
IV. ENVIRONMENTAL ANALYSIS

A. Land Use

Existing Conditions

The City of San Diego encompasses about 207,000 acres. About one-third of this area is planned/zoned for residential uses; planned commercial-industrial uses comprise about eight percent. About one-quarter is planned/zoned for agricultural uses. Portions of the City are unzoned, such as parklands, military bases, and municipal airports. The balance of land uses includes open space, open water, flood way and flood channels, and tidelands. Less than ten percent of the developable land within the City remains vacant. The City's planned habitat preserve, the MHPA, encompasses 52,012 acres including 36,338 acres within the municipal boundary.

Land use and growth patterns of the City are guided by the *Progress Guide and General Plan*. The land use plans are implemented, and development is regulated by, the sections of the Municipal Code relating to the zoning, subdivision of land, and building regulations. This section analyzes the proposed project in view of the existing land use plans and policies for the City to determine whether there may be potential environmental impacts related to land use. The following existing conditions section includes environmentally related goals and recommendations from land use plans and special area management plans used in the City of San Diego that are relevant to the proposed City of Villages Strategic Framework Element of the *Progress Guide and General Plan*. The subsequent section on impacts presents an analysis of how the subsequent implementation of the proposed project might relate to the stated environmental goals and policies of existing land use plans.

General Plan Environmental Goals and Policies

The current *Progress Guide and General Plan* includes the following recommendations, policies, and guidelines that are related to the citywide environment and are pertinent to the proposed City of Villages:

1. Provide a range of opportunities for active and passive recreation, educational activities, and neighborhood identification, in all parts of the City, adapted to the needs and desires of each neighborhood and community.
2. Require approximately 20 acres of urban recreation land for each 1,000 residents citywide.
3. Retain all parkland for recreation purposes only. As opportunities arise, repossess for recreation purposes desirable park areas that have been diverted to other uses.
4. Acquire non-public beach areas for public use and preserve and identify access.
5. Make suitable provision for parks or open space public areas in redevelopment plans for areas presently park-deficient.
6. Prohibit development of floodplains, steep slopes, canyons, coastal and waterfront lands or minimally developed lands.

7. Prohibit filling of canyons; grading should be kept to a minimum, and natural drainage systems should be preserved.
8. Increase utilization of local water resources.
9. Decrease reliance on imported water.
10. Conserve endangered species and manage all resources necessary for their survival.
11. Protect and enhance the quality of San Diego's air resources.
12. Preservation of San Diego's rich historical and prehistoric tradition so that it may become part of the consciousness of the present and future generations.
13. Effectuation of a cultural resources management program that maximizes, insofar as practicable, the living utility of historic resources.
14. Conserve not only structures of outstanding historic and architectural merit, but also those structures which contribute to the economic and social well-being of the City.
15. Enact local ordinances which would ensure effective preservation, protection, and management of significant cultural resources and would place such resources in the public domain.
16. Conserve in their entirety the largest and most unique prehistoric sites found within the City to be held for investigation with more sophisticated techniques developed at some future time.
17. Preservation of historic resources in number and type so as to successfully evoke the distinctive character of all significant stages of San Diego's history.
18. Ensure that land use designation, zoning, and specific project development plans are consistent with adopted land use-noise level compatibility standards.
19. Ensure that mitigation measures needed to achieve compatibility with the noise environment are made enforceable conditions of project approvals.
20. Eliminate as soon as possible incompatible land uses in areas adversely impacted by aviation noise by reducing noise levels, converting land uses, or by successfully mitigating the noise impact to noise-sensitive uses.
21. Protect other community open space areas that have been designated for long-term open space use because of their value in protecting landforms; providing buffers within and between communities or potentially incompatible land uses; providing visually appealing open spaces; and protecting habitat and biological systems of community importance that are not otherwise included in the Multi-Habitat Planning Area (of the adopted MSCP).

