Introduction

Rancho Santa Margarita has a well-planned, well-developed circulation system consisting of arterial roadways and local streets. The Foothill Transportation Corridor (SR-241) provides regional access to the City, and a commercial airport is located approximately 15 miles to the west. Established transit service connects the City to the nearby communities of Mission Viejo and Lake Forest, and many of the Planned Communities that comprise the City were developed with pedestrian and bicycle trails.

The Circulation Element emphasizes the maintenance of layered transportation networks for the City (see Figure C-1) that respond to demands of current and planned land uses, as set forth in the Land Use Element. This Element establishes acceptable roadway service levels and identifies improvements required to maintain the service levels. The use of non-vehicular travel modes such as transit, walking, and biking is promoted to reduce the demand for transportation system improvements and improve air quality.

**Purpose of the Circulation Element**

The purpose of the Circulation Element is to provide a safe, efficient, and adequate circulation system for the City. State planning law requires:

“….a circulation element consisting of the general location for proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the land use element plan.”

To meet this purpose, the Circulation Element addresses the circulation improvements needed to provide adequate capacity for future land uses. The Element establishes a hierarchy of transportation routes with typical development standards described for each roadway category.

The State General Plan Guidelines recommend that the circulation policies and plans should:

- Coordinate the transportation and circulation system with planned land uses;
- Promote the safe and efficient transport of goods and the safe and effective movement of all segments of the population;
- Make efficient use of existing transportation facilities; and
- Protect environmental quality and promote the wise and equitable use of economic and natural resources.
Figure C-1. Rancho Santa Margarita Layered Transportation Networks (GPCE Traffic Study Exhibit 4-1)
The Guidelines indicate that the Circulation Element should address all facets of circulation including streets and highways, transportation corridors, public transit, railroads, bicycle and pedestrian facilities, and commercial, general, and military airports. The Rancho Santa Margarita Circulation Element fulfills State requirements with a plan to provide effective circulation facilities supporting desired community development. Along with circulation, public utilities must be addressed in the General Plan. Instead of addressing utilities within the Circulation Element, the Rancho Santa Margarita General Plan contains a public services and facilities section in the Land Use Element.

Scope and Content of the Circulation Element

This Element contains goals and policies to improve overall circulation in the City, as well as layered transportation networks (Figure C-1) designed to improve the balance between environmental concerns, community objectives, and performance (mobility and safety). Within Rancho Santa Margarita, further progress toward a sustainable transportation system can be advanced by focusing on the following principles:

- Network Connectivity (more than one route between land uses and a mixture of low speed and high speed road connections wherever possible)
- Operational Balance (flexibility to achieve community objectives and place making without sacrificing safety and mobility)
- Emissions Reduction / Energy Efficiency (prioritize designs which minimize idling times and vehicle miles traveled, help conserve resources and minimize waste)
- Pedestrian and Bicycle Accommodations (walkways and bikeways fully integrated)
- Transit Readiness (access to transit stops and effective interface of modes)

For vehicular transportation, a hierarchical roadway network is established with designated roadway types and design standards. The roadway type is linked to anticipated traffic levels, and acceptable levels of service are established to determine when capacity improvements are necessary. Because local circulation is linked with the regional system, the Element also focuses on participation in regional programs to alleviate traffic congestion and construct capacity improvements. Alternative transportation modes are also emphasized in this Element to reduce dependency on the automobile and thereby improve environmental quality.

The Circulation Element consists of three sections: 1) Introduction; 2) Issues, Goals, and Policies; and 3) the Circulation Plan. In the Issues, Goals, and Policies section, major issues pertaining to the transportation system are identified, and related goals and policies are established. The goals are overall statements of the City desires and include broad statements of purpose and direction. The policies serve as guides for planning circulation improvements to accommodate anticipated population growth, maintaining acceptable service levels while
development occurs, coordinating with local and regional jurisdictions to phase regional transportation facilities, and promoting alternative transportation modes. The Circulation Plan explains how the goals and policies will be achieved and implemented. Specific implementation programs are included in the General Plan Implementation Program in Appendix A of this General Plan.

Related Plans and Programs

Several transportation plans prepared by the County and other regional agencies focus on the regional transportation system. Strategies to handle anticipated traffic levels from future regional development are discussed. The regulatory setting for the 2013 Update of the City of Rancho Santa Margarita General Plan Circulation Element includes the following:

- California Assembly Bill 32 (2006) and Senate Bill 375 (2008)
- AB 1358 California Complete Streets Act of 2008
- The Regional Transportation Plan (RTP)
- Orange County Congestion Management Program (CMP)
- Orange County Master Plan of Arterial Highways
- OCTA Commuter Bikeways Strategic Plan
- Orange County Sustainable Communities Strategy (SCS)

AB32 and SB375

Assembly Bill 32, the Global Warming Solutions Act of 2006 (AB 32), is the primary state policy created with the purpose of reducing greenhouse gas emissions in California. AB 32 created emissions reduction targets and granted authority over emissions reduction to the California Air Resources Board (ARB). Senate Bill 375, the Sustainable Communities and Climate Protection Act of 2008 (SB 375), which was passed by the legislature as a tool for working towards AB 32’s reduction goals, requires ARB to set regional GHG emissions targets and requires each California metropolitan planning organizations (MPO) to develop a Sustainable Community Strategy (SCS) that integrates housing, transportation, and land use policy.

