

SECTION II: CIRCULATION ELEMENT UPDATE

This section is an update to the *2003 General Plan Guidelines* section on the circulation element (Chapter 4, pages 55-61). This amended and reformatted section of the *Guidelines* contains new information related to goals, policies, data collection, and implementation measures that will assist local governments in modifying the circulation element to plan for a balanced multimodal transportation network and the safe and convenient travel of all users of streets, roads, and highways.

CIRCULATION ELEMENT

The circulation element is not limited to transportation network issues. For the purpose of the circulation element, circulation includes all systems that move people, goods, energy, water, sewage, storm drainage, and communications. As a result, the circulation element should contain objectives, policies, and standards for transportation systems, including multimodal transportation networks, airports and ports, military facilities and operations, and utilities.

By statute, the circulation element must correlate directly with the land use element.²⁵ Land use patterns can have a significant impact on the effectiveness of a multimodal transportation network, since trip distance is a determinant of whether pedestrians and bicyclists, as well as transit users walking or bicycling to and from terminals, can reach a given destination. The land use plan and transportation network should be complementary. The close proximity of land uses can also facilitate effective transportation services and provide the ridership necessary to support high quality mass transit. Multimodal transportation policies should link transportation planning and land use planning to support effective multimodal transportation networks that connect people with desired destinations. This means that although AB 1358 only requires cities and counties to modify the circulation element to plan for a balanced, multimodal transportation network, jurisdictions will need to examine, and amend as necessary, the land use element. Jurisdictions should also consider the housing, open space, noise, conservation, and safety elements.

A key factor in creating a successful multimodal transportation network is making sure the planning objectives, policies, and standards reflect the rural, suburban, and/or urban context of a community within the planning area. Rural, suburban, and urban areas have different growth and development patterns and therefore face different opportunities and challenges when designing a multimodal transportation network.

A rural jurisdiction may require wide shoulders to accommodate pedestrian, bicycle, or equestrian travel. A jurisdiction with an suburban or urban context may accommodate

²⁵ California Government Code §65302(b)(1).

pedestrian and bicycle travel with the inclusion of sidewalks and bicycle lanes along with controlled street crossings. Rural and suburban areas where there are greater distances between destinations may consider benches, covered resting areas, and other facilities that allow for people to successfully walk or ride a bicycle to frequently visited destinations. Jurisdictions that include all or a combination of rural, suburban, or urban areas should consider different policies, standards, and implementation measures specific for those areas when modifying the circulation element to plan for a well-balanced multimodal transportation network. When considering context issues such as needs of all users, needs of the community, traffic demand, impacts on alternate routes, impacts on safety, funding feasibility, and maintenance feasibility; relevant laws and regulations should be addressed.

The provisions of a circulation element can affect a community's environment as follows:

Physical—The circulation system is one of the chief determinants of physical settlement patterns and the system's location, design, accessibility, and mode varieties have major impacts on air, water, and soil quality, plant and animal habitats, environmental noise, energy use, community appearance, and the placement of land uses.

Social—The circulation system is a primary determinant of the pattern of human settlement. It has a major impact on the areas and activities it serves because of its potential to both provide accessibility and act as a barrier. The circulation system should be accessible to all segments of the population, including the disadvantaged, the young, the poor, the elderly, and the disabled. Transportation systems and facilities should not serve as barriers to community resources.

Health and Safety—The circulation system through design and accessibility of multiple modes of transportation can either promote or deter physical activity. Physical inactivity is linked to such health ailments as heart disease, diabetes, and obesity. The availability of multiple modes can also reduce automobile use and air pollution, reducing other negative health impacts. Circulation design can also influence travel safety by increasing or decreasing vehicle collision risks.

Economic—Economic activities normally require circulation of materials, products, ideas, and employees, so the efficiency of a community's circulation system has a direct effect on its economic productivity. The efficiency of a community's circulation system can either contribute to or adversely affect its economy and economic sustainability.

