

TRAILS NETWORK PLAN

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Environmental Services Department

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## TRAILS NETWORK PLAN

### INTRODUCTION

#### TRAILS NETWORK - A BACKGROUND

As an integral part of the circulation system in the City of Rancho Palos Verdes; pedestrian, bicycle, and equestrian trails make up the classification referred to in this study as the "Trails Network".

Circulation networks play very important roles in contributing to the successful interaction of residential, institutional, commercial, and recreational districts within the City.

As directed by the City Council, the Environmental Services Department has assumed the responsibility of developing a comprehensive Trails Network Plan. It is understood that other City departments and committees also have a role in the successful implementation and maintenance of such a network. By emphasizing the necessity of coordinating responsibilities, a detailed trail plan program may be achieved and implemented.

This plan utilizes policies previously established in the City's General Plan and Local Coastal Plan documents. The major themes identified by these documents consist of a trails network that functions as a transportation system, linear recreation facility, and linkage between recreational, commercial, and educational activity areas. In order to provide a comprehensive network, both City and Peninsula wide characteristics have been considered.

Given the regional character of the Peninsula, physical and sometimes jurisdictional constraints contribute to the difficulty of joining the City's districts. This difficulty enforces the need for a comprehensive look at circulation networks both inside and outside the City of Rancho Palos Verdes. The coordination and cooperation of the Peninsula cities and the County of Los Angeles are essential and encouraged in the attainment of a viable trail network.

An analysis of recent trends indicates a projected increased demand for recreation and transportation networks of the variety mentioned above. This trend is influenced by factors such as an increased awareness focused on physical fitness, increased environmental concerns, and an increased need to conserve energy due to the limited amount of available natural resources. Energy conscious modes of transportation such as walking, biking, and horseback riding and carriage riding are becoming increasingly popular.

## HISTORY

Although an interest in recreational and transportation trails has existed in Rancho Palos Verdes for many years, there has been limited planned development of trails to date.

A Bikeways Plan was adopted by the City Council on March 4, 1974. This document set down some basic goals for a bicycle trails network. Implementation of this plan has been minimal.

On June 26, 1975, Rancho Palos Verdes adopted its General Plan which includes general criteria and conceptual alignments for pedestrian, bicycle, and equestrian trails. Again, resulting action and implementation was minimal.

Several incremental and isolated trail studies have been undertaken since the General Plan document was completed. These studies have focused on specific areas and problems, lacking the coordination and comprehensive nature this type of network study demands.

In December, 1978, Rancho Palos Verdes adopted a Coastal Specific Plan which includes corridor design requirements, primary and secondary corridor designations, and city policies relating to bicycle and pedestrian networks.

A Trail Standards Study was completed by the Environmental Services Department and adopted by the City Council on June 15, 1982. This study was intended to serve as a framework for continued planning by providing a graphic representation of design and construction standards for trails.

This report represents the next step in the trail planning process.

## PURPOSE

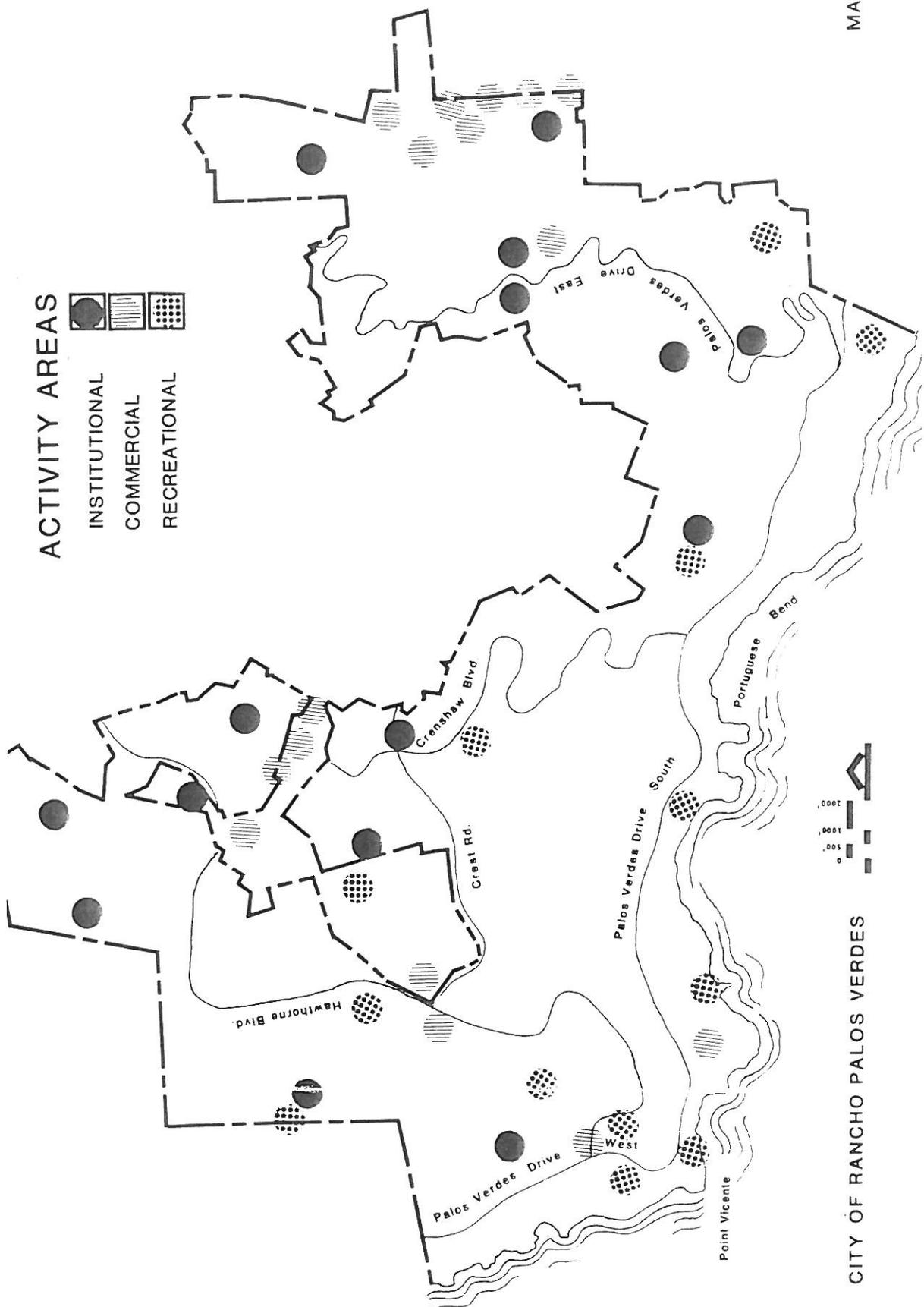
The purpose of this study is to provide a specific Trails Network Plan for the City of Rancho Palos Verdes. Trails addressed in this report will include pedestrian, bicycle, and equestrian types.

The Trails Network Plan is intended to serve as an advisory tool for City decision-makers. It is also intended to serve as a guide for implementing and funding city and regional trails. This plan should serve as a device to achieve a consistent course of action in developing an integrated network of trails to support the transportation, recreation, and other needs of the general public.

# ACTIVITY AREAS



- INSTITUTIONAL
- COMMERCIAL
- RECREATIONAL



CITY OF RANCHO PALOS VERDES

MAP 1

Set aside easements and/or right-of-ways wherever possible for the use of pedestrians, bicyclists, and equestrians.

Make use, where appropriate, of existing right-of-ways and easements.

Goal III Connect residential districts, schools, parks, neighborhood centers, regional open space, transportation systems and educational facilities with a Trails Network...(See Map 1)

Policies Assess new development for trail improvements whenever possible and appropriate.

Consider alternate forms of acquiring trail easements other than simple purchase by the City.

Seek County, State, Federal and private assistance when available to help finance and maintain developed paths and trails.

Establish maintenance programs utilizing volunteer help from service organizations, (e.g., Scouts, riding clubs, nature groups).

Goal IV Promote safety during trail use.

Policies Develop educational programs to promote the safe, legal, and constructive use of designated trails.

Encourage the widespread dissemination of trail safety information, literature, and materials to the public.

Maintain trails to the degree necessary to ensure the safety of users.

Buffer alternate trail types from auto transportation whenever feasible.

Establish strict protective measures at all points of coastal access in order to minimize hazards to the public.

Require, wherever practical, all path and trail networks to be in separate right-of-ways.

Goal V Minimize environmental impacts of trail development, especially in environmentally sensitive areas.

- Policies Identify and preserve existing trails in the coastal region in their natural state and post appropriate warning signs where necessary.
- Use appropriate trail engineering techniques to avoid soil erosion, excessive compaction, and degradation.
- Protect rare or endangered wildlife and vegetation habitats through avoidance.
- Goal VI Enhance the Public's enjoyment of the environment by providing networks for alternate modes of transportation, especially in the open space areas of the City.
- Policies Increase environmental awareness of the public through trail use in otherwise inaccessible areas of the City e.g., hillsides, coastal bluffs
- Goal VII Promote and provide for a regional Trail network.
- Policies Work closely with surrounding cities to ensure that trail networks outside the City of Rancho Palos Verdes are connected whenever possible
- Encourage coordinated citizen participation among regional trail groups when considering future trail development

#### PRIORITIES/DEMANDS

The benefits associated with the establishment of a trail network throughout the city are many. Besides the healthy affects of hiking and riding, the trails also play an important role in the development of a balanced circulation system. Additionally, both local and regional recreation demands are met through the trails network system. Because of the high quality recreational and environmental amenities found on the Peninsula, this plan will consider both local and regional demands, and help to preserve the unique character of the Peninsula.

Demand for trail use may be divided into two main categories; recreational and transportation. Demand within both categories is currently high and will increase in the future judging from past and present expressed interest in the network plan by various groups. Economic indicators such as the increased sales of bicycles, tennis shoes, horses, equestrian equipment sportswear, etc., indirectly reflect these increased demands. The energy conscious person has recognized the great savings that walking or riding a bicycle or horse can mean.

If fuel prices rise in the future, an increase in demand for these alternative modes of transportation can be expected to increase proportionally.

Recognizing the obvious benefits related to trail usage, it becomes necessary to establish a priority of trail development due to given municipal budget constraints. Priority rating for trails considers factors such as demand for trail use, associated costs of trail developments, realized benefits, potential for linking into the existing network, erosion and environmental impacts, aesthetics, and support facilities required. A priority of trail development will be discussed in more detail later on in this study.

To ensure the successful implementation of the Trails Network Plan, certain obstacles must be recognized and dealt with. The following section focuses upon possible obstacles associated with the planning, design, and implementation of this plan in the City of Rancho Palos Verdes.

#### OBSTACLES

The following information represents a synthesis of reports and comments taken from various groups, agencies, and individuals pertaining to trail development and use in general. This list represents an attempt to identify the major obstacles inhibiting trail development. Once identified, these obstacles may be incorporated into the planning process to ensure successful plan implementation.

The following list of obstacles with respect to trail development will be discussed in this section:\*

- lack of political support
- trail opposition
- administrative obstacles
- coordination obstacles
- planning obstacles
- funding obstacles
- education/research deficiencies
- legislative/legal obstacles
- physical barriers

#### Lack of Political Support

The attitude of the general public towards trail issues has been traditionally apathetic, unless someone has a particular and immediate problem with a path or trail. The lack of organized and persistent interest in trail development does not generate a great amount of political support in most cases.

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\*U.S. Department of Interior, Heritage Conservation and Recreation Service: Information condensed from workshops conducted nationwide in 1981.

Political support for trail development may be eroded by such factors as unrealistic goals and objectives on the part of the trail advocates, unrealistic development cost estimates, a failure to focus on critical trail needs, or an unwillingness to compromise. A lack of organized trail group cooperation has deterred trail development. Trail groups tend to concentrate on isolated problems rather than long term planning. Also, users of various trail types have not effectively united to lend support for each other's trail proposals. In summary, a minimal coordinated trail group effort equals minimal political support.

### Trail Opposition

Opposition to trail development is frequently centered around objections by landowners whose land would be crossed or by landowners adjacent to a proposed trail route. Landowners are often concerned with the thought of "outsiders" passing through their neighborhood and the possibility of increased crime, vandalism, liability and a loss in property values that they might face if inadequate enforcement/security is provided. These concerns may be largely based on misconceptions, but they can appear very real to the landowners unless a strong, well-documented argument to the contrary is presented.

Other reasons cited for opposition to trail development or trail use are: (1) the fear that it will disturb sensitive environments (some areas are closed to off-road vehicles or large groups of trail users for this reason, and the fear of damage is enhanced by a record of poor regulation enforcement on trails) and, (2) the negative image of some trail user groups (most notable off-road vehicle users, but other trail groups such as bicyclists and equestrians sometimes suffer from an image problem as well).

### Administrative Obstacles

Governmental processes involved in trail development often require extended periods of time to complete. Money and manpower for trail projects must be programmed well in advance as part of the normal city budget in order to have funds available when quick action becomes necessary. Many trail opportunities open up quickly with new development and the administration should be prepared both with a plan and funds to secure potential trails. Often, however, extended time periods for obtaining results are necessary and a critical loss in momentum for trail projects occurs.