Complete Streets Act

The Complete Street Act of 2008 (Assembly Bill 1358) was developed in response to and in support of other legislation aimed at reducing vehicle emissions through reduced trip length and frequency combined with changes in land use policies. The City of Rancho Santa Margarita Circulation Plan meets the goals and policies of the Complete Streets Act by addressing a variety of modes in layered transportation networks.
County of Orange Master Plan of Arterial Highways (MPAH)

The County of Orange Master Plan of Arterial Highways (MPAH) forms part of the Orange County General Plan and designates the arterial system in the Circulation Element of the General Plan. Defined according to specific arterial functional classifications, the MPAH identifies the intended future roadway system for the County. Cities within the County are expected to achieve consistency with the MPAH in individual General Plan circulation elements. As the administrator of the MPAH, OCTA is responsible for maintaining the integrity of the MPAH system through its coordination with cities and the County and determinations of cities; and County consistency with the MPAH. To aid in establishing consistency among plans, all jurisdictions are encouraged to use common land use assumptions and travel demand projections. OCTA facilitates the use of these common assumptions through administration of the Orange County Transportation Analysis Model (OCTAM).

To maintain eligibility for all Measure M2 funding programs, the City of Rancho Santa Margarita General Plan Circulation Element must be consistent with the MPAH. To demonstrate consistency with the MPAH, the City of Rancho Santa Margarita shall have the minimum planned carrying capacity equivalent to the MPAH. The “planned carrying capacity” shall be measured by the number of through lanes on each arterial highway as shown on the Circulation Element.

County of Orange Congestion Management Program

Urbanized areas such as Orange County are required to adopt a Congestion Management Program (CMP). The goals of the CMP are to reduce traffic congestion and to provide a mechanism for coordinating land use development and transportation improvement decisions. The Congestion Management Program in effect in Orange County was approved by the (OCTA) in 2011. OCTA has adopted a minimum Level of Service threshold of LOS “E” for CMP facilities.

For the most part, the Orange County CMP is a composite of local agency submittals in which each local jurisdiction develops the required data in accordance with the guidelines established by OCTA. The OCTA compiles the data and submits the results to the Southern California Association of Governments (SCAG) for a finding of regional consistency. The Foothill Transportation Corridor (SR-241) is a roadway component of the Congestion Management Plan system. Development projects in the City are required to evaluate whether there are project impacts to the CMP system. An impact is defined as having project contribution of 0.03 or greater (V/C or ICU). The City of Rancho Santa Margarita will continue to coordinate with OCTA and the County of Orange to ensure that impacts to the SR-241 toll road are addressed, consistent with sub regional initiatives.
Measure M Transportation Investment Plan (M2)

Measure M is the half cent sales tax for transportation improvements first approved by Orange County voters in 1990, and renewed by voters for a 30-year extension in 2006. The combined measures raise the sales tax in Orange County by one-half cent through 2041 to alleviate traffic congestion. Under the first Measure M program (M1), more than $4 billion worth of transportation improvements for Orange County were achieved. As a result, M1 was responsible for adding 192 freeway lane miles, improving 170 intersections and 38 freeway interchanges, and implementing Metrolink service in Orange County.

With the sunset of M1, voters approved a continuation of transportation improvements through the Measure M Transportation Investment Plan (M2). By the year 2041, the M2 program plans to deliver approximately $15.5 billion worth of transportation improvements to Orange County. Major improvement plans target Orange County freeways, streets and roads, transit and environmental programs.

OCTA Commuter Bikeways Strategic Plan

The 2009 Commuter Bikeways Strategic Plan (CBSP), developed by the Orange County Transportation Authority (OCTA), encourages the enhancement of Orange County’s regional bikeways network in order to make bicycle commuting a more viable and attractive option. OCTA’s action plan includes improving the regional bikeway network (funding, encouraging, and supporting where possible), external coordination (maintaining the Plan, facilitating coordination), internal coordination, and addressing regional priorities. The plan is financially unconstrained, so it is the responsibility of each implementing agency to identify funding sources for the projects within their purview. The Circulation Element contains a bikeway plan that links to CBSP routes.

