



# Mobility Element

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August 2015

## Section 1: Introduction

Pasadena envisions a more livable and economically strong City for the 21st Century. That vision speaks to transportation policy and sets forth a Guiding Principle that views Pasadena as “a community where people can circulate without cars.” The vision relies upon an integrated and multimodal transportation system that provides choices and accessibility for everyone living and working in the City. Key strategies to achieve this vision promote non-auto travel including public transit services, parking strategies, bicycle facilities, car-sharing programs and pedestrian components that are well coordinated and connected with a larger regional transportation system. Such a safe and convenient transportation system for all modes of travel is necessary to support planned land uses in the community and also to manage mobility for residents, employees, and visitors.

The City conducted a two-year community outreach program in preparation of the 2009 Mobility Element. The workshops, community meetings, commission meetings, public hearings and City Council meetings provided considerable review and comments. This outreach resulted in development of a framework for the Mobility Element that focuses on the following three major objectives:

- Enhance Livability
- Encourage walking, biking, transit and other alternatives to motor vehicles
- Create a supportive climate for economic viability

These objectives are outlined in this report which is organized into the following major chapters: Purpose of the Mobility Element; Issues, Objectives & Policies; Mobility Plan and Implementation Programs. Technical appendices provide more detailed information on the travel demand model, as well as full-size images and maps that are included in the main chapters.

### **Eight Guiding Principles of the Pasadena General Plan:**

Principle 1: Growth will be targeted to serve community needs and enhance the quality of life.

Principle 2: Change will be harmonized to preserve Pasadena's historic character and environment.

Principle 3: Economic vitality will be promoted to provide jobs, services, revenues and opportunities.

Principle 4: Pasadena will be promoted as healthy family community.

Principle 5: Pasadena will be a city where people can circulate without cars.

Principle 6: Pasadena will be promoted as a cultural, scientific, corporate, entertainment and educational center for the region.

Principle 7: Community participation will be a permanent part of achieving a greater city.

Principle 8: Pasadena is committed to public education and a diverse educational system responsive to the broad needs of the community.

## **Section 2: Purpose of the Mobility Element**

The ability of a community to balance and facilitate the different components of its transportation system is important to the creation and preservation of a quality living and business environment. The function of a community's transportation system is to provide for the movement of people and goods including pedestrians, bicycles, transit and other vehicle traffic flows within and through the community.

Pasadena's General Plan Mobility Element (commonly known as the Circulation Element in other cities) guides the continuing development of the transportation system to support planned growth. The anticipated development pattern, as identified in the Land Use Element, will increase the use of the City's transportation systems, including demand for local and regional roadways. Regional growth, particularly in north Los Angeles County and San Bernardino County, will continue to have effects on the City since Pasadena is a regional economic activity center.

The purpose of the Mobility Element is twofold. First, and most important, it contains measures for the implementation of the City's Guiding Principle related to mobility – Pasadena will be a city where people can circulate without cars. Second, the Mobility Element addresses the requirements of California state law designed to evaluate the transportation needs of the community within the context of the region and to present a comprehensive plan to meet those needs.

### 2.1 Land Use and Mobility

The Mobility Element of the General Plan demonstrates the relationship between the Land Use Plan and the Mobility Plan for the City as required by Government Code Section 65302(b). The reason for this linkage is that the Mobility Element is more than a transportation plan; it also concerns itself with the mobility of people and goods, and provisions for energy, water, sewage, storm drainage and communications. The provisions of the Mobility Element support the goals, objectives, policies and provisions of the General Plan Land Use Element. In turn, the Land Use Element is supported by the community's transportation system and the plans, projects, and proposals for improvement of that system.

The Mobility Element of the General Plan is also internally consistent and complements other elements of Pasadena's Comprehensive General Plan in conformance with Government Code Section 65300.5. This consistency is necessary because the goals, policies, and objectives of the Mobility Element have a direct impact on the physical, social, and economic fabric of the City.

### 2.2 Scope and Content of the Mobility Element

The Mobility Element sets forth goals and policies to improve overall transportation in Pasadena. The Mobility Element's underlying objective – promote a livable community where people can circulate without cars – establishes its policy direction. Non-auto travel modes are emphasized in this Element in order to recognize their role in improving the City's environment and quality of life.

The Mobility Element is based on approaches that address the needs of multimodal corridors and streets as well as community neighborhoods that are affected by traffic. Because Pasadena is a vibrant economic community, local transportation is inextricably linked with the regional transportation demand. Therefore, the Element also promotes active participation in the development and implementation of regional policies and programs to manage and alleviate area wide traffic congestion.

The goal of the Mobility Element is to articulate objectives, policies and actions that will provide a safe, efficient, balanced and serviceable framework. Its implementation will facilitate the movement of people and goods within the City and provide access to the regional transportation network.

### 2.3 Relationships to other General Plan Elements

The 1994 General Plan established a unified vision for the future of the City that was shaped and driven by community values reflecting the input of residents. The 1994 General Plan set a goal of reducing dependence on single-occupancy vehicles. Since 1994, the City has aggressively pursued and implemented many transportation-related programs to achieve the vision that “Pasadena will be a city where people can circulate without cars.” This Mobility Element Update is consistent with that vision.

### 2.4 Transportation Achievement Since the 2004 General Plan

- Suggested Routes to School Report and Maps (2006)
- Safe Routes to School Improvements (2006-2007)
  - IRWL – 3 locations
  - Curb Ramps
  - Bulb-outs and medians
- Pasadena Pedestrian Plan (2006)
- OTS Safe Strides and Rides (Phase I) (2005-2007)
  - IRWL - 2 locations
  - Pedestrian Safety Video
  - Bicycle Helmet Distribution and Bicycle Rodeos
- OTS Safe Strides and Rides Phase II (2007-2009)
  - Bicycle Helmet Distribution and Bicycle Rodeos
  - Rose Bowl Loop Bicycle Safety Campaign
  - Crossroads Upgrade
  - Enforcement
- OTS Pedestrian Safety at Signalized Intersections Project (2010-2011)
  - Pedestrian Safety Study
  - Stop B4 the Line Pedestrian Safety Campaign
- Safe Routes to School Education/Outreach (2013-2014)
  - Safe School Zones/“We Make Time” Campaign
- Berkeley Institute of Transportation Studies Traffic Safety Assessment (TSA) (2014)
- HSIP Funded Infrastructure Improvements (2013-2016)

- Neighborhood Traffic Management Program
- Adoption the Complete Streets Plan
- Completion of the 2000 Bicycle Master Plan
- Bicycle Transportation Action Plan
- Rules of the Road Bike Safety Brochure

## 2.5 Related Transportation Plans and Programs

The Government Code recognizes the need for transportation and mobility planners to consider regional transportation issues and improvement programs. The City of Pasadena is a vibrant, regional economic-activity center served by regional transportation. The City is located at the critical junction of the I-210 Freeway, State Route 134 and at the entrance to the I-110 Freeway. The interface of these regional and local systems and management of traffic transitions to and from these networks is a necessary consideration in development of the Mobility Plan. Consequently, various provisions address efforts to coordinate City transportation improvements with the regional transportation network. In addition, the Mobility Element discusses the need for coordination between regional transportation agencies including the California Department of Transportation (Caltrans), Los Angeles County Metropolitan Transportation Authority (MTA), Foothill Transit, South Coast Air Quality Management District (AQMD), the County of Los Angeles and adjoining municipal jurisdictions, and special districts such as the Pasadena Unified School District (PUSD).

## 2.6 State Requirements

All components of the Mobility Element conform to the State of California's General Plan Guidelines [Government Code Section 65302(b)]. These requirements include the following:

- Identification and analysis of mobility needs and issues
- A statement of goals, objectives and policies based on the total transportation needs of the community
- Diagrams, maps, and other graphic representations showing the proposed circulatory system
- A description of the proposed transportation system and the interrelated system parts including preparation of a computer model
- Standards and criteria for the location, design, operation and levels of service of transportation facilities
- A guide to the implementation of the mobility element
- Balance a multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context for the general plan.

## 2.7 Public Outreach

During the entire General Plan Update process, City Staff facilitated community outreach programs at every milestone or benchmark to gather community input or general consensus.

Year		Description	Deliverable
2009	Community Outreach	After nine (9) months of community outreach to 3,000 stakeholders and the City received thousands of comments on issues related to land use, mobility, open space and conservation.	Outreach Summary Report
2010	Workshops	Over 175 members of the community participated at the workshops. The information gathered and shared at the workshops was used as a framework in developing a series of draft alternatives at a community charrette in November 2010.	Draft Alternatives
2010	Charrettes	A multi-day intensive workshop to develop and design draft themes, or alternatives.	Four (4) draft alternatives to be analyzed and evaluated for impacts
2011	Alternatives Survey	A General Plan Community Survey was distributed that asked the community for feedback on which alternative, or combination of alternatives, were preferred for six planning areas. The survey also sought feedback on the guiding principles of the General Plan and mobility policies.	Framework to begin drafting a concept land use plan utilizing key findings from 3,000 returned surveys.
2011	Mobility Element Workshops	A series of public workshops to focus on the Mobility Element's policies, objectives and programming initiatives. The public commented on the Bicycle Transportation Action Plan, Street Types	Affirmation of the Mobility Element policies and objectives. Community Input the programming initiatives.

		Plan and the Short Range Transit Plan.	
2012	Public Meetings	Staff worked with the commissions and community in reviewing the objectives and policies that support the vision of the community. During that same time period, staff refined four survey alternatives into one balanced draft concept map	Draft Concept Plan for Commissions and City Council to review.
2012	Concept Plan	Staff began the process of presenting recommendations on the General Plan Land Use and Mobility Elements to the City Council and various other City Commissions.	Defined recommendations and changes to the General Plan's existing guiding principles, land use and mobility objectives, supporting policies, general plan diagram, and development levels.
2013	Environmental Review	The City held four scoping meetings for the project to receive comments on the scope and content of the proposed EIR.	Present environmental information and identified topics that should be considered in the EIR.
2013	Council Approvals	The Council reviewed and provided direction on changes to eight components to the Land Use and Mobility Elements and directed city staff to study the environmental impacts of those changes.	Include changes to the guiding principles, new policy topic areas, new development caps, a revised Land Use Diagram, and other items.
2014	Policy Work	The City held a community meeting to review draft General Plan policies that will direct the City's future.	Input was collected on the draft Land Use and Mobility Element goals and policies

*General Plan Update Advisory Committee (GPUAC)*

City Council appointed the General Plan Update Advisory Committee to guide the community outreach and participate in the update process. Staff and the GPUAC worked closely with the Planning Commission and the Transportation Advisory Committee to address the comments received by the community. With a goal reaching as many people as possible, and specifically to reach segments of the community that generally do not participate.

### Section 3: Issues, Objectives and Policies

The Mobility Element contains multimodal components that will enhance the performance of Pasadena's transportation system. It is structured to effectively implement the objectives and policies that reflect both citizens' and decision-makers' desires to provide mobility and quality access to existing and future residential, recreational and employment uses.

The following key issues, objectives and policies were identified through extensive community and intergovernmental outreach efforts, transportation analysis, and consideration of objectives identified in the General Plan's Guiding Principles.

#### 3.1 Issues

The preliminary Outreach Program in 2009 brought forward community issues and concerns. These comments were published in the Draft Outreach Summary Report dated 2009. The *Dominant Themes* that were consistently heard pertaining to Mobility were Traffic and Transit.

Traffic congestion was identified as one of the most challenging issues facing the city. Although some pointed out that local traffic was not nearly as bad as other areas in the region and that traffic can be a sign of economic success, many participants expressed frustration with increase in traffic congestion. Higher density residential and office developments in the City's Central District were repeatedly cited as a main cause for the increased traffic congestion experienced throughout town. Pass-through trips travelers whose trips do not begin or end in Pasadena, were also identified as a significant cause of traffic congestion.

Participants recognized that the need for public transportation will intensify in the future and the challenges to meet those needs will deepen. There was a consensus that transit needs to be improved, expanded, better coordinated, and made more accessible and affordable. Comments on transportation included focus on local efforts such as Pasadena Transit services and Dial-A-Ride, as well as support for regional efforts such as the Gold Line Foothill Extension.

Through this General Plan Mobility Element Update, the city is using this opportunity to redefine critical aspects of its transportation policy. In addition to the added aspect of sustainability, the city's transportation system is also expected to support the goals of livability, neighborhood protection and mobility. As a city whose street network developed in the first quarter of the 20<sup>th</sup> Century and which has been fully urbanized for many years, Pasadena is not in a position to add new streets or to widen existing ones. As a result, the city is electing to redefine its transportation policies to embrace a system management concept that emphasizes improved operations strategies, expanded transit, bicycle and pedestrian systems coupled with transportation demand management and supported by traffic calming at the neighborhood level.

The General Plan embodies eight Guiding Principles that are used to shape development and implementation of the City's policies, plans and programs.

#### *Guiding Principles*

Growth will be targeted to serve community needs and enhance the quality of life.

Change will be harmonized to preserve Pasadena's historic character and environment.  
Economic vitality will be promoted to provide jobs, services, revenues, and opportunities.  
Pasadena will be promoted as a healthy family community.  
Pasadena will be a city where people can circulate without cars.  
Pasadena will be promoted as a cultural, scientific, corporate, entertainment, and educational center for the region.  
Community participation will be fostered as a permanent part of achieving a greater city.  
Pasadena is committed to public education and a diverse educational system responsive to the broad needs of the community.

Effective and efficient transportation services are critical components of achieving the quality of life for residents and the economic vitality for commercial activities envisioned in the General Plan.

### 3.2 Objectives and Policies

Last updated in 2004, the Mobility Element is based on one of the seven guiding principles of the General Plan: to promote a city where people can circulate without cars. Its policies and objectives are meant to support neighborhoods, improve connectivity, promote safety, incorporate quality in design and delivery of services, and address the needs of Pasadena's residents, businesses, and civic institutions. As part of the Mobility Element Update, DOT has revised its Mobility Objectives, which are specific strategies and guidelines for enhancing livability, strengthening the local economy, and improving all methods of travel in Pasadena:

#### OBJECTIVE 1. Enhance Livability.

Guidelines for greater community health and safety, including:

- Streets that reflect neighborhood character
- Neighborhood Protection Measures

#### **Policies**

- 1.1 Encourage connectivity and accessibility to a mix of land uses that meet residents' daily needs within walking distance.
- 1.2 Promote greater linkages between land uses and transit, as well as non-vehicular modes of transportation to reduce vehicular trip related emissions.
- 1.3 Recognize the distinctive transportation needs of the community and deliver appropriate transportation services developed through public outreach programs.
- 1.4 Develop system management strategies that elevate accessibility, livability and a healthy community.
- 1.5 Consider the mobility needs of the disabled, students and especially seniors, when designing new infrastructure and developing transportation programs
- 1.6 Continue to invest in innovative information technology and applications to help improve access to all transportation choices.
- 1.7 Design streets to achieve safe interaction for all modes of travel particularly for pedestrians and bicycle users.
- 1.8 Improve safety for all modes by developing and coordinating between the Police Department and the Transportation Department the implementation of traffic management, education and

- enforcement initiatives Increase options for walking and bicycling to recreate, shop and services while improving safety for all modes.
- 1.9 Support local and regional air quality, sustainability, and GHG emission reduction goals through management of the City's transportation network.
  - 1.10 Continuously evaluate the operation of the City's transportation system to manage the speed of travel at or below the speed limit, manage queues at intersections and develop improvements to increase safety of all transportation services.
  - 1.11 Design Streets to reflect the mobility needs of the adjacent land use context to support healthy activities such as walking and bicycling.
  - 1.12 Apply traffic management measures to manage vehicular speeds as a function of designated street type to ensure safe and orderly movement of all modes of travel.
  - 1.13 Implement traffic measures developed through the Neighborhood Traffic Management Program (NTMP) to control the speed and volume of traffic to reduce traffic impacts in neighborhoods.
  - 1.14 Promote safe travel in neighborhoods and coordinate with the Pasadena Police Department to enforce traffic regulations with particular attention given to sensitive uses such as schools, senior centers, hospitals, community service facilities, and parks.
  - 1.15 Provide programs, transit and traffic management services, residential parking management, and bicycle improvements that are compatible with neighborhood needs and are developed in collaboration with the community.
  - 1.16 Support mobility performance measures which support the City's sustainability goals.
  - 1.17 Design streets to improve access to destinations by transit, bicycle and walking.
  - 1.18 Increase walking and bicycling to local destinations and regional transportation services by developing wayfinding signage for pedestrians and bicyclists.
  - 1.19 Develop measures to reduce conflict areas for bicyclists such as driveways and right turn lanes.
  - 1.20 Develop measures that would reduce conflicts between bicyclists and pedestrians on sidewalks especially in commercial areas.
  - 1.21 Inform and involve neighborhood residents in transportation programs such as the Suggested Safe Routes to School Program to help ensure that students can safely walk or bicycle to and from school.
  - 1.22 Minimize street and intersection widening to facilitate pedestrian crossings and protect historic resources and open space.
  - 1.23 Improve public health by supporting walking and bicycling throughout the city.
  - 1.24 Ensure predictable transit travel times by providing traffic signal system priority measures.
  - 1.25 Assess ways to improve availability of transit for underserved populations.
  - 1.26 Continue to coordinate with other governmental agencies in the area, including municipalities, SCAG, MTA and the San Gabriel Council of Governments to address issues of mutual concern related to the transportation system.
  - 1.27 Provide an ongoing review of emergency operations plans and provisions to ensure that the City's program for emergency transportation services is coordinated with other local and regional jurisdictions and incorporates updated procedures and programs as appropriate.
  - 1.28 Coordinate transportation services and programs with all City departments.
  - 1.29 Coordinate transportation options for major community and commercial events to increase transit access, ridesharing and bicycle access and parking options.
  - 1.30 Pursue funding opportunities such as grants, impact fees or fair share contributions from development to implement programs and projects that contribute to the City's Mobility Element objectives.

- 1.31 Emphasize transportation projects and programs that will contribute to a reduction in vehicles miles traveled per capita, while maintaining economic vitality and sustainability.
- 1.32 Implement parking management and enforcement programs to protect residential and commercial areas from spillover parking impacts.
- 1.33 City of Pasadena will monitor and evaluate the development and adoption of future VMT/cap thresholds for the SCAG region and Los Angeles County.
- 1.34 City of Pasadena will involve Caltrans in the revision and update of the existing Transportation Impact Fee.

**OBJECTIVE 2. Encourage walking, biking, transit and other alternatives to motor vehicles.**

- Strategies to encourage non-auto travel, including:
- Walking - Promote official walking tours and events
- Biking - Maintain existing and identify new opportunities for biking infrastructure
- Transit - Assess way to improve availability of transit for underserved populations
- Public Involvement - Ensure community participation at all levels of planning for transportation and pedestrian improvements

**Policies**

- 2.1 Continue to support the construction of the Gold Line Foothill Extension transit service and the expansion and use of regional and local bus transit service.
- 2.2 Seek funding to enhance accessibility by increasing routes, frequency and hours of operation for Pasadena's transit system throughout the community.
- 2.3 Provide convenient, safe and accessible transit stops.
- 2.4 Facilitate coordination between transit providers to improve seamless transit service.
- 2.5 Develop and maintain a comprehensive and integrated system of reduced stress bikeways and increase bicycle parking at destinations to promote bicycle riding as a mode of transportation.
- 2.6 Continue to strengthen the marketing and promotion of non-auto transportation to residents, employees and visitors.
- 2.7 Support neighborhood walk-to-school efforts.
- 2.8 Maintain existing and identify new opportunities for bicycle infrastructure.
- 2.9 Ensure that secure and convenient bicycle parking is available at destinations.
- 2.10 Explore bicycle share programs or any other bicycle programs that will provide greater access to bicycles for visitors and those that may not own a bicycle.
- 2.11 Consider bicycle education safety programs for all skill levels to reduce bicycle crashes and conflicts.
- 2.12 Continue to develop specialized educational campaigns and informational materials to improve safety for pedestrians and bicyclists.
- 2.13 Amend the existing transportation impact fee to include pedestrian and bicycle improvements in addition to street and transit improvements
- 2.14 City of Pasadena will involve Caltrans in the revision and update of the existing Transportation Impact Fee.
- 2.15 City of Pasadena will consider improvements to ITS projects involving Caltrans owned intersections at freeway ramp termini in the development of the future transportation impact fee, including but not limited to the I-210 Connected Corridors project

- 2.16 City of Pasadena will work with Caltrans to evaluate access management needs and strategies to better manage traffic operations on arterial streets located within close proximity of freeway on/off-ramps in an effort to reduce traffic backups and frictions at Caltrans ramp signals.
- 2.17 Implement a citywide car sharing system to support the Mobility Element objectives.
- 2.18 Continue to impose Trip Reduction Ordinance (TRO) requirements for regulated new development.

