500
Street Trees[3]	$ 4,000
Utility / Conduit Allowance	$ 2,500
Subtotal	$ 25,900
TOTAL	**$ 34,500**

Sources: SFDPW, SFMTA, SFCTA 19th Ave Corridor Study, SF Underground Utility Task Force Report, CD+A, Nelson\Nygaard. As developed for the SFCTA Bayview Neighborhood Transportation Plan.

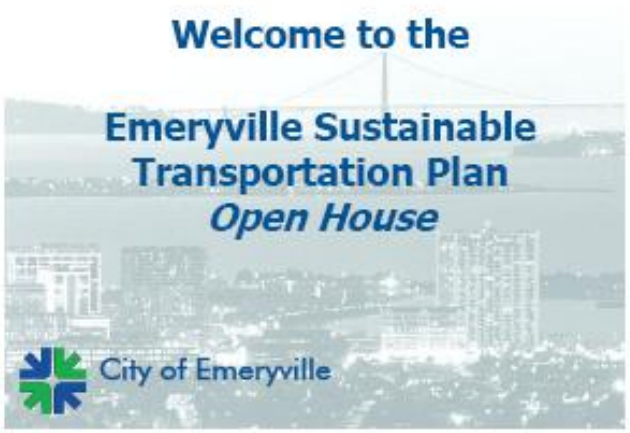
1 Shelter costs could be covered by a contractual agreement with Clear Channel Communications.

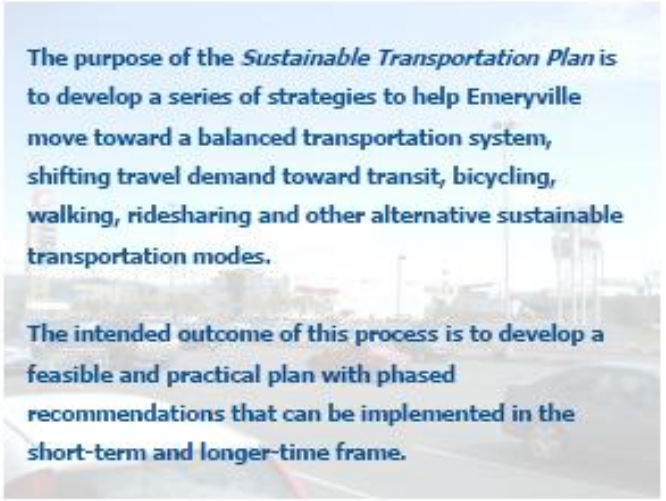
2 Cost includes one crosswalk.

3 Street trees include costs of tree grate and tree.

6 Clear Channel-provided shelters are to be maintained by Clear Channel staff: an agreement effective December, 2007, and to be in effect for fifteen years. Clear Channel will be required to inspect each shelter and kiosk at least twice per week, and those on Market Street at least three times per week. The agreement requires Clear Channel to make daily inspections of all platforms and pick-up trash, remove graffiti, clean and wash each boarding platform, inspect LED signs and lighting fixtures, and replace defective lights. http://www.sfmta.com/cms/apress/AdvertisingAgreementApprovedbyBoardofSupervisors.htm

APPENDIX D. OPEN HOUSE PRESENTATION





Recently Completed/Ongoing Planning Efforts

- General Plan (adopted 2009, amended 2010)
- Bicycle and Pedestrian Master Plan (currently undergoing update)
- Shellmound Streetscape Design Guidelines (draft October 2007)
- Parking Policy and Management Implementation Plan (North Hollis Parking Study) (May 2008)
- Climate Action Plan (November 2008)
- Powell and Christie Streetscape Design Plan

How Emeryville Commutes

Emeryville Residents	Drive alone	Carpool	Transit	Bicycle	Walk	Other	Work at home
Working in Emeryville	37%	5.3%	n/a	3.8%	28%	1.1%	25%
Working Elsewhere	60%	10%	28%	0.7%	0.1%	2.0%	0%
Emeryville Workers							
Living Elsewhere	77%	13%	6.4%	1.3%	1.4%	0.7%	n/a

Source: 2000 US Census Transportation Planning Package

Paratransit Services

- East Bay Paratransit
  - ADA demand responsive service for people unable to use AC Transit buses or BART

- Door-to-Door Shuttle Service -- 8 To Go
  - Door-to-door, shared ride transportation for residents of the 94608 zip code area to destinations in the 94608 zip code area.