Orange County Sustainable Communities Strategy

Although SCAG is also responsible for developing the Sustainable Communities Strategy (SCS) for the SCAG Region, SB 375 also allows for a subregional council of governments and county transportation commission to work together to propose a subregional SCS. As one of these subregions, Orange County has prepared its own subregional SCS (OC SCS). It was prepared by the Orange County Council of Governments (OCCOG) and the Orange County Transportation Authority (OCTA), in collaboration with multiple Orange County stakeholders including city agencies, the County of Orange, County special districts, OCTA, the Center for Demographic Research (CDR), the California Department of Transportation (Caltrans), and Transportation Corridor Agencies.

The OC SCS begins with the setting of current population, housing, and employment in Orange County, and then describes projected long-term trends for these socio-economic variables. The resulting assessment is that a majority of Orange County’s projected growth of population, housing, and employment will occur near existing and future job centers, which will positively impact transportation patterns and therefore be beneficial to GHG emission reductions.
Because of the interconnectedness between Orange County’s population, housing and employment and the transportation systems that support them, the OC SCS also delineates the foundational transportation systems that currently exist in Orange County. Transportation systems described include freeways, arterial streets and local roads, rail and bus transit, bikeways, and demand responsive services and transportation demand management.

**Regional Transportation Plan**

On April 4, 2012, the Regional Council of the Southern California Association of Governments (SCAG) adopted the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future. The 2012–2035 RTP/SCS includes a strong commitment to reduce emissions from transportation sources to comply with SB 375, improve public health, and meet the National Ambient Air Quality Standards as set forth by the federal Clean Air Act. As such, the 2012–2035 RTP/SCS contains a regional commitment for the broad deployment of zero- and near-zero emission transportation technologies in the 2023–2035 time frame and clear steps to move toward this objective.

The SCS focuses the majority of new housing and job growth in high-quality transit areas and other opportunity areas in existing main streets, downtowns, and commercial corridors, resulting in an improved jobs-housing balance and more opportunity for transit-oriented development. This overall land use development pattern supports and complements the proposed transportation network that emphasizes system preservation, active transportation, and transportation demand management measures.

This RTP/SCS achieves greenhouse gas emission-reduction targets set by CARB by achieving a 9 percent reduction by 2020 and 16 percent reduction by 2035 compared to the 2005 level on a per capita basis. This air quality benefit is made possible largely by more sustainable planning, integrating transportation and land use decisions to allow Southern Californians to live closer to where they work and play and to high-quality transit service. As a result, more residents will be able to use transit and active transportation as a safe and attractive means of travel.

**Air Quality Management Plan**

The federal Clean Air Act requires preparation of plans to improve air quality in any region designated as a non-attainment area. (A nonattainment area is a geographic area identified by the Environmental Protection Agency and/or California Air Resources Board as not meeting state or federal standards for a given pollutant). The plan must outline specific programs and strategies and timelines for bringing the area into compliance with national and/or State air quality standards.

The Air Quality Management Plan prepared by the South Coast Air Quality Management District, first adopted in 1994 and updated on a three-year cycle, contains policies and measures designed to achieve federal and state standards for healthier air quality in the South Coast Air Basin (a non-attainment area). Many of the measures identified in the AQMP address circulation improvements, since fossil-fuel-powered vehicles account for more than 60 percent of the NOx emissions and 70 percent of the carbon monoxide emissions within the basin.
Planned Communities

Rancho Santa Margarita has been developed as a series of Planned Communities approved prior to incorporation. The Planned Communities comprising the incorporated City include Rancho Santa Margarita Planned Community, Rancho Trabuco Planned Community, Robinson Ranch Planned Community, and Dove Canyon Planned Community. Each of the community plans featured a planned roadway system of collector and local streets that interface with MPAH roadways. These roadways are contained in the Circulation Plan described in this Element.

Relationship to Other General Plan Elements

According to State planning law, the Circulation Element must be independent, but consistent with the other General Plan elements. All elements of the General Plan are interrelated to a degree, and certain goals and policies of each element may also address issues that are the primary subjects of other elements. The integration of overlapping issues throughout the General Plan elements provides a strong basis for implementation of plans and programs, and achievement of community goals. The Circulation Element relates most closely to the Land Use, and Conservation and Open Space Elements.

The Land Use and Circulation Elements are inextricably linked. The planned development identified in the Land Use Element is the basis for determining future road improvements. The circulation policies and plans ensure that existing transportation facilities will be improved and new facilities will be constructed to adequately serve traffic generated by planned development. An efficient circulation system is a critical factor for diversifying and expanding local economic activities. In addition, the Circulation Element promotes alternative transportation modes to minimize the regional impacts of planned local development.

The Circulation Element provides for a trail system that accommodates bicycles and pedestrians. Trails for these uses will connect with recreational areas and support the City’s recreational goals articulated in the Open Space and Conservation Element. In addition to promoting bicycle and pedestrian transportation, the Circulation Element promotes the use of public transit. Alternative transportation modes will help achieve the air quality goals identified in the Conservation and Open Space Element.
Rancho Santa Margarita is a community with a well-defined circulation system featuring vehicular, public transit, bicycle, and pedestrian components. An independent system is created by the connection of this local system with a larger regional circulation system. A safe and convenient circulation system operation is needed to support a variety of land uses in the community.