Community Plans - Environmental Goals and Policies

In addition to the General Plan, there are 38 community plans in San Diego. Fifteen of these current plans were adopted over ten years ago. In addition, there are adopted area planning documents for parks, special resource areas and specific plan areas. While each plan addresses unique issues and concerns, they also contain many similar environmental goals and policies. Most plans have the overall goal of preserving and enhancing the unique quality and character of their specific area.

Most community plans contain a Circulation/Transportation Element. Generally, the goal of that element is to provide a circulation system to safely and adequately accommodate traffic within the community and establish linkages with other parts of the City. Existing goals which are typical of the transportation elements and are relevant to the proposed City of Villages and the Transit First concept, include the following:

1. Improve public transit service and provide regular bus service, light rail transit and commuter rail should link the community with the regional transportation network.
2. Provide bikeway and pedestrian paths that link all areas within the community.
3. Require that street improvements be compatible with the surrounding areas.
4. Locate transit stops to maximize access and optimize transit service and pedestrian and bikeway connections.

Parking

Most current community plans contain goals and policies that specifically provide for adequate parking. Some of the goals and objectives of the proposed project include the reduction in the demand for parking due to expanded and improved public transit system, concentration of residents in areas with retail and employment opportunities in the urban villages, an increase bicycle friendliness and walkability to and around the villages, and use of parking management tools. At a minimum, the proposal would redevelop areas with extensive surface parking with additional residential or mixed uses.

The project also proposes to apply the Transit-Oriented Development Design Guidelines (TOD) to the designated villages and corridors as an interim measure until such time that community plans are updated with site or community-specific design guidelines. The interim TOD guidelines would apply to project design only; no changes to residential density or land use would occur with this proposed interim application. The proposed TOD guidelines would be used to evaluate the parking requirement of a new development if minimum site design features are incorporated into the proposed project in conjunction with the processing of a discretionary permit.

Subsequent community plans amendments or updates need to consider the appropriateness of these provisions and, where necessary, recommend adjustments. The existing parking provisions common to most community plans include:

1. Provide an adequate, accessible, and well-maintained supply of parking for residents, businesses, and tourists.
2. Provide adequate off-street parking for vehicles in all community projects.
3. Require new development to provide parking and address pedestrian activity in site design proposals.
4. Prohibit the elimination of existing parking.

Hillside and Sensitive Lands Development

Most plans have goals and recommendations addressing development on undeveloped slopes or hillsides. Given the lack of vacant land and the placement of many remaining slopes and or urban canyons into the MHPA, the applicability of these policies to the proposed City of Villages, much less to future subsequent development, would become moot at best. The following recommendations, objectives, goals, and/or policies addressing sensitive topography, are common to most of the community plans:

1. Preserve hillsides and treat them sensitively.
2. Require that development constructed on natural hillsides preserve and enhance the beauty of the landscape by encouraging the maximum retention of natural topographic features.
3. Design roads serving hillside and canyon developments carefully and sensitively.
4. Require access roads to follow the natural topography, whenever possible, to minimize cutting and grading.

Most of these plans were adopted prior to the adoption of the MSCP, and the goals regarding sensitive biological resources and/or habitat have been addressed in the City's MSCP Subarea Plan, the implementing planned habitat preserve, the MHPA, and the recently adopted Environmentally Sensitive Lands Ordinance and its associated bio-guidelines and open space zones that address the preservation and guide development of open spaces designated in community plans. The following recommendations, objectives, goals, and/or policies regarding the environment that are relevant to the proposed City of Villages, are common to most of the community plans:

1. Prohibit land uses adjacent to sensitive habitats that negatively impact those areas; if there are impacts, the new development is responsible for the restoration and enhancement of the area.
2. Minimize or eliminate development impacts on rare, threatened, endangered, or candidate species.
3. Limit public access in areas of sensitive habitats to low-intensity recreational, scientific, or educational use.
4. Control or confine access to designated trails or paths; no access shall be approved which results in disruption of habitat.
5. Restore sensitive habitat area that is degraded by human activity, or compromised by the presence of exotic or invasive plant species.
6. Preserve and enhance all open space with non-building or negative open space easements.
7. Design the construction or improvement of roadways adjacent to biologically sensitive areas or open space to avoid impacts, especially in wetlands and wetlands buffer areas.
8. Maintain regulations that prohibit contaminated runoff from reaching any of the sensitive open space areas.