OBJECTIVE 3. Create a supportive climate for economic viability.

Mobility strategies to improve economic vitality, including:

- Work with existing and potential businesses to assess parking needs and requirements
- Incorporate Green City Action Plan initiatives

### **Policies**

- 3.1 Manage curb-space parking to support neighborhood protection and economic vitality.
- 3.2 Manage traffic speeds on neighborhood streets to reduce cut-through traffic.
- 3.3 Expand the Traffic Management Center (TMC) capabilities to provide priority treatment and monitoring of transit vehicles and to provide additional traveler information services.
- 3.4 Increase the availability of customer parking in commercial areas by supporting Travel Demand Management programs to reduce employee commute trips.
- 3.5 Collaborate with the business community to encourage truck deliveries to be made in off-peak hours especially in areas where nearby residents would be affected. This policy must be consistent with provisions of the City's noise ordinance.
- 3.6 Limit the intrusion of commercial truck traffic on City streets by directing truck traffic to the City's designated truck routes and coordinating with the Pasadena Police Department to enforce related regulations on local streets.
- 3.7 Examine ways to maintain and better utilize existing private and public parking structures through shared parking opportunities and advanced traveler information services to direct parkers to available spaces.
- 3.8 Enforce regulations that prohibit parking of commercial, recreational, and non-operable vehicles in residential areas, including the staging of taxi services.
- 3.9 Support public and private efforts to implement the Pasadena Streetcar.
- 3.10 Participate in interagency reviews of the study of the I-710 tunnel.

## **Section 4: Mobility Element Plan**

The City of Pasadena benefits from a diverse transportation system that includes transit, bicycle, and pedestrian links as well as vehicular links. The City's local system connects with the larger regional system, and the operation of the two systems is interdependent. The Mobility Plan establishes how the City manages the local system to provide for the safe and convenient movement of people and goods. It also addresses how the City influences and manages connections with the regional transportation system.

The Plan identifies the City's current transportation system and potential enhancements. It draws upon objectives and policies identified in Section 3.

### 4.1 Local Transportation System

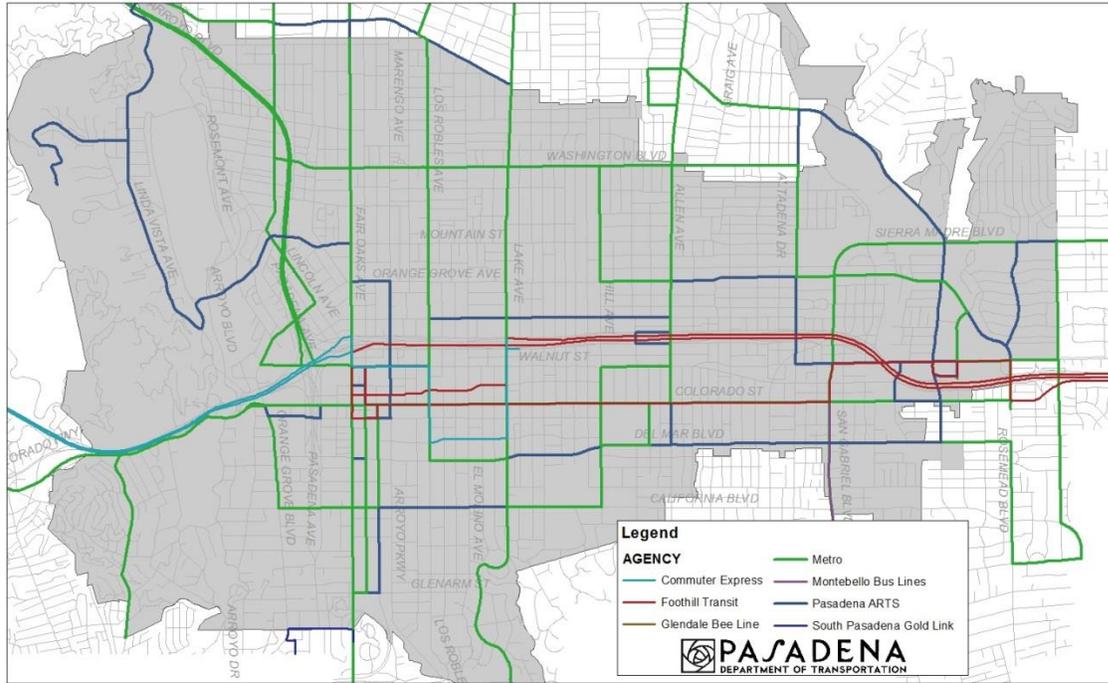
The vision of the Mobility Element is to promote a livable community where people can circulate without cars. Consistent with this principle, the Mobility Plan has four primary objectives that guide how the City's transportation system is managed: Promote a livable and economically strong community, encourage non-auto travel, protect neighborhoods by discouraging traffic from passing through neighborhoods, and manage multimodal corridors to improve citywide transportation services. Each objective is discussed below.

### 4.2 Fixed Route Services

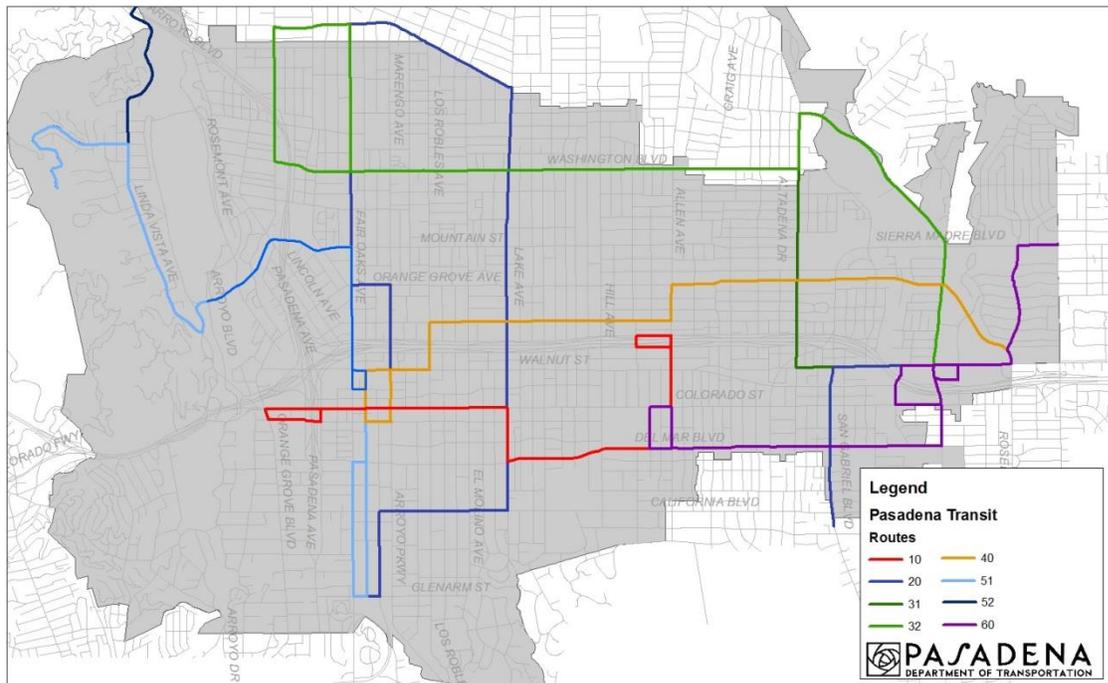
The City of Pasadena benefits from an extensive network of local and regional transit routes that provide good citywide coverage. Pasadena Transit provides a network of routes that are focused on the major business districts; the six Gold Line Stations in Pasadena; and connections to the regional transit service network. The system is also intended to connect residential neighborhoods to the business districts and major trip generators. The list below includes all transit agencies that service the City these routes consist of Local Lines and Feeder Lines:

- Six local routes provided by the City (Pasadena Transit Routes 10, 20, 31/32, 40, 51/52, 60)
- 13 regional routes provided by the MTA (east-west lines: 177, 180 and 181; north-south lines: 256, 260, 264, 267, 266 and 268; Pasadena to downtown Los Angeles: 485, 487, 489, 762 and 780)
- One regional route provided by Foothill Transit (east-west: Route 187)
- Two regional express routes provided by Foothill Transit (Route 690) and LADOT (Route 549)

Map: All Transit Agencies



Map: Pasadena Transit Routes



### Map: Metro Gold Line Stations



Information regarding the transit services is available in printed form and can also be found at a number of Internet web sites. Each agency has an individual web page that provides route-specific information. Additionally, MTA makes available travel/schedule software services that can be used to plan trips including trips that require transfer from one transit system to another.

The City's local transit service, Pasadena Transit, has undergone significant development since its inception in 1994. Current plans include continued support to the Gold Line Foothill extension, increased service levels, and increase the existing fleet with the acquisition additional of new clean-fuel vehicles. The Short Range Transit Plan outlines future headway increases in existing routes and potential expansion of services.

#### 4.3 Pasadena Transit Programs

##### TAP

To enhance transit connectivity and accessibility, TAP cards, a universal fare transit pass program has been adopted by several transit agencies in Los Angeles County which enhances seamless travel for transit users. Transit users can board any participating transit system by simply "tapping" a card reader as the customer boards a bus or enters in a rail system. Pasadena Transit recently collaborated with MTA to install TAP card readers in all buses which are now being accepted.

#### Transit Vehicle Arrival Information System

Transit Vehicle Arrival Information System (TVAIS) enables Pasadena Transit buses to be tracked by a system to provide customers with “real-time” arrival information. Transit customers are now able to obtain real-time bus arrival information via an interactive voice response (IVR) component (i.e., information via phone), installation of real-time information signs at a number of key bus stops, the internet, as well as automated voice announcements on the buses as buses approach bus stops. In addition, the implementation of this project has allowed the City to track on-time performance, route adherence, and aid dispatchers and operations personnel in quickly identifying the location of vehicles and facilitate the resolution of incidents. This information will also be available to the City Traffic Management Center (TMC).

The TVAIS is designed to be an efficient, effective, reliable, flexible, and expandable bus CAD/AVL system that meets the needs of the ARTS ridership, and the City’s management, dispatchers, bus operators, and road supervisors. Key objectives of this project include:

- Provide improved delivery of transit information to the public
- Improve operational efficiency
- Improve service quality

#### 4.4 Paratransit Service

All fixed-route, public transit buses are accessible to persons with disabilities. However, transit operators recognize that some individuals may need a greater level of assistance. Access Services, a regional agency, administers and manages the delivery of paratransit service within Los Angeles County. Access Paratransit is the service name of the ADA complementary paratransit service operated by Access Services for functionally disabled individuals. In addition, the City of Pasadena provides supplemental, curb-to-curb, dial-a-ride service (Pasadena Dial-A-Ride) to further assist the regional program for seniors and persons with disabilities who are unable to access local bus service.

#### 4.5 Bicycle and Pedestrian Accessibility

##### Bicycle Transportation Action Plan

The City of Pasadena's Bicycle Transportation Action Plan provides specific goals, objectives, actions, and timelines for creating an environment (1) where people circulate without a car, (2) that significantly increases the number of people who commute by bike, (3) that increases the number of people who use a bike for utilitarian trips, fitness and recreation, and (4) that provides business and economic benefits for the City. The plan provides details for a network of bikeways so that every neighborhood is within 1/4 mile of an effective bicycling route in the north-south and east-west directions. The plan outlines educational, engagement, enforcement, and evaluation strategies designed to increase bicyclist safety by educating both bicyclists and motorists. Finally, the plan outlines strategies for funding the program.

In addition, the Bicycle Transportation Action Plan establishes goals to set the context for planning objectives and actions to carry out the Bicycle Transportation Action Plan. They provide long-term vision and serve as the foundation of the plan. Goals are broad statements of purpose. Objectives are more specific statements of purpose. Actions describe actions the City can take to meet the goals and objectives.

Existing Conditions

As of early 2014, the City of Pasadena has approximately 82 miles of bike facilities. These include:

- 21 miles of bike lanes (Class II facilities).
- 61 miles of bike routes, including 34 miles of bike enhanced bike lanes. The enhanced routes include a 4" white edge line, bike route and "Share the Road" signage.

Bicycle Facility Types

The Plan establishes four classes or categories of bikeways referred to as Class I, II, III and IV. Until recently the California Department of Transportation (Caltrans) used three categories for bikeways. However, a fourth category, separated bikeways or cycle tracks, has recently been added to the classification. Refer to the California Streets and Highways Code (SHC) Section 890.4 for definitions of the four bikeway classifications defined in California.

Designation	Facility Types	Pasadena Designation
Class 1: Off-Street Bike Path		
Class 2: On-Street Bike Lane	<ul style="list-style-type: none"> <li>• Contraflow Bike Lanes</li> <li>• Buffered Bike Lanes</li> <li>• Parking Side or Curb Buffer</li> <li>• Travel Side Buffer</li> <li>• Combined Side or Double-Sided Buffer</li> </ul>	
Class 3: On-Street Bike Route	Bicycle Boulevard Sharrows	Greenways Roseways
Class 4: Separated Bikeways (Cycle Tracks)	<ul style="list-style-type: none"> <li>• One –Way Cycle Track</li> <li>• Two-Way Cycle Track</li> </ul>	

This document builds on the feasibility study and lays out an action plan for the installation of the buffered lanes, cycle tracks, and bike boulevards along 10 corridors.

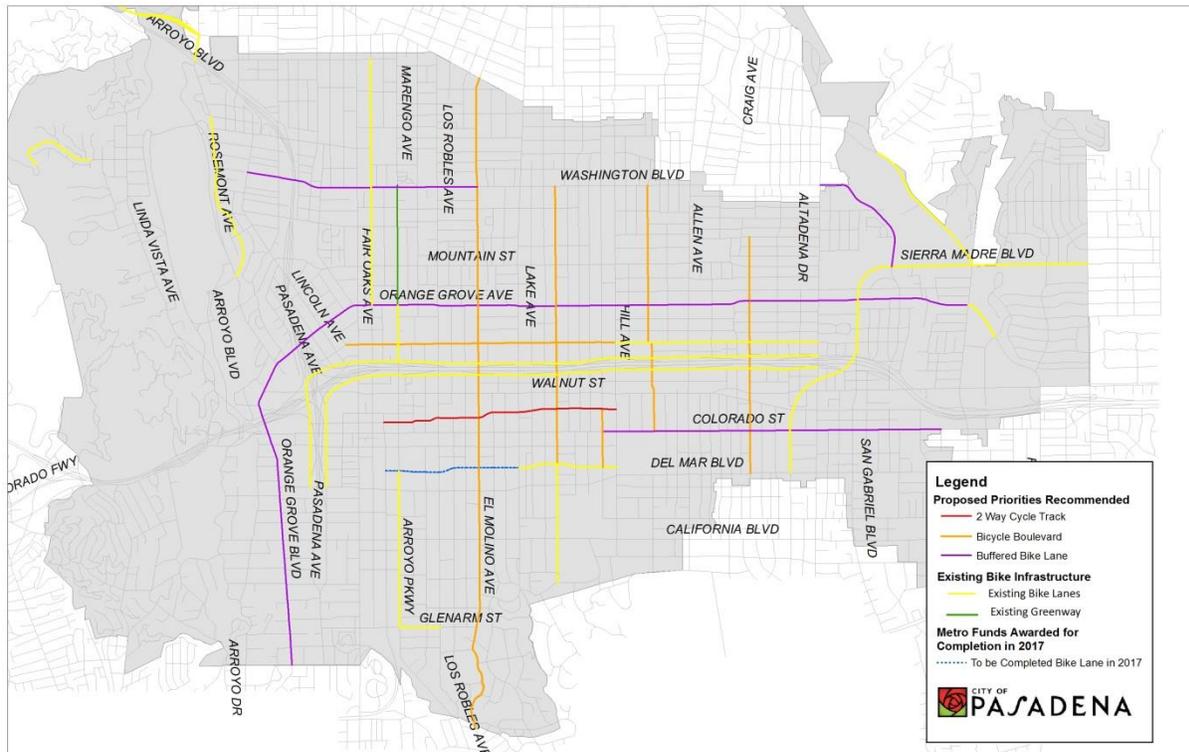
*East-West Corridors – Buffered Bike Lane or Cycle Track Implementation*

1. Washington Boulevard from Forest Avenue to El Molino Avenue
2. Orange Grove Boulevard from south city limit to Sierra Madre Villa Avenue
3. Villa Street from Champlain Avenue to Hill Avenue
4. Union Street from Arroyo Parkway to Hill Avenue
5. Colorado Boulevard from Holliston Avenue to east city limit (buffered bike lane implementation only)

*North-South Corridors – Bicycle Boulevard Implementation*

1. El Molino Avenue from north city limit to south city limit
2. Wilson Avenue from Washington Boulevard to Arden Road
3. Sierra Bonita Avenue from Washington Boulevard to Colorado Boulevard

4. Craig Avenue from Casa Grande Street to Del Mar Boulevard
5. Holliston Avenue from Union Street to Cordova Street



**Bicycle Parking**

An important element of a bike program is available bike parking. Bike parking falls into two categories: short-term (usually less than two hours) and long-term, which can be hours or days. The City has over 1,000 racks for short-term bike parking along with bike lockers at a number of the Metro Gold Line stations. As part of the Bike Action Plan, the City will look at additional short-term parking as well as meet the needs for long-term parking at areas beyond the Gold Line locations. These will include new residential and commercial developments as well as bus stops, schools, libraries, and other civic buildings.

**Bike Safety Education and Enforcement**

**Safety Education**

Pasadena is undertaking a bicycle outreach program, targeting commuter bicyclists and service employees who ride bicycles as their primary mode of transportation. The safety campaign will be developed and implemented in 2015. To complement the safety campaign, the City has procured, distributed, and installed over 450 bicycle headlights and tail lights to bicyclists riding their bikes at night without lights. In addition, the City will distribute bicycle helmets and additional lights throughout the year. Funding for this program was provided by a grant from the California Office of Traffic Safety (OTS), through the National Highway Safety Administration. The City of Pasadena has an active campaign each May that includes not only a bike-to-work day, but a number of events held throughout the month. The intent of the month-long campaign is to increase awareness of bicycling, its benefits and impact, as well

as encourage bicycling across all segments of the population. The City will also focus efforts educating both bicycles and motorists an important aspect of being bike friendly. Bicyclists need to understand safe bicycling behavior and the basics of bicycle maintenance. They need to understand how to deal with traffic as well as pedestrians and other bicyclists. Motorists need to understand that bicyclists have the same rights that vehicle drivers have. Today, they need to understand safety rules, such as the 3-foot law.

#### Safe Routes to School Program

The Safe Routes to School (SRTS) Program ([www.saferoutesinfo.org](http://www.saferoutesinfo.org)) focuses on both education and infrastructure development with the goal of increasing the number of children who walk and bike to school on a regular basis.

#### Open Streets Events

Open streets events have many names: Sunday Parkways, Ciclavias, Summer Streets, and Sunday Streets. These events have become increasingly popular across the County. In Southern California, these events have been hosted from Los Angeles to Santa Ana, Garden Grove, and San Diego. Los Angeles's events routinely attract over 100,000 participants and have encouraged large numbers of people who do not regularly ride a bike to come out and enjoy car-free city streets.