Four major issues are addressed by the goals, policies and plans of the Circulation Element. These major issues include: 1) providing a suitable system of City roadways; 2) successful integration with the regional roadway system; 3) promotion of alternative modes of travel; and 4) providing and maintaining an extensive trails network.

**Local Circulation System**

Safe and convenient access to activities in the community can be provided by a well-designed local roadway system. To allow for new development or redevelopment to occur without negatively affecting the existing community, improvements to the circulation system may be required.

**Goal 1:** Provide a circulation system that keeps traffic moving while accommodating other modes and meeting other community values.

**Policy 1.1:** Provide and maintain a City circulation system that promotes safety and satisfies the demand created by land uses in the Rancho Santa Margarita area. We require our roadways to:

- Comply with federal, state and local design and safety standards.
- Meet the needs of multiple transportation modes and users.
- Be compatible with the streetscape and surrounding land uses.
- Be maintained in accordance with best practices.

**Policy 1.2:** Improve the Rancho Santa Margarita circulation system roadways in concert with land development to maintain sufficient levels of service.

**Policy 1.3:** Coordinate improvements to and maintenance of the City circulation system with other major transportation improvement programs.

**Policy 1.4:** Utilize traffic calming methods within residential areas where necessary to create a pedestrian-friendly circulation system, while accommodating local street patterns that unify neighborhoods whenever feasible.
Policy 1.5: Apply creative traffic management approaches to address congestion in areas with unique problems, such as schools, businesses with drive-through access, and other special situations

Regional Circulation System

Transportation and traffic congestion in Rancho Santa Margarita is directly related to an overall transportation network for the region as surrounding city residents pass through Rancho Santa Margarita on the Foothill Transportation Corridor (SR-241) and other major roadways. In addition, a healthy economy depends on the ability of businesses to move their goods from one location to another. To support the continued success of local businesses, the local circulation system must provide adequate local and regional access. Planning for the needs of the community necessarily includes recognition of the related transportation needs and planning efforts of the surrounding cities, county, region, and state. With this recognition is the need for the City to actively work with other public agencies responsible for transportation and development in surrounding areas.

Goal 2: Achieve a local circulation system that is integrated with the larger regional transportation system to ensure the economic well-being of the community.

Policy 2.1: Coordinate planning, construction and maintenance of local circulation improvements with adjacent jurisdictions and transportation agencies.

Policy 2.2: Work closely with adjacent jurisdictions and transportation agencies to ensure that development projects outside Rancho Santa Margarita (e.g., development of Rancho Mission Viejo, Trabuco Canyon and Ladera Ranch) do not adversely impact the City or providers of public transportation service within the City.

Policy 2.3: Monitor efforts to create additional freeway corridors or toll roads in the Rancho Santa Margarita area and oppose such a link if unacceptable negative impacts to Rancho Santa Margarita are created and cannot be mitigated to less than significant levels.

Policy 2.4: Reduce pollutants associated with vehicles and increasing traffic resulting from development. Coordinate local traffic management reduction efforts with Orange County Transportation Authority’s Congestion Management Plan.
Public Transportation System

Public transportation and alternative modes of travel, such as bicycling and walking, are an important component of a comprehensive circulation system. Public and alternative modes of transportation offer an alternative to the use of automobiles and help reduce air pollution and road congestion. To promote the increased usage of these modes of transportation, adequate facilities must be provided.

Goal 3: **Promote the increased use of multi-modal transportation.**

Policy 3.1: Maintain a proactive working partnership with transit providers to ensure that adequate public transit service is available, and encourage the increased use and expansion of public transportation opportunities.

Policy 3.2: Monitor the effectiveness of regional alternative transportation programs, such as bus systems, providing service to the City.

Policy 3.3: Work with regional transit agencies to encourage the provision of additional regional public transportation services and support facilities, such as park-and-ride lots.

Policy 3.4: Collaborate with neighboring cities and regional transportation providers to encourage the provision of affordable transportation programs for elderly and youth to desirable locations in the region (e.g., malls, youth and senior program providers, the Inter-Generation Community Center (IGCC), and other senior and community centers).

Policy 3.5: Incorporate design features into public improvement projects that promote and support the use of public and alternative modes of transportation.

Trails Network

Non-vehicular methods or modes of transportation offer an option to the traditional use of automobiles. These modes of transportation, such as bicycling and walking, also help to reduce roadway congestion and air pollution. Trail systems also provide recreational opportunities for the community.

Goal 4: **Provide and maintain extensive public bikeway and community pedestrian networks that facilitate and encourage non-motorized travel throughout the City.**

Policy 4.1: Coordinate with other public and private organizations and jurisdictions to provide and maintain an extensive trails network in the Rancho Santa Margarita City.
area that: supports bicycles and pedestrians; links to activity nodes within the community; and is coordinated with the trail networks of adjacent jurisdictions.