Local Coastal Program

There is one Local Coastal Program (LCP) in the City of San Diego. There are two parts of the Program: the policies derived from the General Plan and from the various community plans with coastal issues, and the implementing ordinances found in the zoning and land development sections of the Municipal Code. Each coastal community attempts to address the several issue areas identified in the State Coastal Act. The following are policies and/or proposals common to most of the Local Coastal Program Elements of the community plans and relevant to the proposed City of Villages:

1. Restore or enhance sensitive habitat that is degraded or disturbed.
2. Establish a multi-modal transportation system throughout the City.
3. Create an integrated system of pedestrian, bicycle, local transit and automobile facilities; pursue development of a system of bike trails that will connect major activity areas with a focus on the ocean and natural scenic corridors.
4. Prevent encroachment into environmentally sensitive areas by proposing that transportation systems take into consideration neighboring amenities.
5. Establish alternative transportation modes for public access to the shoreline.
6. Incorporate pedestrian- and transit-oriented features into project designs in new commercial development along the identified transit corridors and in the core commercial area.
7. Develop a connected system of shoreline walkways.

Other Planning Efforts

In addition to the General Plan and community plans that contain guidelines for growth, development and land use, there are plans for special areas of the City. These include park master plans, resource management plans, precise plans and specific plans. These special area plans contain environmental goals, policies, and recommendations which may be affected by or relevant to the implementation of the proposed City of Villages.

First San Diego River Improvement Project Specific Plan

Mission Valley has been identified as potential Subregional District, an area that is identified for existing and proposed, employment, commercial, and increased medium to high density residential uses. Since plan adoption, the trolley line has extended through the valley and is now planned to connect to San Diego State University and further east to Grossmont Center, in the City of La Mesa. The Transit First effort would make the valley a much-expanded hub for a variety of transit modes. The First San Diego River Improvement Project Specific Plan (February, 1984) contains guidelines for the river corridor and the transportation system in Mission Valley, which include:

1. The buffer areas of the river corridor are to be located along the entire length of both sides of the river, and at no point shall the private development intrude into the floodway proper;

2. The average width of the buffer shall be no less than twenty feet, and no more than fifty feet wide;
3. Land uses within this area should include only the Light Rail Transit corridor, bikeway and pedestrian areas, and other passive recreation uses.

The river corridor is a part of the San Diego River City-wide open space system. Therefore, it should be accessible to the public. The floodway has been placed into the MHPA and there is a preliminary effort to plan and design a river park. The park proposal and/or a possible comprehensive community planning effort may engender changes to this current plan. The relatively narrow river buffer may need to be reconsidered in the unchannelized, western portion of the valley. Areas outside the river channel should be landscaped and linked to the river corridor.

There are many guidelines for the alternative mode, transportation system of the plan, which include:

1. The pedestrian/bikeway areas along the river corridor should be placed in the buffer areas.
2. All primary pedestrian walks should be six feet wide, and pedestrian/bikeway areas should be eight feet wide within twelve feet (maximum) right-of-ways, exclusive of slopes.
3. The nature trail, planned along a segment of the pedestrian system on the north side of the river, should be a maximum of five feet wide and should be paved with natural-appearing material.
4. River pedestrian/bikeway corridors are to be designed to link adjacent areas within the planned area.
5. Driveway entrances are to be minimized into parking areas in order to avoid breaking the pedestrian continuity of the sidewalk areas.

The First San Diego River Improvement Project (FSDRIP) states that buffer areas should be located along the entire length of both sides of the river. At no particular location shall the private development intrude into the floodway proper. The average width of the buffer for the entire area shall not be less than 20 feet. The maximum width of the buffer should be approximately 50 feet. Buffer areas should be widest adjacent to the most sensitive habitat areas. Land uses within the buffer areas should include only the LRT corridor, bikeway and pedestrian areas and other passive recreation uses.