The City of Pasadena received an Open Streets Metro grant in 2014 and hosted the event on May 31, 2015.

#### 4.6 Pedestrian Facilities

Pasadena has taken great strides in creating a walkable environment. In recent years, the following pedestrian enhancements have been implemented: pedestrian signals on automatic recall rather than requiring a button to actuate the signal; "scramble" or diagonal crossings; and crosswalks enhanced with art designs, stamped R brick patterns, or ladder striping; pedestrian wayfinding signs.

The Pedestrian realm will be addressed through the following initiatives: Complete Streets, Specific Plans and the Pedestrian Plan. As the Department of Transportation prioritizes the implementation of Complete Streets, every street will be considered to create a better environment for walking. Several pedestrian design tools will be employed through the Form Based Street Design Guidelines to make city streets safe, attractive and accommodate pedestrians. Special attention will be given to crossings points and traffic calming.

#### 4.7 Complete Streets

In accordance with the California Complete Streets Act (AB 1358), the City of Pasadena City Council adopted the Street Types Plan in March 2013. The Street Types Plan supports the implementation of the following policy topic areas:

Streets should reflect neighborhood character and accommodate all users

- Complete Streets: Streets should accommodate all users such as pedestrians, bicyclist, public transit, skateboarders and scooters.
- Streets should reflect individual neighborhood character and needs, and support healthy activities such as walking and bicycling.

The 1994 General Plan Mobility Element sought to address some of the classification/function inconsistencies by introducing two new types of streets – multi-modal (mobility) corridors and de-emphasized streets. These designations carried through into the 2004 Mobility Element and are in place today guiding city policy for what types of actions are permissible on these streets. The de-emphasized streets begin to introduce the concept of matching the function of the street to its context and in all cases focused on minimizing traffic on streets that while classified as arterials were essentially neighborhood streets. The multi-modal corridors formed a loose grid network of thoroughfares.

Many of Pasadena’s traffic calming policies use the functional classification of a street as one of the criteria for deciding whether a particular device is appropriate. Similarly the acceptable methods for enforcing speed limits are influenced by the functional classification of the street. As more traffic calming devices have been deployed in Pasadena, the inconsistencies between the form and designated function of many streets have become more evident. An example of this is that the functional classification criteria have impeded the installation of speed humps on several streets that would otherwise be eligible for the devices under city policy.

In light of the recently mandated Complete Streets policy at the state level, Pasadena is putting more emphasis on understanding the design responses necessary to achieve such a policy. As the emphasis shifts from a curb-to-curb focus to one of a building-to-building (or complete right of way) focus, the variable character (context) of the land use and urban form adjacent to the roadway becomes more important, particularly as one attempts to balance the competing space demands for multiple modes of travel within a constrained space.

While the multi-modal corridor/de-emphasized street designations were a step in the direction necessary to meet the current demands, their response is limited in light of the multi-modal, multi-functionality that is present on Pasadena’s streets today. To address the expanded needs, the city elected to pursue a more robust context-based street classification system that draws from the approach described in Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities (ITE Proposed Recommended Practice 36). As noted in the initial materials prepared by the city’s consultant team:

*The City’s primary goal in developing a new street type system is that it reflect both land use context and multi-modal function of streets as a means to prioritize decision-making about intensity and kind of investment appropriate to each. With regard to context, the City desires a system that is reflective of the type or types, character and intensity of land uses along a street to ensure that future investments and efforts on those streets are appropriate to the primary users of the street – those that live, work or shop there. With regard to the streets themselves, the City seeks a system that differentiates streets by their function, rather than by volume, and treats all modes equally where appropriate and prioritizes modes where appropriate.*

The classification system under consideration for Pasadena has three components:

- Context – the character of each street in terms of urban form and land use mix, particularly in ways that relate to the sidewalk
- Function – the multi-modal and primary trip-type function of each street.
- Overlays – unique factors that merit special consideration that affect design of a street, but do not define the predominate nature of the street.

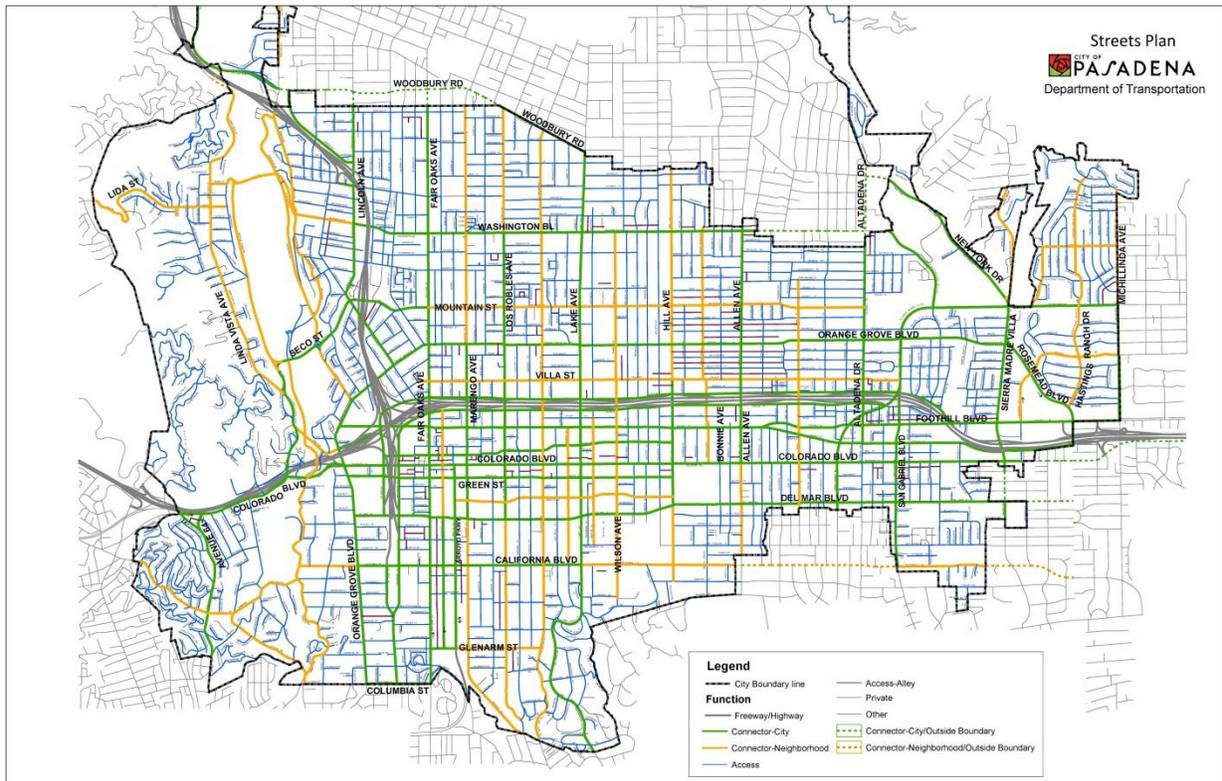
Context and Function jointly define the street type, while Overlays may indicate special design or management of the street. The context of a street, which is the condition of the land that fronts onto the street right of way, and the function of the street have been organized into the following categories:

**Context**

- Freeway Frontage
- Downtown
- Main Street
- City Mix
- Commercial and Industrial
- City Multifamily Residential
- Garden Multifamily Residential
- Single Family Residential
- Park
- Civic

**Function**

- Connector City
- Connector Neighborhood
- Access Street
- Access Yield
- Access Alley
- Access Shared



**4.7 Conventional Street Classification**

The City of Pasadena utilizes the roadway categories recognized by regional, state, and federal transportation agencies for grant applications to secure funding for ongoing street maintenance and rehabilitation programs.

There are four categories in the roadway hierarchy, ranging from freeways with the highest capacity to two-lane undivided roadways with the lowest capacity. As mentioned before, the City has jurisdiction over roadways designated as arterial, collector, or local streets. The State of California Department of Transportation (Caltrans) maintains and has jurisdiction over all freeways and state routes. The street classification system is used for the purpose of indicating streets which can use federal funding for reconstruction and resurfacing programs.

**FREEWAYS:** Freeways are limited-access and high-speed travel ways included in the state and federal highway systems. Their purpose is to carry regional through-traffic. Access is provided by interchanges with typical spacing of one mile or greater. No local access is provided to adjacent land uses. The City of Pasadena has access to several freeways: SR-110, SR-134, I-210 and I-710.

**ARTERIALS:** Arterial roadways are major streets that primarily serve through-traffic and provide access to abutting properties as a secondary function. Arterials are generally designed with two to six travel lanes and their major intersections are signalized. There are two categories: Principal and minor arterials. Principal arterials are typically four-or-more-lane roadways and serve both local and through-traffic. Minor arterials are typically two-to-four-lane streets that serve local and commute traffic. These streets provide movement within the City and are primarily for trips that originate from or are destined to the City. Through-trips are directed to stay on arterial streets and away from residential neighborhoods.

**COLLECTORS:** Collectors are streets that provide access and traffic circulation within residential and nonresidential (e.g., commercial and industrial) areas. They connect local streets to arterials and are typically designed with two travel lanes that may accommodate on-street parking. In some cases, they will provide access to abutting properties.

**LOCAL:** Local streets distribute traffic within a neighborhood, or similar adjacent neighborhoods, and are not intended for use as a short-cut for through-traffic between higher capacity facilities such as collector or arterial roadways. Local streets are fronted by residential uses and do not typically serve commercial uses.

#### 4.8 Performance Measures

A key challenge facing the City is the current set of Performance Measure and Metrics, used in the 2004 General Plan and the Transportation Impact Review Current Practice and Guidelines, place a considerable emphasis on the automobile operations. If these measures continue to be used in their current form, it would present a conflict with the Mobility Element objectives.

Pasadena is currently using a conventional set of performance measures for evaluating system performance and in reviewing the impacts of new development. Intersection volume to capacity ratios and Level of Service (LOS) are the primary measures. The city also uses a volume-based analysis of change in traffic on street segments to assess impact. The 1994 General Plan update went as far as to include a measure of the environmental capacity of residential streets, essentially an estimate of the level of traffic volume that would be acceptable on residential streets as opposed to the operational

capacity. This measure was replaced in the 2004 update by the street segment analysis. A discussion of staff's proposed modifications to the Street Segment Analysis measure is included later in this report.

When looked at in the above context, the current measures are silent with regard to system performance of non-auto modes and tend to generate mitigation solutions that encourage widening of intersections and streets, which may compromise the performance of non-auto modes and are increasingly contrary to community values. Consequently, a more robust set of transportation performance measures has been developed that adds depth and balance to the existing measures of vehicle capacity and delay while adding measures to evaluate impact on the non-motorized modes as well as transit. The new measures also align with the sustainability goals of the General Plan by evaluating the "efficiency" of projects by analyzing the per capita length and number of trips associated with changes in land use.

The five adopted transportation measures with CEQA thresholds are:

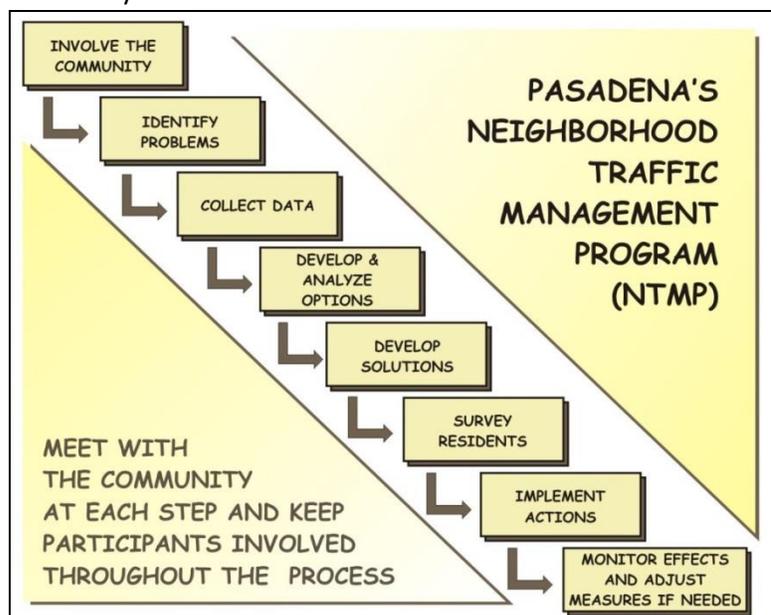
1. Vehicle Miles Traveled Per Capita
2. Vehicle Trips Per Capita
3. Proximity and Quality of the Bicycle Network
4. Proximity and Quality of the Transit Network
5. Pedestrian Accessibility

The thresholds guide system-wide bike and local transit improvements and guide pedestrian improvements in Specific Plan Updates. The bike and transit improvements identified will be included in a nexus study to the update of the Traffic Reduction and Transportation Improvement Fee (TRTIF) following the adoption of the Land Use and Mobility Element updates. An analysis at the project level impacts to the various citywide network is not necessary because projects would address their proportionate impacts in these areas by paying their fees.

#### 4.9 Neighborhood Protection

Pasadena has approximately 90 neighborhood organizations/associations that vary in size from a few blocks to entire ZIP Codes. The process through which the city's Neighborhood Traffic Management Program has been implemented has relied heavily on a concurrence between these neighborhood organizations and their respective City Council Districts to identify the boundaries of each NTMP. This approach has been used to ensure that each study area has consensus on the traffic issues that are to be addressed, which has effectively underpinned the education elements that the areas included in each NTMP. This approach has also reinforced the city's commitment to neighborhood protection.

However, the NTMP has been sufficiently long-running that by the end of this year, essentially all neighborhood areas of the city will have been studied as part of an



Pasadena's NTMP

NTMP. Requests received from Council Offices and neighborhoods in the last year are for new NTMPs to be conducted in areas where some of the original studies were conducted 10-15 years ago. One of the outcomes of the success of the NTMP is that the small scale of each study, while effective for much of the program's span, is now resulting in a set of conditions where changes in one neighborhood area are pushing traffic to adjacent neighborhoods that have been previously traffic-calmed in earlier NTMPs.

In recognition of this trend, the tenets of the NTMP have been revisited, particularly the exclusion of non-local streets from the studies and the scale of problem identification (i.e., the boundaries of each study). This assessment indicated that the city needs to be taking more of a multi-neighborhood (or district) approach to traffic management and that the major streets that link between and through neighborhoods need to be incorporated into the studies, not necessarily for the application of traffic-calming to these streets, but to be better able to address the interface between major streets and neighborhood streets.

Accordingly, the city has embarked on developing the next generation of the program, dubbed NTMP 2.0. The context-based street classification system and its resultant design guidelines are being used as the framework for incorporating non-local streets into the NTMP process. The expanded nature of NTMP 2.0 has necessitated a review of the city's traffic calming policies and is allowing us to revisit decisions made years ago about which traffic calming devices are applicable/acceptable in Pasadena. Installation criteria and guidelines are being developed for traffic calming devices not currently in wide use in Pasadena that include traffic circles, curb extensions, partial closures and raised crossings/speed tables.

Rather than just expanding the reach of the NTMP to larger areas and more streets, the city is taking advantage of this effort to achieve a better vertical integration of day to day traffic engineering actions (traffic investigations) with the longer-term NTMP studies. This approach has resulted in a three-tiered system that organizes activities into the following categories:

- Tier 1 – Readily Solvable Issues
  - Traffic investigations initiated by requests from residents and Council offices and through day to day observations by staff of system performance
  - Typically low-cost, spot fixes that do not involve warrant analyses or other more complex engineering studies nor require public involvement
- Tier 2 – More Complex Transportation Issues
  - Initiated by carry forward from Tier 1 for issues that require engineering studies but are still essentially one-dimensional
  - Low to moderate cost solutions that are developed by staff with a limited degree of public involvement
  - Examples include Stop Signs, Parking Timed-Restrictions, Loading Zones, Crosswalks and other elements for which more detailed analytical work is necessary before a recommendation can be made
- Tier 3 – System-level issues

- Systemic problems that involve larger areas and/or multiple neighborhoods or corridors
- Moderate to high cost solutions that are developed through a systematic approach that includes a high degree of public involvement
- Initiated by carry forward from Tiers 1 and 2
- Examples include traffic calming devices, preferential parking districts, medians, traffic diversion, neighborhood protection

#### 4.9 Managing Demand

Achieving the City's transportation objectives and policies necessitate a transportation system capable of serving both existing and future demand. One way to meet this need is to implement programs designed to manage demand. These programs are often referred to as transportation demand management (TDM) strategies. The City of Pasadena, in order to reduce the number of vehicular trips in general, and specifically the use of autos for drive-alone trips, has adopted a Trip Reduction Ordinance that is applied citywide. Such trip reduction measures have been incorporated into the City's project review process.

##### Trip Reduction Ordinance

The City of Pasadena recognizes that new development and sizable additions to existing development generate travel and parking demands that can create adverse impacts on traffic flow and parking in surrounding areas. To address such situations, the City developed a policy, through its Trip Reduction Ordinance, to accomplish the following:

- Encourage non-auto modes such as public transit, vanpools, carpools, and bicycles rather than single-occupant vehicles.
- Encourage alternative work hours that serve to reduce the typical peak demand upon the street network, parking facilities, and transit systems.

The Trip Reduction Ordinance applies to Nonresidential development projects, and the nonresidential portion of mixed-use development projects, which exceed 25,000 square feet of gross floor area, as a result of new construction or an expansion of an existing use. These development projects are required to reserve and designate preferential parking spaces for carpool vehicles, provide employees with commuter-matching services and trip reduction information, and provide bicycle parking facilities and/or other non-auto enhancements.

In addition, nonresidential development projects, and the nonresidential portion of mixed-use development projects, which exceed 75,000 square feet of gross floor area, as a result of new construction or an expansion of an existing use shall comply with the conditions already mentioned. These major development projects must also satisfy the requirements to reduce trips, such as providing employees with discounted transit passes, parking pricing measures, etc. The trip reduction measures must be included in a plan that must be submitted to and approved by the City. Transportation Systems Management (TSM) Programs involve a commitment by the owner to an ongoing program. The City will continue to explore additional trip reduction measures and update the Trip Reduction Ordinance as needed to reduce congestion. Designated pedestrian sidewalks or paths will be provided on the development site between the external pedestrian system and each structure in the development.

Bus stop improvements, including bus pads, bus pullouts, and right-of-way for bus shelters may be required as mitigation measures if a proposed development would have substantial traffic impacts.

Lastly, multi-family projects with 100 units or more, or mixed use projects with 50 units or more, will submit a TDM Program Plan as required.

In order to encourage non-auto travel, the Trip Reduction Ordinance also includes incentives that allow a project to reduce the number of required employee parking spaces. Reductions can be claimed by having an on-site Employee Transportation Coordinator (ETC) and by having an approved TSM Program. The City participates in the trip reduction initiative by providing a program for city employees. The City's "PRIDE SHARE" program consists of incentives for employees to rideshare or use public transit, bicycle, or walk to work.

#### Transportation Management Association (TMA)

The City of Pasadena supports the Pasadena Transportation Management Association (TMA). The organization was established in 1989 in response to the South Coast Air Quality Management District's (AQMD) Regulation XV. This regulation required employers with more than 100 employees to reduce vehicle emissions through carpooling, transit use, or other modes of travel that do not rely upon single-occupancy vehicles. The TMA is a voluntary organization which serves as a networking and information organization that has three primary objectives: Reducing single-occupancy vehicle commuter trips, improving air quality, and reducing congestion in the City. There are approximately 40 employers in Pasadena who participate in the TMA.

#### 4.10 Parking

Parking is included in the Mobility Element because the presence of off-street and on-street parking has a direct effect on the use of the roadway. On-site parking provisions are developed in zoning regulations consistent with the objectives of specific plans. However, Mobility Element policies discourage provision of excess auto parking in new development, support the use of shared parking and encourage a balanced approach that fosters non-auto travel.