### Coordination Obstacles

The task of coordinating all interested trail parties in the planning and development process is a formidable one. Landowners affected by trail projects, developers, various

trail groups, and individual trail users are all parties who should be aware of and participate in trail planning.

There is also a problem of regional trail coordination among bordering jurisdiction. Trails crossing city boundaries often require special attention. Even coordination among departments inside the same municipality is difficult to achieve.

Side effects of this lack of coordination include single purpose or incremental planning, lack of uniformity in trail standards and alignment, lack of accurate information and duplication of effort.

#### Planning Obstacles

In the past, trail plans have been either non-existent or too vague as to be of any help in development of a comprehensive path and trail network. Vague plans are easily changed or ignored.

A second problem arises when a trail route is identified on a city map. An incorrect assumption is often made that this identification/designation protects a trail route indefinitely into the future and measures are not taken to assure permanent public use.

Acquiring linear corridors of land such as are needed by trails often requires dealing with several landowners. This is a complex, difficult, and time consuming job, and carries with it a need for a strong planning commitment.

#### Funding Obstacles

In general there exists a lack of funding for trail acquisition, development, planning, operation and maintenance, regulation enforcement, programming and curriculum development, and information dissemination. Funds that are available from outside the city often require a match of local funds which may not be available. City budgets are generally tight, and even time spent looking for grant money is often deemed too expensive or extravagant to pursue.

#### Education/Research Deficiencies

The dissemination of information on the location of trail opportunities, trail design, trail funding, etc., is limited, and there is no central source of information.

Compounding the information distribution problem is the inclination of some trail users not to advertise trail opportunities so that they remain uncrowded.

Other educational problems are the failure to adequately

educate trail users on trail safety, first aid, and the proper use of trails; failure to provide interpretive programs; and failure to educate non-users on the needs of trail users and the values of trail use.

With experience we will be able to gain additional practical data documenting the actual effects of trail use on adjacent landowners. We also need to better disseminate the research which has already been done.

Research is needed on trail design/maintenance aimed at reducing erosion/slide problems caused by trails. Other research needed is to discover whether it is possible to design a trail which is accessible to those in wheelchairs but is not also accessible for motorcycling, bicycling, roller skating, and skateboarding when these activities are not desired.

#### Legislative/Legal Obstacles

Existing trails often lack legal right-of-ways dedicated to public use, resulting in closure of these trails when a landowner desires.

There is a great deal of expense, time, and risk required for citizen groups to pursue litigation to keep trails open.

The fear of liability for injuries incurred on trails causes a reluctance on the part of private and public interests to open their lands for trail use.

#### Physical Barriers

Various physical barriers to trail development and use exist. These include: the fragility of certain environments, dense vegetation, fences and walls, extreme topography, roads, and new development.

Existing trails are severed by many kinds of projects such as new roads and developments. An increasing amount of automobile traffic and/or fencing on existing roads is causing trail crossing problems. Road-widening projects are eliminating parallel trail opportunities. Sometimes the only possible access to an existing trail is across private property.

In these cases, the landowner may prohibit access or may put up a gate and give keys to only certain select individuals. Existing trails are often blocked when a landowner who has allowed access subdivides his property and sells to someone who blocks access.

## TRAIL STANDARDS: GENERAL

During the trail design phase of the planning process, certain general criteria are carefully considered. Priority factors which should be integrated into this development strategy include:

- (1) safety, especially with regard to minimizing the conflicts between various modes of transportation such as pedestrians and equestrians or autos.
- (2) convenience; alignment of trails so as to enhance direct routes and access between major nodes of the city.
- (3) comfort; allow a comfortable and relaxing trail experience to be enjoyed by users.
- (4) aesthetics; trails should be constructed of quality materials and integrated into the surrounding environment with an effort to maintain or enhance the existing beauty of an area.
- (5) minimum maintenance; use of materials and design standards which will create a low maintenance trail network.
- (6) minimum environmental impacts; align and develop trails in a manner which will minimize the environmental impacts usually associated with development, especially in non-urban areas.

General criteria also exist for construction materials. When evaluating and selecting construction materials for trail networks within the City, the following factors should be considered:

- availability
- cost
- safety
- maintenance

Locally available construction materials should be chosen whenever possible. Factors to consider which will effect cost are production, transportation, and installation. Material choice should reflect safety concerns, avoiding smooth finishes, assuring good traction for pedestrians, bicycles, and horses. Materials which require high levels of maintenance should be avoided in order to reduce the unnecessary expense of future repair costs.

The final trail design and construction should reflect the considerations of function and aesthetic quality in equal proportions if possible.

In addition to keeping these general criteria in mind while developing a trails network, it becomes necessary to consider more specific standards which pertain to each particular trail type.

## PEDESTRIAN TRAILS

### SPECIFIC STANDARDS

There are different types of pedestrian trails, including pedestrian/bicycle, pedestrian/equestrian, and pedestrian separated. Whichever trail type is used, safety of the users should be kept as a top priority consideration.

A 15'-20' easement width for pedestrian trails is appropriate in order to provide a buffer zone from alternate modes of transportation. A tread of 2'-4' will allow adequate space for individuals or groups to maneuver. Grade should average 5%, with a maximum grade of 15% allowable for short distances. A clearing of vegetation and other obstructions to the height of 8' is adequate. (see diagram)

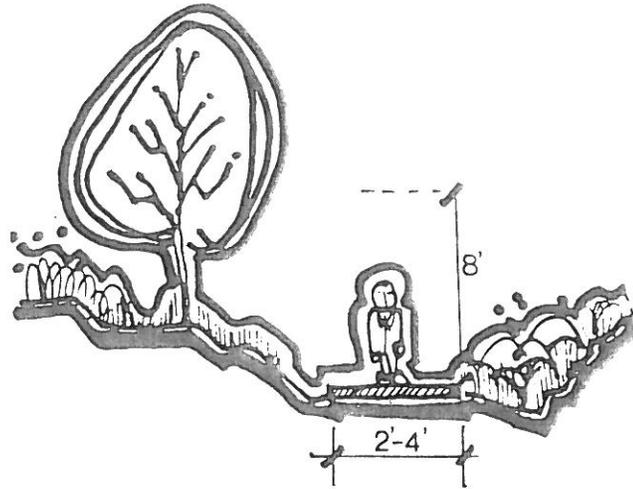
For pedestrian/bicycle combined trails, a 4' minimum pedestrian tread, with a 3' minimum buffer zone between trail types is appropriate. Division between trail types may be defined by a change in construction materials, a physical barrier (i.e. shrubs, walk, etc.), or a painted line. (see diagram)

The mixing of pedestrians and equestrians is not a designated trail type, and specific standards have not been developed regarding this trail type. However, combining pedestrian and equestrian trails has been found to be generally compatible in some areas. Potential conflicts which must be overcome regarding this particular trail mix include:

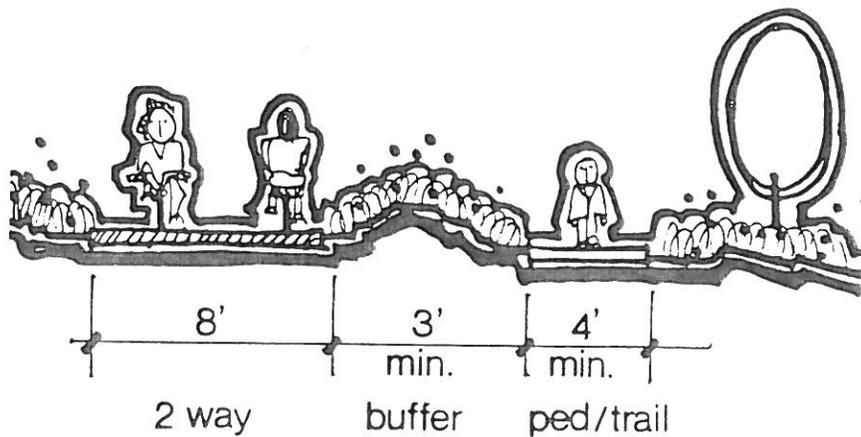
- (1) where trail visibility is obscured, a hazardous element may be created when pedestrians and riders meet.
- (2) during extended wet periods, "bogging" can occur because of heavy horse traffic, making hiking very difficult.
- (3) horses create dust, and their excrement tends to be a nuisance to those on foot.
- (4) Pedestrians require gentle grades, whereas equestrians can handle steeper grades.
- (5) Equestrian trail use requires more clearing of vegetation, especially in height. This may detract from the aesthetic qualities of the trail for the hiker.

## PEDESTRIAN TRAIL

WIDTH	
EASEMENT	15'-20'
TREAD	2'-4'
GRADE	
AVERAGE	5%
MAXIMUM	15%

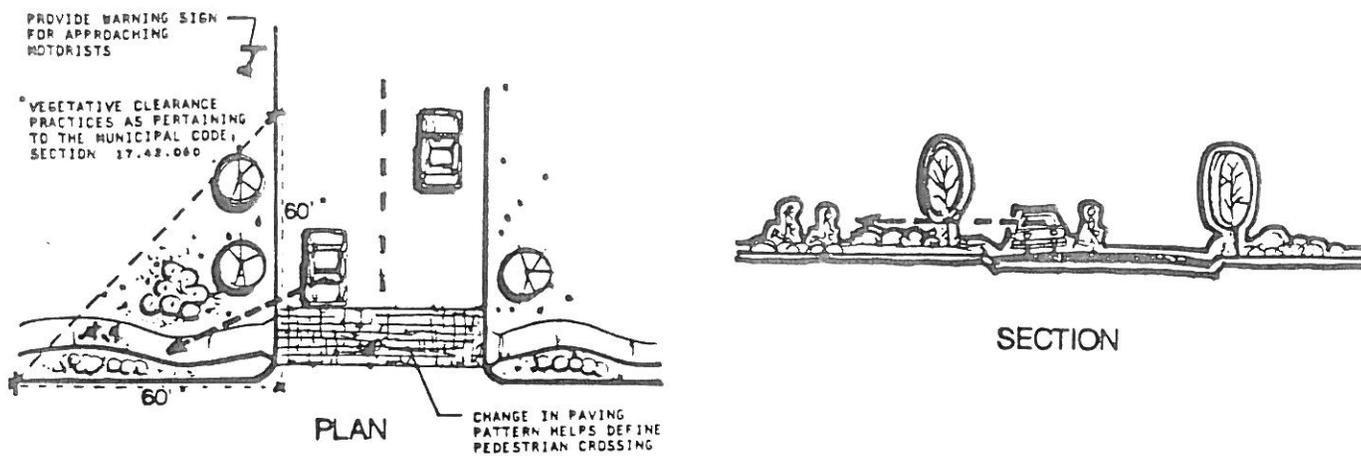


## PEDESTRIAN/BIKEWAY

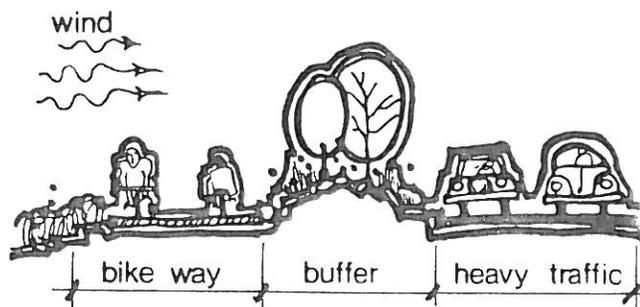


Source: Trail Standards Study, Rancho Palos Verdes, 1982

## INTERSECTION VISIBILITY



## PEDESTRIAN/BIKEWAY LAYOUT



MINIMIZE EXPOSURE TO EXHAUST FUMES

Source: Trail Standards Study, Rancho Palos Verdes, 1982

- (6) Loop trails for horses and loop trails for hikers differ rather dramatically in length.

All pedestrian trails should be screened from auto traffic as much as possible in order to minimize fume and exhaust intake by pedestrians. (see diagram)

Intersection visibility should be considered carefully in accordance with Section 17.42.060 of the Municipal Code.\*

Concerning construction material suitability for pedestrian trails, there are several options available depending upon trail location. Urban trails should avoid the use of loose materials. Many urban pedestrian trails parallel streets in the form of concrete sidewalks. Asphalt is also an appropriate construction material to use. The use of loose materials (organic products) such as pine bark, wood chips, etc., should be located primarily in non-urban, low activity areas.

#### CONCEPTUAL TRAILS NETWORK

The two major types of pedestrian trails considered in this plan fall into the classification of either urban or non-urban. Urban trails are primarily located on existing or proposed sidewalks which act as primary transportation linkages. Non-urban trails are normally dirt paths which provide an important link to the more rural and natural regions of the Peninsula.

These trails are intended to meet users demand for both recreation and transportation purposes. The conceptual trail plan consists of major loops, associated radial connecting branches, and a series of non-urban trails functioning as scenic and recreational by-passes.

#### TRAILS NETWORK

Due to the nature of walking, pedestrians generally have freedom to access more places than cars, bicycles, or horses. Many formal and informal trails and paths exist throughout the City, both on public and private property.

Many streets throughout the City have sidewalks established for pedestrian use. Even where cement or asphalt sidewalks do not exist, there are often dirt paths along the street right of way. In the non-urban areas of the City, (i.e. coastal bluffs, Portuguese Bend area, etc.) pedestrian trails have been aligned through "unplanned" use. Some of these trail locations are appropriate as existing, others may need to be realigned due to conflicts with private property owners or related trespassing problems.