TDM is a general term for strategies that increase overall system efficiency by encouraging a shift from single-occupant vehicle (SOV) trips to other modes of travel such as transit, walking, or bicycling.

Existing Transportation Demand Management Programs and Services

Emeryville Transportation Management Association (TMA)

The Emeryville TMA is non-profit organization whose primary purpose is to increase access and mobility to, from and within Emeryville. The TMA is funded through a citywide Property based Business Improvement District (PBID).

Emeryville Transportation Management Association (TMA)

The TMA administers the following services within Emeryville:

- Emery Go-Round
- Alameda County Guaranteed Ride Home (GRH) Program
- Zipcar Carsharing

The content of this section represents input from over 30 stakeholders who were selected to represent a diversity of perspectives. Stakeholders were asked about their perspectives on current transportation conditions in Emeryville, priority issues and potential opportunities for improvement.

Key Issues and Themes

Stakeholder Key Issues and Themes

Improve Ease of Walking in Emeryville

- Lack of sidewalk connectivity was frequently cited
- Many intersections were noted for their unfriendly pedestrian design (long crossing distances, wide vehicle turning radii)

Stakeholder Key Issues and Themes

Targeted Improvements to Transit Services

- Extend Emery-Go Round Hours
- Speed up Service and enhance passenger amenities
- Better Access to Intermodal Hubs and Transit Hubs
- Enhanced service to residential areas

Stakeholder Key Issues and Themes

Promote a Balanced Transportation System

While the need to provide for non-auto modes of travel was supported, many stakeholders noted that private auto travel will remain an integral element of the Emeryville transportation network.

- A significant number of stakeholders noted that ease of automobile access to regional retail destinations in Emeryville is important.
- Emeryville should make a significant shift to other modes to achieve social, economic and environment goals.

Stakeholder Key Issues and Themes

Support Bicycling at an Appropriate Level of Investment

- Most stakeholders support bicycling improvements
- No clear consensus about appropriate level of investment.

Stakeholder Key Issues and Themes

Differing Positions on Parking Policies

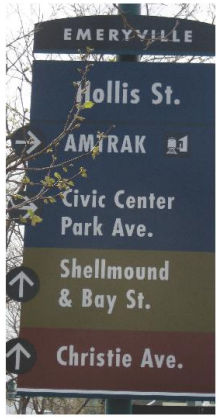
No clear consensus on how parking revenue should be used (additional parking vs. promoting other modes)

- Desire to protect on-street residential parking
- Ensuring residential supply is important; unsure about "unbundling parking"


This concludes our presentation.
We look forward to receiving your feedback on the Draft Strategies.
Staff and members of the consultant team are on hand to assist in answering your questions
Emeryville Sustainable Transportation Plan Open House
Nelson Nygaard


Hollis St.
Christie Ave.
PUSH BUTTON FOR WALK
SIGNAL
Powell
Eastbound

Emeryville Wayfinding



Wayfinding refers to how people orient themselves and navigate from place to place,

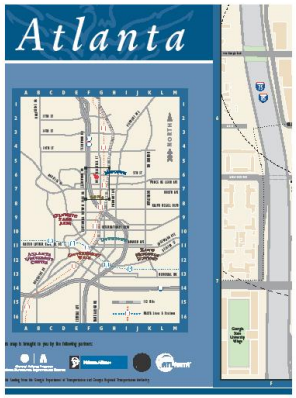
and the types of information they use to do so. For locals and visitors alike, finding one's direction and orientation around Emeryville can be a daunting challenge. A combination of one-way streets with high traffic volumes, a complex street layout, and several significant connectivity barriers make it difficult to find one's destination. Given Emeryville's small footprint and close connections with Berkeley and Oakland as well as being a regional destination, it could serve as a model for a highly legible and effective wayfinding system.