**Policy 4.2:** Enhance the biking and walking environment by providing and maintaining safe and attractive sidewalks, walkways and bike lanes for both recreational and commuting purposes. We require our on- and off-street pathways to:

- Comply with federal, state and local design and safety standards.
- Meet the needs of multiple types of users (families, commuters, recreational beginners, exercise experts), and meet ADA standards and guidelines.
- Be compatible with the streetscape and surrounding land uses.
- Be maintained in accordance with best practices.

**Policy 4.3:** Protect public access to the trails network, and identify future opportunities to enhance the network.

### Related Goals and Policies

The goals and policies described in the Circulation Element are related to and support subjects included within other General Plan elements. In turn, many goals and policies from the other elements directly or indirectly support the goals and policies of the Circulation Element. These supporting goals and policies are identified in Table C-1.

#### Table C-1: Related Goals and Policies by Element

<table>
<thead>
<tr>
<th>General Plan Element</th>
<th>Local Circulation System</th>
<th>Regional Circulation System</th>
<th>Public Transportation System</th>
<th>Trails Network</th>
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<td>2.1, 2.5, 3.7, 3.8</td>
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<td>2.1, 2.2, 2.3</td>
<td>2.1, 2.3</td>
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</tr>
</tbody>
</table>

City of Rancho Santa Margarita
Circulation Plan

A diverse circulation system with vehicle, transit, pedestrian and bicycle linkages supports the City. The local system connects with the larger regional system. The operation of the two systems is interdependent. This section of the Element establishes the Circulation Plan. The Plan summarizes the approach to ensure safe and convenient operation of the circulation system and identifies improvements required to accommodate traffic from planned development.

Vehicle transportation is presently the primary mode of travel. An Arterial Highway Plan is established with hierarchical roadway designations, physical design standards for the roadway designations, and service standards. The Arterial Highway Plan includes regional arterials and anticipated regional traffic levels. The use of alternative modes of transportation is promoted to reduce dependency on automobiles.

The Plan is based on the issues, goals, and policies identified in the previous section. The Circulation Element Implementation Program, which is part of the General Plan Implementation Program contained in Appendix A, is an extension of the Circulation Plan and contains specific programs to coordinate planned development with vehicular and non-vehicular circulation improvements.

Local Circulation System

The arterial roadway system in Rancho Santa Margarita is defined using a hierarchical classification system. Roadway functional classifications are differentiated by size, function, and capacity. The arterial roadway functional classification system is derived directly from the County Master Plan of Arterial Highways, since all City arterials were developed using County standards. The dimensions and characteristics of local streets are determined in large part by circulation systems contained in the community plans for each of the various Planned Communities within the City.

There are four basic categories within the functional classification hierarchy in Rancho Santa Margarita, ranging from a six-lane divided roadway with the highest capacity, to a two-lane undivided roadway with the lowest capacity. The categories are briefly summarized below:

Major Arterial: The major arterial is generally a six-lane roadway section with a raised curbed median, although an eight lane version of this classification (designated as a Principal arterial by OCTA) can be accommodated if necessary (previously considered in at least one location in the City). A Major arterial is designed with emphasis for automobile, goods movement, and/or transit, and is designed to accommodate an upper limit of approximately 56,300 vehicle trips per day. A Major arterial may consist of three through lanes, two left-turn lanes and a dedicated right-turn lane. Major arterials may carry a large volume of regional through traffic not handled...
by the toll road system. In the City of Rancho Santa Margarita, the three major arterial roadways include Santa Margarita Parkway, Antonio Parkway and Alicia Parkway. The major arterial roadway classification restricts on-street parking and provides pavement markings for Class II on-street bike lanes.

**Primary Arterials (Augmented):** A primary arterial roadway is a four-lane divided (raised median) roadway which may be designed with emphasis for automobile, goods movement, transit, and/or bicycle. Primary arterials function similarly to major arterials. The principal difference is capacity. A Primary arterial may consist of two through lanes, one left-turn lane and a dedicated right-turn lane. An additional left-turn lane or optional right-turn lane may be allowed if warranted by traffic demand. The primary arterial restricts on-street parking and provides pavement markings for Class II on-street bike lanes. While the Primary arterial (Augmented) is designed to accommodate four through travel lanes, the pavement and right-of-way (width) may be able to accommodate up to six-through travel lanes.

**Secondary Arterials:** A secondary arterial is also a four lane roadway, although it may be divided or undivided. In the City of Rancho Santa Margarita, secondary arterials generally include divided raised medians. A Secondary arterial serves to distribute traffic between local streets and major and primary arterials. Along Secondary arterials, shoulders may accommodate exclusive bike lanes or on-street parking. Sidewalks may be curb-adjacent or separated from the roadway by a landscaped parkway. A Secondary arterial may consist of two through lanes, one left-turn lane and a dedicated right-turn lane. An additional left-turn lane or optional right-turn lane may be allowed if warranted by traffic demand. Many of the Secondary arterials within the City of Rancho Santa Margarita effectively function as Primary arterials without the on-street parking restrictions.