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\* See Appendix

To insure the lasting existence of the trails network, it is the ultimate intention of the City to provide a system of paths and trails protected by dedicated easements. This will help ensure against problems of future development or private property owners closing sections of the trails network off at some future date.

#### EASEMENT INVENTORY

The following table contains a list of existing pedestrian dedicated easements in the City, not including the normal right of way access found along most streets. Trail locations are designated by number on Map 2.

EXISTING EASEMENTS: PEDESTRIAN (\* Recorded/Dedicated Easements)

KEY NO.	TRACT/ PARCEL	RECORDED TYPE	LOT/PARCEL NO. (s)	LOCATION
#1	TR 31714	Pedestrian/ Equestrian	19 South-32	Crenshaw Blvd. to City easterly boundary with R.H.
	TR 31714	Pedestrian/ Equestrian	19 North	Valley View Road to R. H. boundary
	TR 24817	Pedestrian/ Equestrian	20-41	From the east end of Valley View Road to and along City boundary of R.H. & R.P.V.
#2	TR. 38848	Pedestrian	Perimeter of Tract	Along Crest Rd. to Crenshaw Blvd. south on Crenshaw Blvd., west along southern edge of tract (Santa Catalina Dr.) forming a loop trail around the tract.
#3	TR. 31617	Pedestrian	Perimeter Tract	A loop trail surrounding Tract 31617 approximately parallel to Ocean Terrace Dr. on both sides.
#4	TR 37060	Pedestrian	30	Avenida Celestial to Hawthorne Blvd.
#5	TR 30119	Pedestrian	32	Rue de la Pierre to ...
	TR 33034	Pedestrian	11	. . . Calle de Suenos
#6	TR 32673	Pedestrian	31	Connector from Alta Vista to Hawthorne Blvd.
	TR 32673	Pedestrian	14-15	Alta Vista to golf course.
#7	TR 39672	Pedestrian	1-11	Southern perimeter of tract near ocean bluff south of Sea Cove Dr.
	TR 39672	Pedestrian	Vista Park	Loop through Vista Park off Sea Cove Dr.
#8	TR 33206	Pedestrian	Common Area	From Crest Road to and along Paseo de Castana.

PROPOSED EASEMENTS: PEDESTRIAN (\*Recorded/Dedicated Easements)

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TRACT/ PARCEL	LOT/PARCEL NO. (s)	LOCATION
29524	1	From Crest Road to City boundary of Palos Verdes Estates

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PRIORITY LINKAGES

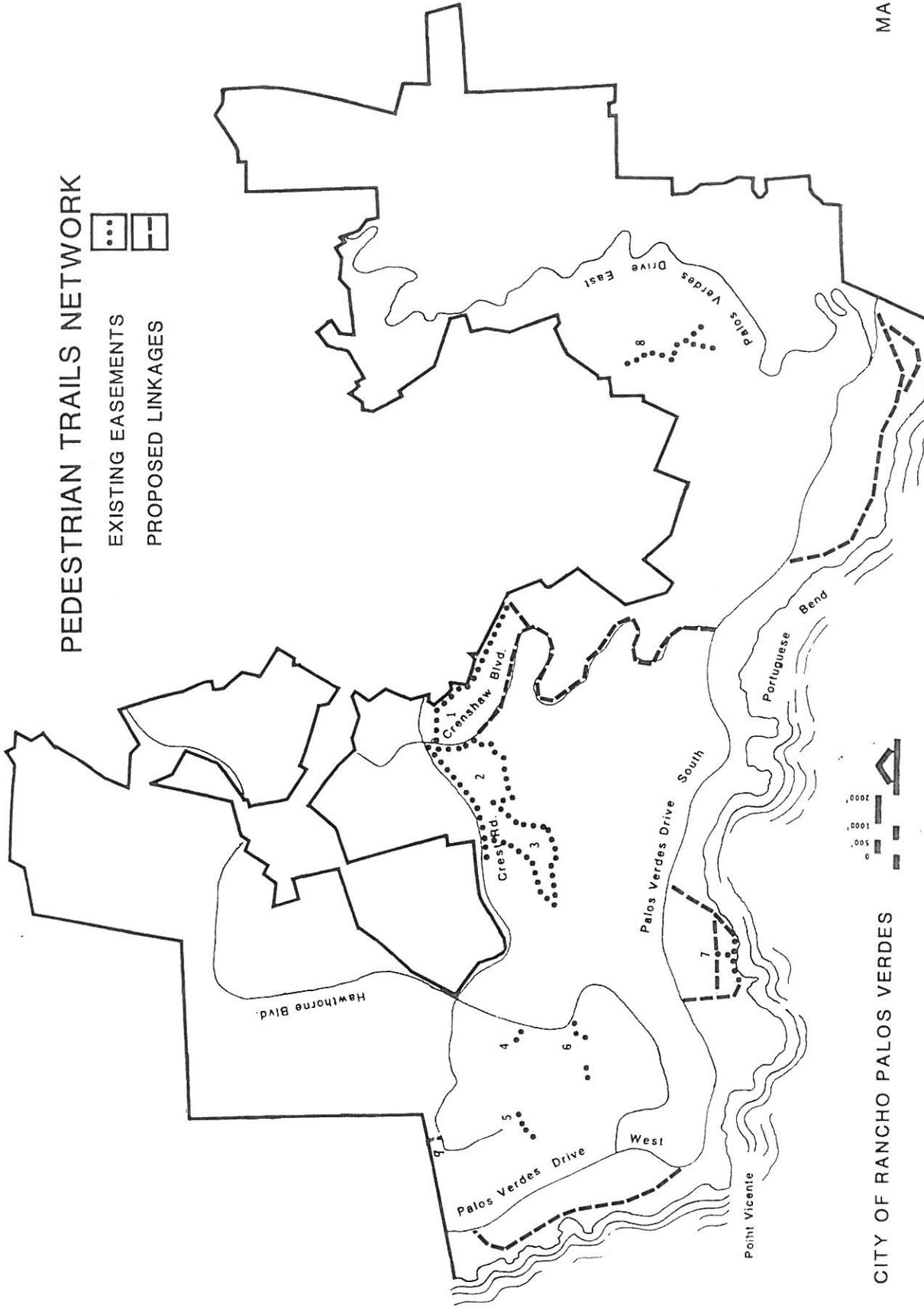
Top priority pedestrian trail areas include:

- o Coastal regions (especially along bluffs and beaches)
- o Vista points
- o School sites
- o Park sites

These areas are traditionally favored by pedestrians, and efforts to provide trails should be concentrated in these places. The following map is intended to depict possible future linkages in the network, as well as existing easements.

# PEDESTRIAN TRAILS NETWORK

- EXISTING EASEMENTS
- PROPOSED LINKAGES



CITY OF RANCHO PALOS VERDES

MAP 2

## BICYCLE TRAILS

### SPECIFIC STANDARDS

The term bikeway is used for all facilities that explicitly provide for bicycle travel. It, like the term bike route, is a generic term which connotes a bicycle course which is to be traveled. These facilities may be classified into the following three major categories:

#### Class I - Bike Trail

A bike trail is a special pathway designated for the exclusive use of bicycles. Crossflows by pedestrians and motorists are minimized. It is usually separated from motor vehicle facilities by a space or physical barrier. It is usually grade separated but it may have street crossings at designated traffic controlled locations. It is identified with guide signing and also may have pavement markings.

#### Class II - Bike Lane

A bike lane is a lane on the paved area of a road for preferential use by bicycles. It is usually located along the edge of the paved area outside the traveled lanes or between the parking lane and the first motor vehicle lane. It is identified by "Bike Lane" or "Bike Route" guide signing, special lane lines, bicycle symbols or "Bikes Only" stencils on the pavement and other pavement markings or signs deemed appropriate to give adequate instructions to the users of the facility. Bicycles usually have exclusive use of a bike lane for longitudinal travel, but must accommodate crossflows by motorists at driveways and intersections and also by pedestrians at various locations.

#### Class III - Shared Route

A shared route is a roadway identified as a bicycle facility by "Bike Route" guide signing only. There are no special lane markings and bicycle traffic shares the roadway with motor vehicles. Special regulations may be enacted and posted along such facilities to control motor vehicular speeds or restrict parking to enhance bicycling safety.

Bikeways should be implemented on the basis of three basic design principles.

1. Access - the bikeway must be located where bicyclists want to go, readily accessible, safe, and convenient for the user.
2. Protection - the bikeway should be located where it will afford the user the greatest degree of protection.

3. Continuity - the bikeway system should be continuous internally and provide access connections to bikeways in adjacent communities.

In general, a bicycle facility should be located to the right of an existing traveled way if it is located upon or adjacent to a roadway. Two-way facilities are possible on one side of a street, but the designer of such facilities must give close consideration to the problems of safe access to the facility. All bikeways should be clearly marked and delineated so that motorists, pedestrians, equestrians and bicyclists are alerted to the location reserved for this use. To delineate the lane or path effectively, the pavement markings, striping, and signing should be in conformance with the recommendations of the California Traffic Control Devices Committee so that statewide standardization may be achieved.

When designing and implementing a bicycle trail network, it is very important to keep in mind who will be using the trail. Bicyclists found on Peninsula trails include:

1. child bicyclists; primarily recreation oriented
2. casual bicyclists; using the bike for errands, enjoyment, and light exercise
3. commuter bicyclists; using the bike as a convenient and inexpensive mode of travel
4. avid bicyclists; interested in exercise, touring, and recreation

Depending upon the primary type of user, trails may vary in width, grade, and condition. This Trails Network Plan seeks to provide as wide a variety of trails as possible to meet these various needs.

The following specific policies are presented here to act as guidelines in the development of a bicycle trails network.

- ° Bikeway should serve as many primary destination points as possible (schools, parks, commercial). Secondary destinations consist of vistas and beach access points.
- ° Bikeway alignment should minimize right-of-way conflicts existing between pedestrian and cyclist, automobile and cyclist, and equestrian and cyclist.
- ° When located on the street, bikeways should flow with traffic and should be designated with painted indicators and/or signs.
- ° Parking should not be allowed on bikeways.

- For on-street bikeways, road width should be able to accommodate minimum width design criteria.
- Routes selected should be where on-street parking is minimal or prohibited.
- When feasible bikeway systems should be separated from conflicting locomotion modes.
- The Trails Network Plan should provide for the availability of support facilities (parking facilities, bike racks, restrooms, drinking water, etc.)
- Scenic and recreation routes should be sufficiently far enough away from bluff and canyon-hazard areas to minimize potential dangers.
- Where high speed/volume of traffic exists, physical barriers should be provided if feasible between vehicular and bicycle traffic.
- Steep grades should be avoided when possible.
- On-street bikeway should be established only where pavement can be brought to a reasonable standard.
- Scenic value should be considered when planning bikeways for recreational purposes.
- Selected routes should consider minimal conflict between vehicular and pedestrian modes.

The following bikeway surface tolerances are recommended for Class II and III bikeways developed on existing streets, to minimize the potential for causing bicyclists to lose control of their bicycle (Note: Stricter tolerances should be achieved on new bikeway construction.):

	<u>Grooves*</u>	<u>Steps**</u>
Parallel to travel	No more than 1/2" wide	No more than 3/8" high
Perpendicular to travel	- - - -	No more than 3/4" high

\* Groove - A narrow slot in the surface that could catch a bicycle wheel, such as a gap between two concrete slabs.

\*\* Step - A ridge in the pavement, such as that which might exist between the pavement and a concrete gutter or manhole cover; or that might exist between two pavement blankets when the top level does not extend to the edge of the roadway.

Special standards for warning signs and their placement demand more specific attention. Generally, bicycle trails should be designed for 20 mph speeds, which means that the warning signs should be 120 feet ahead of the hazard. On paved bicycle trails, warnings should be painted on the pavement, as well as signed. A 2 foot wide clear shoulder should be maintained along the edge of a bicycle trail; if structures protrude into this shoulder area, they should be made more visible to the cyclists by painting them white or yellow.

4" x 4" yellow metal reflectors are available in the sign shops for use on gates, bollards, and other obstructions to make them more visible. This is most important on or near vehicle access roads where night visibility is essential.

#### Sidewalk Bikeway Criteria

In general, the designated use of sidewalks (as a Class III bikeway) for bicycle travel is unsatisfactory, for the following reasons:

- ° Sidewalks tend to be used in both directions, despite any signing to the contrary. As such, bicycles coming from the right may go unnoticed by motorists crossing these facilities at intersections and driveways.
- ° At approaches to intersections, parked cars interfere with the visual relationships between motorists and bicyclists. At driveways, sight distances are often impaired by property fences and shrubs, etc.
- ° At intersections, motorists are not looking for bicyclists (which are traveling at higher speeds than pedestrians) entering the crosswalk area, particularly when motorists are making a turn.
- ° Sidewalks are typically designed for pedestrian speeds, and are not safe for high-speed use. Conflicts between bicyclists and pedestrians traveling at low speeds are common, as are conflicts with fixed objects (e.g. parking meters, utility poles, sign posts, bus benches, trees, hydrants, mail boxes, etc.). Also, bicyclists riding on the curb side of sidewalks may accidentally drop off the sidewalk into the path of motor vehicle traffic.