Levi-Cushman Specific Plan (Mission Valley)

The Levi-Cushman Specific Plan (1987) guides the development of 200 acres located on both sides of the San Diego River generally west of Fashion Valley extending westward to the intersection of Friars Road and Goshen Street. Much of the Riverwalk Golf Course currently occupies this site. This specific plan includes a mixed-use development of residential, office, hotel, and retail commercial uses and a planned 100-year flood control channel that varies between 400 and 450 feet wide and 26 feet deep. The channel would be soft-bottom with

naturally vegetated, 2.5:1 slopes and edges and three habitat islands would be provided. A 25-foot wide buffer on each side of the channel would contain pedestrian-bicycle paths and passive recreational areas. As with the length of the San Diego River through Mission Valley, the floodway has been placed into the MHPA and there is a preliminary effort to plan and design a river park. This area is included in a proposed Subregional District and has been identified for potential higher intensity development.

Mission Bay Park Natural Resource Management Plan

The long established, urbanized communities of Mission Beach, Pacific Beach, Linda Vista, and Clairemont border Mission Bay Park. The major drainages of Tecolote, Rose, and Cudahy Creeks whose watershed covers the northwest-central portion of the City, flow into this bay. While the existing plan addresses environmental concerns with the bay waters or immediately adjoining the bay, the on-going water quality concern needs to be addressed on a watershed basis which extends far inland to the populated central portion of the City of San Diego. The Mission Bay Park Natural Resource Management Plan (May, 1990) contains the following development guidelines:

1. In-water construction or dredging will not be permitted in Mission Bay or the Flood Control Channel from April 1 through September 15, the least tern-breeding season.
2. Buffer zones for each Least Tern nesting site will be free of new structures with heights of over six feet, including fencing around the site. North Fiesta Island, Stony Point, South Shores and Mariner's Point are required to have a 150-foot buffer, while Cloverleaf is to have a 100-foot buffer.
3. A 1:1 replacement ratio of similar density is required for impacts to eelgrass habitat as delineated in the 1988 survey.
4. Sand beaches that are new and below Mean ?Lower Low Water should be replanted with eelgrass whenever the slope is changed by maintenance activities and eelgrass beds are impacted.
5. Construction or dredging projects of any kind that disturb the substrate in Mission Bay or the Flood Control Channel will use silt curtains or similar devices around disturbance areas.
6. Land use within buffer areas will be limited to bikeways, walkways, and passive recreation.
7. Buffer zones around terrestrial habitats in Mission Bay Park which exclude any development are as follows: salt marsh - 100 feet; salt pan - 50 feet; and coastal strand - 50 feet.
8. Dredging impacts to marine habitat will require 1:1 replacement.

Mission Bay Park Master Plan

Mission Bay Park currently serves as a regional and local recreational resource and as a venue for large special events. In addition, the park contains large expanses of sensitive marine habitat and hosts endangered bird species. The Mission Bay Park Master Plan contains these plan policies and/or proposals:

1. Prohibit the occupation of new parking facilities in the parkland within the primary waterfront zone, parking provisions should promote reductions in vehicular circulation around the Park; parking provisions should serve multiple needs;
2. Maximize public access and enjoyment of the water by arranging and defining land use allocations in the Park.

Balboa Park Master Plan

Balboa Park is one of San Diego's major attractions. This regional park contains historic buildings which now contain museums in its central core with more active recreation areas in the Morley Field-East Mesa area and in the western portion along Sixth Avenue. It also contains the San Diego Zoo and the Globe Theatre. Balboa Park is bounded by the communities of Golden Hill, North Park, Uptown, and Centre City. Portions retaining native vegetation in the central area in Florida Canyon and in canyon in the north central area have been placed in the MHPA. The Balboa Park Master Plan (July, 1989) contains the following policies:

1. Protect and recover free and open park land from encroaching uses whenever possible; the Arizona Landfill, Central Operations Station and Inspiration Point shall be developed as free and open park land emphasizing multi-use play, picnic and passive uses;
2. Consolidate special use recreation and sports activities in the Morley Field-East Mesa area, the Zoo, and the Golden Hill Recreation Center areas.