CIRCULATION ELEMENT CHECKLIST

The following is a checklist of statutory requirements for a general plan circulation element.

| <i>Requirements</i> | <i>Statute</i> | <i>Check</i> |
|---|-----------------|--------------|
| The general plan requires the inclusion of a circulation element. | §65302(b) | |
| A circulation element shall consist of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan. | §65302(b) | |
| Commencing January 1, 2011, upon any substantive revision of the circulation element, the legislative body shall modify the circulation element to plan for a balanced, 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 of the general plan. | §65302(b)(2)(A) | |

MANDATORY CIRCULATION ELEMENT ISSUES

The circulation element shall contain objectives, policies, principles, plan proposals, and/or standards for planning the infrastructure to support the circulation of people, goods, energy, water, sewage, storm drainage, and communications. Mandatory circulation element issues as defined in statute include: major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities.²⁶ Additionally, the statute requires the circulation element be modified to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways. The statute defines “all users of streets, roads, and highways” as “bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors.”²⁷ Transportation networks should additionally consider pedestrian, bicycle, and transit routes, which may not always be located on or along streets, roads, and highways.

Circulation elements shall also take into consideration the provision of safe and convenient travel that is suitable to the rural, suburban, or urban context of a local jurisdictions general plan. This could include policies and implementation measures

²⁶ California Government Code §65302(b).

²⁷ California Government Code §65302(b)(2)(A).

for both retrofitting and developing streets to serve multiple modes and the development of multimodal transportation network design standards based on street types.

In addressing these mandatory issues, cities and counties may wish to consider the following:

No city or county can ignore its regional setting. Local planning agencies should coordinate their circulation element provisions with applicable state and regional transportation plans.²⁸ In addition, funding for new infrastructure and the maintenance of existing infrastructure can benefit from a regional approach. Likewise, the state must coordinate its plans with those of local governments.²⁹ The federal government is under similar obligations.³⁰

Caltrans is particularly interested in the transportation planning roles of local general plans and suggests that the following areas should be considered:

- Coordination of planning efforts between local agencies and Caltrans districts;
- Preservation of transportation corridors for future multimodal system improvements;
- Development of coordinated transportation system management plans that include multimodal and transportation system demand strategies to achieve the optimal use of present and proposed infrastructure; and,
- Identification of complete streets and multimodal improvements on state highway routes.

These areas of emphasis are addressed through Caltrans' Intergovernmental Review (IGR), Regional Planning, and System Planning programs.³¹ Caltrans goal is to resolve transportation problems early enough in the planning process so as to avoid costly delays to development. Coordinating state and local transportation planning is a key to the success of a circulation element.

28 California Government Code §65103(f) and §65080.

29 California Government Code §65080(a).

30 Title 23 USC 134.

31 California Department of Transportation, *Local Development-Intergovernmental Review (LD-IGR)*, (2007); http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa.html (accessed September 2010).

POSSIBLE POLICY AREAS AND DATA COLLECTION TECHNIQUE CONSIDERATIONS

The following suggestions are examples of possible policy areas and data collection technique considerations that could be used to prepare or amend a circulation element. Suggestions are generally categorized based on the statutorily required portions of the circulation element as described in G.C. 65302(b). Not all of these suggestions will be relevant in every jurisdiction. Suggestions pertaining to multimodal transportation networks (i.e. complete streets) are marked with a ‡.

Major Thoroughfares

Streets, Roads, and Highways

Policies and data collection for streets, roads, highways should include the consideration of transit services within a roadway right-of-way, in either mixed flow lanes, high occupancy vehicle (HOV) lanes, and/or street-running light rail tracks.

Possible Policy Areas:

- The availability of a mix of transportation modes and the infrastructure to support those modes to meet community needs. ‡
- The development and improvement of major thoroughfares, including future acquisitions and dedications, based on proposed land use patterns and projected demand. This may include a street, road, and highway classification system.
- The consideration of street patterns; curvilinear, grid, modified grid, etc. ‡
- The design of streets (including, but not limited to, width, block size, etc.)
 - The consideration of sidewalks and curbs as a standard street design principle. ‡
 - The consideration of bicycle lanes and/or shared lanes as a standard street design principle. ‡
 - The consideration of transit accessibility and transit priority measures as a standard street design principle. ‡
 - The consideration of shade trees and planting strips as a standards street design principle. ‡
- The consideration of traffic calming measures (narrower travel lanes, roundabouts, raised medians, speed tables, planting strips, etc.). ‡
- The safety of the traveling public, including pedestrians and bicyclists. ‡
- The accessibility and accommodation of bicycle and pedestrian traffic, where appropriate, on and across major thoroughfares. ‡

- The design of intersections and public right-of-ways to include adequate and safe access for all users including pedestrians, bicyclists, and motorists of all ages and abilities. †
- The development of a connected system of streets, roads, and highways that provides continuous, safe, and convenient travel for all users. †
- The consideration of separate performance and level-of-service standards for bicycle and pedestrian traffic or integrated performance and level-of-service standards that include multiple modes. †
- The development and improvement of transit, including transit services within a roadway right-of-way.
- The consideration of bus HOV lanes or other exclusive right-of-way for transit vehicles.
- The consideration of transit priority measures such as single priority and queue jump lanes.