**Collectors:** Collector roadways move traffic from local streets to arterial roads. Unlike arterials, collector roads are designed to provide access to residential areas. Two versions of the Collector classification are shown on Exhibit 4-2. The “Collector – 2 Lanes Divided” may have a painted or raised median which can be utilized where left turn pockets are needed while also providing a shoulder for on-street parking or cyclists. Finally, the “Collector – 2 Lanes Undivided” is a conventional two-lane section with shoulders that can accommodate on-street parking and/or cyclists.

Figure C-2 shows the schematic or typical cross sections of each category of arterial and collector roadway. These sections represent desirable standards, but variation in right-of-way width and specific road improvements will occur in certain cases due to physical constraints and/or right-of-way limitations. In particular, the median width of Major and Primary Arterials will vary according to the area being served, right-of-way constraints and turn lane requirements. Any of the arterial classifications may deviate from the standards where physical constraints exist or where preservation of community character dictates special treatment. Bikeways and sidewalks also affect the specific standards applied to various facilities. Another design consideration is the need to comply with MPAH capacity requirements. The overriding circulation goal is that all roadways keep traffic moving while providing for other modes of transportation and meeting other community values.
Figure C-2. Typical Roadway Cross-Sections (GPCE Traffic Study Exhibit 4-2)
Performance Criteria

Evaluating the ability of the circulation system to serve the desired future land uses requires establishing suitable “performance criteria.” These are the means by which future traffic volumes are compared to future circulation system capacity, and the adequacy of that circulation system assessed. The technical evaluation of the Rancho Santa Margarita roadway system was conducted with volume-to-capacity (V/C) ratios. V/C ratios are calculated based on existing or future average daily traffic (ADT) volumes and daily capacity values for the various types of arterials. Daily capacity values for the city’s roadway geometric classifications are provided in Table C-2. Based on the V/C ratio, each study area roadway segment is classified into one of four categories; Acceptable (V/C 0.00-0.79), Approaching Capacity (V/C 0.80-1.00), Potentially Exceeds Capacity (V/C 1.01-1.25), and Exceeds Capacity (V/C > 1.26). As the V/C ratio approaches or exceeds the average daily vehicle capacity thresholds, roadway capacity may be expanded by restricting on-street parking, improving signal timing, widening intersections, and adding through and turn lanes.

Table C-2. Roadway Classifications and Daily Capacities

<table>
<thead>
<tr>
<th>Roadway Geometry Classification</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Arterial – 6 Lanes Divided</td>
<td>56,300 Vehicles Per Day</td>
</tr>
<tr>
<td>Primary Arterial – 4 Lanes Divided</td>
<td>37,500 Vehicles Per Day</td>
</tr>
<tr>
<td>Secondary Arterial – 4 Lanes Divided</td>
<td>31,300 Vehicles Per Day</td>
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<td>Collector – 2 Lanes Divided</td>
<td>18,800 Vehicles Per Day</td>
</tr>
<tr>
<td>Collector – 2 Lane Undivided</td>
<td>12,500 Vehicles Per Day</td>
</tr>
</tbody>
</table>

1 These roadway capacities are approximate figures only, and are used at the General Plan level. They are affected by such factors as intersections (numbers & configuration), degrees of access control, roadway grades, design geometrics (horizontal & vertical alignment).

The roadway segment V/C analysis is used as a planning tool to evaluate the adequacy of roadway segment capacities; however, a level of service deficiency occurs when adjacent intersections experience LOS D or worse conditions during one of the peak hours (Table C-3). A V/C ratio of greater than 1.01 to 1.25 suggests that additional review is required; however, if adjacent intersections provide the lanes needed to achieve acceptable peak hour LOS, then segment capacity improvements between key intersections may not be needed.

Due to the generalized nature of ADT capacities, the daily capacity values in Table C-2 are typically viewed as general rather than absolute guides for estimating levels of service and sizing the future roadway system. A more detailed intersection evaluation (using peak hour level of service ranges, such as those shown in Table C-4) will be carried out for individual projects.
Table C-3.
Circulation System Performance Criteria

Peak Hour Intersection Performance Policy for Future Development Projects

Level of Service D – All signalized intersections

Peak hour level of service is based on peak hour intersection capacity utilization (ICU) values calculated using the following assumptions:

• Saturation Flow Rate: 1,700 vehicles/hour/lane
• Clearance Interval: .05
• “De-facto” right-turn lane is assumed in the ICU calculation if 19 feet from edge to outside of through-lane exists and parking is prohibited during peak periods.

