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INTRODUCTION TO THE CIRCULATION ELEMENT

The Circulation Element is one of seven mandated Elements of the General Plan and is intended to guide the development of the City's circulation system in a manner that is compatible with the Land Use Element. A well-planned circulation system is important, and the State of California has mandated the adoption of a citywide Circulation Element since 1955. The anticipated level and pattern of development by the year 2010, as identified in the Land Use Element, will increase capacity demands on the City's roadways. To help meet these demands and achieve balanced growth, the City has adopted specific goals and policies which serve as the basis for the Circulation Element.

PURPOSE OF THE CIRCULATION ELEMENT

The purpose of the Circulation Element is to provide a safe, sensible, and efficient circulation system for the City. The current State mandate for a Circulation Element states that the General Plan shall include:

"...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 of the Plan."

To meet these objectives, the Circulation Element addresses the circulation improvements needed to relieve traffic congestion due to future land uses. It also addresses potential demand management strategies and mass transit services. Corresponding goals and policies have been adopted to ensure that all components of the circulation system will meet the needs of the City of Dana Point.

The Element establishes a hierarchy of transportation routes with specific development standards described for each category of roadway. The "City of Dana Point, General Plan Traffic Analysis," prepared by Austin-Foust Associates, provides background information and acts as a supporting document for the Element.

RELATED PLANS AND PROGRAMS

Several transportation plans have been prepared by the County of Orange, focusing on the development of a regional transportation system to handle the anticipated traffic loads expected from future development. A number of plans have also been prepared identifying the location of future routes for mass transit including light rail and conventional buses.

Plans and programs related to the City's Circulation Element include the following:

- County of Orange, Master Plan of Arterial Highways
- San Joaquin Hills and Foothill Transportation Corridor plans
- South Coast Air Basin, Air Quality Management Plan
- County of Orange, Congestion Management Plan
- County of Orange, Master Plan of Scenic Highways
- County of Orange, Master Plan of Countywide Bikeways
- Los Angeles/San Diego Corridor Commuter Rail Plan
- Dana Point Harbor, Master Plan

SCOPE AND CONTENT OF THE ELEMENT

This Element is comprised of several sections which address the major components of the circulation system. Each section contains summary information on the existing and future conditions of the system, relevant plans and programs which influence circulation in Dana Point, and the goal and policy statements corresponding to each component. Following these sections, noteworthy characteristics of each component of the system are discussed. Detailed information pertaining to existing conditions are documented in the Master Environmental Assessment, and forecast conditions are analyzed in detail in the "City of Dana Point, General Plan Traffic Analysis."

Utilities and transmission facilities are described in the Public Facilities Element.

CIRCULATION ELEMENT GOALS AND POLICIES

The Circulation Element is based on a set of circulation-related goals which reflect and are designed to support the citywide objectives of the General Plan. The goals acknowledge the changing economic, social and environmental conditions in the City and surrounding regions, and the anticipated needs of the community. The circulation goals and policies are discussed in the following sections:

- Local Thoroughfares and Transportation Routes
- Intercity and Regional Transportation
- Transportation System/Demand Management
- Public Transportation
- Bicycle, Pedestrian, and Equestrian Facilities
- Parking
- Truck Circulation
- Harbor
- Rail
- Airport

The major traffic problem within the City, as identified in the "City of Dana Point, Circulation Element, Technical Report", exists primarily on the section of Pacific Coast Highway (PCH) where State Route 1 (SR-1) ends and becomes PCH. The intersection of Del Obispo Street and PCH is of particular concern.

LOCAL THOROUGHFARES AND TRANSPORTATION ROUTES

A well-planned street system facilitates the movement of vehicles and provides safe and convenient access to surrounding development. Three classifications of streets are included

in the local circulation system:

Arterial Streets: Streets which primarily serve through traffic and provide access to abutting properties as their secondary function. Arterials are further subdivided into functional classifications based on distinctions in geometrical characteristics and primary function:

- **Major Arterials:** Roadways comprising six travel lanes with a raised median divider. Major arterials generally carry high traffic volumes and are main thoroughfares through the City, as well as acting as links between adjacent communities.
- **Primary Arterials:** Roadways which are designed to accommodate four travel lanes and a raised median. These arterials carry high traffic volumes and connect major arterials with secondary arterials.
- **Secondary Arterials:** Roadways which are composed of four travel lanes without a raised median. These arterials typically carry traffic along the perimeters of major developments but are also used as through streets.