The availability and pricing of on-street parking also affects the choices that travelers make, as well as the mode of transportation they use. Many American cities continue to devote much of their land space to the movement and storage of the automobile. Pasadena actively seeks ways to successfully develop and maintain a transit-, pedestrian-, and bicycle-friendly environment while addressing the space needs of the automobile consistent with adopted development plans and projects. On multimodal corridors, transportation programs are balanced to address peak-hour parking needs, commuter travel needs, and delivery needs of commercial areas.

An additional challenge in development of parking solutions is recognition of the unique character of many areas of the City, which means that no one parking solution will fit all situations. The City engages in collaborative efforts with the residential areas, the businesses and the retail community to develop and operate auto parking programs to meet their particular needs consistent with the General Plan. In addition, the City's public parking facilities are planned and in some instances operated in partnership with the business community.

The various auto parking facilities and program areas within the City. Components include:

- On-street parking in commercial areas
- Off-street parking facilities
- Preferential parking
- Light-rail station parking enforcement areas

**Public Parking Facilities**

The City of Pasadena owns and operates thirteen auto/parking facilities that offer low rates and user conveniences. These parking facilities are in close proximity to retail, restaurant, entertainment, and office buildings. In addition, bicycle racks and/or lockers have been installed in some facilities pursuant to the City’s project review process. Additional efforts to expand bicycle parking are underway throughout the City as part of the Bicycle Transportation Action Plan. While this document identifies the auto parking spaces available in the City, it should be noted that privately operated parking facilities are also available throughout the City, providing numerous parking options for the traveling public.

In Old Pasadena, there are three public parking structures that provide approximately 1,600 auto parking spaces. In the Civic Center area there are six parking structures, providing approximately 4,500 auto parking spaces. The Playhouse District has two parking lots, providing approximately 200 auto parking spaces. The South Lake Avenue Business District also has two parking lots available to customers and visitors with close to 700 auto parking spaces. Many of these facilities are close to bus routes, allowing people to park once and travel conveniently within Pasadena’s downtown areas.



**Parking Meter Districts**

The City has five parking meter districts with more than 2,267 parking meters: West Gateway, Old Pasadena, Civic Center, Playhouse and South Lake. The installation of parking meters creates more

short-term parking opportunities (resulting in a higher turnover of users). Meters encourage long-term users to park in garages or surface lots. The parking meter revenue funds collected within each parking meter district are reinvested to improve the streetscapes and alley walkways to create a more attractive pedestrian experience.

Overnight Parking

With growth, new development, and concern for preserving the unique quality of life in Pasadena, there is a need for parking regulations. A City ordinance prohibiting overnight parking on City streets from 2 a.m. to 6 a.m. was implemented in 1950. It was imposed to allow street cleaning during these early hours and to easily identify vehicles that were abandoned. Residents, for whom temporary or permanent parking is unavailable, may apply for a Daytime or Overnight On-Street parking permit to park during these hours.

Preferential Parking Permit

In January 1996, the City Council adopted a Preferential Parking Ordinance to control regional parking intrusion in residential areas by way of a permit-parking program. In accordance with this Ordinance, formal “Procedures for Establishing Preferential Permit Zones” were developed to process and evaluate the eligibility of each request.

The established procedures include meeting with property owners, conducting traffic engineering and parking impact studies, and reviewing petitions from the affected homeowners. The traffic engineering and parking impact studies typically include evaluations of whether the parking intrusion is generated by nonresidential regional traffic generators; an analysis of the available on-street parking; the hours and days the parking intrusion occurs; and the evaluation of reasonable alternatives to eliminate the problem. Once a proposed program has been developed, it is reviewed by the Transportation Advisory Commission before action is taken by the City Council.

Since the program started, the following areas have been designated as preferential permit parking districts:

Neighborhood	Approval Year
Pasadena City College Area	1996
West State Street	2000
South Oak Knoll, Wentworth, Hillcrest and Ridgeway	2001
South Mentor, Catalina, Cornell & Polytechnic School	2001
Metro Gold Line Station Area (Allen & Lake)	2003
North Holliston and Chester Neighborhood	2003
District M (Maranatha/Harvest Rock Church)	2015

Residential Parking Time Limit Exemptions	2015
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#### 4.11 Regional Transportation Services

Pasadena is a vibrant regional economic center that benefits from good access to the regional freeway network and greatly improved regional transit services. The challenge is to manage this resource, in particular the transitions from the regional system to the local system, in a way that is convenient to the user and minimizes impacts on the local community. This necessitates seeking opportunities to partner with state and regional agencies to jointly review and implement service enhancements that address the needs of the Pasadena community.

The following sections describe significant components of the regional transportation system.

#### 4.12 Public Transit

There are three significant developments in the area of regional public transit that will have lasting beneficial impacts on the City of Pasadena. First is the completion the Gold Line Foothill Extension from Pasadena to Montclair. Second, Metro Regional Connector Project extends from the Metro Gold Line Little Tokyo/Arts District Station to the 7th Street/Metro Center Station in downtown Los Angeles.

##### Metro Gold Line Light Rail System

The Metro Gold Line Foothill Extension is extending the existing Gold Line east from Pasadena. The first phase will travel more than 11 miles from Sierra Madre Villa Station to Azusa.

Phase 1 includes new stations at:

- Arcadia
- Monrovia
- Duarte/City of Hope
- Irwindale
- Azusa Downtown
- APU/Citrus College

The Foothill Extension Construction Authority expects to complete construction between Pasadena and Azusa in September 2015. Metro is scheduled to begin safety testing in late 2015 with a projected opening in 2016.

The second phase will continue the line for 12 miles east from Azusa to Montclair. Funding is currently being sought for this segment. The Draft Environmental Impact Report/Environmental Impact Statement for the Azusa to Montclair section was certified in March 2013 and preliminary engineering began in summer 2014.

Phase 2 includes new stations at:

- Glendora

- San Dimas
- La Verne
- Pomona
- Claremont
- Montclair

Metro Regional Connector

The Regional Connector will improve access to both local and regional destinations which extends from the Metro Gold Line Little Tokyo/Arts District Station to the 7th Street/Metro Center Station in downtown Los Angeles, allowing passengers to transfer to Blue, Expo, Red and Purple Lines, bypassing Union Station. The 1.9-mile alignment will provide a one-seat ride for travel across Los Angeles County. From the Metro Gold Line, passengers will be able to travel from Azusa to Long Beach and from East Los Angeles to Santa Monica without transferring lines.

## **5. Implementation Programs**

The Implementation Programs section provides a guide to actions that carry out adopted Mobility Element policies and plans. It also provides program implementation information that enables oversight by City elected officials, Commissions, staff, and the public. The purpose of the Implementation Programs section is to ensure that the overall direction provided in the Mobility Element for transportation management is translated from general terms to specific actions.

Each implementation program is a procedure or technique. Action may either occur on a citywide basis or in specific areas within the City. The City Council recognizes the importance of long-range planning considerations in day-to-day decision making and budgeting. Implementation of the specific programs is subject to funding constraints.

Status reports on the Implementation Programs will be provided to the City Council on a regular basis as part of reports on the Capital Improvement Program and in response to funding and implementation opportunities as they arise.

The Implementation Section includes a description of the responsible agency and/or department for each program, sources of funding, and time frame. Additional information on implementation programs is provided in Appendix D of this document.

### 5.1 Implementation Opportunities: Programs and Strategies

The City seeks funding to implement transportation policies through a number of ongoing programs. These programs, which are developed with the oversight of the City Council and responsible Commissions, are addressed in the following sections:

#### Interagency Opportunities for Program Implementation

Pasadena recognizes the importance of partnering with other agencies and local jurisdictions on plans, legislative initiatives, capital grant funding opportunities, and studies to improve and enhance coordinated regional and local transportation services. Most funding opportunities to implement City policies and programs occur at the federal, state and regional level through competitive grant processes. Following is a summary of significant programs funded through such efforts.

#### The MTA Call for Projects

The City competes for regional funding to implement transportation projects through the “Call for Projects” competitive grant process managed by the MTA on a two-year cycle. In recent years, the City has been successful in securing funds to implement bicycle programs and facilities, pedestrian enhancements, traffic management improvements, and restoration of pedestrian, bicycle, hiking and equestrian facilities. Detailed cost and scheduling information is reported annually in the City’s Capital Improvement Program.

Civic Center/Mid-Town area was awarded funding by the MTA to enhance the pedestrian environment and other transportation components. Detailed design for the project is underway.

#### I-210 Integrated Management Plan

The City of Pasadena and Caltrans are currently cooperating on the development of the I-210 Connected Corridors project to address congestion relief due to incidents on either freeway or city arterial streets. The goal of the future phases of the project is to also address recurring traffic congestion on freeway and adjacent arterial streets.

#### 5.2 Federal and State Grants

Periodically, opportunities arise to secure federal and state funding for needed transportation improvements of regional significance. In the past, federal legislation provided funding for transportation improvements that will mitigate, on an interim basis, the traffic impact of the 710 Freeway gap on City streets.

#### 5.3 City of Pasadena Capital Improvement Program

The Capital Improvement Program (CIP) is a funding program for capital projects approved annually by the City Council. This program, which is prepared annually by the Department of Public Works, builds upon programs that are consistent with, and implements, the City's General Plan. Community requests for projects are also considered in developing a recommended program. Staff's recommendations are reviewed by the various commissions with oversight responsibility for the projects. After that review, the program is submitted to the Planning Commission for a finding of consistency with the City's adopted plans. Thereafter, the document is submitted to the City Council for approval.

In developing the CIP budget, the first priority is to focus on safety issues within the City's infrastructure. Safe streets and roadways are addressed in this document.

#### 5.4 Other implementation Program and Strategies

The City aggressively pursues implementation of transportation programs through a wide range of programs, grant opportunities, partnership initiatives, etc. Programs and strategic initiatives are undertaken to secure funding and/or achieve program enhancements that implement the policies outlined in this Mobility Element.

## 6. OTHER CIRCULATION FACILITIES

### 6.1 Airport

The City of Pasadena is served by the nearby Burbank-Bob Hope Airport. The airport, which was built in 1930, is served by most of the major commercial passenger carriers. During 2013, approximately 3.8 million passengers arrived or departed at the airport.

Although the airport is in operation 24 hours a day, there is a voluntary curfew on all commercial passenger flights between the hours of 10:00 p.m. and 7:00 a.m. each day. Most of the commercial carriers that operate out of the airport generally comply with this restriction.

Previous plans of providing expanded and updated facilities at a new site located farther from the runways are currently on hold due to numerous issues raised by the community. A Part 161 Study, as required by the FAA, is currently underway to make the voluntary curfew mandatory. Phase I of the Part 161 Study was completed in the early summer of 2002, and the Phase II of the study is expected to be completed in two years.

However, as part of the Aviation and Transportation Security Act (ATSA), plans for expanding the current Terminal A wing by adding approximately 40,000 square feet to implement new security measures at the airport have recently been approved. The TSA Security Improvement Project at the Airport consists of providing additional space for ticket lobby and baggage screening/handling, relocating and enlarging security checkpoints, creating space for screening in holdrooms and relocating holdroom space into the hallway, installing complete fire/life safety systems, relocating and widening the existing hallway, creating additional space for TSA personnel, creating additional space for the relocation of airline personnel, providing blast-resistant walls, relocating restrooms, relocating concessions, and creating new space to accommodate additional airport police.

Pasadena is also served by Los Angeles International Airport, 30 miles to the southwest, and Ontario International Airport, approximately 25 miles east of the City. With these facilities, Pasadena enjoys convenient and abundant air transport service.

### 6.2 Sewer

Although an older system than most due to the City's age, Pasadena's sewer system is in general good condition. Ongoing reviews of the sewer system are conducted. Problems disclosed by maintenance reviews or complaints are systematically corrected. Waste water considerations of new development are addressed based on site-specific information. However, as City policy is to require that localized system impacts caused by major developments be corrected at the sole expense of said development. No significant impact on the current system is expected. A new Master Sewer Plan (MSP) Update will be prepared.

### 6.3 Waste Water Treatment

Pasadena, along with Alhambra, San Marino, and South Pasadena, is part of County Sanitation District No. 16 and, thereby, part of the waste water collection, treatment, and disposal system operated by the County Sanitation Districts of Los Angeles County. The Sanitation Districts, in conformance with Federal and State standards, must plan and construct waste water treatment facilities which are consistent with regional land use and population goals and forecasts. The Sanitation Districts' facilities are currently planned and constructed in conformance with the 1989 Growth Management Plan adopted by the

Southern California Association of Governments (SCAG) and the South Coast Air Quality Management District (AQMD) or with regional or subregional population projects approved by SCAG from time to time. The Sanitation Districts presently have sufficient existing and planned waste water treatment capacity to accommodate the year 2010 population forecasts for the Glendale/Pasadena subregional encompassing Sanitation District No. 16.

In addition, a small portion of the southwest hillside area of Pasadena comprised exclusively of single-family homes is tributary to the waste water collection, treatment, and disposal system owned and operated by the City of Los Angeles. This service is provided under a contractual arrangement under the auspices of County Sanitation District No. 16. As this small area is virtually fully built-out, potential incremental additions to the sewer system are insignificant.

#### 6.4 Drainage

The City's drainage system, which consists of open channels, underground conduits, and streets, in general provides a reasonable degree of protection against flooding. Localized problems that may occur from time to time, especially in hillside areas subject to periodic fire and flood cycles, are treated on a case-by-case basis.

The standard for the level of protection to be provided against flooding in Los Angeles County requires that during the "urban design storm" - one with a probability of occurring once in 25 years, based on rainfall records - the surface capacity of a street may be used up to a water surface level not extending above or beyond the street's right-of-way lines.

As the City is almost fully built out and proposed land use changes will primarily involve the re-use of developed areas, no significant impact is anticipated on the drainage system. However, drainage system elements, particularly older facilities, are subject to ongoing repair, replacement, or modification efforts based on maintenance records, complaints, and field observations. Major developments that impact the capacities of downstream lines are required to upgrade adjacent system components to mitigate these impacts at their sole expense.

#### 6.5 Waterway

The nearest port facilities are located at the Ports of Los Angeles and Long Beach, approximately 35 miles south of downtown Pasadena. There are no inland waterways which directly link the City to these ports.

#### 6.6 Water System

An adequate supply of water for Pasadena is dependent on weather, statewide growth, development of new sources and other factors. Since it is not possible to predict climatic changes and other outside influences, it is difficult to give an accurate picture of water supply ten to twenty years from now.

Since 60 percent of Pasadena's water is dependent on outside purchases through Metropolitan Water District, reasonable steps must be taken to avoid water shortfalls. To address these critical water supply challenges, Pasadena Water and Power (PWP) have taken a proactive step to lead as a model water agency by developing a Water Integrated Resources Plan (WIRP).

The Metropolitan Water District of Southern California (MWD) imports their water from the Sacramento-San Joaquin Delta via the State Water Project (SWP), and from the Colorado River. An eight-year drought in the Colorado Basin—more severe than any other measured.

In the 20th century—resulted in record lows in Colorado River water levels. Water supplies from the SWP have also been significantly reduced due to recent court restrictions to protect fisheries in the Delta and a prolonged drought. These strains on MWD’s supply sources have caused it to dip into emergency storage, and impose water allocation limits to its member agencies for the first time since 1991. In addition, MWD’s imported water costs have increased an average of 12 percent per year from 2006 to 2010. In response to water supply limitations from MWD and reduced local groundwater, Pasadena recently enforced city-wide Level 1 shortage and water restrictions to its residential and commercial/institutional customers.

To address these critical water supply challenges, PWP has taken a proactive step to lead as a model water agency by developing WIRP. In addition to providing an overall water resources strategy, the WIRP is a source document for Pasadena’s 2010 Urban Water Management Plan (UWMP). California law requires that all water agencies prepare an UWMP every five years. Furthermore, both the WIRP and 2010 UWMP have to indicate how Pasadena will meet the new Water Conservation Act of 2009, also known as California’s “20x2020” plan.

In 2009, Senate Bill 7 (SB7) was passed as part of a comprehensive legislative package to improve the state’s water supply reliability and restoration of the Sacramento-San Joaquin Delta. SB7 requires that per capita water use be reduced by 20 percent by the year 2020.

As of 2013, PWP had a service area population of 164,729 and covering 26 square miles. Pasadena’s water distribution system consists of 508 miles of water mains, ranging from 2 to 36 inches in diameter; 19 booster stations; and 14 distribution reservoirs (PWP 2014). The City also has five service connections with MWD. Water from MWD is stored in reservoirs with a total capacity of 110 million gallons before it is put into the water distribution system. PWP owns and operates 16 wells that draw water from the Raymond Groundwater Basin and has developed 11 interconnections with neighboring water agencies to enhance the reliability of the City’s system and to use as emergency back-up. The Raymond Groundwater Basin covers about 40 square miles. Groundwater is recharged from direct percolation of precipitation and stream flow in the natural creek beds of Arroyo Seco, Eaton Wash, and Santa Anita Wash. The basin is intentionally recharged in spreading basins north of Devil’s Gate Dam and along the south side of Eaton Wash. The long-term yield of the Raymond Groundwater Basin is about 30,000 afy (RBMB 2013). Pumping rights in the basin are adjudicated and managed by the Raymond Basin Management Board. The City also has a Recycled Water Management Plan that identifies potential demands and projects that could be developed.

The network of pipes and other appurtenances that comprise the existing water distribution network is such that no major transmission pipeline changes are anticipated to meet growth projections. Specific development projects generally do not have a major impact on overall water supply or storage, but rather have an effect on the water mains in the immediate area surrounding the development. Fiscal responsibility for any water distribution requirements in the immediate vicinity of the development are the sole responsibility of the developer.

## 6.7 Power System

The Pasadena Water and Power (“PWP”) published an Integrated Resource Plan for power resources (the “2012 IRP”), which among other objectives affirmed the commitment of the City of Pasadena (“City”) to a goal of obtaining 40% of its energy from renewable resources by 2020, procuring specific amounts of local solar power, reducing its greenhouse gas (“GHG”) emissions by 40% from 2008 levels, also by 2020, and replacing the Broadway power plant with a comparably sized new combined cycle plant. The 2015 IRP Update considers the 20-year planning horizon from 2015 through 2034.

#### 6.7.1 Distribution Facilities

The Power Division of the Water and Power Department provides electrical energy to meet the needs of the consumers of the City. Present facilities are adequate to serve the current electrical requirements of the City.

To the extent that the City grows, it has invested \$81 million in capital improvements. New facilities to support the demand for electric service in the City of Pasadena would be constructed by PWP in accordance with the demand for new service. Because developments that would be considered for approval under the proposed General Plan have not yet been designed or proposed, the specific electricity facilities that would need to be installed to serve those developments are unknown, as are the environmental impacts of such installations. Such impacts would be evaluated on a project-by-project basis. It is not likely that major new facilities would be necessary to serve the City with adequate electricity service at project buildout. Consistent with the City’s adopted Integrated Resource Plan, the PWP is already replacing inefficient local generating units at its Glenarm Power Plant.

#### 6.7.2 Transmission Facilities

Energy is moved from sources to substations over the City’s transmission system. At present, that system operates at 34 Kilovolts and is approximately 95% underground. Future transmission facilities, which may be of a higher voltage, will all be underground.

As such, with the exception of construction periods, the facilities will have no impact on the General Plan.

#### 6.7.3 Resource Facilities

Energy is delivered to the City at two locations: the Water and Power Department generating plants at the end of the Pasadena Freeway in the South-Central portion of the City, and at the T. M. Goodrich Receiving Station in the eastern side of the City, where energy is imported from sources outside the City.

The T. M. Goodrich Receiving Station presently has 300 Mva transformer capacity of import power into the City. This facility may be enlarged in the future to provide additional economical and reliable importation of electrical energy from sources outside the City. Alternatively, a planning study is presently underway to evaluate the cost and feasibility of building a new receiving station on the west side of Pasadena to increase reliability and import capacity. Facilities at the generating plants will be maintained and upgraded to ensure sufficient capacity for reliable electric service, improve operating efficiency, and meet the requirements of air quality standards as they evolve.