It is important to recognize that the development of extremely wide sidewalks does not necessarily add to the safety of sidewalk bicycle travel, as wide sidewalks will encourage higher speed bicycle use and can increase potential for conflicts with motor vehicles at intersections as well as with pedestrians and fixed objects.

Sidewalk bikeways should be considered only under special circumstances, such as:

- To provide bikeway continuity along high-speed or heavily traveled roadways having inadequate space for bicyclists, and uninterrupted by driveways and intersections for long distances.

Whenever sidewalk bikeways are established, a special effort should be made to remove obstacles that will be hazardous to bicycle travel. Whenever bicyclists are directed from bike lanes to sidewalks, curb cuts should be flush with the street to assure that bicyclists are not subjected to the hazards of a vertical lip crossed at a flat angle. Also, curb cuts at each intersection are necessary, as well as bikeway yield or stop signs at uncontrolled intersections. Curb cuts should be wide enough to accommodate adult tricycles and two-wheel bicycle trailers.

In residential areas, sidewalk riding by young children too inexperienced to ride in the street is common. With lower bicycle speeds and lower auto speeds, potential conflicts are somewhat lessened, but still exist. Nevertheless, this type of sidewalk bicycle use is accepted. But, it is inappropriate to sign these facilities as bikeways. Bicyclists should not be encouraged (through signing) to ride facilities that are not designed to accommodate bicycle travel.

The following standard measurements should be used as guidelines when developing bicycle trails. Suggested minimum easement widths for one and two-way traffic are 15' and 20' respectively. Minimum tread requirements are 3.5' and 10' respectively. Grade for either type of trail mentioned above should average 2% and should not exceed 10% (except for short distances). Please see the following diagrams with respect to these guidelines.

#### CONCEPTUAL TRAILS NETWORK

Bikeways in the City may be divided into loop, by-pass, and radial routes. The Peninsula bicycle loop should meet the demand for both recreation and transportation needs. This loop would incorporate segments of Palos Verdes Drive West, Palos Verdes Drive South/25th Street, Western Avenue, and Palos Verdes Drive North.

There is also the potential for a Hilltop loop with route alignment described below:

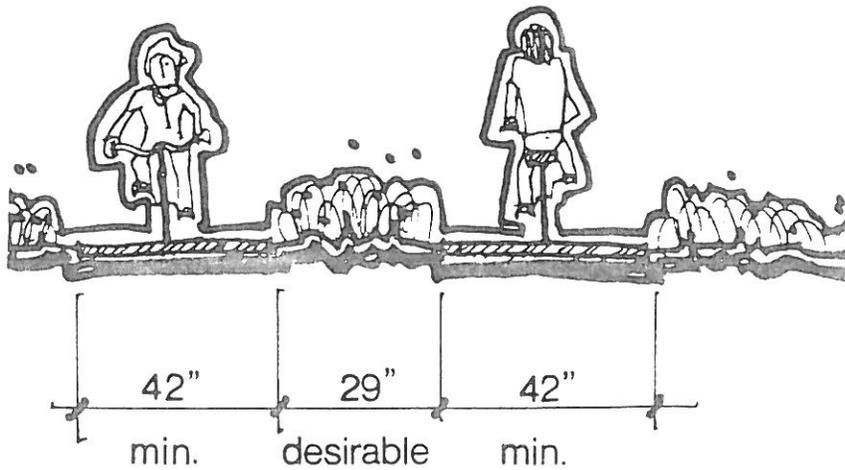
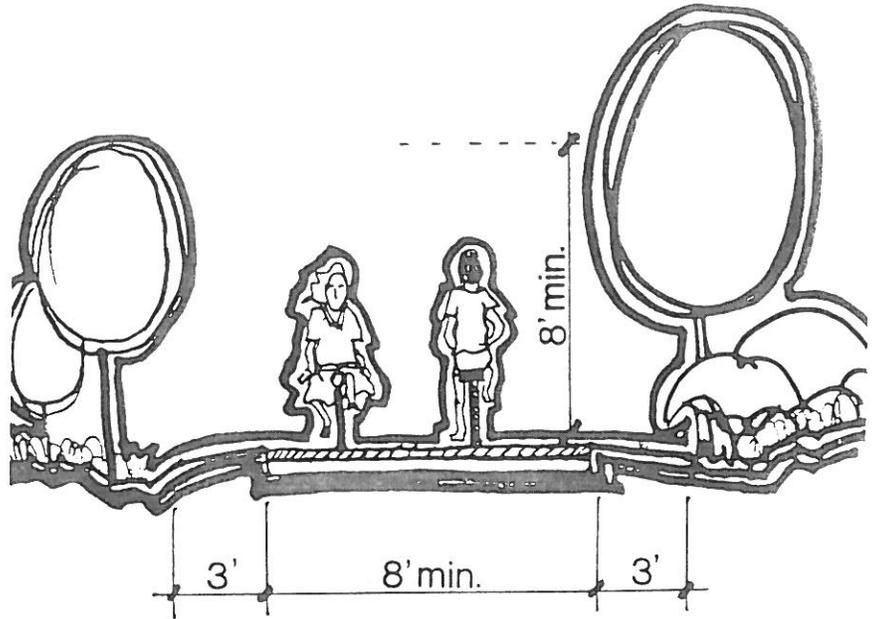
- from Indian Peak Road to Crest Road along Hawthorne Boulevard.

# BIKEWAY DESIGN

	1 way	2 way
WIDTH		
EASEMENT	15'	15'-20'
TREAD	3.5' <sup>Ⓜ</sup>	10'
GRADE		
AVERAGE	2%	2%
MAXIMUM	10%	10%

<sup>Ⓜ</sup> RECREATION ROUTES (BICYCLE TRAIL)

AS NARROW AS THREE FEET IN EACH DIRECTION OR EVEN LESS THAN THREE FEET FOR A SHORT DISTANCE (ASSUMING HANDLEBAR OVERHANG IS POSSIBLE)



Source: Trail Standards Study, Rancho Palos Verdes, 1982

- ° from Hawthorne Boulevard to Crenshaw Boulevard along Crest Road.
- ° from Crest Road to Indian Peak Road along Crenshaw Boulevard.
- ° from Crenshaw Boulevard to Hawthorne Boulevard along Indian Peak Road.

For on-street bikeways, road width should be able to accommodate minimum width design criteria. Routes selected should be where on-street parking is minimal or prohibited. When feasible bikeway systems should be separated from conflicting locomotion modes.

Associated with these loop routes are a series of proposed by-pass and radial routes which would act as links between the two major loops and provide access to various activity and vista areas on the Peninsula.

#### TRAILS NETWORK

Depending upon variables such as rider skills, traffic levels, and street conditions, bicyclists may share a portion of public right-of-ways adjacent to streets, or the streets themselves. Safety considerations should be the primary consideration in this decision. The fact that bicycles can effectively utilize streets in many cases largely increases the potential for a bicycle trail network. Wherever bicycle trails are proposed on streets, adequate signing and safety precautions must be taken. (see TRAILS NETWORK: SIGNS for details.)

#### EASEMENT INVENTORY

The following Table contains a list of existing easements and designated bicycle routes in the City. Trail locations are designated by number on Map 3.

EXISTING EASEMENTS: BIKEWAY (\* Recorded/Dedicated Easements)

KEY NO.	TRACT/ PARCEL	RECORDED TYPE	LOT/PARCEL NO. (s)	LOCATION
#1	TR 31617	Bicycle	North Boundary of Tract	From Highridge Road east along Crest Road
#2	TR 38848	Bicycle	North & East boundaries of Tract	Along Crest Road and south on Crenshaw Blvd.

DESIGNATED BICYCLE ROUTES: EXISTING

KEY NO.	TYPE	LOCATION
#2	Class I	Highridge Road to Crenshaw Boulevard along Crest Road.
#3	Class I	Pt. Vicente Lighthouse to Marineland along Palos Verdes Drive South.
#4	Class II	Palos Verdes Drive West to the City's northerly boundary with Rolling Hills Estates along Hawthorne Boulevard.
#5	Class I	Crenshaw Boulevard to City boundary of Rolling Hills Estates along Indian Peak Road.
#6	Class I	La Vista Verde to City boundary of Rolling Hills Estates along Palos Verdes Drive East.

PRIORITY LINKAGES

Top priority bicycle trail areas include:

- Coastal region
- Vista points
- School sites
- Park sites
- Interfaces with regional routes/networks

Concentrated effort should be made to provide bicycle access in these areas. Routes around schools should be aligned and signed for children riders particularly.

The following table and Map 3 describe priority linkages in the bicycle trail network.

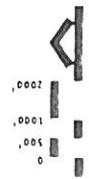
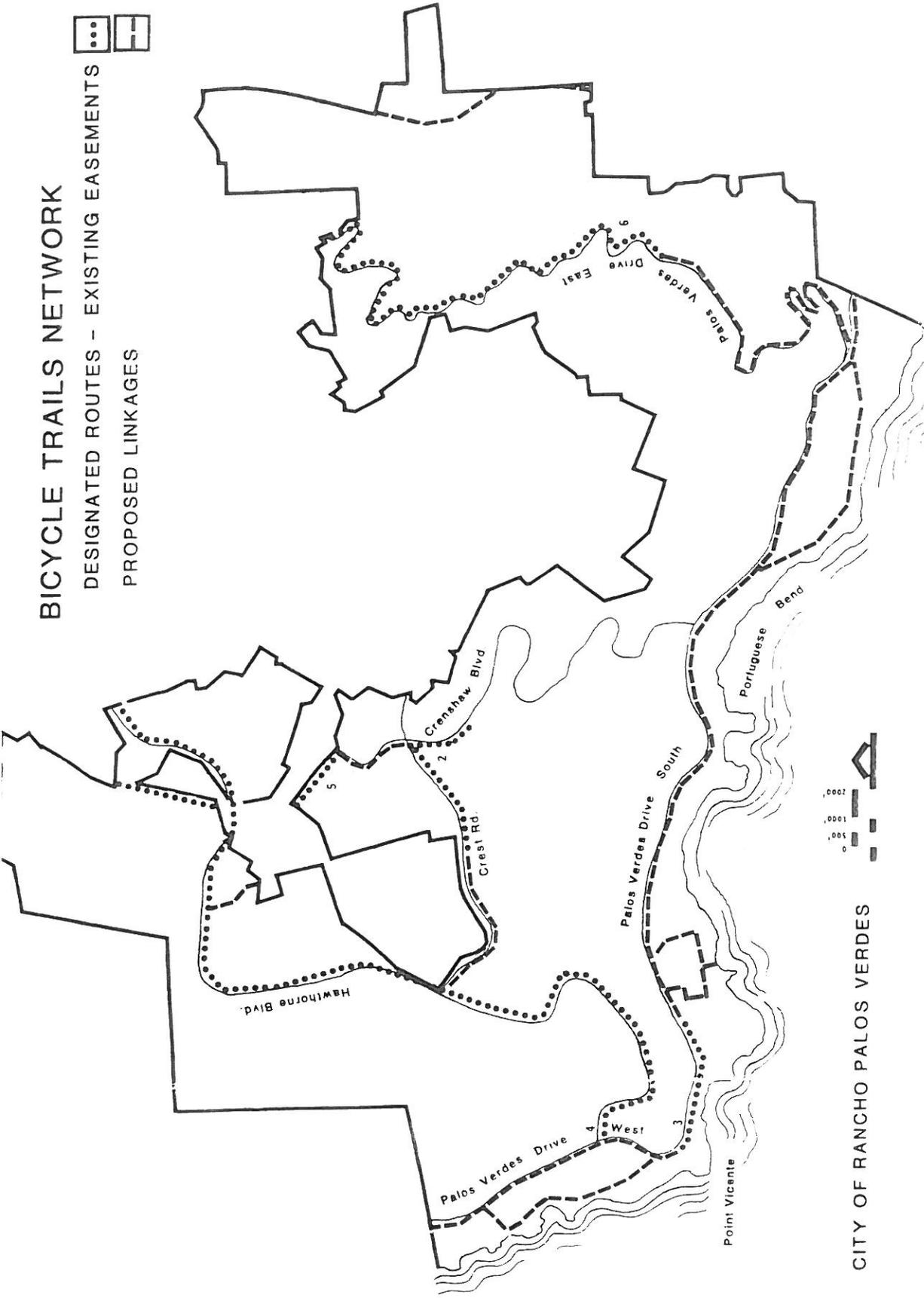
DESIGNATED BICYCLE ROUTES: PROPOSED

TYPE	LOCATION
Class II	Boundary of Palos Verdes Estates to Pt. Vicente Lighthouse along Palos Drive West/South.
Class I/II/III	From Marineland to San Pedro boundary line along Palos Verdes Drive South and 25th Street.
Class I	From Crest Road to end of Crenshaw Boulevard along Crenshaw Boulevard.
Class III	From Hawthorne Boulevard to Highridge Road along Crest Road.
Class III	From Crest Road to Indian Peak Road along Crenshaw Boulevard.
Class III	From Hawthorne Boulevard to City boundary of Rolling Hills Estates along Highridge Road.
Class I	From the south end of La Rotonda Dr. to Palos Verdes Drive South along coastal bluff.
Class II	From Palos Verdes Drive South to La Vista Verde along Palos Verdes Drive East.
Class I	Radial loop off Palos Verdes Drive South near Seawolf Drive (coastal bluff).
Class I	Radial loop off Palos Verdes Drive West from Berry Hill Dr. to Point Vicente Interpretive Center.
Class II	Along Western Avenue within City boundaries.