The challenges of wayfinding are not limited to automobile traffic; they are distributed across all modes of travel. This is particularly true in Emeryville as the city is moving towards a more balanced and sustainable transportation system

Components of a Wayfinding Plan

A comprehensive wayfinding plan in Emeryville should have the following components:

- Bicycle wayfinding should be consistent with Berkeley's existing program and Oakland's planned program, including destination-oriented signage, special color treatments of street signs along major bicycle routes, sharrows and other techniques.
- Transit users could better orient themselves through high quality bus shelters complete with system maps, a detailed local walking map and real-time bus arrival displays. Los Angeles' Metro Rapid program is a good model, and the City of Santa Monica is developing an improved transit wayfinding program for its Big Blue Bus service.
- Collaborate with the City of Berkeley to better mark Emeryville's only northern gateway, at 7th and Folger. Ideally, work to acquire property in Berkeley in order to extend Hollis directly to Ashby.
- Consider reducing some street names. For example, Bolivar Street in Berkeley turns into Bay Street in Emeryville, then becomes Shellmound, which runs parallel with two additional streets called Bay Street within the Bay Street Shops and Residences, before turning into 40th Street.
- The City's official map already identifies its major retail centers, including Emery Bay Public Market, Powell Street Plaza, Bay Street, East Bay Bridge and the Promenade Shops. Continue to build the image of these places through strong landscape, public art, lighting, materials and other tools.
- For pedestrians, consider neighborhood walking maps highlighting all the goods and services available within walking distance, much as the City of Seattle has done. See http://feetfirst.info/mapping.
- In all wayfinding programs, work to maintain and build upon existing color schemes and design templates, supplementing existing signage rather than creating new systems.



Emery Go-Round

The Emery Go-Round is a free fixed-route shuttle service administered by the Emeryville Transportation Management Association (TMA).

Emery Go-Round service is highly visible - vehicles are uniquely identified and there is good public information available to users. NextBus offers riders real-time arrival and departure information. In April 2010, several minor improvements were made to further improve this well utilized service including publication of a new Schedule and Route Guide. Emery Go-Round has five routes: North and South and Hollis, Powell, Watergate Express and the BART shopper. The MacArthur BART Station in Oakland is a key transfer point for connections to regional transit, with all routes serving this BART station.

In 2008, the Emery Go-Round carried about 1.3 million riders. The majority of riders during peak hours are going to or from work. Mid-day service carries workers as well as riders traveling for other trip purposes.

Emery Go-Round Strategies

The following are potential modifications of the Hollis Route to serve the Emeryville Senior Center

Consolidation of Hollis Street Routes

Consider eliminating the North and South Hollis Routes and operate a single route along Hollis during all service hours.

Route Simplification

To gain minor time savings and maintain simplicity of the Powell and Watergate Routes consider eliminating the loop into the Watergate Office Towers and potentially add a passenger shelter opposite the drive.

Through-Routing of Hollis and BART Shopper Routes

To eliminate transferring along 40th Street or the BART station, consider operating a single Hollis Route outbound that continues as a BART Shopper Route inbound. The BART Shopper Route could travel northbound on Shellmound and inbound as a Hollis Route.

Other Considerations

Access at MacArthur BART Station

Work with AC Transit and BART to improve pedestrian crossings and reduce vehicle conflicts. Consider shifting stops to an on-street location so vehicles would not need to enter the traffic lane at the MacArthur BART station.

Delay and Signal Priority

Plan for Transit Signal Prioritization (TSP) at major intersections and consider other improvements to speed operations such as transit-only lanes.

Bicycle Connectivity/Convenience

Bicycling is a critical component for a sustainable future in Emeryville.

A parallel effort is underway to update the City's Bicycle and Pedestrian Master Plan.

Although the Sustainable Transportation Plan does not intend to duplicate the efforts of the forthcoming Plan, some strategies are recommended to support the city goal of creating a safe, comprehensive, and integrated bicycle system.

Strategies

Install Bicycle Boxes & Advanced Stop Bars

Bicycle boxes and advanced stop bars are pavement markings that provide a dedicated and visible place to stop and wait in front of traffic at traffic signals. These enable cyclists to proceed visibly and safely once lights turn green. This type of facility reduces collisions, especially those on right hand turns. The bike box at left was recently implemented in San Francisco.

Develop Bicycle Parking Requirements

In most cities, vehicular parking requirements are issued to new developments depending on the land use. Similarly, bicycle parking should be required of new development to ensure bicyclists have access to ample safe and convenient parking facilities.