# Mobility Element Implementation Program

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
<b>1.0 Create a Supportive Climate for Economic Viability</b>							
1.1 Streets should support Adjacent Land Use	<ul style="list-style-type: none"> <li>Promote employment and new multifamily residential development in key transit corridors including affordable housing programs.</li> <li>Support mixed-use zoning in key transit corridors.</li> <li>Coordinate with businesses along commercial corridors to develop vibrant retail districts.</li> </ul>	1.1, 1.2, 1.11			X		Planning and Development, Transportation
1.2 Develop and Apply project Review Guidelines	<p>The Guidelines for Transportation Review of Projects, provides developers with a roadmap for incorporating the City's transportation goals and objectives into new projects. These guidelines encourage and/or require developers to:</p> <ul style="list-style-type: none"> <li>Assess opportunities to better manage parking, including shared parking, reduced parking, provision of short-term parking for commercial, and preferential permit parking in residential areas.</li> <li>Incorporate pedestrian, bicycle and transit-friendly features in the design of developments. Locate building entrances in close proximity to the street to</li> </ul>	1.1, 1.2, 1.7, 1.10, 1.11, 1.16, 1.17, 1.28, 1.31, 1.32, 2.3, 2.8, 2.9, 2.13, 2.15, 3.4, 3.5, 3.7			x		Planning and Development, Transportation

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	<p>provide for convenient access to transit stops and sidewalks.</p> <ul style="list-style-type: none"> <li>• Include transit facilities (pedestrian easements, bicycle facilities, bus shelters and loading areas) and implement other non-auto provisions (ride-share, car sharing and taxi staging improvements where appropriate).</li> <li>• Include rideshare pick-up areas for carpools and vanpools.</li> <li>• Share parking areas and driveways where appropriate, such as in mixed use development projects.</li> <li>• Include funding for transit, pedestrian and bicycle improvements as a potential mitigation measure.</li> <li>• Apply the provisions of Trip Reduction Ordinance to new developments</li> <li>• Assess options for new development to mitigate cumulative traffic impact.</li> </ul>						
1.3 Manage Parking Supply and Demand	<p>Promote the management of parking supply and demand programs that mitigate the impacts attributable to new development including:</p> <ul style="list-style-type: none"> <li>• Encourage non-auto travel modes such as transit, carpooling, bicycle use and walking.</li> <li>• Improve the quality and</li> </ul>	1.2, 1.3, 1.11, 1.16, 1.18,1.32, 2.1, 2.3, 2.4, 2.6, 2.15, 3.1, 3.5, 3.7, 3.8,			X		Transportation

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	<p>level of service of fixed-route transit service.</p> <ul style="list-style-type: none"> <li>• Provide Dial-a-Ride operations for transit-dependent travelers who need special assistance.</li> <li>• Support extension of Gold Line light rail service to the east.</li> <li>• Provide pedestrian, bicycle and transit amenities.</li> <li>• Encourage regional construction of park &amp; ride lots at strategic locations with transit service serving Pasadena destinations.</li> <li>• Coordinate seamless transit operations at regional intermodal stations.</li> <li>• Encourage collaborative planning and operations between transit and paratransit providers.</li> </ul>						
1.4 Promote Regional Interagency Coordination	<p>Cooperate with regional agencies to promote area-wide solutions that are coordinated with other jurisdictions and transportation providers. Actively participate in regional and sub-regional areawide transportation planning studies and review new developments to ensure that they are consistent with the City's adopted plans and policies. This review should include consideration through-traffic caused by regional development and infrastructure projects.</p>	1.3, 1.5, 1.9, 1.25, 1.26, 1.28, 1.29, 2.1, 2.4, 3.10			x		Transportation
1.5 Emergency Planning	<p>Provide an ongoing review of</p>	1.8, 1.14, 3.3, 1.27			x		Transportation;

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	emergency operations plans and provisions to ensure that the City's program for emergency transportation services is coordinated with other local and regional jurisdictions and incorporates updated procedures and programs as appropriate. Upgrade the Traffic Management Center (TMC) to provide a more effective link to the Los Angeles County Information Exchange Network (IEN) by incorporating features such as video detection, incident management, and advanced control strategies.						Police; Fire
1.6 Community Event Support	Provide transportation services to support major community events including improvements to the Traffic Management Center (TMC) to support venues of regional and national significance taking into account the impact on adjacent neighborhoods.	1.2, 1.3, 1.6, 1.8, 1.28, 1.29, 1.32, 2.3, 2.10			x		Transportation; Police; Planning and Development; Public Works
1.7 Air Quality Improvements	Participate in inter-jurisdictional efforts to continue recent improvements in air quality and to meet State and Federal mandates through advanced technology (vehicles, fuels, automated traffic signal systems, and telecommunications) and Transportation Demand Management (TDM) programs.	1.4, 1.9, 1.16, 1.23, 1.26, 1.31, 2.1, 2.6, 2.15			x		Transportation; Regional Transit Operators
1.8 Manage Traffic on Connector Streets	Manage traffic on designated Connector Streets to to accommodate the needs of multimodal and peak-hour	1.4, 1.6, 1.10, 1.12, 1.13, 1.14, 1.15, 1.16, 1.31, 3.2, 3.31.4,			x		Transportation; Public Works

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	travel and to discourage the intrusion of through traffic into residential neighborhoods.						
1.9 Manage Truck Traffic	Encourage truck deliveries to be made in mid-day off-peak hours, especially in areas where intersections are congested, consistent with the provisions of the City's noise ordinance. Limit the intrusion of heavy-duty trucks on residential streets by directing truck traffic to the routes and enforce appropriate traffic regulations. Additional needs for truck delivery services will be reviewed on a case-by-case basis. Enforce provisions to manage large truck traffic associated with construction projects consistent with the provisions of Hillside Ordinance.	3.5, 3.6			x		Business Community; Transportation; Police
1.10 Shared Parking for Projects with Multiple Users	Promote the provision of shared-parking and pooled-parking facilities in appropriate locations to more effectively use the overall parking supply.	3.1, 3.4, 3.7, 3.8			x	x	Transportation; Planning and Development; Private development
1.11 Provide for Public Parking Needs	<ul style="list-style-type: none"> <li>Provide for existing and future parking demands in commercial areas in an economically feasible and aesthetically pleasing manner through partnerships with the private sector.</li> <li>Operate public parking facilities to ensure the availability of short-term parking at major destinations.</li> </ul>	1.29, 1.32, 3.1,3.4, 3.7, 3.8			x	x	Transportation; Planning and Development; Private development

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	<ul style="list-style-type: none"> <li>Coordinate parking management policies with other transportation strategies such as park-and-ride services for regional transit and transportation demand management requirements.</li> <li>Address the parking needs of residential areas through community initiatives such as the overnight parking permits and the preferential permit parking program.</li> <li>Work with local businesses to manage curb parking to accommodate delivery needs, short-term parking, and valet parking.</li> <li>Use parking pricing and supply to efficiently manage parking availability.</li> </ul>						
<b>2.0 • Encourage Walking, Biking, Transit, and other Alternatives to Motor Vehicles</b>							
2.1 Partner with Adjacent Jurisdictions	<p>Promote collaboration and cooperation with adjacent jurisdictions to increase transit services and ridership to better manage regional travel demand and provide service improvement programs including convenient user information services for schedules, transfers, and fares.</p> <ul style="list-style-type: none"> <li>Support improvements in regional transit services, particularly extension of Gold Line service and provision of related park-</li> </ul>	1.2, 1.3, 1.5, 1.6, 1.9, 1.26, 1.27, 2.1, 2.4, 3.10			x		Transportation

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	<p>ride facilities to the East San Gabriel Valley.</p> <ul style="list-style-type: none"> <li>• Support improvement in regional bus service operated by Metro (San Gabriel Valley Sector and San Fernando Valley Sectors), Foothill Transit, and LADOT Commuter Express, and actively participate in restructuring studies to improve existing services.</li> <li>• Continue to support regional fare policy for transit and an automated payment system.</li> <li>• Urge regional transit operators to conduct ongoing public education campaigns to inform City residents, employees, and visitors of the availability, convenience and interconnectivity of the multiple transit operations serving the Pasadena area.</li> <li>• Support operation of the MTA Rapid Bus Program on major transit corridors.</li> </ul>						
2.2 Expand Local Transit	<p>Expand ARTS transit service to encompass a city-wide route system and enhance overall transit service by the following means:</p> <ul style="list-style-type: none"> <li>• Implement the Short-Range Transit Plan for Pasadena ARTS service.</li> <li>• Promote the expansion and use of regional and ARTS bus service with particular emphasis on</li> </ul>	1.2, 1.3, 1.5, 1.6, 1.18, 1.25, 1.26, 1.29, 2.1, 2.2, 2.3, 2.4,			x		Transportation in cooperation with regional transit operator

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	<p>transit-dependent areas and major activity centers including work, retail, entertainment, and recreational destinations.</p> <ul style="list-style-type: none"> <li>• Pursue funding opportunities for expansion of the ARTS service including designation by MTA as an included transit operator.</li> <li>• Evaluate, with the MTA San Gabriel Transit Sector, ways to improve service on existing routes and to work with the City to define transit improvements that will enhance overall service and increase ridership.</li> <li>• Pursue partnership opportunities with adjacent jurisdictions to jointly fund operations of ARTS routes that are of mutual benefit.</li> <li>• Pursue demonstration projects to test</li> </ul>						
2.3 Improve Bus Stops and Stations	Encourage the construction of safe, clean, and attractive bus stops by requiring that transit enhancements, bicycle facilities, and pedestrian amenities be included in the City's review process for new development projects.	1.5, 2.3, 2.4			x		Transportation in cooperation with regional transit operator
2.4 Provide Improved Public Information	Encourage regional transit service operators to jointly undertake programs that provide the public with clear, easy-to-understand, transit user information (route,	1.3, 1.5, 1.6, 2.4, 2.6			x		Transportation, Regional Transit Operators and Transportation Planning Agencies

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	schedule, fare, transfer policy, etc.) including posting of information on a Regional Transit Vehicle Arrival.						
2.5 Foster Active Transportation Demonstration Projects	Actively pursue demonstration projects to test the feasibility and effectiveness of new, innovative transit and other bicycle and pedestrian projects such as bike share, car-sharing membership programs. Continue to pursue opportunities to increase the use of environmentally friendly vehicles in the City's transit fleet.	1.3,1.6, 1.26, 1.30, 2.2, 2.8, 2.10, 2.11, 2.12, 2.14, 3.9					Transportation
2.6 Bicycle Infrastructure	<p>The provision of bicycle facilities along key City and Neighborhood Connectors will require the careful balance of competing transportation needs. In some cases this may involve parking restrictions, travel lane restriping, or the provision of bicycle facilities on parallel routes.</p> <ul style="list-style-type: none"> <li>Extend bicycle routes/paths to provide a citywide network. Coordinate the City's bike-path network with adjacent jurisdictions and inform the public of these services by issuing bicycle maps illustrating street ratings for bicycle use.</li> <li>Launch a comprehensive marketing campaign that includes bicycle safety and riding tips.</li> <li>Require promoters of</li> </ul>	1.2, 1.5, 1.7, 1.11, 1.12, 1.15, 1.17, 1.18, 1.19, 1.20, 1.21, 1.31, 2.5, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13			x		Transportation

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	<p>large events to provide bicycle parking and/or valet service.</p> <ul style="list-style-type: none"> <li>Involve the residential and business communities in the design, implementation, and promotion of transit, bicycle, and other alternative transit services.</li> </ul>						
2.7 Encourage Use of Bicycles	<ul style="list-style-type: none"> <li>Promote and maintain a comprehensive and integrated system of bikeways that promote bicycle riding for commuting and recreation. Maintain the requirement to include provisions for rideshare and bicycle parking spaces in new development projects.</li> <li>Develop programs such as Bike Share to provide options and improve mobility.</li> <li>Seek funding to produce an Open Streets event on a yearly basis.</li> </ul>	1.2, 1.3, 1.4, 1.7, 1.18, 1.23, 2.5, 2.6, 2.8, 2.9, 2.10, 2.12, 2.13,			x		Transportation; Planning and Development
2.8 Bicycle Provisions at Transportation Centers	Provide bicycle access at Gold Line Stations, major bus and park-ride facilities, and in or near multimodal corridors, neighborhood districts, community centers, and recreational facilities to afford easy accessibility by bicycle to many destinations.	1.2, 1.5, 1.7, 1.11, 1.12, 1.15, 1.17, 1.18, 1.19, 1.20, 1.21, 1.31, 2.5, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13			x		Transportation; Planning and Development; Public Works; Regional Transit Operators
2.9 Promote Pedestrian- and Bicycle-Friendly Places	Enhance pedestrian circulation and create walkable places in neighborhoods, community centers, and appropriate	1.1, 1.2, 1.3, 1.4, 1.5, 1.7, 1.8, 1.11, 1.12, 1.16, 1.17, 1.18, 1.20, 1.21, 1.22, 1.23, 2.5, 2.6, 2.7, 2.13			x		Transportation; Planning and Development; Public Works

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	locations at major activity centers and along mixed-use boulevards. Provide for safe and convenient pedestrian and bicycle connections to and between major commercial districts, activity centers, and neighborhoods within the City.						
2.10 Promote Pedestrian Linkages	Promote direct pedestrian linkages between transit portals/platforms and their adjacent commercial development through project orientation and design—taking into account the particular needs of seniors, youth, and persons with disabilities. Identify High Pedestrian Activity Areas and develop project review guidelines to develop, protect, and foster the pedestrian-oriented character of these places. Consider traffic impacts on these places and apply mitigation measures which do not restrict pedestrian circulation.	1.1, 1.2, 1.3, 1.4, 1.5, 1.7, 1.8, 1.11, 1.12, 1.16, 1.17, 1.18, 1.20, 1.21, 1.22, 1.23, 2.5, 2.6, 2.7, 2.13			x		Transportation; Planning and Development; Public Works
2.11 Promote Trip Reduction Programs	Promote reduction in vehicle trips in general through continued application of the Trip Reduction Ordinance (TRO). Measures include: <ul style="list-style-type: none"> <li>Specify rideshare and transit goals</li> <li>Encourage and foster transit, bicycle, and pedestrian access to major destinations</li> <li>Foster transportation management</li> </ul>	1.1, 1.2, 1.3, 1.5, 1.6, 1.30, 2.6, 2.15			x		Transportation; Planning and Development

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	<p>organizations for major employment areas</p> <ul style="list-style-type: none"> <li>• Encourage Pasadena residents to use transit and rideshare from the home end of trip-making</li> <li>• Ensure that transportation demand management programs include the full range of trip reduction measures that promote non-auto travel.</li> <li>• Encourage employers to consider “cashing-out” free parking. In this program, employers who fully or partially subsidize parking offer their workers a choice of transportation services, including a transit pass.</li> </ul>						
2.12 Access to Major Transportation Services	<p>Promote ease of access to local and regional transportation services by developing identifiable Connector Streets to accommodate travel throughout the City and to destinations outside of the City.</p> <p>Improve system performance by applying advanced technology to provide and reinforce seamless, efficient, and safe multimodal connections at key destinations and transit transfer locations along the Connector Streets.</p>	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.25, 1.26,1.28, 3.3			x		Transportation; Public Works; Planning and Development

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
2.13 Support Regional Freeway Improvements	Participate in pending interagency reviews of the completion of the I-710 Freeway Gap Closure consistent with the voter-approved initiative passed in March 2001 that favors completing the I-710 Freeway extension between the I-210 and I-10 Freeways.	1.9, 1.26, 3.10			x		Transportation; Planning & Development; Public Works; Caltrans; MTA; SCAG; FHWA
<b>3.0 Enhance Livability</b>							
3.1 Complete Streets	<p>Streets should be planned, designed, constructed, and maintained to facilitate shared use by all users.</p> <ul style="list-style-type: none"> <li>• Adopt Form-Based Design Guidelines to design and construct context sensitive and safe streets.</li> <li>• Incorporate street design guidelines principles into all city plans, manuals and programs as appropriate.</li> <li>• Coordinate the implementation of Complete Streets with all City Departments.</li> <li>• Consider repurposing rights-of-way to enhance connectivity for pedestrians, bicyclist and transit.</li> <li>• Implement Complete Streets through single projects or incrementally through a series of smaller improvements or maintenance activities over time.</li> </ul>	1.1, 1.2, 1.4, 1.5, 1.7, 1.10, 1.11, 1.12, 1.17, 1.18, 1.19, 1.20, 1.21, 1.22, 1.23, 1.28, 1.30, 1.31, 2.5, 3.6			x	x	Transportation; Planning and Development; Public Works

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
3.2 Discourage Traffic from Using Local Streets	<ul style="list-style-type: none"> <li>• Make the most efficient use of Connector Streets and discourage traffic from using Access streets to bypass congested intersections. Seek to eliminate or minimize the intrusion of traffic generated by new development into residential neighborhoods and on de-emphasized streets while preserving an adequate Connector street system. Maintain the existing Wayfinding program to discourage traffic from intruding into neighborhoods.</li> <li>• Apply traffic management measures to control traffic speeds and volumes on Access streets within residential neighborhoods and adjacent to parks to ensure safe and orderly traffic flows and reduce noise impacts associated with speeding vehicles.</li> <li>• Manage traffic volumes and speeds Access streets so that they are compatible with the character of the adjacent land uses, the function of the street, and bicycle and pedestrian traffic.</li> <li>• Implement the Neighborhood Traffic Management Program and related traffic calming measures to limit the</li> </ul>	1.4, 1.6, 1.8, 1.10, 1.11, 1.12, 1.13, 1.14, 1.15, 1.16, 1.17, 1.21, 1.22, 3.2, 3.3, 3.5, 3.6					Transportation; Public Works

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	<p>volume and speed of traffic on local streets.</p> <ul style="list-style-type: none"> <li>Promote safe travel for pedestrians and bicycles and enforce the traffic regulations at places with high pedestrian activity.</li> <li></li> </ul>						
3.3 Support Neighborhood Initiatives	<ul style="list-style-type: none"> <li>Inform and involve neighborhood residents in the development of transportation services, including the Suggested Safe Routes to School Program, to help ensure that students can safely walk and bicycle to and from school.</li> <li>Implement programs to address community-based parking needs that recognize the unique characteristics of neighborhoods and distinctive places within neighborhoods.</li> <li>Implement parking enforcement programs to protect residential and commercial areas immediately adjacent to the Gold Line stations from spillover parking impacts.</li> <li>Enforce regulations prohibiting parking of commercial, recreational, and non-operable vehicles in residential areas</li> </ul>	1.4, 1.13, 1.14, 1.15, 1.21, 1.32					Transportation; Neighborhood
3.4 Promote and Seek Funding from Regional Agencies to Construct Soundwalls	Promote and seek funding from regional agencies to construct soundwalls along the I-210						Transportation; Caltrans; MTA

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	Freeway between the SR-134/I-710 and the northwest City limit.						
3.5 Sustainable Services	Promote sustainable and convenient transportation services by using clean-fuel vehicles in the City's transit fleet; encouraging public transportation carriers to make every effort to reduce noise emissions; fostering the use of shared cars, electric vehicles, carpools, and bicycles; and providing safe and convenient pedestrian connections within the City.	1.1, 1.4, 1.5, 1.6			x		Transportation
3.6 Improve Safety	Promote continuous improvement in user safety through Complete Streets by addressing safety features in the design and delivery of all services.	1.3, 1.4, 1.5, 1.7, 1.8, 1.10, 1.11 1.12, 1.13, 1.17, 1.20, 1.21, 1.23, 2.3, 2.5, 2.7, 2.11, 2.12,			x		Transportation
3.7 Address Pass Through Traffic on Neighborhood Streets	Manage traffic to address the needs of neighborhoods where cut-through and speeding traffic intrudes from Connector Streets. Provide for effective traffic flow on Connector Streets to prevent traffic from infiltrating neighborhoods.	1.12, 1.13, 1.13, 1.14, 1.24, 3.2, 3.3					Transportation; Public Works
3.8 Implementation Approach for Traffic Management Initiatives	Traffic management projects will be implemented in a phased manner and evaluated for their effectiveness to determine the need for additional actions.	1.10			x		Transportation; Public Works; Planning and Development
3.9 Minimize Street Widening along Corridors and Consider Alternatives	Minimize the use of street widening along corridors in order to promote use of non-auto travel and continue to use the following criteria for such review:	1.4, 1.11, 1.17, 1.22, 1.28			x		Transportation; Planning and Development; Public Works