North City Future Urbanizing Area Framework Plan

The majority of the previous North City Future Urbanizing Area (NCFUA) has been phase-shifted and is currently being developed. With the construction of State Route 56 nearing completion, development has been accelerated. This area, along with Otay Mesa, remains the last major, undeveloped portion of the City. The adopted plans for this area contain concepts of urban villages. Although these planned villages would act as community centers, they are unlike the proposed City of Villages in that when they are initially developed, they would most likely not be connected to the envisioned expanded transit network in the near term.

The North City Future Urbanizing Area Framework Plan (February, 1995) contains the following guiding and implementing principals:

1. Create the environmental tier, an interconnected, viable system of natural open space that serves to protect and conserve cultural resources, flora and fauna that occur in the NCFUA.
2. Preserve floodplains and significant topographic features such as canyons, ridges, and hillsides.
3. Require that all linear corridors in the environmental tier be a minimum of 1/8 mile in width.
4. Require that portions of the environmental tier may not be eliminated based solely on an absence of sensitive resources within the area designated, because of the importance of continuous open space that provides for plant and animal movement.

5. Preserve 100-year flood zones as open space.
6. Prohibit the planting of non-local native vegetation within habitat protection areas.
7. Require that biological buffer areas be a minimum of 100 feet wide.
8. Prohibit wildlife corridors from having trails and recreation allowed within them, where that activity might impede animal movement or other faunal needs for breeding nesting, etc.
9. Prohibit concrete, asphalt, riprap, or other channelization structures within the open space system's drainage areas or floodplains.
10. Allow water retention areas and runoff filtering systems in portions of the open space system.
11. Require bridge structures to provide unobstructed wildlife corridors, where it is essential that roads cross the environmental tier.
12. Avoid filling of canyons or valleys and prohibit roads from being placed in the bottom of canyons or that act as barriers or impediments to wildlife movement or the survival of native species.
13. Narrow roads to a minimum when they cross the open space system to eliminate parking, turn lanes and median strips.
14. Construct roads that cross the 100-year flood plain, above grade using bridge or causeway structures.

Del Mar Mesa Specific Plan

Portions of the Del Mar Mesa have been targeted for acquisition into the City's planned preserve, the MHPA. Once assembled, this preserve would act as an urban limit line in the northwestern portion of the City. The Del Mar Mesa Specific Plan (1996) states an overall land use goal: To preserve the rural character of the Del Mar Mesa while accommodating clustered development and the preservation of open space.

The preparation of this plan was concurrent with the City's MSCP effort and contains elements of the MSCP. The adoption of this plan preceded the MSCP. The MSCP/Open Space element includes guidelines for development for areas in and adjacent to the preserve. These guidelines address specific properties in the plan area. In general, the guidelines are:

1. For certain properties, brush management shall occur within the area defined for development.
2. Fencing or other barriers will be used where it is determined to be the best method to achieve conservation goals and adjacent to land uses incompatible with the preserve.
3. Where grading is necessary, daylight grading at the edges of the preserve is preferred.
4. Wildlife corridors shall be preserved by the installation of culverts or fence, where necessary.

In addition, the MSCP/Open Space element includes guidelines for resource based open space and adjacent areas.