Install Bicycle-Only Signal Phases/Actuators

In areas with high levels of bicycle activity, and/or high volumes of cross-traffic, cyclists may require their own signal phasing to ensure safe crossing of streets. This type of signal can be actuated either on a timed basis like some traffic signals or special bicycle actuators can be installed that react to the presence of a bicycle. A bicycle-only signal was recently installed at Golden Gate Park to reduce collisions.

Use Diverters and Other Traffic Calming Devices

Berkeley's Bicycle Boulevards are largely successful due to the use of traffic calming devices to reduce vehicle speeds and ensure bicycle safety. Similarly, appropriate streets in Emeryville could install traffic diverters and other traffic calming devices in corridors identified for bicycle priority.

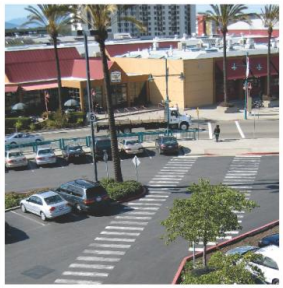
Expand Public and Private Bicycle Parking

Bicycle parking should be provided at all destinations either publicly or privately. Parking can be designed and implemented based on the type of demand which could include long-term (work, residential developments) or short-term (shoppers, recreational users or visitors).

Ensure Bicycle Priority Streets are Safe

The network of signed bike routes and bicycle boulevards in the General Plan should be further examined to ensure all portions of those streets provide the "as advertised" benefits for bicycles. Segments of those streets that may need to share priority with other modes such as transit or commercial loading, should provide adequate warning to cyclists.

Parking



Parking Reform is Key to Improving Access and Reducing Traffic

The supply, utilization, and management of on and off-street parking in Emeryville are key factors that influence:

- Multimodal access to and mobility within Emeryville
- The affordability and choices of housing and commercial space
- The potential for the city to grow and develop as planned

Parking supply and occupancy were surveyed for the North Hollis Area in 2008, where on-street parking occupancy peaks in late morning at almost 90% near Hollis and at 71% in adjacent residential neighborhoods.

Parking supply and occupancy surveys are needed to identify auto access issues and sites with underutilized parking in the South Hollis, Park Avenue and Bayfront Districts.

Parking Strategies

Revise parking standards to meet city goals

Eliminate minimum off-street parking requirements

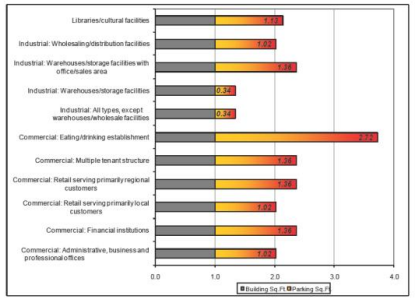
- This does not necessarily mean that no parking will be built; instead property-owners will provide parking as necessary to meet market demand.
- Allows existing property-owners and developers to lease or sell their excess parking to other users, satisfying additional parking demand, at low cost.
- Managing public on-street and off-street parking – these are better tools for maintaining on-street parking availability.
- Using valuable land to satisfy minimum parking requirements represents a hidden subsidy for driving that can worsen traffic congestion.

Alternative: Incentivize or mandate shared parking and payment of in-lieu fees

Manage public parking to ensure availability

- Adopt vacancy goals for public on-street and off-street parking (Recommended 15% and 10% respectively).
- Where paid parking is necessary, install smart meters that allow adjustable rates, or sell permits.
- Grant staff administrative authority to establish and adjust parking rates and/or time limits as necessary to meet these vacancy goals.
- Monitor parking occupancy and adjust rates accordingly.

SPACE REQUIRED FOR PARKING FOR EACH SQUARE FOOT OF LAND USE



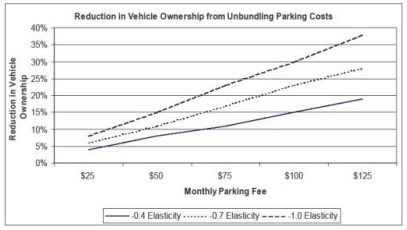
Establish Parking Benefit Districts

- Establish Parking Benefit Districts with Permit Parking Areas.
- Dedicate all parking meter/permit revenue to improvements in the District in which it was collected.
- Limit the number of permits issued to guarantee peak hour occupancy of 85% or less.
- If occupancy is less than 85%, sell permits for any surplus parking capacity to non-resident commuters at fair market rates.