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	<ul style="list-style-type: none"> <li>• Minimize the disruption and relocation of homes and businesses</li> <li>• Preserve historic buildings and structures</li> <li>• Protect the quality of residential areas and other surrounding land uses</li> <li>• Provide safety improvements</li> <li>• Improve pedestrian and bicycle access</li> <li>• Incorporate environmental protection</li> <li>• Integrate plans for parking, transit, traffic, and pedestrian circulation including curb cuts</li> <li>• Recognize community development plans and policies</li> <li>• Widen streets within existing right-of-way (EXCEPTION: Six intersections listed in Section 5.5.4.1)</li> </ul> <p>Preserve parkland</p>						
3.10 Enhance Signalized Intersections for all road Users	<p>Apply intersection design guidelines to promote safety at busy locations.</p> <ul style="list-style-type: none"> <li>• Design intersections to provide a safe and efficient flow of vehicles, pedestrians and bicycles.</li> <li>• Consider the volume of school children, the elderly, and persons with disabilities in intersection design and traffic signal control equipment.</li> <li>• Design curb-radii to</li> </ul>	1.4, 1.5, 1.6, 1.7, 1.10, 1.11, 1.12, 1.17, 1.21, 1.23, 3.3			x		Transportation; Public Works

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	<p>facilitate safe turning movement without encouraging excessive vehicle speed.</p> <ul style="list-style-type: none"> <li>• Design signal phases to accommodate differences in traffic conditions during morning and evening peak times, midday, and weekends.</li> <li>• Ensure that an adequate pedestrian <b>WALK</b> interval is provided in the traffic-signal timing phase at intersections with heavy pedestrian use.</li> <li>• Install and use traffic signal equipment with technology that maximizes flexibility in allowing for customized adjustments at each intersection. Include provisions for bicycle uses at intersections as bicycle routes are implemented.</li> <li>• Design grouping of signal synchronization to minimize stops and dilemma zones without encouraging speeding. (Dilemma zones are areas where drivers have to make crucial decisions related to signal changes.)</li> <li>• Explore approved new technology that will enhance driver compliance, increase visibility of traffic control devices and provide improved driver awareness to potential</li> </ul>						

Program	Program Description	Policy	Near Term	Mid -Long Term	Continuous	Periodic Update <sup>1</sup>	Responsible Departments
	hazards using automated enforcement systems and active warning systems.						
3.11 Safety Enhancements	<p>Promote public safety through the design and operation of transportation services and conduct public safety outreach programs to enhance safety in the community.</p> <p>Maintain adequate emergency access provisions in new development, investigate solutions for intersections and roadway segments with high accident rates, and coordinate enforcement programs with the Police Department.</p>	1.3, 1.4, 1.5, 1.7, 1.8, 1.10, 1.11 1.12, 1.13, 1.17, 1.20, 1.21, 1.23, 2.3, 2.5, 2.7, 2.11, 2.12,			x		Transportation; Police



**AA - Alternative Analysis-** An analysis of the environmental effects of alternatives under consideration for a project that has been determined through an Initial Study (IS) and/or Environmental Assessment (EA) to have potential significant environmental impacts.

**AADT - Average Annual Daily Traffic-** The total traffic for a year divided by 365.

**AASHTO - American Association of State Highway and Transportation Officials-** An interest group based in Washington, D.C., that is involved in transportation-related research, advocacy, and technical assistance.

**Accessibility-** The degree to which a product, device, service, or environment is available to as many people as possible. Accessibility can be viewed as the "ability to access" and benefit from some system or entity.

**ADA - Americans With Disabilities Act-** Federal civil rights legislation for disabled persons passed in 1990. As it pertains to transportation, public transportation, and public facilities such as sidewalks, features must be designed per ADA standards to provide access for disabled persons.

**ADT - Average Daily Traffic-** The total traffic volume during a given period divided by the number of days in that period. Current ADT volumes can be determined by collecting traffic counts for two or more 24-hour periods. Where only periodic traffic counts are taken, ADT volume can be established by applying correction factors, e.g., for season or day of week. For roadways having traffic in two directions, the ADT includes traffic in both directions unless specified otherwise.

**AFC - Automatic Fare Collection System-** A system of controls and equipment that automatically admits passengers on insertion of the correct fare in coins, tokens, tickets or fare cards; it may include special equipment for transporting and counting revenues.

**Alley-** A vehicular way located at the rear of lots providing allocation for utility easements and access to service areas, parking, and outbuildings.

**Alternative Fuels-** Low-polluting fuels which are used to propel a vehicle instead of high-sulfur diesel or gasoline. Examples include methanol, ethanol, propane or compressed natural gas, liquid natural gas, low-sulfur or "clean" diesel and electricity.

**Amtrak-** Operated by the National Railroad Passenger Corporation, this rail system was created by the Rail Passenger Service Act of 1970 (Public Law 91-518, 84 Stat. 1327) and given the responsibility for the operation of intercity (as distinct from suburban) passenger trains between points designated by the Secretary of Transportation.

**Apportionment-** A federal budgetary term that refers to a statutorily prescribed division or assignment of funds.

**Appropriation-** A federal budgetary term that refers to an act of Congress that permits federal agencies to incur obligations and make payments out of the Treasury for specified purposes.

**Air Quality Management District (AQMD)**- A regional agency which adopts and enforces regulations to achieve and maintain State and federal air quality standards.

**Air Quality Management Plan (AQMP)**- A plan for attaining State air quality as required by the California Clean Air Act of 1988. The plans are adopted by air quality districts and subject to approval by the California Air Resources Board.

**ARB - Air Resources Board**- The state agency, (aka, CARB in California) responsible for adopting state air quality standards, establishing emission standards for new cars sold in the state, and overseeing activities of regional and local air pollution control agencies.

**Arterial**- A major thoroughfare, used primarily for through traffic rather than for access to adjacent land, that is characterized by high vehicular capacity and continuity of movement.

#### **ATIS - Advanced Traveler Information Systems**

**ATMS - Advanced Traffic Management Systems**- ATMS uses a variety of means to more efficiently manage traffic. It can include roadside sensors, ramp metering, HOV lanes and synchronized traffic signals that respond to traffic flows.

**Attainment Area**- An area that the Environmental Protection Agency has designated as being in compliance with one or more of the National Ambient Air Quality Standards (NAAQS) for sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and particulate matter. An area may be in attainment for some pollutants but not for others. (See National Ambient Air Quality Standards (NAAQS), nonattainment area, and particulate matter.)

**At-Grade Crossing**- An intersection of traveled ways — eg, highways, rail lines, or walkways — at the same vertical elevation.

**Authorization**- Basic, substantive legislation which establishes or continues the legal operation of a federal program or agency, either indefinitely or for a specific period of time, or which sanctions a particular type of obligation or expenditure within a program. An authorization may set appropriation limits.

**Automated Guideway**- An electric railway operating without vehicle operators or other crew on board the vehicle.

**AVCS - Advanced Vehicle Control Systems**- New techniques to ease stresses and strains of driving are evolving, possibly leading to the day when you may be able to sit back and leave your car in charge. AVCS spans the gamut from ordinary cruise control to "smart cruise control" that helps maintain safe following distance to, researchers hope, "platooning" — the ability to electronically link and guide a dense pack of cars moving in formation at high speed.

**Avenue**- A thoroughfare of high vehicular capacity and low to moderate speed, acting as a short distance connector between urban centers, and usually equipped with a landscaped median.

**AVI - Automated Vehicle Identification System**- Also known as Automatic Vehicle Monitoring System or Automatic Vehicle Location System. A system in which electronic equipment on a vehicle sends signals back to a central control facility, locating the vehicle and providing other information about its operations or about its mechanical condition.

**AVL – Automated Vehicle Location System**- A computerized system that employs satellites and other technologies to track vehicles in a fleet, assisting with dispatching and other applications.

**AVO - Average Vehicle Occupancy**- The number of people traveling by private passenger vehicles divided by the number of vehicles used.

**AVR - Average Vehicle Ridership-** The ratio of the number of all people traveling by any mode, including cars, buses, trains and bicycles, in a given area during a given time period to the number of cars on the road.

**AWDT - Average Weekday Daily Traffic-** The total traffic for an average weekday. An average weekday is a representative weekday computed as the mathematical average of several typical weekdays selected at random throughout the year. A typical weekday has no anomaly such as heavy traffic due to a special public event or light traffic due to inclement weather. Average Saturday, Sunday, and holiday traffic are determined the same way.

**Baseline-** The existing environmental conditions against which impacts of the proposed action and its alternatives can be compared.

**Base Period-** The period between the morning and evening peak periods when transit service is generally scheduled on a constant interval. Also known as "off-peak period".

**Base Fare-** The price charged to one adult for one transit ride; excludes transfer charges, zone charges, express service charges, peak period surcharges and reduced fares.

**Bicycle Boulevard-** A low-speed street that prioritizes bicycle travel over other modes, though also allows local vehicle traffic.

**Bicycle Lanes-** Commonly referred to as Class II facilities established within the paved area of roadways for the preferential use of bicycles. Bike lane stripes are intended to promote an orderly flow of traffic by establishing specific lines of demarcation between areas reserved for bicycles and lanes to be occupied by motor vehicles.

**Bicycle Locker-** An enclosed storage facility designed to temporarily house and secure a bicycle.

**Bicycle Paths-** Commonly referred to as Class I facilities with exclusive right of way, with cross flows by motorists minimized.

**Bicycle Rack-** A non-enclosed rack designed for parking and securing a bicycle.

**Bicycle Routes-** Commonly referred to as Class III facilities, designated Bicycle Routes do not provide an exclusive lane for bicycles. These facilities are established by placing Bike Route signs along the roadways to provide awareness to drivers that bicyclists may be more common on the route.

**Bicycle Shed-** An area that is centered on a common destination. Its size is related to average cycling distances for the applicable community type.

**Bicycle Treatment-** Typically on-street bicycling improvement strategies, such as signed bicycle routes or striped bicycle lanes; on-street bicycle lanes can also be buffered, separated, colored, or otherwise made distinct from general travel lanes.

**Biofuel-** A type of fuel whose energy is derived from biological carbon fixation. Biofuels include fuels derived from biomass conversion, as well as solid biomass, liquid fuels, and various biogases.

**Block-** The aggregate of private lots, passages, alleys, and rear lanes, circumscribed by thoroughfares.

**Budget Authority-** A federal budgetary term that refers to legal authority given by Congress to federal agencies to make funds available for obligation or expenditure.

**Budget Resolution-** A federal budgetary term that refers to a concurrent resolution passed by both Houses of Congress, but not requiring the signature of the President, setting forth the congressional budget for each of five fiscal years. The budget resolution sets forth various budget total and functional allocations, and may include reconciliation instructions to designated House or Senate committees.

**Bus (Motorbus)**- A rubber-tired, self-propelled, manually steered vehicle with fuel supply carried on board the vehicle. Types include advanced-design, articulated, charter, circulator, double-deck, express, feeder, intercity, medium-size, new look, sightseeing, small, standard-size, subscription, suburban, transit and van.

**Bus, Articulated**- A bus, usually 55 feet or more in length, with two connected passenger compartments that bend at the connecting point when the bus turns a corner.

**Bus, Charter**- A bus, transporting a group of persons who pursuant to a common purpose and under a single contract at a fixed price have acquired the exclusive use of a bus to travel together under an itinerary.

**Bus, Circulator**- A bus serving an area confined to a specific locale, such as a downtown area or suburban neighborhood with connections to major traffic corridors.

**Bus, Double Deck**- A bus with two separate passenger compartments, one above the other.

**Bus, Express**- A bus that operates a portion of the route without stops or with a limited number of stops.

**Bus, Feeder**- A bus service that picks up and delivers passengers to a rail rapid-transit station or express bus stop or terminal.

**Bus, Intercity**- A bus with front doors only, high-backed seats, separate luggage compartments, and usually with restroom facilities, for use in high-speed long-distance service.

**Bus, Medium-Size**- A bus from 29 to 34 feet in length.

**Bus, New Look**- A bus with the predominant styling and mechanical equipment common to buses manufactured between 1959 and 1978.

**Bus, Rapid Transit (BRT)**- Bus Rapid Transit can be defined as a flexible, rubber-tired rapid-transit mode that combines stations, vehicles, services, running ways, and Intelligent Transportation System (ITS) elements into an integrated system with a strong positive identity that evokes a unique image. BRT applications are designed to be appropriate to the market they serve and their physical surroundings, and they can be incrementally implemented in a variety of environments. In brief, BRT is an integrated system of facilities, services, and amenities that collectively improves the speed, reliability, and identity of bus transit. BRT, in many respects, is a rubber-tired light-rail transit (LRT) bus with greater operating flexibility and potentially lower capital and operating costs.

**Bus, Sightseeing**- A bus adapted for sightseeing use, usually with expanded window areas.

**Bus, Small**- A bus 28 feet or less in length.

**Bus, Standard-Size**- A bus from 35 to 41 feet in length.

**Bus, Subscription**- A commuter bus express service operated for a guaranteed number of patrons from a given area on a prepaid, reserved-seat basis.

**Bus, Suburban**- A bus with front doors only, normally with high-backed seats, and without luggage compartments or restroom facilities, for use in longer-distance service with relatively few stops.

**Bus, Transit**- A bus with front and center doors, normally with a rear-mounted engine, low-back seating, and without luggage compartments or restroom facilities, for use in frequent-stop service.

**Bus, Trolley-** An electric, rubber-tired transit vehicle, manually steered, propelled by a motor drawing current through overhead wires from a central power source not on board the vehicle. Also known as "trolley coach" or "trackless trolley."

**Bus Lane-** A street or highway lane intended primarily for buses, either all day or during specified periods, but sometimes also used by carpools meeting the requirements set out in traffic laws.

**Bus Shelter-** A building or other structure constructed near a bus stop for the convenience of waiting passengers to provide seating and protection from the weather.

**Bus Stop-** A place where passengers can board or alight from the bus, usually identified by a sign.

**Busway-** (See HOV Lane) Exclusive freeway lane for buses and carpools.

**Clean Air Act (CAA)-** Federal legislation that requires each State with areas that have not met federal air quality standards to prepare a State Implementation Plan (SIP). The sweeping 1990 amendments to the CAA established new air quality requirements for the development of metropolitan transportation plans and programs. The California Clean Air Act (CCAA) sets even tougher State goals.

**CAAA - Clean Air Act Amendments of 1990-** Also known as the FCAA Federal legislation that sets national air quality standards; requires each state with areas that have not met federal air quality standards to prepare a SIP. The sweeping 1990 amendments to the CAA, sometimes referred to as CAAA, established new air quality requirements for the development of metropolitan transportation plans and programs.

**Cable Car-** An electric railway operating in mixed street traffic with unpowered, individually controlled transit vehicles propelled by moving cables located below the street surface and powered by engines or motors at a central location not on board the vehicle.

**Caltrans – State of California Department of Transportation-** The state agency that operates and maintains California's state-owned transportation facilities.

**Capacity-** A transportation facility's ability to accommodate a moving stream of people or vehicles in a given time period.

**Capital Assistance-** Financial assistance for transit capital expenses (not operating costs); such aid may originate with federal, local, or state governments.

**Capital Costs-** Costs of long-term assets such as property, infrastructure, buildings, vehicles, etc.

**Capital Revenues-** Monies dedicated for new projects to cover one-time costs, such as construction of roads, transit lines and facilities, or purchase of buses and rail cars.

**CARB - California Air Resources Board-** See ARB.

**Carpool-** An arrangement where two or more people share the use and cost of privately owned automobiles in traveling to and from pre-arranged destinations together.

**Categorical exemption-** An exemption from CEQA (see below) for a class of projects based on a finding by the Secretary for Resources that the class of projects does not have a significant effect on the environment.

**CBD - Central Business District-** The downtown retail trade and commercial area of a city or an area of very high land valuation, traffic flow, and concentration of retail business offices, theaters, hotels, and services.

**CEQA - California Environmental Quality Act of 1970-** The California Environmental Quality Act, California Public Resources Code Sections 21000 et seq.

**Charter Bus-** See "Bus, Charter".

**CHP - California Highway Patrol-** State law enforcement agency responsible for highway safety, among other things.

**CIP - capital improvement program-** The CIP is a mechanism for prioritizing and funding city-sponsored projects with an estimated cost that exceeds \$50,000. Typical CIP projects include construction/reconstruction of street, water, and sewer systems; technology infrastructure; and public parks, libraries, community centers, etc. The program also includes streetscape projects, installation of street lights and traffic signals, and the City's Neighborhood Traffic Management Program.

**Circulator Bus-** See "Bus, Circulator".

**Congestion Management Agency (CMA)-** The agency responsible for developing the Congestion Management Program and coordinating and monitoring its implementation.

**CMAQ - Congestion Mitigation and Air Quality Program-** Money contained in ISTEA for projects and activities that reduce congestion and improve air quality in regions that have not yet attained federal air quality standards.

**CMP - Congestion Management Program-** Required of every county in California with a population of 50,000 or more (including all of the SCAG 6-County area) in order to qualify for certain state and federal funds. The CMP requires annual development reporting and biennial data collection at designated intersections and roadway segments., The CMP sets performance standards for roads and public transit, and requires local jurisdictions to employ measures to meet those standards.

**CMS-** (1) Congestion management systems. (2) Changeable message signs provide travelers with real-time information about traffic accidents, special events, and construction activities on the route ahead. CMS is also used to direct traffic to specific routes or parking facilities.

**CNG - Compressed Natural Gas-** A clean-burning alternative fuel for vehicles.

**COG - Council of Governments-** A voluntary organization of local governments that strives for comprehensive, regional planning.

**COLA - Cost-of-Living Allowance-** An increase or decrease in employees' wages or salaries made on the basis of changes in agreed-upon economic indices, usually the Consumer Price Index.

**Collective Bargaining-** Negotiations between labor union representatives and employers to reach agreement on a contract describing such matters as wages, hours, and working conditions.

**Collector Road-** A thoroughfare that provides a less highly developed level of service at a lower speed for shorter distances than a Major Avenue, by collecting traffic from local roads and connecting them with arterials. Collectors specifically balance vehicle mobility and land access.

**Commitment-** See "Obligation".

**Commuter-** A person who travels regularly between home and work or school.

**Commuter Rail-** See "Rail, Commuter".

**Complete Streets-** A policy for the design and operation of thoroughfares enabling safe access for all users. By adopting a complete streets policy, communities direct their transportation planners and

engineers to routinely design and operate the entire right-of-way to enable safe access for all users, regardless of age, ability, or mode of transportation.

**Conformity-** A process in which transportation plans and spending programs are reviewed to ensure that they are consistent with federal clean air requirements; transportation projects collectively must not worsen air quality. Conformity ensures that the planning for highway and transit systems, as a whole and over the long term, is consistent with the state air quality plans for attaining and maintaining health-based air quality standards; conformity is determined by metropolitan planning organizations (MPOs) and the U.S. Department of Transportation (U.S. DOT) and is based on whether transportation plans and programs meet the provisions of a State Implementation Plan.

**Congestion Pricing-** The concept of charging a toll that varies by the amount of congestion on a transportation facility, usually on a freeway during rush hour.

**Connectivity-** The number of publicly accessible street intersections per square mile, including intersections of streets with dedicated alleys and transit rights-of-way, and intersections of streets with nonmotorized rights-of-way. If one must both enter and exit an area through the same intersection, such an intersection and any intersections beyond that point are not counted; intersections leading only to culs-de-sac are also not counted.

**Contract Authority-** A federal budgetary term that refers to a form of budget authority permitting obligations to be incurred in advance of appropriations. Advance obligations, however, have been limited by the appropriations committees with obligation limitations.