Data Collection Techniques:

- Identify existing and proposed modes of transportation. †
- Assess all thoroughfares to determine if they are providing sufficient multimodal transportation options. †
- Assess the number and distribution of households with and without an automobile. †
- Assess the transportation needs of special groups within the population and the extent to which such needs are being met by existing streets, roads, and highways. (e.g., children, persons with disabilities, and the elderly). †
- Project future modal split by estimating the percentage of trips by transit, passenger car, van pools, etc.
- Assess the adequacy of the existing streets, roads, and highway systems and the need for expansion, improvements, and/or transportation operations management based on projected traffic including that generated by planned land use changes. Consider that the need for expansion should recognize economic principles such as cost effectiveness and efficiency as well as environmental and social consequences. †
- Analyze existing street, road, and highway traffic conditions for all transportation modes to determine current levels of use throughout the entire day. Assess whether existing travel demand or transportation network supply could be better managed to limit the need for expansion of streets, roads, and highways. †
- Analyze existing performance and levels of service of existing streets, roads, and highways for all transportation modes. Compare projected with desired performance and level of service standards for all transportation modes. †
- Project future traffic volumes for all modes on existing and planned streets, roads, and highways by accounting for the effects of changes in the following built environment characteristics: †
 - Density of land uses;
 - Diversity of land uses;

- Design of network;
 - Destinations (regional accessibility);
 - Distance to transit;
 - Demographics;
 - Development scale; and,
 - Demand management (i.e. pricing, etc.)
- Determine the effects of projected traffic volumes for all transportation modes on existing street, road, and highway capacities. ‡
 - Identify physical barriers and other constraints that prevent or inhibit use or access by all modes. ‡
 - Analyze historical data and trends with regard to collisions involving all modes of travel. ‡
 - Review the CA Highway Patrol's Statewide Integral Traffic Record System to identify areas where safety could be addressed. ‡
 - Identify problem locations by analyzing injury severity and determining collision frequency relative to exposure by conducting motor vehicle, pedestrian, and bicycle counts. ‡
 - Review traffic projects pertinent to local planning that are proposed within neighboring jurisdictions.
 - Review pertinent regional transportation plans and project funding priorities under the regional transportation improvement program.
 - Analyze the potential effects of alternative plan proposals and implementation measures (related to transportation and/or land use) on desired projected performance and multimodal levels of service.
 - Analyze the potential effects of alternative plan proposals and implementation measures (related to transportation and/or land use) on residential land uses.
 - The identification of farm-to-market transportation needs on streets, roads, and highways. ‡

Transit and Railroads

Policies and data collection for transit and railroads should consider both passenger and freight rail, and light rail and bus rapid transit alignments.

Possible Policy Areas:

- The development and improvement of transit and paratransit services, including mass rapid transit services, commuter light rail and heavy rail metro/subway systems, in consultation with the appropriate transportation agencies. ‡

- The accessibility and accommodation of all transit users. †
- The review and/or development of paratransit plan proposals for jitneys, car pooling, van pooling, taxi service, dial-a-ride, etc. †
- The adoption of technology that creates a more effective usage of existing transit such as real time monitors and personalized automatic notification arrivals. †
- The development and improvement of railroad facilities and services.
- The preservation and repositioning of abandoned railroad right-of-ways for future transportation corridor use, including bicycle paths and trails, or new passenger rail or bus services. †

Data Collection Techniques:

- Analyze existing public transit demand on transit capacity and services. †
- Assess the adequacy of existing transit services and the need for expansion and improvements. †
- Examine trends in transit use and estimates of future demand. †
- Assess the needs of people who depend on public transit. †
- Determine the effects of projected public transit demand on transit capacity and services. †
- Determine existing and projected performance and levels-of-service standards for transit. †
- Evaluate the transportation needs that are or are not being met by public or private bus companies. †
- Examine private bus company plans to provide bus services in the future. †
- Inventory existing paratransit services, uses, and routes. †
- Inventory the existing and future needs served by paratransit. †
- Inventory rail lines and facilities and assess plans for expansion and improvements.
- Determine transportation needs that are not being met by railroads.
- Identify abandoned railroad right of ways which could be preserved for future transportation corridor use, including bicycle paths and trails, or new passenger rail or bus service. †
- The identification of farm-to-market transportation needs for rail services. †

Navigable Waterways

Possible Policy Areas:

- The maintenance and improvement of navigable waterways.