Collector Streets: Streets which provide property access and traffic circulation within residential, commercial, and industrial districts.

Local Streets: Streets which are designed to provide individual property access throughout the City.

The Dana Point community's historical development of local, collector and arterial streets has provided the basis for a safe, efficient roadway system. Arterial streets have been built with sufficient capacity to accommodate long-term traffic growth. In addition, driveway access has been limited to promote safe and efficient operations.

GOAL 1: Provide a system of streets that meets the needs of current and future residents and facilitates the safe and efficient movement of people and goods throughout the City. (Coastal Act/30252)

Policy 1.1: Develop and maintain a road system that is based upon and is in balance with the Land Use Element of the

General Plan. (Coastal Act/30250)

Policy 1.2: Develop circulation system standards for roadway and intersection classifications, right-of-way width, pavement width, design speed, capacity, maximum grades and associated features such as medians and bicycle lanes. (Coastal Act/30252)

Policy 1.3: Coordinate roadway improvements with applicable regional, State and Federal transportation plans and proposals.

Policy 1.4: Develop thresholds and performance standards for acceptable levels of service. (See "Performance Criteria" in next chapter).

Policy 1.5: Develop a program to identify, monitor and make recommendations for improvements to roadways and intersections that are approaching, or have approached, unacceptable levels of service or are experiencing higher than expected accident rates.

Policy 1.6: Develop a transportation network that is capable of meeting the needs of projected increases in the population and in non-residential development. (Coastal Act/30252)

Policy 1.7: Provide for the safe and expeditious transport of hazardous materials.

Policy 1.8: Work with the appropriate entities to improve rail and other public transit systems to serve the resident and visitor population of the area. (Coastal Act/30213)

Policy 1.9: Limit driveway access on arterial streets to maintain a desired quality of flow.

Policy 1.10: Design local and collector streets to discourage their use as through traffic routes.

Policy 1.11: Require that proposals for major new developments include a future traffic impact analysis which identifies measures to mitigate any identified project impacts. (Coastal Act/30250)

Policy 1.12: Encourage new development which facilitates transit services, provides for non-automobile circulation and minimizes vehicle miles traveled. (Coastal Act/30252)

Policy 1.13: Minimize pedestrian and vehicular conflicts. (Coastal Act/30252)

Policy 1.14: Establish landscaping buffers and building set-back requirements along all roads where appropriate. (Coastal Act/30252)

Policy 1.15: Develop a circulation system which highlights environmental amenities and scenic areas. (Coastal Act/30251)

Policy 1.16: Provide public access and circulation to the shoreline, through private dedications, easements, or other methods including public transportation. (Coastal Act/30211, 30212, 30212.5, 30221)

INTERCITY AND REGIONAL TRANSPORTATION

The Circulation Element provides an analysis of the City's existing and future circulation needs based upon their relationship to the regional transportation network. Planning for the effective implementation of the Dana Point Circulation Element requires active participation in the transportation planning activities of the County, Region and the State.

GOAL 2: Support development of a network of regional transportation facilities which ensures the safe and efficient movement of people and goods from within the City to areas outside its boundaries, and which accommodates the regional travel demands of developing areas outside the City.

Policy 2.1: Support the completion of the Orange County Master Plan of Arterial Highways.

Policy 2.2: Support the addition of capacity improvements to Interstate 5 such as high-occupancy vehicle lanes, general purpose lanes, auxiliary lanes, and corresponding noise barriers to mitigate the noise impacts of these improvements.

Policy 2.3: Maintain a proactive and assertive role with appropriate agencies dealing with regional transportation issues affecting the City.