# BICYCLE TRAILS NETWORK

DESIGNATED ROUTES - EXISTING EASEMENTS

PROPOSED LINKAGES



MAP 3

CITY OF RANCHO PALOS VERDES

## EQUESTRIAN TRAILS

### SPECIFIC STANDARDS

The following policies are intended to act as guidelines to be considered during trail design and construction:

- In keeping with the general trails standards discussed earlier, equestrian trails should be off-road wherever possible.
- Regulations and use policies should be generated by City, equestrian clubs, and property owners.
- Whenever possible, trails should be continuous and provide access to stable and other riding facilities.
- Use should be made of existing trails if determined feasible.
- Trails should be continuous between specific sites.
- Trail access points should be provided at varying distances along route so user may choose trips of varying lengths.
- Horse tie rails and water may be provided near the trails so riders can secure their mounts at rest stops, scenic places, etc.
- All trails that approach major roads should do so at near right angles, for at least ten feet (for safety reasons).
- When feasible, switchbacks should be avoided, except in steep terrain where they may be necessary.
- Trails should be constructed on loose dirt, decomposed granite or appropriate mulch materials to minimize dust.

More specific standards and diagrams suggesting minimum and maximum allowable trail tolerances follow:

#### Grade

While rolling terrain is desirable, trail grade of over 20% is not acceptable except in extreme cases.

Grades of 15% for distances up to 500 feet are acceptable.

Grades of 10% for distances in excess of 500 feet are considered maximum.

### Width

The preferable easement width for equestrians trails is 15' - 20'.

The graded width of the trail tread shall be 2' to 8'.

### Overhead Clearance

The trail shall be clear of all obstruction from ground level to a height of 10'. Where it is necessary to trim tree branches, the branches shall be cut close to the trunk and sealed with tree seal. (Please see diagram)

### Drainage

The trail shall be constructed to provide good drainage.

Outsloping of the trail is preferred.

The outslope should not exceed 1" in 18" except at grade dips.

Grade dips are 3' to 5' sections of the trail that have been depressed below the prevailing grade line, thus forming a short piece of adverse grade and providing opportunity to carry surface water across the trail tread.

The cross slope at grade dips shall not exceed 4" in 18".

A berm shall be provided on the outslope edge of the trail and drain off points provided.

Drainoffs shall be protected from washout at drain off end by rock fill or equivalent erosion resistant material.

Wherever possible, surface or subsurface water should be prevented from reaching the trail by the construction of ditches well back from and above the top of the cut slope to lead the water to a culvert or other outlet.

Trails crossing natural drainage courses shall be constructed to maintain the full flow of anticipated water run-off.

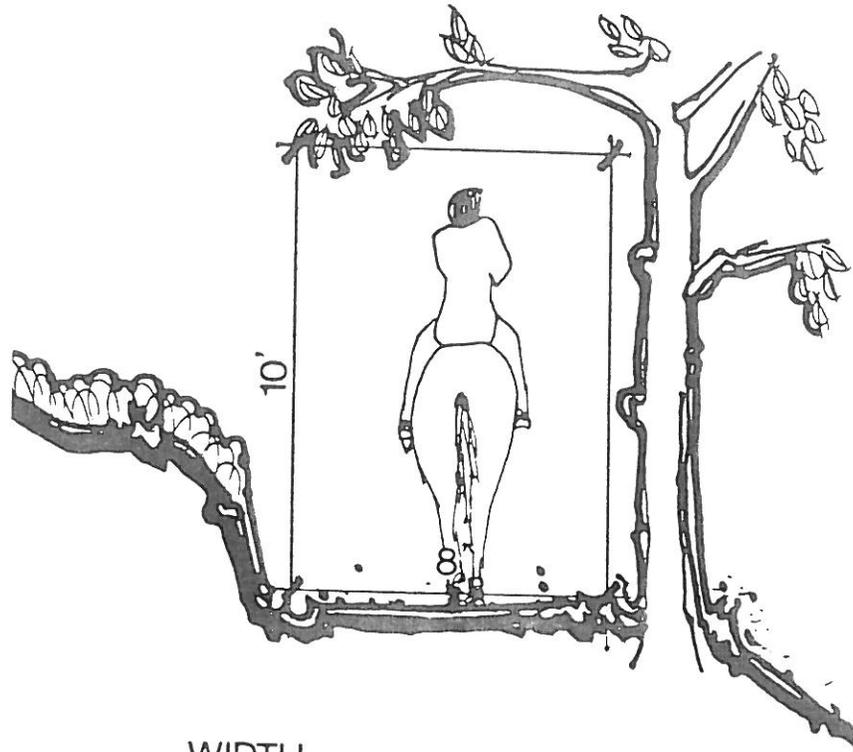
### Planting

All slope cuts shall be planted with erosion resistant planting.

General criteria which may be used as guidelines when choosing appropriate ground covers and shrubs include:

- Drought resistance
- Low maintenance
- Fire resistance
- Native of the Palos Verdes Peninsula

## EQUESTRIAN TRAIL



### WIDTH

EASEMENT 15'-20'

TREAD 2'-8'

### GRADE

AVERAGE 5%

MAXIMUM 15%

Source: Trail Standards Study, Rancho Palos Verdes, 1982

References may be made to the Park Study II (1980) for a list of specific varieties of plant materials which may be appropriate to use.\*

#### Fences

Trails should be fenced where deemed necessary or appropriate. For example, fences should be used in cliff and canyon areas, or places where there is a significant amount of equestrian interaction with pedestrians, bicycles, or autos. As a general rule, fences should be utilized where a separation of uses is required for safety purposes.

#### Surfacing and Cleanup

All cleared material shall be disposed of to prevent fire and to provide an attractive and neat appearance.

"Ditching" of brush or refuse below the trail is not permitted.

The graded portion of the trail shall be free of loose rock in excess of 1" diameter or any other hazardous condition and surfaced with 3 to 4 inches of chopped bark and tree trimmings or approved equivalent.

#### Signs

Safety and identification signs should meet criteria as stated in this study. Top priority concern should be exhibited at intersections of trails and auto routes. Equestrian crossing signs should be plainly mounted in order to warn motorists of potentially hazardous situations.

#### Support Facilities

Support facilities for equestrians (i.e., stables, riding rings) should be considered in certain areas of the City. For example, the Ladera Linda Park area could be appropriate because of its location near Portuguese Bend, Rolling Hills, and several trail access points in various directions. Establishment of an equestrian facility at this location would require an Equestrian District zoning designation to be applied to the area. Improvement of the existing Pony Club Equestrian facility in Portuguese Bend is also an option. A riding ring in the Eastern equestrian district (Martingale/ Bronco area) is a possibility depending upon

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\* Park Study II (Revised 1980) Prepared for the City of Rancho Palos Verdes by the Peridian Group; Landscape Architecture/Planning. pp. 120-124.

the availability of open space and associated environmental impacts of development. An alternate ring location may be a section of the Narbonne right-of-way located near Rockinghorse Road. These projects may be funded by the City according to budget, or developed as joint ventures utilizing private and public funds. (also, see TRAILS NETWORK: REVENUES for more information regarding funding alternatives and sources.)

## CONCEPTUAL TRAILS NETWORK

Within Rancho Palos Verdes, two general locations now support major concentrations of horses and equestrian trails. These are the Eastern Equestrian District (Bronco - P. V. Dr. East area) and the Western Equestrian District (Portuguese Bend area). Two smaller equestrian districts include the Northern Equestrian District (Via Campesina - Yellow Brick Road area) and the Central Equestrian District (Crestridge Road-Robin View Lane area). The proposed equestrian trails network should ideally provide designated trails between these areas, as well as establishing linkage to activity areas, scenic vistas, and trail systems existing in adjacent cities.

## TRAILS NETWORK

There currently exists many miles of equestrian trails in the City and throughout the Peninsula. Most of these trails have existed for several years previous to City incorporation.

Trails currently used in these areas traverse dedicated easements, public right-of-ways, private property, and private streets. In some cases, horses may safely use a portion of public and private streets. In other areas, this use may cause extreme hazards. Trails on private property and private streets are fairly common, but they are subject to abrupt closure by property owners. Because of this, the trails network proposed for equestrians is intended to incorporate a system of dedicated easements and right-of-ways to insure its longevity.

Equestrian crossings over public rights-of-way should be carefully considered. All proposed crossings should be referred to the City's Traffic Committee for review and comment.

## EASEMENT INVENTORY

The following table contains a list of existing equestrian dedicated easements in the City, not including trails existing in other areas (i.e., private property, public streets, and private streets. Trail locations are designated by number on Map 4.

EXISTING EASEMENTS: EQUESTRIAN (\* Recorded/Dedicated Easements)

KEY NO.	TRACT/ PARCEL	RECORDED TYPE	LOCATION LOT, PARCEL NO.(s)	LOCATION
#1	P.M.8744	Equestrian	1,2	From Palos Verdes Drive West to north end of Via Victoria.
#2	P.M.10241	Equestrian	1	End of Chaparral Lane north to R.H.E.
#3	TR.19518	Equestrian	Perimeter	Perimeter trail surrounding tract, Colt Road area.
#4	TR.22909	Equestrian	20, 21, 22	Martingale Drive (connector to Rolling Hills.)
#5	TR.24712	Equestrian	10, 11, 12	Palos Verdes Estates to Hyte Road.
	TR.28556	Equestrian	3, 5-13	Palos Verdes Estates to Hyte Road.
#6	TR.24817	Equestrian/ Pedestrian	20-41	From the east end of Valley View Road to and along the City boundary of Rolling Hills and Rancho Palos Verdes.
	TR.31714	Equestrian/ Pedestrian	19-32	Crenshaw Boulevard to City's easterly boundary.
#7	TR.27980	Equestrian	1-23	From Browndeer Lane to Rolling Hills Estates.
#8	TR.29795	Equestrian	1,4	Via Campesina

Easement Acceptance Criteria

The following criteria have been developed as guidelines for the acceptance of easements for trail purposes.

- (1) Is the proposed easement on or adjacent to an existing or proposed trail route as designated in the Trails Network Plan?

If yes, then the easement proposal should be referred to the City Council for review and acceptance.

If the answer to criteria #1 is no, then the easement proposal may be referred to the Planning Commission for review considering the following criteria and any other criteria deemed appropriate.

- (2) Is the proposed easement in conflict with any of the policies set forth in the Trails Network Plan?
- (3) Is the easement proposal a duplication of another trail route in the vicinity; i.e., is the easement necessary?
- (4) If the proposed easement is bordering another city or county jurisdiction, does the proposal interface with bordering trail networks?
- (5) What is the number of individuals serviced by the proposed easement; i.e., is the cost/benefit positive?

#### Private Roads

The City of Rancho Palos Verdes has several miles of private roads which are owned and maintained by private property owners. Private roads do not contain easements granted to the City for public right-of-way uses.

Currently portions of many private roads throughout the City are being used as equestrian trails. This use is subject to the discretion of property owners who own and maintain the road.

Private roads which are used by equestrians as part of the trail network throughout the City are not designated in this plan for the reasons outlined above.

#### Right-Of-Ways

The Crenshaw Boulevard right-of-way which extends from the present paved end of Crenshaw Boulevard to Palos Verdes Drive South is currently being used as an equestrian and pedestrian trail. If this right-of-way is improved in the future, an easement for equestrians, pedestrians, and bicyclists should be incorporated into the development. The Crenshaw Boulevard right-of-way currently provides a vital link between the Portuguese Bend area and the Rolling Hill's trails network, and is consistently used by equestrians.

Other right-of-ways in the City which could be utilized as trails in the future include the Narbonne right-of-way (extending approximately from P. V. Drive East near the Rolling Hills Estates border to Rockinghorse Road) and the Forrestal Drive right-of-way (extending from the current end of Forrestal Drive to Mainsail Drive).

#### PRIORITY LINKAGES

Top priority equestrian trail areas include:

- ° non-urban areas of the City

- ° stable facility areas
- ° equestrian districts (and connections in between)
- ° regional network interfaces

Maps 4 and 4.1 show priority linkages for the equestrian trails network, as well as existing easements.

PROPOSED TRAIL LINKAGES: PRIORITY LIST

The following priority list is provided to serve as a guideline for equestrian trail development in the future. Development of proposed trails may not proceed in the exact order as indicated here, depending on variables such as where the trail is located, timing of land development in the area, and budget constraints.