1. Land uses considered conditionally compatible with the preserve are: passive recreation; utility lines and maintenance access roads; limited water utilities facilities; and limited low-density residential uses.
2. Development on private property designated as open space/rural residential shall not exceed 25 percent of the parcel.
3. All proposed utility lines should be designed to avoid or minimize intrusion into the preserve system.
4. All proposed utility lines and facilities within or crossing preserve areas shall be designed and constructed to minimize environmental impacts.
5. Construction and maintenance activities in wildlife corridors must avoid significant disruption of corridor usage.
6. Roads in the preserve will be limited to those identified in the Del Mar Mesa Specific Plan, roads necessary for maintenance and emergency access and local streets needed to access isolated development areas.
7. Development of roads in canyon bottoms should be avoided, whenever feasible.
8. Where possible, roads within the preserve should be narrowed from existing design standards to minimize habitat fragmentation and disruption of wildlife movement.
9. Lighting shall be designed to avoid intrusion into the preserve and to reduce negative effects on wildlife.

The Circulation Element contains the following guiding principles:

1. An efficient and environmentally sensitive transportation system that maintains the rural character of the subarea.
2. Transportation facilities shall be regarded as an integral part of the landscape in which they are located.

Los Peñasquitos Enhancement Plan and Program

The watershed of the northern portion of the City of San Diego as well as other adjoining jurisdictions, terminates at the Los Peñasquitos Lagoon. The development that has occurred in the past three decades, has adversely effected this sensitive coastal resource. The City has received a state grant to begin a watershed management plan for the Peñasquitos drainage area. The goal of the Los Peñasquitos Enhancement Plan and Program (October, 1985) is to protect, maintain, and enhance the Los Peñasquitos Lagoon system and adjacent uplands in order to perpetuate the native flora and fauna characteristic of southern California lagoons and to restore and maintain the estuarine hydrology. Objectives of the plan include:

1. Open the lagoon mouth regularly to enhance the health and ecological value of the lagoon.

2. Protect the lagoon by reducing the amount of sedimentation and pollution that enters the lagoon and its associated uplands.
3. Improve and maintain habitat for native species that historically inhabited and used Los Penasquitos Lagoon.
4. Remove encroaching vegetation from historic least tern nesting sites along the sewer berm.
5. Remove ice plant and other exotic species and establish tidal channels and salt marsh habitat in the area bounded by Carmel Valley Road, the railroad embankment, and the North Beach parking lot access road.
6. Build a pedestrian link between the North Beach parking lot and the sidewalk of the North Torrey Pines Road Bridge.
7. Permit the diking, filling or dredging of wetlands only where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects.

Carroll Canyon Master Plan

Carroll Canyon is a major east-west drainage within the Mira Mesa Community Plan area. Generally, its current major uses are material extraction and a cemetery. There is a planned east-west circulation element road and transit corridor through this canyon. The Carroll Canyon Master Plan (August, 1994) includes the following design features in the Parks, Open Space, and Recreation Element that must be included in a 10 usable acre neighborhood park site near Rattlesnake Canyon:

1. Use non-invasive plant species to complement the character of the native canyon areas.
2. Provide a 100-foot wide buffer of adjoining upland habitat adjacent to Rattlesnake Canyon. This buffer should start at the outside edge of the defined riparian habitat, or at the outside edge of the 100-year FEMA floodplain, whichever is wider or outermost.
- 3.

The following are design features for the two passive neighborhood parks:

1. Direct park runoff away from the vernal pool habitat.
2. Avoid introducing new species into the adjacent native habitat by using non-invasive plant species in the parks.

The following are design elements for the creek channel to be built:

1. Build the creek channel with a minimum dimension of 200 feet with a 50-foot landscape buffer on each side; a channel width less than 200 feet is permitted if the Planning Director determines that future right-of-way widths required to construct Carroll Canyon Road and a transit line make the 200-foot minimum infeasible.
2. Build a linear open space park with a bicycle and pedestrian trail within the 50-foot buffer along the south side of the creek. The trail should be designed to pass under Carroll Canyon Road and Camino Santa Fe.

3. Build a 50-foot habitat buffer on the north side of the creek transitioning to a passive use park as the buffer meets the edge of the mixed-use development area.
4. Orient project buildings toward the creek, as feasible, to maximize views and pedestrian access.
5. Screen parking, industrial loading and storage areas, or other unsightly features located within the viewshed of the creek and associated open space.