Policy 2.4: Work with adjacent cities to ensure that the traffic impacts of development projects in these cities do not adversely impact the City of Dana Point. (Coastal Act/30253)

Policy 2.5: Work toward a multi-modal transportation network which provides viable transportation alternatives such as Amtrak, LOSSAN (Metrolink), shuttle access to airport facilities, and congestion management techniques.

TRANSPORTATION SYSTEM/DEMAND MANAGEMENT

Effective circulation planning must involve the use of Transportation System Management (TSM) and Demand Management (TDM) strategies. Operational improvements relating to signalization and intersection enhancements can help to increase the capacity of the existing circulation system. Through participation in Transportation Demand Management programs, vehicle trips can be significantly reduced. Continued participation in County and Regional discussions on TSM/TDM strategies may help to create long term reductions in traffic impacting the City of Dana Point.

GOAL 3: Maximize the efficiency of the circulation system through the use of Transportation System Management and Demand Management strategies.

Policy 3.1: Implement traffic signal coordination on arterial streets to the maximum extent practical, and integrate signal coordination efforts with those of adjacent jurisdictions.

Policy 3.2: Implement intersection capacity improvements where feasible.

Policy 3.3: Encourage the implementation of employer Transportation Demand Management (TDM) requirements included in the Southern California Air Quality Management District's Regulation XV of the Air Quality Management Plan. Participate in regional efforts to implement (TDM) requirements.

Policy 3.4: Require that proposals for major new non-residential developments (in excess of 50,000 square feet) include submission of a TDM plan to the City, including monitoring and enforcement provisions. (Coastal Act/30213)

Policy 3.5: Encourage the development of additional regional public transportation services and support facilities including park-and-ride lots near the I-5 freeway.

Policy 3.6: Promote ridesharing through publicity and provision of information to the public.

PUBLIC TRANSPORTATION

The City of Dana Point supports an efficient public transportation system to serve the residents of the City. Developments should be planned in a manner that facilitates provision of transit services. While increasing the mobility of all the residents is important, it is essential to increase accessibility to transit services for the elderly and disabled persons.

GOAL 4: Support development of a public transportation system that provides mobility to all City residents and encourages use of public transportation as an alternative to automobile travel.

Policy 4.1: Support the efforts of the appropriate agencies to provide additional local and express bus service to the Dana Point community, and to provide additional park-and-ride lots near the I-5 freeway.

Policy 4.2: Require new development to fund transit facilities, such as bus shelters and turn-outs, where deemed necessary.

Policy 4.3: Ensure accessibility of public transportation for elderly and disabled persons.

Policy 4.4: Encourage employers to reduce vehicular trips by offering employee incentives.

Policy 4.5: Promote new development that is designed in a manner that (1) facilitates provision or extension of transit service, (2) provides on-site commercial and recreational facilities to discourage mid-day travel, and (3) provides non-automobile circulation within the development. (Coastal Act/30213, 30252)

Policy 4.6: Encourage developers to work with agencies

providing transit service with the objective of maximizing the potential for transit use by residents and/or visitors.

Policy 4.7: Encourage the provision of safe, attractive and clearly identifiable transit stops and related high quality pedestrian facilities throughout the community. (Coastal Act/30252)

Policy 4.8: Require noise impact studies prior to approval of new public transportation routes through residential communities.

BICYCLE, PEDESTRIAN AND EQUESTRIAN FACILITIES

The provision of effective vehicular travel is an essential part of the City's circulation needs. However, non-vehicular modes of travel are also important. Bicycle and pedestrian circulation between major activity areas of the City should be provided through separate trails, walkways, and bike lanes.

GOAL 5: Encourage non-motorized transportation, such as bicycle and pedestrian circulation.

Policy 5.1: Promote the safety of pedestrians and bicyclists by adhering to national standards and uniform practices.

Policy 5.2: Maintain existing pedestrian facilities and encourage new development to provide pedestrian walkways between developments, schools and public facilities.

Policy 5.3: Ensure accessibility of pedestrian facilities to the elderly and disabled.