Require Parking to be "Unbundled" from commercial and residential leases and sale agreements

- Require new office and residential development to separate, or "unbundle" the full cost of parking. Create a separate parking charge for employee and resident spaces.

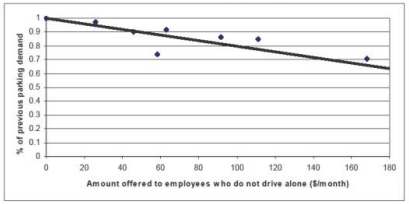
IMPACT OF UNBUNDLED PARKING ON VEHICLE OWNERSHIP



Require compliance with state parking cash-out law

- Adopt a local ordinance requiring proof of compliance with the state parking cash-out law upon renewal of local business license (this requirement may be extended to businesses with 10-50 employees).
- Reduces parking demand and associated traffic.
- Provides an equal transportation subsidy to employees who ride transit, carpool, vanpool, walk or bicycle to work.
- Provides a low-cost fringe benefit that can help businesses recruit and retain employees.
- Simple to administer and enforce (1-2 minutes per employee per month).

EFFECTS OF PARKING CASH-OUT ON PARKING DEMAND



Transportation Demand Management

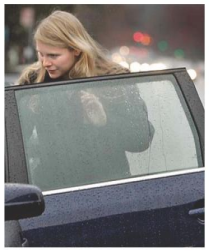
Transportation Demand Management, or TDM, is a general term for strategies that increase overall system efficiency by encouraging a shift from single-occupant vehicle (SOV) trips to other modes of travel such as transit, walking, or bicycling. TDM emphasizes the movement of people and goods, rather than motor vehicles, and gives priority to more efficient modes such as walking, cycling, ridesharing, public and private transit and telecommuting.

TDM strategies

are those that focus on better utilizing existing transportation investments and infrastructure in Emeryville by reducing the demand for vehicle trips.

The intent of TDM programs are to reduce the demand for automobile trips. This ensures that investments in transportation capacity are utilized efficiently and reduces the need for continual roadway expansion.

TDM Strategies



Expand Casual Carpooling Pick-up Locations

Although casual carpooling locations are created through a grassroots "organic" process, the city can incentivize casual carpooling through a number of efforts:

- Provide locations and amenities such as lighting, benches, and signage indicating a carpool location.
- Enforce appropriate curb restrictions and ensure public transportation is nearby.
- Ensure casual carpool locations are appropriately promoted through city media and online transportation portals.

Implement a Pilot Employer-Based Bicycle Share Program

An employer based bicycle sharing program may be an initial first step for bike sharing in Emeryville. It would help reduce the need for vehicles for short trips to nearby amenities and services. The City could be the first to initiate a bicycle sharing program, as a proof-of-concept and to encourage healthy practices among city employees.

Expand and Further Incentivize Carsharing Programs

The TMA and Zipcar have led the way by providing six Zipcar carsharing pods throughout Emeryville. Potential strategies:

- Extend discounted membership fees to all Emeryville residents and employees.
- Increase the number of carsharing pods (Zipcar and CityCarShare).
- Assist carsharing marketing with city support.
- Consider replacing city fleet and utilize carsharing.
- Establish carsharing pods at new developments.

Encourage Employers and Homeowners Associations to Participate in EasyPass Program

The EasyPass Program is a way of reducing the cost of using AC Transit services by sharing the cost among a large group. Encourage large developments or employers to participate in the EasyPass program and subsequently, offer low-cost transit passes to their employees or residents.

Consider expanding the Role of the Emeryville TMA

The existing TMA's primary function is planning and operation of the city's Emery Go-Round service. Potential additional roles include:

- Online Ride Matching Efforts to supplement 511.org.
- Online commute information portal for Emeryville residents and employers.

Establish Consolidated Home Delivery for High-Volume Retailers

An innovative concept to reduce vehicle trips would be a consolidated home delivery service that would cater to customers shopping at one of Emeryville's many large retailers. A similar program has been operating in Manhattan's Home Depot stores. That service delivers customer goods within a specified radius of Manhattan for a nominal fee.