Data Collection Techniques:

- Assess the adequacy of navigable waterways, including the need for expansion and improvements.

- Assess current and future land uses and communities near navigable waterways, ports, and harbors.
- Project future needs for navigable waterways.
- The identification of farm-to-market transportation needs on navigable waterways and at ports and harbors. †

Transportation Operations Management

Possible Policy Areas:

- The development of transportation operations management policies, such as the consideration of reducing speeds, separating pedestrians and bicyclists from vehicle traffic, and adding or upgrading traffic control devices, etc. †
- The provision of adequate crossing times and detection for all users at signalized intersections, consistent with AB 1581 (Fuller, Statutes of 2007). †
- The appropriate balancing of needs of various users when establishing speed limits for motor vehicles, consistent with AB 2767 (Jackson, Statutes of 2000). †
- The scheduling and financing of circulation operations maintenance projects.

Data Collection Techniques:

- Review pertinent regional, state, and federal corridor plans.
- Analyze the projected effects on the transportation system of construction improvements versus the projected effects of transportation operation management.
- Compare the costs of construction improvements versus the costs of transportation operation management.

Transportation Routes

Truck Routes

Possible Policy Areas:

- The development of proposed truck routes and policies supporting truck route regulations. †
- The development and preservation of farm-to-market routes. †
- The accessibility and accommodation of pedestrian and bicycle traffic, where appropriate, on truck routes, including farm-to-market routes. †

Data Collection Techniques:

- Identify existing truck routes and determine needed improvements. †
- The identification of farm-to-market routes. †

Pedestrian and Bicycle Routes

Possible Policy Areas:

- The development of a comprehensive pedestrian and/or bicycle plan. See California Streets and Highways Codes Sec. 891.2 requirements for bicycle transportation plans. †
- The development and improvement of pedestrian and bicycle routes, on and off, streets, roads, and highways. Consider special accommodations such as car-free zones, bicycle boulevards, and paths. †
- The connectivity of pedestrian and bicycle routes between homes, job centers, schools and facilities, and other frequently visited destinations. †
- The development of Safe Routes to School programs that address pedestrian and bicycle safety for a two mile radius around all elementary, middle, and high school facilities. †
- The development of pedestrian and bicycle facilities along routes that support the use of these routes such as benches, shelters, trees, bicycle parking, etc. †
- The dedication and preservation of independent alignments (utility, abandoned waterways, or live rail right-of-ways) for the development of bicycle paths. †
- The development of performance and level-of-service standards for pedestrian and bicycle routes and intersections. †
- The development and use of marketing and incentive programs to promote the increase of walking and bicycling. †

Data Collection Techniques:

- Assess the adequacy of existing bicycle and pedestrian route access, accommodations, and the need for improvements or additional infrastructure, considering connectivity to other transportation modes. †
- Identify gaps in bicycle and pedestrian access routes and determine how future projects can improve pedestrian and bicycle circulation. †
- Assess the adequacy of existing bicycle and pedestrian routes to and from school facilities in regards to the accessibility and safety of children. †
- Assess the adequacy of existing pedestrian routes to determine if all routes meet *Americans with Disabilities Act (ADA) Accessibility Guidelines* and applicable ADA Transition Plans. †
- Examine trends in bicycle usage. †
- Study pedestrian activity and patterns. †
- Assess historical data and trends with regard to vehicle, bicycle, and pedestrian collisions. †

- Inventory availability and adequacy of bicycle parking at major land use destinations, along transit routes and at transit terminals. ‡

Transit Routes

Possible Policy Areas:

- The development and improvement of public and private transit routes. ‡
- The development and improvement of access to and from transit routes by walking and bicycling and by people with disabilities. ‡
- The development of performance and level-of-service standards for transit routes and intersections that consider all transportation modes. ‡

Data Collection Techniques:

- Assess the adequacy of existing transit routes and the need for expansion or improvements. ‡
- Identify public and private bus routes within the local jurisdiction and determine the need for expansion or improvements. ‡
- Assess the accessibility to transit stops by walking or bicycling and by people of all abilities. ‡

Emergency Routes

Possible Policy Areas:

- The identification, development, and maintenance of evacuation and emergency access routes.