Policy 5.4: Support and coordinate the development and maintenance of bikeways in conjunction with the County of Orange Master Plan of Countywide Bikeways to assure that local bicycle routes will be compatible with routes of neighboring jurisdictions.

Policy 5.5: Encourage the provision of showers, changing rooms and an accessible and secure area for bicycle storage at all new and existing developments and public places. (Coastal Act/30213)

Policy 5.6: Develop programs that encourage the safe utiliza-

tion of easements and/or rights-of-way along flood control channels, public utility rights-of-way, railroad rights-of-way, and street rights-of-way wherever possible for the use of bicycles and/or hiking trails.

Policy 5.7: Explore possible link-up of trails within the City to regional trail systems.

Policy 5.8: Improve the safety of pedestrians crossing Pacific Coast Highway. (Coastal Act/30252)

Policy 5.9: Support and coordinate the development and maintenance of bikeways and trails in conjunction with the master plans of the appropriate agencies.

Policy 5.10: Encourage safe biking by supporting the clinics sponsored by the County Sheriff's Department.

Policy 5.11: Consider the provision of unique non-motorized circulation methods for special events.

Policy 5.12: Provide for a non-vehicular circulation system that encourages mass-transit, bicycle transportation, pedestrian circulation. (Coastal Act/30252, 30253)

PARKING

Adequate and convenient parking facilities should be provided as a part of all development in the City. Where possible, and especially in commercial areas, parking should be consolidated or shared. Access and egress to parking areas should be carefully planned so as to facilitate the safe flow of traffic on major streets and to minimize conflicts with pedestrians.

GOAL 6: Provide for well-designed and convenient parking facilities.

Policy 6.1: Consolidate parking, where appropriate, to reduce the number of ingress and egress points onto arterials.

Policy 6.2: Maintain public access to the coast by providing better transit and parking opportunities. (Coastal Act/30252)

Policy 6.3: Provide sufficient off-street parking. (Coastal Act/30250)

Policy 6.4: Encourage the use of shared parking facilities, such as through parking districts or other mechanisms.

TRUCK CIRCULATION

The establishment of well-defined circulation routes for truck traffic will help to increase the efficiency of the street system and also address safety concerns. One of the major concerns of City residents is noise and safety from large vehicle traffic in or near residential areas.

GOAL 7: Provide for a truck circulation system that provides for the effective transport of commodities while minimizing the negative impacts throughout the City.

Policy 7.1: Provide primary truck routes on selected arterial streets to minimize the impacts of truck traffic on residential areas.

Policy 7.2: Provide appropriately designed and maintained roadways for the primary truck routes. (Coastal Act/30254)

Policy 7.3: Develop berms, landscape screening or barriers along truck routes to minimize noise impacts on sensitive land uses.

Policy 7.4: Provide loading areas and accessways that are designed and located so as to avoid conflicts with efficient traffic circulation.

Policy 7.5: Consider safety regulations addressing trucks hauling materials within the City.

HARBOR

The Harbor is one of Dana Point's greatest assets. Through sound planning the City can ensure the continued adequacy of the Harbor for boating, fishing and other recreational activities.

GOAL 8: Provide adequate waterway circulation through the Dana Point Harbor.

Policy 8.1: Evaluate adequacy of and maintain sufficient capacity within the Harbor for the existing and future patrons of the Harbor.

RAIL

Commuter rail systems presently serve the residents of Dana Point from stations in San Juan Capistrano and San Clemente. As demands for rail travel increase, opportunities may exist to locate an additional commuter rail station in Dana Point.

GOAL 9: Support the continued development of a commuter rail system throughout the City that meets the needs of current and future residents.

Policy 9.1: Coordinate with Amtrak and Los Angeles-San Diego (LOSSAN) Corridor Commuter Rail to expedite commuter rail service to the City.

Policy 9.2: Work with the appropriate entities to evaluate development of a commuter rail station for Dana Point, with shuttle connections to employment centers and residential areas.

AIRPORT

While airport facilities are not located within Dana Point, it is important the public transportation be provided between the City and the regional airports. This can also avoid unnecessary vehicular trips within the City.