Table C-4.
Peak Hour Level of Service Ranges

<table>
<thead>
<tr>
<th>Level of Service (LOS)</th>
<th>Intersection Capacity Utilization (ICU)</th>
<th>Average Vehicle Delay</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Signalized</td>
<td>Unsignalized</td>
</tr>
<tr>
<td>A 0.00 - 0.60</td>
<td>0 - 10.00 seconds</td>
<td>0 - 10.00 seconds</td>
</tr>
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<td>B 0.61 - 0.70</td>
<td>10.01 - 20.00 seconds</td>
<td>10.01 - 15.00 seconds</td>
</tr>
<tr>
<td>C 0.71 - 0.80</td>
<td>20.01 - 35.00 seconds</td>
<td>15.01 - 25.00 seconds</td>
</tr>
<tr>
<td>D 0.81 - 0.90</td>
<td>35.01 - 55.00 seconds</td>
<td>25.01 - 35.00 seconds</td>
</tr>
<tr>
<td>E 0.91 - 1.00</td>
<td>55.01 - 80.00 seconds</td>
<td>35.01 - 50.00 seconds</td>
</tr>
<tr>
<td>F Above 1.00</td>
<td>Above 80.00 seconds</td>
<td>Above 50.00 seconds</td>
</tr>
</tbody>
</table>

Development proposals and amendments within Planned Communities will be reviewed for consistency with transportation infrastructure and fee requirements established in approved development plans and agreements.

Relationship to Land Use

Future traffic volumes and highway capacity needs are directly related to future land use. A refined version of the Orange County Transportation Analysis Model (OCTAM) has been used to evaluate future vehicular traffic conditions. Cumulative growth to 2035 includes full occupancy of residential and non-residential land uses projected for buildout of the City’s General Plan. Even though the City of Rancho Santa Margarita is nearly built out, additional future growth has been identified for the Circulation Element to ensure that the analysis reflects the potential for increased future traffic.
The proposed Arterial Highway Plan presented in the next section is designed to accommodate current and anticipated regional traffic levels, including the development of the northeast area future planned community (Robinson Ridge).

**General Plan Circulation System**

The circulation element goals and policies emphasize the need for a circulation system capable of serving existing and future traffic, and successfully integrating that system with a regional circulation network. The location and design of the circulation system have major impacts on air quality, noise, community appearance and other environmental resources. The Rancho Santa Margarita General Plan Circulation Plan depicted in Figure C-3 delineates the planned circulation system.

**Truck Traffic**

Rancho Santa Margarita experiences moderate amounts of truck traffic generated by commercial and light industrial uses. Truck traffic will increase in future years to support new businesses. Noise impacts and congestion can be caused by truck traffic in urban areas. To avoid such impacts on a case-by-case basis, streets can be evaluated in the future for implementation of weight restrictions should problems occur. Given the current roadway system, such problems are not anticipated.

**Neighborhood Traffic Safety**

One of the major components of the Circulation Plan is the importance of non-vehicular modes of transportation. To increase the number of people using non-automobile means of transportation, an existing and safe transportation network has to be in place. This network should include crosswalks, grade separations (bridges), and walkways that ensure the safety of pedestrians and bicyclists. Where appropriate, traffic calming devices should be considered to reduce speeds on neighborhood streets. Special traffic problems caused by schools, businesses with drive-through access, and land uses that generate high traffic volumes at specific times will be studied and solutions developed to reduce the impact of increased traffic on neighborhoods.

The City will continue to work with homeowner associations to ensure that sufficient improvements are in place to serve the needs of pedestrians and bicyclists, to investigate the potential for traffic calming devices in neighborhoods, and to assess and mitigate the impacts of special traffic problems.
Figure C-3
General Plan Roadway Network (GPCE Traffic Study Exhibit 4-3)
Regional Circulation System

Southern California has experienced rapid urban growth within the last three decades. The success of existing and future development is in part dependent on the availability of an effective regional transportation system. The system must link localities with outside commerce centers and regional transportation hubs. In addition, the regional circulation system must meet the needs of local residents. Rancho Santa Margarita is well connected with the regional system. The Foothill Transportation Corridor (SR-241) bisects the planning area and provides connections with other freeways in Orange, Riverside, and Los Angeles Counties, and beyond. Once completed, this toll way will connect Rancho Santa Margarita with San Clemente to the south, providing direct access to San Diego County.

Ensuring adequate circulation for residents and businesses will require coordination with regional and state transportation planning efforts, as well as with adjacent jurisdictions. Development projects outside the City, including, development of Rancho Mission Viejo (“The Ranch”), Trabuco Canyon and Ladera Ranch, will be monitored to ensure that they do not adversely impact circulation in Rancho Santa Margarita. In addition, the City will monitor efforts to develop additional regional freeways/toll roads and oppose any proposed project that creates unacceptable negative impacts on City circulation.

Public Transportation and Trails Network

One of the key components of the Circulation Plan is to promote the use of alternative modes such as transit, bicycling and walking. Increasing the use of alternative transportation modes will produce a number of community benefits, including reduced traffic, less need for costly roadway improvement projects and improved air quality. Facilities for biking and walking provide recreational opportunities as well.