As part of the Master Plan, the canyon will serve as a passive open space area. The following should be considered in reestablishing native vegetation:

1. Avoid planting invasive plant species adjacent to the canyon.
2. Avoid excessive runoff of irrigation water into the canyon from adjacent development.

San Dieguito River Park Concept Plan

The San Dieguito River Park is the natural feature and planned open space system 52 miles in length from the Pacific Ocean to Vulcan Mountain near Julian that defines the northwestern boundary of the City of San Diego. The San Dieguito River Park Joint Powers Authority plans the development and acquisition of this regional park. The San Dieguito River Park Concept Plan (February, 1994) contains the following park objectives:

1. Optimize the water quality and quantity of all groundwater resources and surface water bodies within the planning area through water conservation, erosion control, pollution control and restoration.
2. Maintain the 100-year floodplain and sheetflow areas within the planning area in an open configuration with a natural channel and provide adequate area for the normal stream waters to meander through the floodplain; it will be preserved for open space uses such as recreation, wildlife habitat or agriculture.
3. Retain and encourage responsible agriculture in appropriate areas.
4. Create a scenic trail and interpretive system and establish recreation areas including water related uses which are compatible with the natural values of the river system.

To protect the significant biological resources of the planning area, adequate buffers should be provided between development and sensitive resources. Functional linkages should be identified and preserved between the San Dieguito River Park and open space preserves to the north and south. The plan promotes the preservation of all significant cultural resources, and recommends the protection and restoration of all historic sites within the planning area. This plan also endorses the proposal to restore the San Dieguito Lagoon and its associated wetlands ecosystem.

Tijuana River National Estuarine Sanctuary Management Plan

The southwestern portion of the San Ysidro Community Plan area is within the Tijuana River Valley in close proximity to the proposed river Regional Park and designated wildlife refuge. Most of the valley within the City's jurisdiction has been placed in the MHPA. A treated wastewater outfall pipeline underlies this valley and an ocean outfall access shaft is located within the plan area. The restoration of habitat pursuant to the joint Tijuana River National

Estuarine Sanctuary Management Plan (February, 1986) has recently begun. The joint Management Plan contains the following policies and regulations:

1. No person shall willfully or negligently pick, dig up, cut, or mutilate any plant or portion thereof, in the state park system.
2. Plants and animals or their parts taken elsewhere shall not be introduced, liberated, or placed on any national wildlife refuge except as authorized.
3. No person shall molest, hunt, or disturb any kind of animal or fish, or so attempt, except that fish may be taken other than for commercial purposes in accordance with the state fishing laws and regulations, provided however, that no person shall use or discharge a spear or bow and arrow in the state park system.
5. The diking, filling, or dredging of open coastal waters, wetlands, estuaries and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects.
6. A buffer area will be established for each development adjacent to environmentally sensitive habitat areas and the buffer should be a minimum of 100 feet for small projects on existing lots, unless the applicant can demonstrate that 100 feet is unnecessary to protect the resources of the habitat area.

Otay Valley Regional Park Concept Plan

The Otay Valley Regional Park Concept Master (1999) is a joint park planning effort by three jurisdictions, the City of San Diego, the City of Chula Vista, and the County of San Diego, all of which have land use control over sections of this major east-west drainage. The river valley serves as a natural barrier east of Interstate 5, between the Cities of San Diego and Chula Vista. This valley still retains a natural riparian corridor and separates the planned Otay Ranch in Chula Vista from the developing areas on Otay Mesa in San Diego. The Otay River drains into South San Diego Bay, where the salt evaporation ponds have been purchased for a federal wildlife refuge. The western portion in the City of San Diego has been placed into the MHPA, and several private properties between I-5 and I-805 have been acquired and added to the planned preserve. The plan is first in a series of plans and recommendations for this joint regional park. It includes general land uses, circulation, and recreation strategies.