GOAL 10: Provide public transportation for residents to airport facilities in the region.

Policy 10.1: Work with the Orange County Transit District (OCTD) and other appropriate agencies to provide express transportation to regional airports.

RELATED GOALS AND POLICIES

Goals and policies identified in this Element are related to other General Plan Elements. A number of policies included in the Circulation Element constitute coastal resources planning and management policies that are part of the City's Local Coastal Program (LCP). Table C-1 identifies the required components or issue areas of the LCP included in the Circulation Element.

A number of goals and policies included in other elements of the General Plan support the goals and policies of the Land Use Element, either directly or indirectly. The supporting goals and policies are identified in Table C-2.

**TABLE C-1
CIRCULATION ELEMENT
LOCAL COASTAL PROGRAM REFERENCE MATRIX**

Required Component/Issue Area (Coastal Act Section)			
*	Shoreline Access (30210-212.5)		Agriculture (30241-242)
*	Visitor Serving and Recreational Facilities (30213)		Soil Resources (30243)
*	Water-Oriented Recreation (30220-224)		Archaeological/Paleontological Resources (30244)
*	Water and Marine Resources (30230-232)	*	Locating and Planning New Development (30250, 252, 255)
	Diking, Filling and Dredging (30233)	*	Coastal Visual Resources (30251)
*	Commercial Fishing and Recreational Boating (30234)	*	Hazard Areas (30253)
	Shoreline Structures/Flood Control (30235-236)	*	Public Works (30254)
	Environmentally Sensitive Habitat (30240)		Industrial Development and Energy Facilities (30260-264)
*	Indicates that the Coastal Act issue areas described in this table are included in the Circulation Element.		

**TABLE C-2
CIRCULATION RELATED
GOALS AND POLICIES BY ELEMENT**

Circulation Issue Area	Related Goals and Policies by Element								
	Land Use	Urban Design	Housing	Circulation	Noise	Public Safety	Conservation/Open Space	Public Facilities and Growth Management	Economic Development
Local Thoroughfares and Transportation Routes		3.2, 6.4	4.2, 4.3		1.3		5.1	7.2, 7.5-7.7, 7.10-7.11	6.3
Intercity and Regional Transportation	5.7		4.5			3.2-3.4	5.7	7.10, 8.1-8.6	6.3
Transportation System/Demand Management	3.6		4.5					7.8, 7.10, 8.1	6.3
Public Transportation	8.6		4.5				5.5, 5.7	7.8, 7.10	6.3
Bicycle, Pedestrian and Equestrian Facilities	4.7, 5.6, 5.8, 5.9, 6.2, 6.3, 8.5, 9.3	1.5, 3.3, 3.6-3.8, 4.3, 5.4, 6.5					5.4	7.10	6.3, 7.4
Parking	6.5, 6.6, 7.6	3.5, 6.7	1.3					7.10	6.3
Truck Circulation								7.10	

CIRCULATION PLAN

The Circulation Plan describes the approach to be used in implementing the Circulation Element goals and policies. This section of the Circulation Element describes the location and extent of circulation facilities and services, and identifies standards that apply to each. To portray the continuity of the circulation system, the General Plan graphics include planned facilities outside the City limits which are inside the analysis area used for the overall circulation analysis.

ROADWAY FACILITY DESIGNATIONS

The future roadway system in Dana Point has been defined using a classification system which describes a hierarchy of facility types. The categories of roadways included in this classification system differentiate the size, function and capacity of the roadway links for each type of roadway.

There are six basic categories in the hierarchy, ranging from higher capacity "Major", "Augmented Primary", "Primary" and "Secondary" arterials, to "Collector" and "Local" streets with the lowest capacity. Typical cross-sections for arterial classifications are provided in Figure C-1. Actual cross-sections may vary somewhat from the indicated measurement standards, but in order to provide maximum capacity, as well as right-of-way protection for landscaping, bike lanes, and future roadway improvements, the typical roadway cross-sections are recommended as future minimums. Major, primary, and secondary arterials are expected to include bike lanes which conform to uniform standards documented in the bicycle facilities section.