Data Collection Techniques:

- Analyze the adequacy of emergency access and evacuation routes.

Terminals

General and Commercial Airports

Possible Policy Areas:

- The development and improvement of aviation facilities found in Airport Master Plans and/or Airport Layout Plans.
- The consistency of the general plan with the provisions of any applicable Airport Land Use Compatibility Plan (§65302.3).
- The mitigation of aviation-related hazards including hazards to aircraft and hazards posed by aircraft.

- The access to and from aviation facilities by all modes of transportation. †
- The inclusion of bicycle parking at airports. †

Data Collection Techniques:

- Assess the adequacy of and safety hazards associated with existing aviation facilities and the need for expansion and improvements.
- Inventory potential noise and safety hazards posed by airport activities to surrounding land uses.
- Inventory potential safety hazards to aircraft passengers posed by existing or proposed land uses near airports.
- Assess the provisions of any Airport Land Use Compatibility Plan prepared pursuant to Public Utilities Code §21675.
- Assess the adequacy of access by all transportation modes to and from airports, based on existing and projected passenger and cargo loads. †

Ports and Harbors

Policies and data collection for ports and harbors should consider the needs of both deep-draft and small boats.

Possible Policy Areas:

- The development and improvement of port, harbor, and waterway facilities.
- The provision of the movement of goods to and from ports and harbors. †
- The accessibility to and from ports and harbors by all modes of transportation. †

Data Collection Techniques:

- Assess the adequacy and accessibility of port and harbor facilities, by all modes of transportation, including the need for expansion and improvements. †
- Assess the adequacy and accessibility of goods movement to and from ports and harbors. †
- Assess current and future land uses and communities near ports and harbors.
- Project future needs for port and harbor facilities.
- Review plans for improvements by harbor and port districts.

Railroad Depots

Possible Policy Areas:

- The development and improvement of railroad depots.
- The provision of the movement of goods to and from railroad depots. †

Data Collection Techniques:

- Assess the adequacy of existing railroad depots including the need for expansion or improvements.
- Assess the adequacy and accessibility of goods movement to and from railroad depots. ‡

Public and Private Transit Terminals

Policies and data collection for both public and private transit terminals should consider public or private buses, light rail systems, rapid transit systems, commuter railroads, high-speed rail, ferryboats, etc.

Possible Policy Areas:

- The location and characteristics of transit terminals to maximize accessibility by all modes of transportation. ‡
- The development and improvement of both public and private transit terminals and stops. ‡
- The development of intermodal transfer facilities, such as bicycle parking and bus transfer stations. ‡
- The provision of adequate and safe transit facilities including covered shelters, lighting, safe crossings, and locations that support eyes on the street. ‡
- The provision of safe and efficient multimodal access to and within transit terminals, complying with ADA standards. ‡

Data Collection Techniques:

- Identify all public transit terminals. ‡
- Assess the adequacy and accessibility of all public transit terminals. Ensure that all terminals are accessible by and accommodate for all potential users. ‡
- Evaluate public and private bus company terminal services and facilities; conditions, locations, and capital improvement plans. ‡
- Identify transportation nodes suitable for future transit-oriented development, including passenger rail. ‡
- Inventory and assess the need for bicycle parking improvements at all terminal types. ‡

Freight Truck Terminals and Warehouses

Possible Policy Areas:

- The development and improvements of freight trucking terminals and warehouses. ‡

- The provision of the movement of goods to and from freight truck terminals and warehouses. ‡
- The provision of the movement of goods from farms to storage facilities. ‡

Data Collection Techniques:

- Project future needs for future freight trucking terminals and warehouses. ‡
- Assess the adequacy and accessibility of goods movement to and from freight truck terminals and warehouses. ‡
- Assess the adequacy and accessibility of goods movement from farms to storage facilities. ‡

Military Facilities

Policies and data collection for military facilities should consider military airports, ports and harbors, and accessible routes to and from military operations.