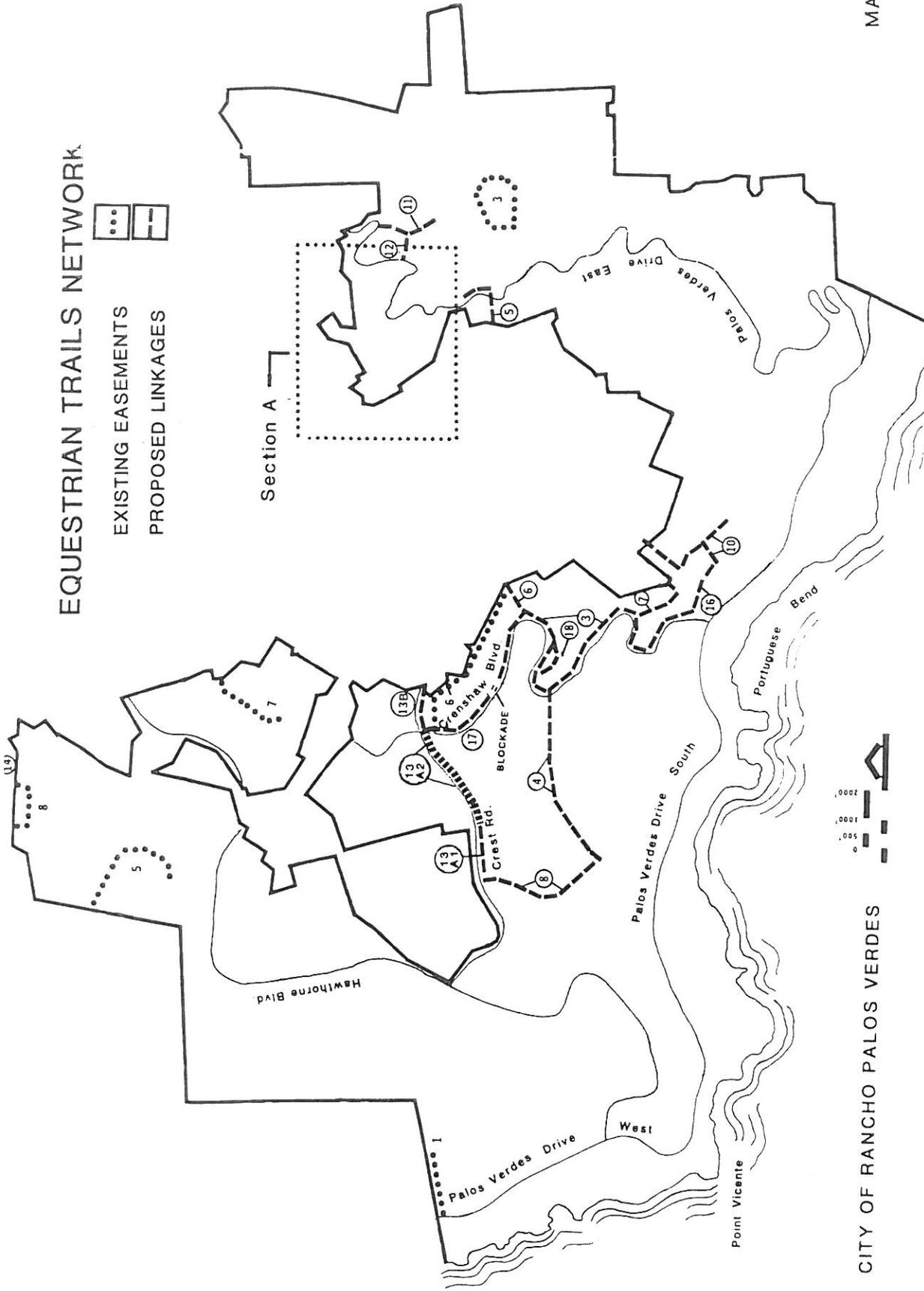
- ① Martingale Road - Willow Springs Road (R.H.): this connection should be established utilizing the City lot. Exact easement location should be coordinated with R. H. pending R. H. Trail Policy Statement.  
Alternative: Mustang Road - R. H. border utilizing undeveloped lots, also pending R. H. Trails Policy Statement.
- ② Bronco Drive - R.H.E. Trail Network: private property owners have been contacted, negotiations will be initiated.
- ③ Crenshaw Boulevard (unimproved section): from P.V. Drive South to barrier. Implementation pending land development, and/or negotiations.
- ④ Crenshaw R-O-W to Pony Club, north of Narcissa Drive (\*see note) Improvement pending development and negotiated easements.
- ⑤ Library Trail - Palos Verdes Drive East to Outrider Road in R. H.: Improvement pending easement acquisition.
- ⑥ Crenshaw Blvd. to R.H. Fire Station: Improvement pending land development and negotiated easements.
- ⑦ Crenshaw R-O-W to R.H. Boundary at Burma Cut: Improvement pending land development and negotiated easements.

\* The sloping terrain north of Narcissa Drive in Portuguese Bend has been susceptible to washouts and slippage (i.e., Alta Mira Canyon) which can block trails. Coordination between redevelopment efforts and trail improvements should exist in order to insure successful trail development with minimal impacts to the slopes.

8. Pony Club to the Ranch: This trail should be developed if safe crossing is constructed over Crest Road to the Ranch near Country Meadow Drive. Improvement pending land development and negotiated easements.
9. Bronco - Martingale Loop: from P.V. Drive East along Bronco and Martingale Drive. Trail development would involve a City improvement project for signing, grading along road, etc.
10. Tract 37885 - trail from West boundary of Tract around Mainsail Drive, then north to Rancho Palos Verdes border near Packsaddle Road in R. H.: Improvement pending easement designation.
11. Narbonne R-O-W from Palos Verdes Drive East to Rocking-horse: Trail development pending land development and legal ownerships status of portions of this right-of-way.
12. Sunnyside Ridge Road (public road): Implementation involves City improvement project.
- 13a Crest Road from Proposed Trail 8 to start of Tract 31617 (undeveloped area). Improved pending land development and easement negotiations.
- 13a2 Crest Road adjacent Tracts 31617 and 38848 (Presley and Cayman respectively) Improvement for equestrians requires agreement of developers and home owners involved, as well as Planning Commission and City Council approval for the change in easement designations in these areas.
- 13b Crenshaw Blvd. to R.H. along Crest Road: Implementation involves City improvement project.
14. Via Campensina roadside - connect Yellow Brick Road equestrian easements with P.V.E. Trails Network: requires negotiation with the City of P.V.E.
15. The "Gap" Trail from R.H.E. trail, across R.P.V. to R.H. Development pending negotiated easements.
16. Crenshaw R-O-W to West boundary of Tract 37885: Improvement upon development.
17. Crenshaw Blvd. R-O-W: (paved section). Development of trail through City improvement project utilizing existing easements for public right-of-way.
18. Eagles Nest Loop: from Crenshaw R-O-W back to Crenshaw R-O-W, vista point: Improvement pending land development and negotiated easements.

# EQUESTRIAN TRAILS NETWORK

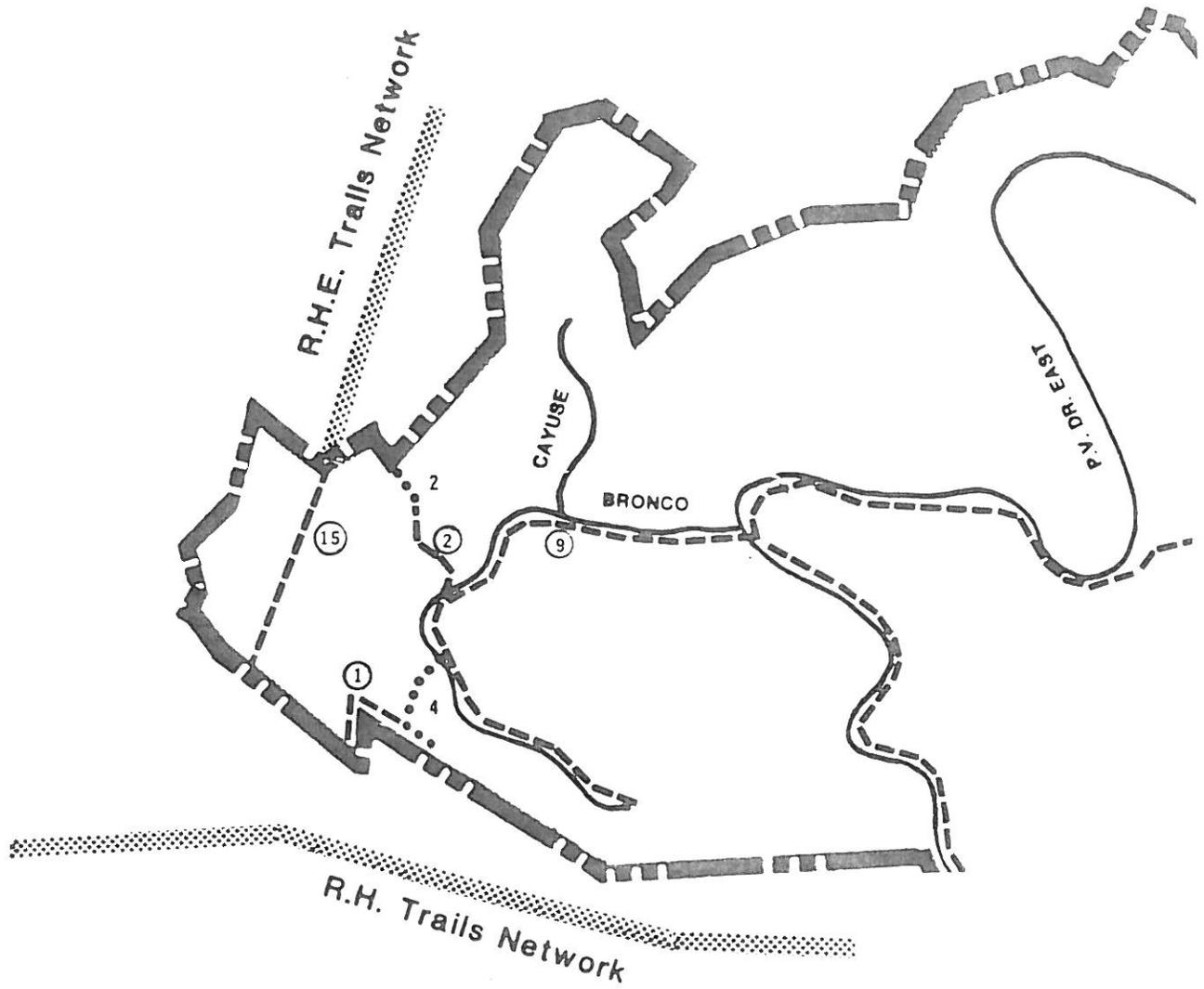
EXISTING EASEMENTS  
 PROPOSED LINKAGES



CITY OF RANCHO PALOS VERDES

MAP 4

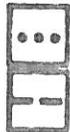
# SECTION A



## EQUESTRIAN TRAILS NETWORK

EXISTING EASEMENTS

PROPOSED LINKAGES



## TRAILS NETWORK: RESOURCES

### FUNDING SOURCES (ALTERNATIVES)

Costs associated with the development of a viable trails network include:

- ° Acquiring trail easements
- ° Surveying potential routes
- ° Constructing trails (including grading, engineering, erosion control measures, surfacing, painting, signing, etc.)
- ° Maintaining trails once built

At present, funds for trail development available in the City budget are very limited. This trend has existed in the past, and indications are that this will remain the norm into the future. For this reason, alternatives for generating funds for trail development and maintenance are needed. It should be mentioned here that alternatives for trail development and maintenance also include options other than simple purchase of land and other trail development cash expenditures.

For purposes of discussion, alternatives and funding sources for trail development are divided into possibilities available from within the City's jurisdiction, and those which are outside the City's jurisdiction.

#### I. City Alternatives:

- ° Quimby Act Funds: (Section 66477 of the Subdivision Map Act):  
Grants authority to a city (or county) to require the dedication of land or impose a requirement of the payment of fees in-lieu thereof for recreation purposes (including trails). This requirement is valid as a condition of approval for a final tract or parcel map. Interest earned on accumulated in-lieu fees pursuant to Section 66477 may be used for maintenance purposes of recreation areas.
- ° Environmental Excise Tax: A nonrecurring tax placed upon the occupancy and construction of new residential, commercial, and industrial buildings with the intent of countering the negative environmental impacts associated with new development. Funds collected from this source may be used to develop a trails network with the intention of improving the general quality of life within the City.

- Coastal in-lieu Fees: A fee required per lot as a condition of approval of final maps of subdivisions in the coastal area. Funds generated in this manner are to be used to provide affordable housing in the City or for coastal recreational/ access facilities.
- Gas Tax Street Improvement Fund: Funds received by the City from the State which may be used for construction and maintenance of streets (which may at the same time indirectly improve sidewalks for pedestrians, or Class II/III bicycle lanes.)
- Assessment District: Funds are generated from specific areas (districts) of the City which will benefit most from the improvements. Money initially spent by the City for improvements will be returned to the City as assessments are collected.
- Public Easement by Prescription: Private parties within the City may pursue this method of acquiring a trail easement. Cost to the City - none.
- Public Easement through Implied Dedication: Implied prescription rights may arise on private land, yet strict criteria must be met, including proof that the "general public" benefits from use of the area in question. Cost to the City - staff time, engineering, attorney, recording, improvement, maintenance.
- Condemnation: The City may condemn land for public purposes and negotiate payment. Cost to the City - engineering, appraisal, staff, attorney, recording, purchase, improvements, maintenance.
- Purchase: If the land is for sale, the City may purchase easements or an entire lot (or lots), and sell the land after the easement has been recorded. Cost to the City - staff, engineering, appraisal, recording, purchase, improvement, maintenance.
- Registration Fees: Require bicycles and horses to be licensed within the City. Funds generated in this manner may be used to improve and maintain trails. Justification for this idea rests upon the "users pay" method of assessment.
- Donations of Time and Money: Local groups (i.e. equestrian associations, bike groups, hiking organizations, etc.) and individuals donate time and money for trail acquisition, construction, and maintenance.