The desirable goal for every classified street section is that it carry the designed volume of traffic at the desired level of service. Within this requirement, descriptions of width and facilities are offered as non-exclusive alternatives; variation in design is expected, depending on different community design characteristics. Different optional facilities are also expected (on-street parking, sidewalks versus pathways, bicycle lanes or paths, extra parkway or median landscape treatment, etc.).

Figure C-1

CIRCULATION ELEMENT
JUNE 27, 1995
(GPA95-02(c)/LCPA95-08)

The seven categories of roadways located in Dana Point are described in greater detail in the following paragraphs:

Freeway: A six- to ten-lane divided arterial roadway with full access control and a typical right-of-way width in excess of 150 feet, designed and maintained by the State Department of Transportation.

Major Arterial: A six-lane divided roadway, with a typical right-of-way width of 120 feet and a curb-to-curb pavement width of around 100 feet.

Augmented Primary Arterial: A six-lane divided roadway, with a typical right-of-way width of 100 feet and a curb-to-curb pavement width of around 84 feet. This designation allows for a six-lane roadway within the geometrics of a four-lane primary roadway.

Primary Arterial: A four-lane divided roadway, with a typical right-of-way width of 100 feet and curb-to-curb pavement width of 84 feet.

Secondary Arterial: A four-lane undivided roadway, with a typical right-of-way width of 80 feet and a curb-to-curb pavement width of 64 feet.

Collector: A two-lane undivided roadway, with a typical right-of-way width of 64 feet and a curb-to-curb pavement width of around 40 feet. Its function is to distribute traffic between local streets, and major and primary arterials. Although some collectors serve as through routes, their primary function is to provide access to surrounding land uses.

Local: This category of roadway is designed to provide access to individual parcels in the City. Local streets consist of two lanes with a typical right-of-way width of 60 feet and a pavement width of 36 feet.

As a roadway facility is downgraded, the non curb-to-curb width increases to allow for landscaping and other amenities.

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.

Performance criteria have a policy component which establishes a desired level of service (LOS) and a technical component which specifies how traffic forecast data can be used to measure the achievement of the criteria. The most commonly used standard in urban areas is LOS "D", and there are also cases where both LOS "C" and LOS "D" are used, the former for average daily traffic table (ADT) link volumes and the latter for peak hour intersection volumes.

The performance criteria used for evaluating volumes and capacities on the City street and highway system are summarized in Table C-3 (and Tables A and B). They include both ADT link volume and peak hour intersection volume criteria. The specified LOS thresholds recognize two different types of roadway:

- State highways and major arterials, which carry a significant proportion of non-City traffic.
- Primary, secondary and local arterials, which largely serve City traffic.

For the first category, LOS "D" is the lowest acceptable level of service, and for the second category, LOS "C" is the threshold level of service. Table C-4 describes traffic flow quality for different levels of service. Such criteria would be applied consistently for evaluating land use and circulation system changes and are the basis for the General Plan circulation recommendations contained in this report. The only departure from these requirements would be for Congestion Management Plan submittals which, under County guidelines, have level of service "E" as the lowest acceptable level of service.

GENERAL PLAN CIRCULATION SYSTEM

The goals and policies included in this Element emphasize the importance of developing a circulation system that is capable of serving both existing and future residents while preserving community values and character.

Arterial streets included in the planned street system, shown in Figure C-2, are classified according to their facility-type designation and sized to provide sufficient capacity for projected traffic

**TABLE C-3
CITY OF DANA POINT
CIRCULATION SYSTEM PERFORMANCE CRITERIA**

The following are the performance criteria used for comparing volumes and capacities on the City street and highway system:

I. AVERAGE DAILY TRAFFIC (ADT) LINK VOLUMES

Level of Service C - Primary arterials, secondary arterials and local streets.

Level of Service D - Major arterials and State highways.

Table A below shows ADT volumes corresponding to these levels of service.

II. PEAK HOUR INTERSECTION VOLUMES

Level of Service C - Primary arterials, secondary arterials and local streets.