Possible Policy Areas:

- The inclusion of all military transportation thoroughfares and infrastructure in the planning area as part of the overall circulation system.
- The consideration of the needs of military installations and training needs when planning transportation and infrastructure projects.
- The reassurance that community and military transportation corridors maintain viability.
- The consideration of all military terminals including airports, ports, and harbors.

Data Collection Techniques:

- Consult with neighboring military planners to ensure that military installations, infrastructure, and training activities are considered in the circulation system.
- Assess major streets, roads, and highways near or surrounding all military facilities, including the need for development and maintenance of adequate ingress and egress routes.
- Assess all military terminals in the same manner as general and commercial terminals.

Utilities

Policies and data collection for utilities should consider sewer, water and drainage lines and facilities, oil and natural gas pipelines, power plants, transmission lines and corridors, proposed or state identified transmission line corridors, renewable and non-renewable energy, and energy storage.

Possible Policy Areas:

- The acquisition of necessary public utility right-of-ways.
- The development of standards for transportation and utility-related exactions.
- The development, improvement, timing, and location of community sewer, water, and drainage lines and facilities.

- The development, improvement, timing, and current and future locations of:
 - Oil and natural gas pipelines;
 - Power plants;
 - Major electric transmission lines and corridors;
 - Utility scaled and distributed energy generation; and,
 - Telecommunication cables and equipment.
- The development of preferences for financing measures to expand and improve public facilities.
- The availability of assistance to those who cannot afford utility services.

Data Collection Techniques:

- Assess the adequacy and availability of existing community water, sewer, energy, and drainage facilities, and the need for expansion and improvements.
- Assess existing and projected capacity of treatment plants and trunk lines.
- Determine the location of existing and proposed power plants, oil and gas pipelines, and major electric transmission lines and corridors.
- Assess potential future development of power plants, transmission lines, and renewable and non renewable energy. Consider such factors as the demand for transmission facilities, the transport and storage of hazardous materials, and local transportation impacts of current and future power plant developments.
- Assess power line or other utility easements for future bicycle paths or multipurpose paths. ‡
- Determine the locations of utility infrastructure that may be blocking the pedestrian right-of-way such as utility poles. ‡
- Determine the locations of utility infrastructure that may create hazardous conditions for bicyclists. ‡

Other Issues

Land Uses and Transportation Integration

Possible Policy Areas:

- The development of transit-oriented development standards, including the appropriate mix of density and intensity of land uses near transit stations, parking requirements, and service and delivery requirements. ‡
- The creation of land use patterns, such as mixed-use overlay districts, that allow frequently visited destinations to be accessible by multiple transportation modes. ‡

- The availability of transportation infrastructure needed to accommodate increased density and transit-oriented development. †
- The consideration of flexible performance and level-of-service standards, in areas planned for increased density and mixed uses to increase walking, bicycling, and transit ridership. †

Data Collection Techniques:

- Assess needed land uses, facilities, and structures that will enhance pedestrian, bicycle, and transit travel. †

Parking Facilities

Possible Policy Areas:

- The provision of bicycle parking. †
- The development of strategies for the control of parking demand such as improved transit services, amenities for bicyclists, subsidized rideshare vehicles, and the consideration of eliminating minimum parking requirements. †
- The development of strategies for the management of vehicle parking supply such as increased parking fees, graduated parking fees, shared parking, metered on-street parking, staggered work schedules, etc.

Data Collection Techniques:

- Assess the supply, demand, and utilization of existing on- and off-street parking, particularly in urban and commercial areas.
- Assess the effects of parking policies (i.e. off-street parking standards, on-street parking restrictions, graduated parking fees, etc.) on congestion, energy use, air quality, and public transit ridership. †
- Assess the need for and types of bicycle parking. †
- Analyze existing bicycle parking standards or requirements including parking requirements for commercial buildings, retail complexes, schools, etc. †

Air Pollution

Possible Policy Areas:

- The development of measures that would reduce public, private, and commercial motor vehicle emissions, consistent with regional air quality and transportation plan policies. †

Data Collection Techniques:

- Assess existing air quality pursuant to air quality district plans.
- Analyze air quality trends.
- Estimate air quality impacts of motor vehicle trips generated by land use changes and new thoroughfares based on regional air quality and transportation plans.