## II. Other Alternative Sources

- Transportation Development Act (TDA, or SB 821 Funds): Funds are administered through the Los Angeles County Transportation Commission (LACTC) to the City of Rancho Palos Verdes for pedestrian and bicycle facility development, or other purposes associated with the development of a balanced transportation system. There are also regional funds available through this same program which are allocated depending upon the regional significance of proposed projects and other related criteria.
- Roberti-Z'Berg Urban Open-Space and Recreation Program: Administered through the California State Office of Recreation and local services. The purpose of this program is to provide funds for the acquisition and development of indoor and outdoor recreation areas and facilities. Specific annual budget allocations for the program are also targeted for operation and maintenance. Fund allocation is based upon demonstrated need.
- Transportation Fund, Bicycle Lane Account: This program is intended to provide a continuing source of State funding to help cities design and construct bicycle facilities for commuter use. This acts as an incentive for local agencies to develop coordinated bikeway systems oriented toward commuter use as an alternative to the automobile.
- Environmental License Plate Fund: Administered through the California Resource Agency, this program provides funding for projects which help to protect and/or preserve the environment. Other purposes involve the control and abatement of air pollution, and the purchase of public accessways to coastal areas. These purposes may be applied to trails.
- California Conservation Corps: The purpose of this program is to further the development and maintenance of the State's natural resources and environment, and to develop the natural environment in order to provide opportunities for greater public use. This is especially applicable to non-urban trails.
- Coastal Access: State funds provided for the acquisition and development of shoreline accessways. In order to qualify, projects must provide new public access to or along the shoreline, or provide access for new user groups (i.e. the disabled). Projects must also serve a greater-than-local need.

- ° Land and Water Conservation Fund Program: A Federally administered program which allocates money to the State to be used for the planning, acquisition, and development of outdoor recreation areas and facilities. Pedestrian, bicycling, and equestrian trails are eligible for these funds.
- ° Army Corps of Engineers: Federal grant programs are administered through this department for recreation purposes. Budgets and programs change quite often, yet money is available at certain times.

#### INTERESTED GROUPS (Citizen Participation)

A valuable, yet often untapped resource in most communities, consists of individual citizens and citizen groups. These people are often willing to volunteer time and money to further particular causes with which they are interested. Even among those not associated with a particular group, there exists an informal network which connects most individuals with common interests (i.e. hiking, bicycling, or horseback riding). Recognized citizen groups existing in the Rancho Palos Verdes area include:

#### Equestrian Groups

- ° Palos Verdes Horseman's Association: a Peninsula-wide group of equestrians whose activities include group rides, parades, contests, information distribution (i.e. newsletters), trail clean-up, and trail identification.
- ° Western Equestrian District (Portuguese Bend Area): A geographically based association of equestrians.
- ° Eastern Equestrian District: A geographically based association of equestrians.
- ° The Caballeros: An equestrian group centered in the City of Rolling Hills whose activities include organized rides, lessons, etc.
- ° Equestrian Trails Incorporated - Local Chapter Corral 8.
- ° North American Trail Riding Counsel (a National Organization).
- ° Pony Club of America - Portuguese Bend Chapter.

- Happy Hoofers.
- Empty Saddle Club.
- Sheriff's Possee.

#### Bicycle Groups

- Unidentified, informal groups, organized through regional groups, bicycle shops, etc. Activities include the sponsorship of races and distance rides.

#### Pedestrian Groups (hiking)

- There are many individuals who hike and walk regularly for pleasure, exercise, and as an alternative mode of transportation.
- The Sierra Club sponsors hikes on the Peninsula many times a year.
- Audubon Society

Utilizing the resources of these groups and individuals requires overcoming many of the common obstacles associated with most citizen participation campaigns, such as apathy, lack of coordination, duplication of effort, etc. Despite these problems, citizen participation should be utilized as often as possible.

The City should attempt to help organize and educate individuals and groups as to the potential they possess to participate in the planning and development of a trails network. Offers of time spent planning, free labor, monetary donations, and maintenance efforts should be formalized and coordinated into a workable program. This valuable resource should be pursued by the City as an important part of continued trails planning and implementation.

## TRAILS NETWORK: SIGNS

### TRAIL SIGNS, STANDARDS, LOCATIONS

The following graphics and signing scheme is intended to provide guidelines for trail signage. Three basic types of signs are required as pertaining to trails:

- directional; information regarding general orientation for trail users, and trail identification.
- informational; messages regarding trail routes, environmental facts, and other general educational type data.
- regulatory; information establishing operating hours, general rules, and safety considerations.

Sign standards taken from the previously adopted Trail Standards Study include:

- use signage sparingly
- design signs to blend with surroundings
- choose appropriate materials depending on sign location
- use consistent graphics throughout the trails network
- install low maintenance signs
- signs should be vandal resistant

The locations of signs will require individual attention and study. Exact sign placement will depend upon circulation patterns, traffic volume, urban or non-urban setting, and cost constraints. In general, the following guidelines should be considered when signs are designed and installed:

- (1) informational, regulatory and warning type signs should be located at trailheads, major nodes, and intersections. Warning signs are required on trails to warn trail users of hazardous conditions on the trail, and to warn both trail users and motorists of locations where a trail crosses a roadway.

Signing on trails should be placed far enough in advance of the hazard that the trail user has time to slow down and maneuver. This is very important on bicycle trails, especially due to the speed involved.

Stop and Yield signs are the most commonly used regulatory signs. Other regulatory signs which may be used on trails include prohibitions such as "No Dogs", or "No Smoking", or "No Parking" signs.

- (2) Directional, identification, distance, and destination signs should be placed as needed along trail routes. For example, bike lane stripping should be consistent and

visible along the entire bicycle trail that shares the automobile roadway. Directional signs should be used especially at intersections with roads or other trails where trails could be confused.

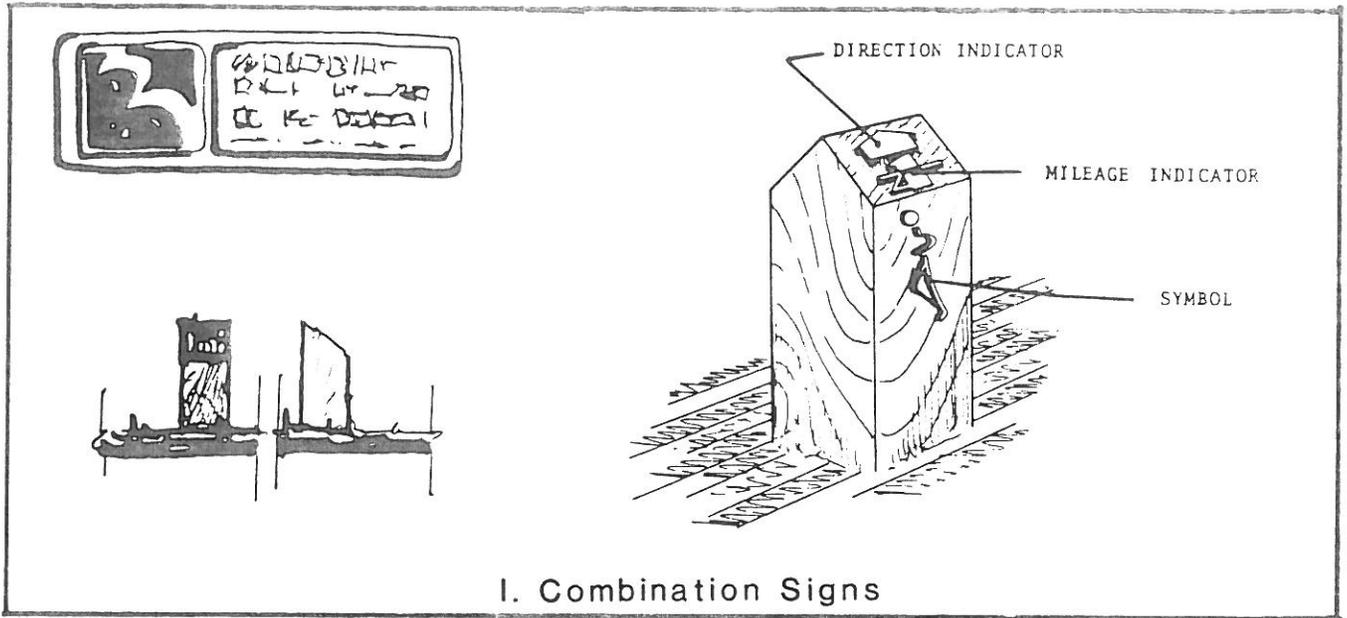
Remembering that each signing situation should be evaluated individually, the following criteria may be used as general guidelines to be followed during evaluation.

1. Materials: Wooden signs are most commonly used on non-urban trails as they are most compatible with the natural environment and are economical to manufacture and maintain. There are two cases where metal signs might be used: one, where vandalism is a problem; two, in interfaces with public roadways, where standard metal highway signs are used.
2. Colors: Wooden signs are normally brown with white lettering. Other earth tones may be used on occasion; there must be enough contrast between the background and the letters for the signs to be legible. Highway sign colors are set in the Manual on Uniform Traffic Control Devices (MUTCD) and may also be copied for trail signing. In standard highway signing, red is used for stop signs and prohibitions; yellow is for warning; green, movement permitted, directional guidance; blue, services; black and white, regulation; and orange, construction and maintenance warning.
3. Size: Blank signboards commonly found stocked are 15" x 15", 18" x 30", 6" x 15", and 9" circle. Most signs for trails should be made to fit one of these stock sizes. Highway sign sizes are standardized, and are found in the MUTCD.
4. Location: Signs should be located to be easily read from the trail; on bicycle trails and routes, signing should be placed to provide safe stopping or turning distance. Height of signs should be determined by vegetation and other surroundings, but normally, 40" from ground to bottom of a single sign, and 36" from ground to bottom of a double sign is a good rule. On paved bicycle trails, sign messages may be painted onto the pavement, rather than or in addition to a sign on a post. On a bicycle trail or route on a street, signs should be placed back of the shoulder, providing at least a two-foot clear shoulder adjacent to the trail or route.

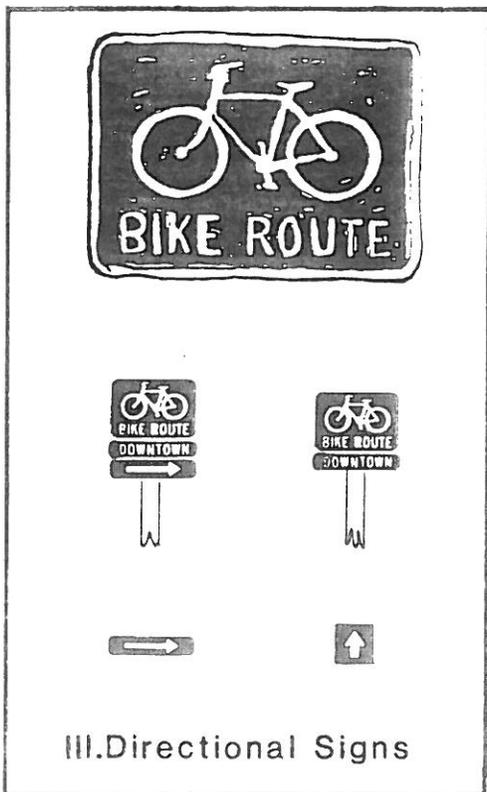
Signing should be consolidated wherever possible; it is preferable to have one sign with three messages than three signs on three separate posts with three separate messages. However, types of signs should not be mixed; warning or regulatory signs especially should not be mixed with other types.

The following sign diagrams are intended to act as samples from which more specific designs may be developed, keeping in mind that consistency is a top priority of a successful signing program.

COMMONLY USED SIGNS



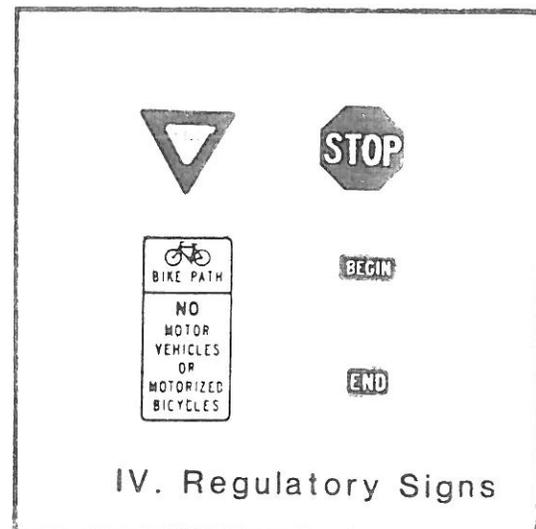
I. Combination Signs



III. Directional Signs



II. Warning Signs



IV. Regulatory Signs

## IMPLEMENTATION

### IMPLEMENTATION PROCEDURES/PROGRAMS

It is not economically feasible to immediately initiate all the trails development discussed in this plan at one time. It is possible however, to initiate a planned program of construction and implementation which effectively utilizes available funds to provide trails and associated support facilities.