Level of Service D - Major arterials and State highways.

Level of Service E - Congestion Management Plan (CMP) evaluations (CMP designated roadways only).

Table B below shows how these levels of service are specified.

**TABLE A
ADT LEVEL OF SERVICE VOLUMES BY FACILITY TYPES**

FACILITY TYPE	MAXIMUM VOLUME	
	LOS C	LOS D
Freeway (per lane)	16,500	18,500
Major (6 lanes divided)	45,000	50,600
Primary (4 lanes divided)	30,000	33,800
Secondary (4 lanes undivided)	20,000	22,500
Collector (2 lanes)	10,000	11,000

**TABLE B
PEAK HOUR LEVEL OF SERVICE**

Peak hour intersection Level of Service (LOS) to be based on Intersection Capacity Utilization (ICU) values calculated as follows:

(VPH)	Saturation flow rate	1700 Vehicles Per Hour
	Clearance interval	.05 ICU

Levels of Service are as follows:

<u>VALUE</u>	<u>LEVEL OF SERVICE</u>	<u>MAXIMUM ICU</u>
	LOS A	.60
	LOS B	.70
	LOS C	.80
	LOS D	.90
	LOS E	1.00

**TABLE C-4
PEAK HOUR LEVEL OF SERVICE DESCRIPTIONS**

LEVEL OF SERVICE	TRAFFIC FLOW QUALITY	ICU VALUE
A	Low volumes; high speeds; speed not restricted by other vehicles; all signal cycles clear with no vehicles waiting through more than one signal cycle.	0.00 - 0.60
B	Operating speeds beginning to be affected by other traffic; between one and 10 percent of the signal cycles have one or more vehicles waiting through more than one signal cycle during peak traffic periods.	0.61 - 0.70
C	Operating speeds and maneuverability closely controlled by other traffic; between 11 and 30 percent of the signal cycles have one or more vehicles waiting through more than one signal cycle during peak traffic periods; recommended ideal design standards.	0.71 - 0.80
D	Tolerable operating speeds; 31 to 70 percent of the signal cycle have one or more vehicles waiting through more than one signal cycle during peak traffic periods; often used as design standard in urban areas.	0.81 - 0.90
E	Capacity; the maximum traffic volume an intersection can accommodate; restricted speeds; 71 to 100 percent of the signal cycles have one or more vehicles waiting through more than one signal cycle during peak traffic periods.	0.91 - 1.00
F	Long queues of traffic; unstable flow; stoppages of long duration; traffic volume and traffic speed can drop to zero; traffic volume will be less than the volume occurring at Level of Service "E".	Above 1.00

Figure C-2

CIRCULATION ELEMENT
JUNE 27, 1995
(GPA95-02(e)/LCPA95-08)

volumes. The map indicates all of the designated major arterials, primary arterials, secondary arterials and collector streets. Because the San Diego Freeway and State Route 1 both traverse the City, freeway facilities are also indicated.

Intersections which are projected to require more lanes than the typical arterial cross-section are indicated as "critical intersections". Provisions of additional lanes may require additional right-of-way beyond the standard provided within the typical arterial cross-sections. Alternatively, these additional lanes could be accommodated by removing on-street bike lanes or reducing parkway width. Critical intersections typically require 10-15 feet of right-of-way in addition to that shown for the typical arterial cross-sections.

The roadway network described in Figure C-2 focuses on a number of major improvements with regard to the roadway system in the City. All roadway improvements are included in the County of Orange Master Plan of Arterial Highways (MPAH) with the exception of those to Camino Capistrano and Doheny Park Road. Both are designated as primary facilities on the MPAH and are forecast to carry traffic volumes significantly in excess of their intended capacities. Both facilities will be upgraded to "augmented primary" designations on the City's Circulation Element (or "modified majors", as denoted in the MPAH.

Critical intersections will be the subject of detailed engineering studies to identify the most effective type of improvements. The "City of Dana Point, General Plan Traffic Study" provides preliminary guidelines for the type of lane configurations appropriate at each location. (The intersections of the I-5 southbound ramps at Camino de Estrella and Camino Capistrano at Stonehill are not located entirely within the City boundaries.)