**Contraflow Lane-** Reserved lane for buses on which the direction of bus traffic is opposite to the flow of traffic on the other lanes.

**Corridor-** A broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways and transit route alignments. .

**Cross Docking-** Cargo transfer from one mode of transportation to another mode.

**Crosstown-** Non-radial bus or rail service which does not enter the Central Business District (CBD).

**Context-Sensitive Solutions (CSS)-** The planning, design, and implementation of transportation infrastructure and facilities that are in scale and character with surrounding land uses in a way that minimizes negative transportation effects and provides value to adjacent land uses through design, aesthetics, and other techniques.

**CTC - California Transportation Commission-** A state-level version of MTC that sets state spending priorities for highways and transit and allocates funding. Members are appointed by the governor.

**Cumulative impacts-** Refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. (a) The individual effects may be changes resulting from a single project or a number of separate projects. (b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable, probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

**DBE - Disadvantaged Business Enterprise-** A business owned and operated by one or more socially and economically disadvantaged individuals. Socially and economically disadvantaged individuals include African Americans, Hispanic Americans, Native Americans, Asian Pacific Americans or Asian Indian

Americans and any other minorities or individuals found to be disadvantaged by the Small Business Administration under Section 8(a) of the Small Business Act.

**Deadhead-** The movement of a transit vehicle without passengers aboard; often to and from a garage or to and from one route to another.

**Dedicated Funding Source-** A source of monies which by law is available for use only to support a specific purpose, and cannot be diverted to other uses.

**DEIR/DEIS-** See EIR/EIS. Draft EIR/Draft EIS.

**Demand Responsive-** Nonfixed-route service utilizing vans or buses with passengers boarding and alighting at prearranged times at any location within the system's service area. Also called "Dial-a-Ride" (DAR).

**Dial-a-Ride-** See "Demand Responsive".

**Discretionary Riders-** Riders who choose to ride transit though they have other travel options.

**Discretionary Spending-** A federal budgetary term that refers to any funds whose distribution is not automatic. Discretionary spending encompasses programs controlled by annual appropriations bills and is subject to the constraints imposed by the discretionary spending limits set in the balanced budget law.

**DOT - Department of Transportation**

**Double Deck Bus-** See "Bus, Double Deck".

**Downtime-** A period during which a vehicle is inoperative because of repairs or maintenance.

**DPM - Downtown People Mover-** A type of automated guideway transit vehicle operating on a loop or shuttle route within the Central Business District (CBD) of a city.

**Drayage-** Transportation of freight (often containers from rail yard or seaports) by truck typically over a relatively short distance to an intermediate or final destination; may also refer to a charge for pickup/delivery of goods moving short distances (eg, from marine terminal to warehouse). Originally, the term *dray* referred to a cart, usually three-sided, used to haul goods.

**Drought-Tolerant-** Adapted to arid or drought conditions.

**Dwell Time-** The scheduled time a vehicle or train is allowed to discharge and take on passengers at a stop, including opening and closing doors.

**Earmark-** A federal budgetary term that refers to the specific designation by Congress that part of a more general lump-sum appropriation be used for a particular project; the earmark can be designated as a minimum and/or maximum dollar amount.

**EA – Environmental Assessment-** A concise public document that a Federal agency prepares under the National Environmental Policy Act (NEPA) to provide sufficient evidence and analysis to determine whether a proposed agency action would require preparation of an environmental impact statement (EIS) or a finding of no significant impact. A Federal agency may also prepare an EA to aid its compliance with NEPA when no EIS is necessary or to facilitate preparation of an EIS when one is necessary. An EA must include brief discussions of the need for the proposal, alternatives, environmental impacts of the proposed action and alternatives, and a list of agencies and persons consulted. [See finding of no significant impact, environmental impact statement, and National Environmental Policy Act.]

**EIR - Environmental Impact Report-** A detailed statement prepared under CEQA describing and analyzing the significant environmental effects of a project and discussing ways to mitigate or avoid the

effects. (a) Draft EIR means an EIR containing the information specified in Sections 15122 through 15131 of the California Code. (b) Final EIR means an EIR containing the information contained in the draft EIR, comments either verbatim or in summary received in the review process, a list of persons commenting, and the response of the Lead Agency to the comments received. The final EIR is discussed in detail in Section 15132 of the California Code.

**EIS - Environmental Impact Statement-** The detailed written statement that is required by section 102(2)(C) of the National Environmental Policy Act (NEPA) for a proposed major Federal action significantly affecting the quality of the human environment. The statement includes, among other information, discussions of the environmental impacts of the proposed action and all reasonable alternatives, adverse environmental effects that can not be avoided should the proposal be implemented, the relationship between short-term uses of the human environment and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources.

**EJ – Environmental Justice-** The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, local, and tribal programs and policies. Executive Order 12898 directs federal agencies to make achieving environmental justice part of their missions by identifying and addressing disproportionately high and adverse effects of agency programs, policies, and activities on minority and low-income populations. (See minority population and low-income population.)

**ETC - Employee Transportation Coordinator-** Someone designated by a business or organization to assist its workers with forming carpools and vanpools, plotting their commute by public transit, and the like.

**Ethanol-** An alternative fuel; a liquid alcohol fuel with vapor heavier than air; produced from agricultural products such as corn, grain, and sugar cane.

**Exclusive Right-of-Way-** A highway or other facility that can only be used by buses or other transit vehicles.

**Express Bus-** See "Bus, Express".

**FAA-** Federal Aviation Administration

**Fare Box Recovery Ratio-** Measure of the proportion of operating expenses covered by passenger fares; found by dividing fare box revenue by total operating expenses for each mode and/or systemwide.

**Fare Box Revenue-** Value of cash, tickets, tokens and pass receipts given by passengers as payment for rides; excludes charter revenue.

**Fare Elasticity-** The extent to which ridership responds to fare increases or decreases.

**Fare Structure-** The system set up to determine how much is to be paid by various passengers using a transit vehicle at any given time. In addition to base fares, most transit operators provide discounts for seniors and persons with disabilities. The Federal Government requires recipients of federal funding to provide discounts of a minimum of 50% of the base fare during non-peak periods to seniors and persons with disabilities.

**FCR - Flexible Congestion Relief-** A state-directed funding program that applies state and federal dollars to local and regional transportation projects that ease traffic congestion, regardless of mode.

**Feeder Bus-** See "Bus, Feeder".

**FETSIM - Fuel-Efficient Traffic Signal Management-** State-provided financial fuel for local traffic signal coordination projects.

**FHWA** - Federal Highway Administration

**Fixed Cost-** An indirect cost that remains relatively constant, irrespective of the level of operational activity.

**Fixed Guideway System-** A system of vehicles that can operate only on its own guideway constructed for that purpose (e.g., rapid rail, light rail). Federal usage in funding legislation also includes exclusive right-of-way bus operations, trolley coaches and ferryboats as "fixed guideway" transit.

**Fixed Route-** Service provided on a repetitive, fixed-schedule basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations; each fixed-route trip serves the same origins and destinations, unlike demand-responsive and taxicabs.

**Flexible funding-** Federal funds which can be used for highway, transit or other transportation projects, as decided by regional Metropolitan Planning Organizations (MPOs) and state governments. Examples of such funds are the Surface Transportation Program (STP) and the Congestion Mitigation and Air Quality (CMAQ) fund.

**Fringe Parking-** An area for parking usually located outside the Central Business District (CBD) and most often used by suburban residents who work or shop downtown.

**FTA** - Federal Transit Administration

**Fiscal Year-** The yearly accounting period for Pasadena which begins July 1 and ends on the following June 30. The fiscal year is designated by the calendar year in which it ends (e.g., FY 05 is from July 1, 2004 to June 30, 2005).

**FONSI (Finding of No Significant Impact)-** A public document issued by a Federal agency briefly presenting the reasons why an action for which the agency has prepared an environmental assessment has no potential to have a significant effect on the human environment and, thus, will not require preparation of an environmental impact statement. (See environmental assessment and environmental impact statement.)

**FSP - Freeway Service Patrol-** (See Incident Management)

**GIS-** Geographic Information System

**Goods Movement-** The processes and activities involved in picking up, moving, and delivering products or raw materials from points of origin (or producers) to points of delivery or use (or consumers). Goods movement relies on transportation, financial, and information systems that involve global, international, national, interstate, statewide, regional, and local networks.

**GPS— Global Positioning System**

**Grade Separation-** A crossing of two forms of transportation paths (eg, light rail tracks and a highway) at different levels to permit unconstrained operation.

**Gravity Model-** See Travel Demand

**Greenhouse Gas (GHG)-** Gases that trap heat in the atmosphere and thus potentially influence climate change, such as carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

**Growth Management-** A longer-term tool for action against traffic problems through comprehensive land-use planning and policies.

**GSM– Global System for Mobile Communications**

**HAR-- Highway Advisory Radio**

**HCM– Highway Capacity Manual**

**HCS– Highway Capacity Software**

**Headway-** Time interval between vehicles moving in the same direction on a particular route.

**Heavy Rail-** See "Rail, Heavy".

**High Speed Rail-** See "Rail, High Speed".

**Highway-** A rural and suburban thoroughfare of high vehicular speed and capacity. This type is allocated to the more rural transect zones (T1, T2, and T3).

**Highway Trust Fund-** The federal trust fund established by the Highway Revenue Act of 1956; this fund has two accounts — the Highway Account and the Mass Transit Account. Trust fund revenues are derived from federal highway-user taxes and fees such as motor fuel taxes; trust fund uses and expenditures are determined by law.

**Horizontal Alignment-** The horizontal alignment of a highway, railway, or transit guideway represents the projection of the facility on a horizontal plane.

**High Occupancy Toll Lane (HOT Lane)-** A lane of freeway reserved for the use of vehicles with more than one passenger, including buses, taxis, carpools, motorcycles, electric vehicles, as well as single-occupant vehicles that pay a predetermined toll.

**HOV - High-Occupancy-Vehicle Lane-** The technical term for a carpool lane, commuter lane or diamond lane.

**Impact Fee-** A cost imposed on new development to fund public facility improvements required by new development and ease fiscal burdens on localities.

**Infrastructure-** The basic facilities, such as roads, public buildings (schools, libraries, fire stations), utilities (water, sewer, electric, gas), and communications systems on which the continuance and growth of a community depends. Infrastructure is needed to sustain industrial residential, commercial, and all other land use activities.

**ICC – Intelligent Cruise Control-** (See AVCS)

**Incident Management-** Systematical monitoring of traffic flow on transportation systems that provides useful information for identifying and responding to traffic incidents.

**IS - Initial Study-** A preliminary analysis prepared by the Lead Agency to determine whether an EIR or a Negative Declaration must be prepared, or to identify the significant environmental effects to be analyzed in an EIR. Use of the Initial Study is discussed in Article 5, commencing with Section 15060 of the California Code.

**Intermodal-** Those issues or activities which involve or affect more than one mode of transportation including transportation connections, choices, cooperation, and coordination of various modes. Also known as "multimodal." The term "mode" is used to refer to and to distinguish from each other the various forms of transportation such as automobile, transit, ship, bicycle, and walking. Intermodal refers

specifically to the connections between modes, whereas multimodal may refer to a system or corridor that supports various travel modes.

**Intermodal facility-** This type of facility is designed for more than one type of transportation, such as the loading and unloading of containers from trucks to trains, and from trains to trucks.

**ISTEA - Intermodal Surface Transportation Efficiency Act-** Pronounced "Ice Tea," this landmark \$155 billion federal legislation, signed into law in December 1991, calls for broad changes in the way transportation decisions are made. ISTEA emphasizes diversity and balance of modes, as well as the preservation of existing systems before construction of new facilities.

**Interregional Transportation Improvements Program (ITIP)-** One of the State funding programs also known as "State Choice." It is a statewide discretionary program which utilizes 25% of the State transportation improvement funds and is authorized by the California Transportation Commission (CTC). Fifteen percent of the funds are used for two programs: 1) Intercity rail (minimum 2.25%); and 2) Interregional roads outside urban areas (12.75% maximum). Ten percent of the funds are subject to the California North/South split and can be used in each of those areas as determined by the CTC.

**Intersection Capacity Utilization (ICU)-** A method for calculating the level of traffic congestion (see Level of Service) at an intersection.

#### **ITE– Institute of Transportation Engineers**

**ITS-** (1) Intelligent Transportation Systems: The term refers to a wide range of advanced electronics and communications technology applied to roads and vehicles designed to improve safety and productivity. (2) Institute of Transportation Studies, University of California. The stated goal of this multicampus research unit is to "improve the way transportation is organized, managed, and maintained." Projects cover transportation policy, new technology (see PATH), safety, traffic management, infrastructure, and freight and logistics.

#### **IVHS - Intelligent Vehicle-Highway System**

##### **IVRG – In-vehicle Route Guidance**

**Jitney-** Privately owned, small or medium-sized vehicle usually operated on a fixed route but not on a fixed schedule.

**Joint Development-** Ventures undertaken by the public and private sectors for development of land. Joint ventures are commonly used around transit stations or stops.

**Kiss and Ride-** A place where commuters are driven and dropped off at a station to board a public transportation vehicle.

**Layover Time-** Time built into a schedule between arrival at the end of a route and the departure for the return trip, used for the recovery of delays and preparation for the return trip.

**Lead Agency (CEQA Term)-** The public agency which has the principal responsibility for carrying out or approving a project. The Lead Agency will decide whether an EIR or Negative Declaration will be required for the project and will cause the document to be prepared. Criteria for determining which agency will be the Lead Agency per CEQA are contained in Section 15051 of the California Code.

**Life-Cycle Maintenance Costs-** The concept that transportation infrastructure maintenance occurs throughout its useful life; for example, a street rebuilt every 15 years will still need regular maintenance during that time.

**Light Rail-** See LRT.

**LNG - Liquefied Natural Gas-** An alternative fuel; a natural gas cooled to below its boiling point of -260 degrees Fahrenheit so that it becomes a liquid; stored in a vacuum bottle-type container at very low temperatures and under moderate pressure. LNG vapor is lighter than air.

**Livable-** Pleasant and convenient to inhabit, preferably without the need for a vehicle to meet daily needs.

**Load Factor-** The ratio of passengers actually carried versus the total passenger capacity of a vehicle.

**Local Road-** A thoroughfare that primarily provides access to land with little or no through movement.

**LOS - Level of Service-** A report card that rates traffic flow from A (far below capacity) through F (at or above capacity), and compares actual or projected traffic volume with the maximum capacity of the intersection or road in question.

**LRT - Light-Rail Transit-** Fixed guideway transportation mode that typically operates on city streets and draws its electric power from overhead wires; includes streetcars, trolley cars, and tramways. Differs from heavy rail, which has a separated right of way and includes commuter and intercity rail, in that it has lighter passenger capacity per hour and more closely spaced stops.

**LRV - Light-Rail Vehicle-** An alternative name for "streetcar".

**Maglev - Magnetic Levitation-** This technology permits trains to move at high speed above a guideway on a cushion of air generated by magnetic force.

**Mass Transit-** See "Public Transportation."

**Mass Transportation-** See "Public Transportation."

**MBE - Minority Business Enterprise-** A business owned and operated by one or more individuals who are defined as minorities under U.S. Department of Transportation regulations. See also "disadvantaged business enterprise."

**MDBF - Mean Distance Between Failures-** The average distance in miles that a transit vehicle travels before failure of a vital component forces removal of that vehicle from service.

**Medium-Size Bus-** See "Bus, Medium-Size."

**Methanol-** An alternative fuel; a liquid alcohol fuel with vapor heavier than air; primarily produced from natural gas.

**Metro-** See MTA

**Metrolink-** The regional commuter rail system connecting Los Angeles, Orange, Riverside, Ventura, San Bernardino, and San Diego counties. It was established and is operated under the authority of the Southern California Regional Rail Authority (SCRRA) using contracted service providers. Currently, Amtrak is contracted to operate the system.

**Metropolitan Railway-** See "Rail, Heavy."

**Mitigated negative declaration-** A negative declaration prepared for a project when the initial study has identified potentially significant effects on the environment, but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur; and (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment.

**Mobility Index-** Measures the ability of a region's transportation systems (all modes) to move people. Higher indices are reached by transportation projects and systems that move people in either fewer vehicles or faster, or both. This index therefore is calculated by the product of aggregate average vehicle occupancy and aggregate speed of the entire region's transportation trips.

**Modal Split-** A term which compares the usage of various forms of transportation. Frequently used to describe the percentage of people using private automobiles as opposed to the percentage using public transportation.

**Mode-** A mode is a method of travel. While many more modes exist in real life, MMLOS method focuses on only four modes of personal travel: auto driver, bus passenger, bicycle rider, and pedestrian.

**Model-** An analytical tool (often mathematical) used by transportation planners to assist in making forecasts of land use, economic activity, or travel activity, and their effects on the quality of resources such as land, air and water.

**Mode Share-** Indicates the share of a transportation mode utilized by people for their transportation trips as compared to other modes and all of a region's transportation trips as a whole.

**Monorail-** An electric railway in which a rail car or train of cars is suspended from or straddles a guideway formed by a single beam or rail. Most monorails are either heavy rail or automated guideway systems.

**MPO - Metropolitan Planning Organization-** A federally required transportation planning body responsible for the RTP and the TIP in its region; the governor designates an MPO in every urbanized area with a population of over 50,000. The Southern California Association of Governments (SCAG) is the MPO for Pasadena.

**MTA – Los Angeles County Metropolitan Transportation Authority-** Recently renamed to Metro.

**MTS - Metropolitan Transportation System-** This is an integrated, multimodal transportation system consisting of major highways, arterials, bikeways, and transit routes used to move people and goods around a region.

**Multimodal-** Refers to the availability of multiple transportation options, especially within a system or corridor. A multimodal approach to transportation planning focuses on the most efficient way of getting people or goods from place to place, including trucks, trains, bicycles, automobiles, airplanes, buses, boats, or foot.

**NAAQS – National Ambient Air Quality Standards-** Standards defining the highest allowable levels of certain pollutants in the ambient air (i.e., the outdoor air to which the public has access). Because the Environmental Protection Agency must establish the criteria for setting these standards, the regulated pollutants are called *criteria* pollutants. Criteria pollutants include sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and two size classes of particulate matter: less than 10 micrometers (0.0004 inch) in diameter, and less than 2.5 micrometers (0.0001 inch) in diameter. Primary standards are established to protect public health; secondary standards are established to protect public welfare (e.g., visibility, crops, animals, buildings).

**NARC - National Association of Regional Councils-** The nationwide organization for MPO's, COG's and other such entities; based in Washington, D.C.

**Negative Declaration-** A written statement by the Lead Agency briefly describing the reasons that a proposed project, not exempt from CEQA, will not have a significant effect on the environment and

therefore does not require the preparation of an EIR. The contents of a Negative Declaration are described in Section 15071 of the California Code.

**Neighborhood Traffic Management Program (NTMP)**- A comprehensive process for reducing and managing traffic volume, travel speeds, and traffic-related noise on local streets.

**NEPA - National Environmental Policy Act of 1969**- NEPA is the basic national charter for protection of the environment. It establishes policy, sets goals (in Section 101), and provides means (in Section 102) for carrying out the policy. Section 102(2) contains "action-forcing" provisions to ensure that Federal agencies follow the letter and spirit of the Act. For major Federal actions significantly affecting the quality of the human environment, Section 102(2)(C) of NEPA requires Federal agencies to prepare a detailed statement that includes the environmental impacts of the proposed action and other specified information.

**New Look Bus**- See "Bus, New Look".

**New Start**- Federal funding granted under Section 3(i) of the Federal Transit Act (formerly known as the Urban Mass Transportation Act). These discretionary funds are made available for construction of a new fixed guideway system or extension of any existing fixed guideway system based on cost-effectiveness, alternatives analysis results, and the degree of local financial commitment.

**NHS - National Highway System**- An approximately 155,000-mile network called for in the Intermodal Surface Transportation Efficiency Act to provide an interconnected system of principal routes to serve major travel destinations and population centers. The NHS is expected to be designated by Congress in 1995.