The Orange County Transportation Authority (OCTA) provides fixed route bus service within the City of Rancho Santa Margarita and neighboring jurisdictions as shown on Figure C-4. Fixed route service represents established routes that follow fixed timetables. OCTA currently provides two fixed routes that operate within and through the City of Rancho Santa Margarita serving residential, business and educational institutions. OCTA reviews and updates fixed route bus service periodically, and makes adjustments to the system as needed to address ridership, budgetary and other factors. Bus stops are generally placed by OCTA on public rights of way. These stops may include signage only, bus bench, shelter or other amenities. Maintenance of bus stops is provided either by OCTA or by the City according to an agreement.

Transit ridership in some communities is high enough to warrant a transit node or center. Transit nodes often host multiple routes that overlap or converge for efficient transfers from one bus to another. Transit nodes may be located within shopping centers, school campuses or other transit-dense locations. As the City of Rancho Santa Margarita matures, a transit node may be considered to facilitate commuter express bus service, fixed route bus service, connections to the Irvine Station Metrolink station and carpools.
Figure C-4
Potential Transit Network (GPCE Traffic Study Exhibit 4-6)
The City has in place an extensive network of bicycle routes and trails. The proposed bikeway network is presented in Figure C-5. Table C-6 summarizes the three bikeway classifications present within the City. As Figure C-5 indicates, the bikeway system is composed of a network of Class I off-road bike trails within O’Neill Regional Park, Class II bike lanes along major and primary arterial roadways, and unmarked shared bike lanes (Class III). Class I bike trails are also described in the Open Space and Conservation Element.

The City will continue to enhance the bikeway system as roadway signing and striping improvements occur. Bikeway projects will focus primarily on the following:

- Along the Bike Lane routes designated on the General Plan Bikeway Network, implement on-street parking restrictions, and
- Along the routes that are designated for “Shared Lane Markings Adjacent to On-Street Parking,” implement pavement markings or signs at the discretion of Public Works/Engineering.

### Table C-6

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>Bicycle paths with exclusive rights-of-way intended to serve cyclists with the safest means of travel, such as the route through O’Neill Regional Park. Pedestrians and cyclists use these routes.</td>
</tr>
<tr>
<td>Class II</td>
<td>Bicycle lanes along the curb lane of a street or highway, such as along Santa Margarita Parkway or Antonio Parkway. The path provides for one-way travel and is generally delineated with special striping and signage to restrict on-street parking.</td>
</tr>
<tr>
<td>Class III</td>
<td>Bike routes for shared use with pedestrian or motor vehicle traffic. Pavement markings and/or signs for shared use of outside travel lanes should be considered on Secondary and Collector roads where on-street parking or physical constraints prohibit the provision of on-street bike lanes.</td>
</tr>
</tbody>
</table>

Source: AASHTO (2012), Caltrans (2012) and Orange County Commuter Bikeways Strategic Plan (CBSP, 2009).

Enhanced local pedestrian linkages exist throughout the City (see Figure C-6). The goal is to link residential areas, schools, parks and commercial centers so that residents can travel within the community without driving. New development projects will be required to include safe and attractive sidewalks, walkways, and bike lanes, and homeowners associations will be encouraged to construct links to adjacent areas and communities where appropriate.
Figure C-5
Bikeway Network (GPCE Traffic Study Exhibit 4-5)
Figure C-6
Pedestrian Network (GPCE Traffic Study Exhibit 4-4)
Transportation System and Demand Management

The efficiency of the circulation system will be improved with transportation system management (TSM) and transportation demand management (TDM) strategies. TSM involves physical improvements to the circulation infrastructure to expand capacity and increase traffic flow, while TDM involves reducing the demand for vehicular transportation. In addition to enhancing the operation of the circulation system, TSM and TDM strategies provide relief from increasing demands for more improvements to transportation facilities.

Traffic signal coordination and intersection capacity improvements will be implemented as needed to improve traffic flow. Fees for traffic impacts of new development will be collected according to established local and regional fee programs.

The City will support the implementation of the employer TDM provisions of the South Coast Air Quality Management District Air Quality Management Plan and participate in regional efforts to implement TDM requirements. Programs to increase transit ridership and use of non-vehicular transportation such as walking and bicycling will be pursued.

Transportation Financing

Implementing circulation improvements to accommodate planned growth will require financing. Funding for transportation improvements is available from several local, state, and federal sources. The City will identify available funding sources and establish a Development Mitigation Program, Comprehensive Phasing Program, Performance Monitoring Program and Capital Improvement Program to guide construction and funding of transportation system improvements.

The standards and programs required to qualify for revenue from the Congestion Management Plan and Measure M2 will be applied in the planning area. Circulation improvements to accommodate new development projects will be constructed and/or funded by project proponents. Fees will be collected for traffic impacts of new development in accordance with established fee programs.