PUBLIC TRANSPORTATION PLAN

The plan for public transportation services is shown in Figure C-3. As indicated in the public transportation policies, the City should continue to coordinate with the Orange County Transit District (OCTD) to identify transit needs and improve service to meet these needs. The plan shown here will then be expanded as such service improvements are implemented.

Figure C-3

CIRCULATION ELEMENT
JUNE 27, 1995
(GPA95-02(e)/LCPA95-08)

Potential transit routes are reviewed each year for ridership demand and operational feasibility if implemented. Average daily ridership levels, indicating the number of pedestrians traveling to or from Dana Point on buses, are approximately 400 persons for line 1, 510 persons for line 85, 380 persons for line 91, and approximately 10 persons for line 385.

BIKEWAY PLAN

The Capistrano Bay Parks and Recreation District operates a coordinated system of bike trails and Figure C-4 shows the planned system. At completion, bike lanes will be included on most of the City's arterial streets and the following outlines the three categories of bikeways:

- **Class I:** A paved path that is separate from any motor vehicle travel lane;
- **Class II:** A restricted lane within the right-of-way of a paved roadway for the exclusive or semi-exclusive use of bicycles; and
- **Class III:** A bikeway that shares the street with motor vehicles or the sidewalk with pedestrians.

The longest Class I bike trails each run for slightly over one mile and are located along San Juan Creek and Niguel Road. Overall, existing Class I bike trails in Dana Point total about 10.5 miles in each direction. The longest Class II bike trails run along Pacific Coast Highway and Del Obispo Street and are each almost three miles long.

The biking network in Dana Point connects with other trails and paths in adjacent communities and throughout Orange County. Several new bike trails have been proposed, including a Class I bikeway through the open space between Street of the Golden Lantern and Sea Bright Drive north of Stonehill Drive and a Class III trail through Doheny State Beach Park.

EQUESTRIAN TRAILS

One equestrian trail is located within Dana Point. It follows San Juan Creek for about one mile and continues into San

Figure C-4

CIRCULATION ELEMENT
JUNE 27, 1995
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Juan Capistrano and also connects to the Salt Creek Trail in Laguna Niguel. The trail is depicted in Figure C-5.

SCENIC HIGHWAYS

The scenic highway plan is shown in Figure C-6. Pacific Coast Highway is currently designated as a "type three" urbanscape corridor. This type of corridor is defined as:

"...one that traverses an urban area with a defined visual corridor which offers a view of attractive and existing urban scenes, and which has recreational value for its visual relief as a result of nature or the designed efforts of man."

The remaining routes are considered to be potential scenic corridors. As such, these routes would be required to conform with the Design Elements and modified to "the Urban Design Element Appendix A. Dana Point Landscape Corridors."

RAIL

Passenger rail service is provided from two Amtrak depots in neighboring cities (San Juan Capistrano to the north and San Clemente to the south). Neither location is a major hub; both provide only platforms for selected arrivals and departures during the day. An analysis of the regional rail system between Los Angeles and San Diego (LOSSAN) is being undertaken by Caltrans, and stops in Dana Point are not currently proposed because of the close proximity to the two depots mentioned above.

NAVIGABLE WATERWAYS, PORTS AND HARBORS

The Dana Point Harbor area consists of approximately 278 acres, 159 of which are under water. Approximately 2,500 boat slips are currently provided in the marina and are not expected to increase. While the Harbor experiences a high level of activity, its utilization is considered to be within the available capacity.

Figure C-5

CIRCULATION ELEMENT
JUNE 27, 1995
(GPA95-02(c)/LCPA95-08)

Figure C-6

CIRCULATION ELEMENT
JUNE 27, 1995
(GPA95-02(e)/LCPA95-08)

Development alternatives for the Harbor area have been proposed, including provisions for sport and commercial fishing and charter operations, although specific plans have not yet been approved. None is expected to adversely impact the waterway traffic conditions in the Harbor.