Existing sources of funding and alternatives for acquisition, development, and maintenance have been identified in this plan. The successful implementation of this trails plan hinges upon the coordination of funding and planning at the city, county, state, and federal levels.

The Trails Network Plan is intended to serve as an advisory tool for City decision-makers. It is also intended to serve as a guide for implementing and funding city and regional trails. This plan should serve as a device to achieve a consistent course of action in developing an integrated network of trails to support the transportation, recreation, and other needs of the general public.

All trails shown as proposed in this plan are:

- (1) conceptual only; mapping does not legally grant their use.
- (2) general in location, not intended to be lot specific.

Development of proposed trails may proceed in various manners depending on where the trail is located, timing of land development in the area, and budget constraints. Each trail proposal will be accessed individually and the appropriate development timing and technique will be used. For example, where easements already exist, trail development may involve a City improvement project of signing, grading, fencing, where necessary, etc. Where easements do not exist, and land is undeveloped, easements may be obtained and trails developed as the surrounding land is developed.

The following table summarizes the programs, legalities, responsible parties, and status of events for the implementation of the Trails Network Plan. In most cases, the Environmental Services Department will act as the lead contact agency in trail implementation.

PROGRAM	IMPLEMENTING ACTION	RESPONSIBLE PARTIES	STATUS
1. Monitor new development & access potential trail linkage opportunities	Existing Policy	Environmental Services Dept., City Attorney	On-going
2. Solicit & procure all funds available for trail development	Existing Policy	Environmental Services Dept., Public Works Dept., City Manager	On-going

PROGRAM	IMPLEMENTING ACTION	RESPONSIBLE PARTIES	STATUS
3. Establish a permit/ registration system for bicycles and horses	Appropriate Ordinances	Environmental Services Dept., Planning Commission, City Council, Finance	Proposed
4. Maintain & publish a comprehensive inventory of existing trails	Appropriate Policy	Environmental Services Dept.	Proposed
5. Incorporate funding for trail development & maintenance into the City budget	Existing Policy	City Manager, City Council	On-going
6. Cultivate citizen participation relating to trail development and activities	Existing Policy	Leisure Services, Planning Commission, City Council, Environmental Services Dept.	Proposed
7. Establish consistent interface with surrounding jurisdictions regarding a regional trails network	Existing Policy	City Council, Planning Commission, Environmental Services Dept.	On-going
8. Maintain existing trails and support facilities	Appropriate Policy	City Council, Public Works Dept.	Proposed
9. Standardize trail signage and regulations	Appropriate Policy	Environmental Services Dept., Public Works Dept.	Proposed
10. Initiate trail education and safety programs for the public	Appropriate Policy	Leisure Services Dept., Environmental Services Dept., Educational Institutions	Proposed
11. Supply sufficient support facilities (i.e., drinking water, bicycle racks hitching posts) in conjunction with trails.	Appropriate Policy	Public Works Dept., Environmental Services Dept.	Proposed

A major part of a successful trail implementation plan includes an active citizen participation program. The City of Rancho Palos Verdes should pursue all available opportunities to incorporate citizens into the trail planning and development process. The following list of ideas may be helpful in accomplishing the goal of productive citizen participation.

- Citizens should be encouraged to organize promotional events in order to draw media attention to the positive aspects of trail use. These same events may also serve the functions of fund raising and educating.
- Citizens should invite elected officials, decision-makers, and planners on field trips designed to demonstrate the positive and negative aspects of the trails.
- Citizens should become familiar with the political and planning processes operating in the City in order to more effectively influence trail development.
- Citizens should form and document consistent and coordinated goals and policies which they regard as important.
- Local trail advocates should organize volunteers to develop and maintain trails.
- Local trail groups could help foster an appreciation for the natural environment in order to enhance trail experiences, and encourage the careful use of trails and adjacent lands.

The establishment of a safe and useful trails network and associated support facilities are the primary purposes of this plan. The accomplishment of these objectives is dependent upon the willing coordination and cooperation of citizens and various levels of government.

In this era of energy shortages, air and noise pollution, and other environmental concerns, the pedestrian, bicycle, and equestrian trails discussed here offer viable, quiet, economical, and non-polluting alternatives to the automobile. These trails also represent a valuable recreational opportunity for citizens of all ages. The staged implementation of trail acquisition and development should be conducted continuously until the network is completed.

## TRAIL NETWORK: MAINTENANCE

### MAINTENANCE RESPONSIBILITY

An adequate trail maintenance program is essential to the successful implementation of the Trails Network Plan. Trails must be maintained after the initial construction in order to insure the safety of the users, and prolong the life of the trail (protecting the capital investment).

Primary maintenance concerns center around erosion problems (especially on slopes), overgrown vegetation, garbage, vandalism, and general wear due to use.

It is the adopted policy of the City of Rancho Palos Verdes that assigning dedicated public trail maintenance responsibility should depend upon who the major beneficiaries of the trail improvements are. The following criteria may be used in determining the major beneficiary status:

- (1) The basic criteria for assigning maintenance responsibility should be based on a determination of whom the trail in question primarily serves, for example, the residents of a particular tract, a certain group, or the general public.
  - (A) Major trails that are a part of the City's Trail Network Plan may be considered to benefit the general public and if the trail is a dedicated public trail, maintenance responsibility should be assumed by the City.
- (2) Trails not discussed above should be privately maintained to insure the safety of all users.

### MAINTENANCE STANDARDS

Top priority maintenance conditions demand immediate attention. Surface defects which immediately effect safety, riding or hiking quality, and capital investment should be dealt with as quickly as possible. Examples of such defects include; slippery pavement, potholes, abrupt vertical variations, or other obstacles blocking trail use. Also, drainage and erosion problems should be addressed immediately.

Bicycle trails require some special considerations, such as the sweeping of paved surfaces often enough to keep them free of loose gravel, broken glass, and other potentially dangerous litter.

Secondary maintenance considerations often do not require immediate attention, such as pavement checks, gentle slumping, and minor overgrowth of vegetation. To prevent these conditions from becoming critical, maintenance should be performed on a regularly scheduled basis.

At all times trails should be maintained to such a degree as to insure safe trail use.

Funding for the maintenance of trails is discussed in Trails Network: Resources section of this plan.

#### MAINTENANCE SCHEDULE/METHODS

A successful maintenance program relies upon regular and routine maintenance schedules and methods. Depending upon the intensity of trail use, type of trail, weather, etc., the maintenance schedule should be made adaptable to specific situations. Example, a Class II or III bikepath along a busy road will require frequent sweeping. Similar paths in less traveled areas will require less attention.

The City's Public Works Department should develop a maintenance schedule based on the current inventory of trails. Within this schedule, a description of maintenance methods should be included. Once again, trail type, intensity of use, and climatic impacts such as a heavy rain or wind should influence the maintenance methods chosen. Most bicycle trails will require sweeping and pavement patching periodically. Depending upon the bicycle lane classification, painting and sign repair will also be necessary to different degrees. Urban pedestrian lanes share many of these same requirements. Non-urban pedestrian trails and equestrian trails will require grading and frequent vegetation clearing.

Methods for this repair and maintenance work should follow previously established patterns and procedures which are currently a part of the Public Works Department's program.

Generally, a maintenance management system provides guidance in four areas:

- ° deciding what kinds of work and how much work needs to be done.

- ° gathering and organizing manpower, equipment and materials to get the job done with uniform procedures.
- ° scheduling, supervising, and performing the work.
- ° reporting the work done for comparison to maintenance plans and programs.

Performance guidelines and standards have been established by the Public Works Department. These guidelines specify:

- ° the most effective crew size
- ° the kinds and number of equipment required
- ° the major types of material that should be used
- ° recommended procedures for performing the work
- ° an estimate of expected average daily accomplishment with standard crew size, equipment and procedures
- ° authorization and scheduling criteria

These guidelines should be followed as part of the trail maintenance program.

#### MAINTENANCE COSTS

Trail maintenance costs will vary according to trail type, initial construction standards used, intensity of trail use, etc. Because of these variations, documenting exact maintenance costs is very difficult. The following table is meant to give only a general indication of what these costs may be per year.

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TRAIL TYPE	REGULAR MAINTENANCE DOLLARS/MILE/YEAR	EMERGENCY REPAIRS DOLLARS/YEAR
Pedestrian:		
Urban	\$200-300 per mile per year	Average: \$2,000/year
Non-Urban	\$100-200 per mile per year	
Bicycle:		
Class I	\$200-250 per mile per year	Average: \$3,000/year
Class II	\$150-200 per mile per year	
Class III	\$50-100 per mile per year	
Equestrian		
*Developed	\$250-300 per mile per year	Average: \$2,500/year
Undeveloped	\$300-350 per mile per year	

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\* Developed trails: grading and erosion control measures (i.e. culverts), were included at the time of trail construction.

Maintenance funds should be included as part of the yearly City budget for trails. This amount should be adjusted proportionally as trail usage increases in the future.

A P P E N D I X

- A. Definitions
- B. Miscellaneous
- C. Bibliography

## A. DEFINITIONS:

### ACCESS:

the place or way by which pedestrians, bicyclists, equestrians, or vehicles have safe, adequate and suitable ingress and egress to a property or use.

### ACTIVE RECREATION:

outdoor recreation activities that are action oriented (i.e., organized hikes, rides, contests, races, etc.)

### ADJACENT:

two or more lots or parcels of land separated by a street or alley or otherwise in close proximity.

### BICYCLE ROUTES:

#### Class I - Bike Trail

A bike trail is a special pathway designated for the exclusive use of bicycles. Crossflows by pedestrians and motorists are minimized. It is usually separated from motor vehicle facilities by a space or physical barrier. It is usually grade separated but it may have street crossings at designated traffic controlled locations. It is identified with guide signing and also may have pavement markings.

#### Class II - Bike Lane

A bike lane is a lane on the paved area of a road for preferential use by bicycles. It is usually located along the edge of the paved area outside the traveled lanes or between the parking lane and the first motor vehicle lane. It is identified by "Bike Lane" or "Bike Route" guide signing, special lane lines, bicycle symbols or "Bikes Only" stencils on the pavement and other pavement markings or signs deemed appropriate to give adequate instructions to the users of the facility. Bicycles usually have exclusive use of a bike lane for longitudinal travel, but must accommodate crossflows by motorists at driveways and intersections, and also by pedestrians at various locations.

#### Class III - Shared Route

A shared route is a roadway identified as a bicycle facility by "Bike Route" guide signing only. There are no special lane markings and bicycle traffic shares the roadway with motor vehicles. Special regulations may be enacted and posted along such facilities to control motor vehicular speeds or restrict parking to enhance bicycling safety.

DESIGN:

includes the planning details of trail alignment, grades, widths, etc.

DIRECTIONAL SIGN:

a sign erected for the purpose of informing the viewer of the approximate trail route and destination.

EASEMENTS:

land dedicated or purchased by the City for specific uses, (i.e.; trail routes, accessways, etc.)

EDUCATIONAL INSTITUTIONS:

public and non-profit institutions conducting regular academic instruction.

EMERGENCY REPAIRS:

work made necessary to restore property or transportation routes to a safe condition.

EQUESTRIAN TRAILS:

trails and paths developed for the use of horseback riders.

GRADING:

excavation or fill or any combination thereof.

HEIGHT OF SIGN:

the distance from the average surface grade immediately surrounding the base of the sign to the top of its highest element.

HIKING TRAILS:

trails and paths developed for the exclusive use of hikers.

IDENTIFICATION SIGN:

provide information regarding place names and orientation.

NETWORK:

a system of trails and paths that connect with or cross one another.

OPEN SPACE:

space or area that is unobstructed except for permitted encroachments (not used for private streets, driveways, parking, or loading).

PASSIVE RECREATION:

outdoor recreation activities that are nonstructured (i.e., sight-seeing, nature studies, etc.)

REGIONAL TRAILS:

those trails and paths designed for pedestrians, bicyclists, and equestrians which connect to routes outside the City boundaries which in turn connect to a larger scale trail network.

SERVICE TRAILS:

trails and roads developed for service or for vehicle access. In some cases, pedestrians, bicyclists, and equestrians may use these trails.

SIGN:

physical form of visual communication which is intended to be viewed from public areas.

VEGETATION:

any living plant organism - such as grasses, chapparal, brush, trees, etc.

VISTA:

viewing location

WARNING SIGN:

a sign erected to make a viewer aware of possible danger.

17.42.060 INTERSECTION VISIBILITY. On corner lots in all districts, no fence, wall, hedge, sign or other structure, shrubbery, mounds of earth, or other visual obstruction over thirty inches in height above the nearest street curb elevation shall be erected, placed, planted, or allowed to grow within the triangular space formed by the intersection curblines and a line joining points on the curb sixty feet (measured along the curblines) from the point of intersection of the curbline extensions. In districts where the required front or streetside setbacks permit construction of a building within this triangular space, fences, walls, other structures or shrubbery behind the required front or street-side setback line are exempted. Trees which are trimmed to the trunk to a height at least six feet above the nearest street curb elevation are also exempted. Conditions existing as of effective date of the ordinance codified in this Chapter which do not conform to this Chapter need only be brought into compliance upon the findings, by resolution of the City Council, that a hazard to public safety exists. (Ord. 175 §18, 1983: Ord. 132 §3 (part), 1980.)  
(Excerpt from the City's Development Code)

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