**Nonattainment Area**- An area that the U.S. Environmental Protection Agency has designated as not meeting (i.e., not being in attainment of) one or more of the National Ambient Air Quality Standards (NAAQS) for sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and particulate matter. An area may be in attainment for some pollutants, but not for others. [See attainment area and National Ambient Air Quality Standards (NAAQS).]

**Notice of Completion**- A brief notice filed with the State Office of Planning Research (OPR) by a Lead Agency as soon as it has completed a draft EIR and is prepared to send out copies for review. The contents of this notice are explained in Section 15085 of the California Code.

**Notice of Determination**- A brief notice to be filed by a public agency after it approves or determines to carry out a project which is subject to the requirements of CEQA.

**Notice of Exemption**- A brief notice which may be filed by a public agency after it has decided to carry out or approve a project and has determined that the project is exempt from CEQA as being ministerial, categorically exempt, an emergency, or subject to another exemption from CEQA. Such a notice may also be filed by an applicant where such a determination has been made by a public agency which must approve the project.

**Notice of Preparation**- A brief notice sent by a Lead Agency to notify the Responsible Agencies, Trustee Agencies, and involved federal agencies that the Lead Agency plans to prepare an EIR for the project. The purpose of the notice is to solicit guidance from those agencies as to the scope and content of the environmental information to be included in the EIR.

**NTS - National Transportation System**- An intermodal system consisting of all forms of transportation in a unified, interconnected manner to reduce energy consumption and air pollution while promoting economic development and supporting the Nation's preeminent position in international commerce.

The NTS includes the National Highway System (NHS), public transportation, and access to ports and airports.

**Obligation-** A federal budgetary term that refers to a binding agreement that will result in an outlay; an agreement by the federal government to pay for goods or services immediately or at some future time when the goods or services are delivered. Also known as a "commitment."

**Obligation Limitation-** A federal budgetary term that refers to a limit placed in appropriations bills on the amount of federal assistance that may be obligated during a specified time period. It does not affect the scheduled apportionment or allocation of funds; it just controls the rate at which these funds may be used.

**Off-Peak Period-** Periods of the day when travel activity is generally lower. Also called "base period."

**Operating Assistance-** Financial assistance for transit operating expenses (not capital costs); such aid may originate with federal, local, or state governments.

**Operating Deficit-** The sum of all operating expenses minus operating revenues.

**Operating Expense-** Monies paid in salaries, wages, materials, supplies, and equipment in order to maintain equipment and buildings, operate vehicles, rent equipment and facilities, and settle claims.

**Operating Revenue-** Monies used to fund general, day-to-day costs of running transportation systems. For transit, costs include fuel, salaries and replacement parts; for roads, operating costs involve maintaining pavement, roadway repairs, labor costs, etc..

**Outlay-** A federal budgetary term that refers to a payment made to meet an obligation; the point at which an actual payment of money is made.

**Paratransit-** Comparable transportation service required by the Americans with Disabilities Act (ADA) of 1990 for individuals with disabilities who are unable to use fixed-route transportation systems.

**Park and Ride Lot-** Designated parking areas for automobile drivers who then board transit vehicles from these locations.

**Particulate Trap-** A filter which removes a portion of the particulates (solids, soot, etc.) from a vehicle's exhaust stream and generally includes a regenerative unit and associated control system to burn the collected solids.

**Passenger Miles-** The total number of miles traveled by passengers on transit vehicles; determined by multiplying the number of unlinked passenger trips times the average length of their trips.

**PATH - (California) Partners for Advanced Transit and Highways-** A leading research and development program for IVHS, sponsored by Caltrans and managed by ITS-Berkeley. Research is carried out by public and private academic institutions across the state.

**Peak Period-** Morning and afternoon time periods when transit riding is heaviest.

**Peak Period (Rush Hours)-** The period during which the maximum amount of travel occurs. It may be specified as the morning (a.m.), or afternoon, or evening (p.m.) peak.

**Peak/Base Ratio-** The number of vehicles operating for passenger service during the peak period divided by the number operated during the base period.

**Pedestrian Shed-** An area that is centered on a common destination. Its size is related to average walking distances for the applicable community type.

**PMS - Pavement Management System-** Computer-assisted scheduling program for preventative maintenance of roadway surfaces

**Plaza-** A civic space type designed for civic purposes and commercial activities in the more urban transect zones, generally paved and spatially defined by building frontages.

**Propane-** An alternative fuel; a liquid petroleum gas (LPG), with vapor heavier than air, which is stored under moderate pressure; produced as a by-product of natural gas and oil production.

**Public Transportation-** Transportation by bus, rail, or other conveyance, either publicly or privately owned, which provides to the public general or special service on a regular and continuing basis. Also known as "mass transportation," "mass transit" and "transit".

**Queues-** Line of people.

**Rail, Commuter-** Railroad local and regional passenger train operations between a central city, its suburbs and/or another central city. It may be either locomotive-hauled or self-propelled, and is characterized by multi-trip tickets, specific station-to-station fares, railroad employment practices and usually only one or two stations in the central business district. Also known as "suburban rail."

**Rail, Heavy-** An electric railway with the capacity for a "heavy volume" of traffic and characterized by exclusive rights-of-way, multi-car trains, high speed and rapid acceleration, sophisticated signaling and high platform loading. Also known as "Rapid Rail."

**Rail, High Speed-** A rail transportation system with exclusive right-of-way which serves densely traveled corridors at speeds of 124 miles per hour (200 km/h) and greater.

**Rail, Light-** An electric railway with a "light volume" traffic capacity compared to heavy rail. Light rail may use shared or exclusive rights-of-way, high or low platform loading and multi-car trains or single cars. Also known as "streetcar," "trolley car" and "tramway".

**Rail Yard-** A complex series of railroad tracks used for storing, sorting, loading/unloading, and repairing railroad cars and/or locomotives. Rail yards also serve as a site where containers of goods are transferred onto trucks or trains.

**Rapid Transit-** Rail or motorbus transit service operating completely separate from all modes of transportation on an exclusive right-of-way.

**Recession-** A federal budgetary term that refers to the cancellation, in whole or in part, of budget authority previously granted by Congress.

**Regional Improvement Program-** One of the State funding programs, it is also known as "Regional Choice." Project selection is done by the Metro and submitted to the California Transportation Commission for approval. Seventy-five percent of State transportation improvement funds are programmed through the Regional Improvement Program. These funds may be used for capital projects including highways, arterials, guideways, rail projects, bikeways, transportation enhancements, Transportation System Management (TSM), and TDM activities.

**Regional Statistical Area (RSA)-** An aggregation of census tracts for the purpose of subregional demographic and transportation analysis within the Southern California Association of Governments (SCAG) area.

**Reverse Commuting-** Movement in a direction opposite the main flow of traffic, such as from the central city to a suburb during the morning peak period.

**Ridesharing-** A form of transportation, other than public transit, in which more than one person shares the use of the vehicle, such as a van or car, to make a trip. Also known as "carpooling" or "vanpooling".

**Ridership-** The number of rides taken by people using a public transportation system in a given time period.

**Rolling Stock-** The vehicles used in a transit system, including buses and rail cars.

**Route Miles-** The total number of miles included in a fixed-route transit system network.

**Regional Transportation Improvement Program (RTIP)-** A list of proposed countywide highway and transportation projects which identifies funding sources, construction, and timing schedules. In Los Angeles County, it is submitted to the Southern California Association of Governments (SCAG), and incorporates projects identified in the County Transportation Improvement Program (TIP). Each County's transportation commission in California prepares an RTIP and submits it to the salient Metropolitan Planning Organization (MPO). The RTIP has a six-year planning period and is updated every other year.

**RTP - Regional Transportation Plan-** A blueprint to guide the region's transportation development for a 20-year period. Updated every two years, it is based on projections of growth and travel demand coupled with financial projections.

**RTPA - Regional Transportation Planning Agency-** A state designated agency responsible for preparing the RTP and RTIP; administering TDA and other tasks.

**Reverse Commuting-** Movement in a direction opposite the main flow of traffic, such as from the central city to a suburb during the morning peak period.

**Ridership-** The number of rides taken by people using a public transportation system in a given time period.

**Ridesharing-** Two or more persons traveling by any mode, including but not limited to: automobile, vanpool, bus, taxi, jitney, and public transit.

**Right-of-Way (ROW)-** The strip of land dedicated to public use for pedestrian and vehicular movement, which may also accommodate public utilities. This strip of land is either publicly owned or subject to an easement for right-of-way purposes benefiting the general public.

**Route Miles-** The total number of miles included in a fixed-route transit system network.

**Safe Routes to School Program-** A national and international movement to create safe, convenient, and fun opportunities for children to bicycle and walk to and from schools.

**SCAG - Southern California Association of Governments-** A six-county planning and coordinating agency that deals with transportation, water quality, housing, and land use. Also reviews and comments on applications for a variety of federal and state assistance programs.

**Sequestration-** A federal budgetary term that refers to the permanent cancellation of budget authority.

**Shared-Use Path-** A wide pathway, separated from the street, that is used for both walking and bicycling.

**Sharrows-** Shared-lane marking, per the Manual of Uniform Traffic Control Devices (MUTCD).

**Shed-** In transportation planning, an area of influence or importance for access and travel using a specific mode, such as a transit shed along a transit route; there are general travel sheds, as well as transit, bicycle, and pedestrian sheds.

**Shuttle-** A public or private vehicle that travels back and forth over a particular route, especially a short route or one that provides connections between transportation systems, employment centers, etc.

**Sightseeing Bus-** See "Bus, Sightseeing".

**Signal Prioritization-** An Intelligent Transportation Systems (ITS) technique that extends the "green time" at traffic signals for approaching buses to improve their on-time performance and "time-competitiveness" with auto travel.

**SIP - State Implementation Plan-** Metropolitan areas prepare local and regional SIP's showing steps they plan to take to meet federal air quality standards (outlined in the CAA). Several SIP's make up the statewide plan for cleaning up the air, also known as a SIP.

**Small Bus-** See "Bus, Small".

**SOV - Single-Occupant Vehicle-** A vehicle with one occupant, the driver, who is sometimes referred to as a "drive alone."

**Standard Pedestrian Shed-** A pedestrian shed that is an average 1/4-mile radius or 1,320 feet, about the distance of a 5-minute walk at a leisurely pace. See Pedestrian Shed.

**Standard-Size Bus-** See "Bus, Standard-Size."

**State Implementation Plan (SIP)-** Metropolitan areas prepare local and regional SIPs showing steps they plan to take to meet federal air quality standards (outlined in the CAA). Several SIPs make up the statewide plan for cleaning up the air.

#### **STIP - State Transportation Improvement Program**

**Stormwater-** Water that originates during precipitation events. Stormwater that does not soak into the ground becomes surface runoff, which either flows directly into surface waterways or is channeled into storm sewers, which eventually discharge to surface waters.

**Street-** A local urban thoroughfare of low speed and capacity.

**Streetcar-** See "Rail, Light."

**Surface Transportation Program (STP)-** One of the key highway funding programs in TEA-21. STP monies may be spent on mass transit, pedestrian, and bicycle facilities as well as on roads and highways. It is intended for use by states and cities for congestion relief in urban areas. Congress annually appropriates funding for this program.

**Subscription Bus-** See "Bus, Subscription."

**Suburban Rail-** See "Rail, Commuter."

**Subway-** See "Rail, Heavy."

**Supplemental Appropriation-** An act appropriating funds in addition to those in an annual appropriation act because the need for funds is too urgent to be postponed until enactment of the next regular appropriation act.

**System Management-** The management of the information technology systems in an enterprise. This includes gathering requirements, purchasing equipment and software, distributing it to where it is to be used, configuring it, maintaining it with enhancement and service updates, setting up problem-handling processes, and determining whether objectives are being met.

**TCM - Transportation Control Measure-** A strategy to reduce traffic volumes and congestion in order to decrease auto emissions and resulting air pollution. Examples of TCM's include incident management,, new or increased transit service, or a program to promote carpools and vanpools.

**TDA - Transportation Development Act-** State law enacted in 1971. TDA funds are generated from a tax of one-quarter of one percent on all retail sales in each county. They are collected by the state for projects and programs within the county of origin, including transit, paratransit, bicycle and pedestrian purposes.. Under certain circumstances, TDA funds may be used for streets and roads in non-urban areas.

**TDM - Transportation Demand Management-** Low-cost ways to reduce demand by automobiles on the transportation system such as programs to promote telecommuting, flextime, and ridesharing.

**TEA - Transportation Enhancement Activities-** An ISTEA-created funding category. Ten percent of STP monies must be set aside for projects that enhance the compatibility of transportation facilities with their surroundings.

**Tiering-** Refers to the coverage of general matters in broader EIR's (such as on general plans or policy statements) with subsequent narrower EIR's or ultimately site-specific EIR's incorporating by reference the general discussions and concentrating solely on the issues specific to the EIR subsequently prepared. Tiering is appropriate when the sequence of EIR's is: (a) From a general plan, policy, or program EIR to a program, plan, or policy EIR of lesser scope or to a site-specific EIR; (b) From an EIR on a specific action at an early stage to a subsequent EIR or a supplement to an EIR at a later stage. Tiering in such cases is appropriate when it helps the Lead Agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe.

**TIP - Transportation Improvement Program-** This is primarily a spending plan for federal funding expected to flow to the region from all sources for transportation projects of all types.

**TMA - Transportation Management Association-** A voluntary group set up by employers or other entities to reduce vehicle trips within certain areas.

**TMP - Transportation Management Plan**

**TMC – Traffic Management Center**

**TOC - Traffic Operations Center**

**TOS - Traffic Operations System**

**TRB – Transportation Research Board**

**Trackless Trolley-** See "Bus, Trolley."

**Traffic Management-** The direction, control, and supervision of all functions incident to the procurement and use of freight and passenger transportation services.

**Traffic Management Center (TMC)-** Traffic Management Center or TMC is a component of a transportation management system. TMC collects information about the transportation network and combines it with other operational and control data to manage the transportation network and to provide traveler information. TMC communicates transportation-related information to the media and to the motoring public. It is a place where agencies can coordinate their responses to transportation situations and conditions. The TMC uses closed circuit video equipment, and roadside count stations to enable decision makers to identify and react to an incident in a timely manner based on real time data.

**Tramway-** See "Rail, Light."

**Transfer Center-** A fixed location where passengers transfer from one route or vehicle to another.

**Transit-** See "Public Transportation."

**Transit Bus-** See "Bus, Transit."

**Transit-Oriented Development (TOD)-** A transit-oriented development (TOD) is a mixed-use residential and commercial area designed to maximize access to public transport, and often incorporates features to encourage transit ridership.

**Transportation Control Measure (TCM)-** A strategy to reduce traffic volumes and congestion in order to decrease auto emissions and resulting air pollution. Examples of TCMs include incident management, new or increased transit service, or a program to promote carpools and vanpools.

**Transportation Demand Management (TDM)-** Techniques intended to promote actions that decrease vehicle trips and vehicle miles traveled by changing SOV trip behavior. TDM generally refers to policies, programs, and actions that are designed to increase the use of HOVs, transit, nonmotorized trips such as bicycling and walking, and SOV trip elimination by telecommuting and transportation/land use policies.

**Transportation Equity ACT for the 21st Century (TEA-21)-** Passed by Congress in 1998, TEA-21 retained and expanded many of the programs created in 1991 under the Intermodal Surface Transportation Equity Act (ISTEA). The law reauthorized federal surface transportation programs for six years (1998-2003), and significantly increased overall funding for transportation. Its successor is SAFETEA-LU.

**TRO - Trip Reduction Ordinance-** This regulation is to limit the number of SOV users in order to stanch polluting emissions. Aimed at employers, TRO's have been enacted by local governments in response to CMP requirements, which vary from county to county.

**Trolley Bus-** See "Bus, Trolley."

**Trolley Car-** See "Rail, Light."

**Trolley Coach-** See "Bus, Trolley."

**Trucks-** Any of a broad range of motorized vehicles used to transport freight. In intermodal transport, freight is often carried by tractor-trailers; the tractor is the front part, including the cab, and the trailer is the detachable wheeled chassis behind the tractor on which the container is placed. Tractor-trailers with a semitrailer, trailer, or both, and four or more axles may be known as "semis" or "18-wheelers."

**Trust Funds-** Funds collected and used by the federal government for carrying out specific purposes and programs according to terms of a trust agreement or statute, such as the Social Security and highway trust funds. Trust funds are administered by the government in a fiduciary capacity and are not available for the general purposes of the government. See "Dedicated Funding Source".

**TSM - Transportation Systems Management-** Alternative improvements to roadway widening that increase the efficiency of a transportation system, including intersection signalization, traffic signal synchronization, changeable message signs, etc.

**Twenty-Foot Equivalent Unit (TEU)-** A standardized transportation (often maritime) industry measurement used when counting cargo containers of varying lengths. Used as an approximate measure for describing a ship's cargo-carrying capacity, or a shipping terminal's cargo-handling capacity. A standard forty-foot (40 x 8 x 8 feet) container equals two TEUs (each 20 x 8 x 8 feet). Ships can carry about 4,500 to 15,000 TEUs. Trains can carry about 240 TEUs; trucks only carry one or two TEUs.

**UMTA - Urban Mass Transportation Administration-** See "Federal Transit Administration (FTA)."

**UZA - Urbanized Area-** An U.S. Bureau of Census-designated area of 50,000 or more inhabitants consisting of a central city or two adjacent cities plus surrounding densely settled territory, but excluding the rural portion of cities.

**U.S. DOT - United States Department of Transportation-** The federal cabinet-level agency with responsibility for highways, mass transit, aviation, and ports; headed by the Secretary of Transportation. The DOT includes the Federal Highway Administration and the Federal Transit Administration, among others.

**Value Pricing-** The concept of assessing higher prices for using certain transportation facilities during the most congested times of the day, in the same way that airlines offer off-peak discounts and hotel rooms cost more during prime tourist seasons. Also known as congestion pricing and peak-period pricing, examples of this concept include higher bridge tolls during peak periods or charging single-occupant vehicles that want to use carpool lanes.

**Vanpool-** An arrangement in which a group of passengers share the use and cost of a van in traveling to and from pre-arranged destinations together.

**Variable Cost-** A cost that varies in relation to the level of operational activity.

**VFV - Variable Fuel Vehicle-** Also known as "Flexible Vehicle". This kind of vehicle can run on gasoline along with less polluting alternative fuels such as CNG.

**Vehicle Hours Traveled (VHT)-** The total vehicle hours expended traveling on the roadway network in a specified area during a specified time period.

**VMT - Vehicle Miles Traveled-** Refers to vehicle miles traveled and is a standard measure of transportation activity.

**Vehicle Miles Traveled Per Capita-** Vehicle miles traveled for each person.

**Vehicle Occupancy-** The number of people aboard a vehicle at a given time; also known as auto or automobile occupancy when the reference is to automobile travel only.

**Vehicle Service Hours (VSH)-** The total hours of revenue service operated by transit service vehicles. This does not include Deadhead hours.

**Vehicle Service Miles (VSM)-** The total miles traveled by transit service vehicles while in revenue service. This does not include Deadhead mileage.

**Vehicle Trip-** A one-way movement of a vehicle between two points.

**Volume-to-Capacity (V/C) Ratio-** The relationship between the number of vehicle trips operating on a transportation facility versus the number of vehicle trips that can be accommodated by that facility.

**Walkable-** An adjective applied to communities and neighborhoods that are sized to permit pedestrian access to the entire area. Generally, pedestrians will be comfortable walking distances that they can cover in 5 to 15 minutes. In this amount of time, a pedestrian can cover between one-quarter and one-half mile, sometimes further.

**Walkingshed-** The one-quarter to one-half mile distance that can be covered comfortably by a pedestrian in a 5- to 15-minute walk.

**WBE - Women's Business Enterprise**

**Zone Fares-** A system of fares where a transit system's service area is divided into zones within which specified rates or fares apply.