Airport Land Use Plans

The aviation facilities of San Diego play an important role in the City's economy and the movement of people and goods. M.C.A.S. Miramar is a Marines Corps aviation facility. General aviation facilities are located at Brown Field and Montgomery Field, both of which are municipal airports. The primary regional commercial airport is Lindbergh Field which is administered by the Unified Port District.

Of the four airports within the City of San Diego, three have Comprehensive Land Use Plans (CLUP) which have been adopted by the San Diego Association of Governments; Lindbergh Field, Montgomery Field, and N.A.S. Miramar. A draft CLUP has been prepared for Brown Field. SANDAG was designated as the Airport Land Use Commission pursuant to the state

Public Utilities Code. SANDAG established an Airport Influence Area for each airport in the region. (Please note: As of January 2002, the San Diego County Regional Airport Authority became the designated Airport Land Use Commission per state law and has replaced SANDAG.) The influence area encompasses those areas that could be impacted by noise levels exceeding the California State Noise Standards or where height restrictions would be needed to prevent obstructions to navigable airspace.

Each CLUP includes a map that delineates the area impacted by aircraft-produced noise. In addition, it outlines the extensive Airport Influence Area within which land uses must be reviewed in order to prevent further land use incompatibility with airport operations and to safeguard general welfare of inhabitants within the vicinity of each airport and the public in general.

Regional Natural Community Conservation Planning (NCCP)

Jurisdictions within San Diego County have developed several multiple jurisdiction natural habitat planning and open space conservation programs in accordance with the California Department of Fish and Game Natural Community Conservation Planning (NCCP) program. The NCCP program, enacted in 1991, was established to provide long-term, regional protection of natural vegetation and wildlife diversity while allowing compatible land uses and appropriate development and growth. The NCCP process was initiated to provide an alternative to "single-species" conservation efforts (Habitat Conservation Plans) that were relied on prior to the NCCP Act. The shift in focus from single-species, project-by-project conservation efforts to conservation planning at the natural community level was intended to facilitate regional protection of a range of species that inhabit a designated natural community. In terms of the regional land use implication, these natural habitat planning and open space conservation programs delineate the regional urban development boundary.

Within the City of San Diego, the current major effort in three areas of the City is to assemble large contiguous portions of the planned habitat preserve. Once assembled, the City would attain a contained urban form with clear geographic delineations. The effort on Del Mar Mesa combined with the San Dieguito River Park, generally defines the urban limit in the northwestern portion of the City; the effort in East Elliot combined with the Mission Trails Regional Park, defines the urban limit in the eastern boundaries, and the effort on Otay Mesa combined with the dedicated open space in the Tijuana River Valley, generally defines the urban limit in the southern portion of the City.

The Multiple Species Conservation Program (MSCP) involves the City of San Diego, the County of San Diego, and the City of Chula Vista as well as the cities of Del Mar, National City, Coronado, and Santee. The Multiple Habitat Conservation Program (MHCP) is an ongoing planning effort involving the County of San Diego and the cities of Carlsbad, Oceanside, Vista, Solana Beach, San Marcos and Escondido. The County of San Diego is also conducting planning efforts for the MSCP North County Subarea and the Multiple Habitat Conservation and Open Space Program (MHCOSP). The cities of Poway, La Mesa and El Cajon have also participated in the NCCP program. The NCCP efforts within San Diego County are illustrated in Figure A-1. These habitat preserve planning efforts are discussed further below.

Multiple Species Conservation Program

The MSCP study area occupies approximately 582,243 acres. The adoption of the MSCP by the City of San Diego in 1996, satisfied the mitigation requirement of the City's Clean Water Program (adopted in 1991). The preparation of the MSCP was a joint effort of the City of San Diego, member agencies, state and federal wildlife agencies, and citizen groups. The program addressed the wastewater facilities needs and improvements for the service area of the Metropolitan Sewerage System that included the City of San Diego as well as adjoining jurisdictions. The biological resource mitigation was for providing wastewater treatment capacity to accommodate continued growth in the southwestern portion of San Diego County. The City of San Diego implemented the MSCP, prepared a MSCP Subarea Plan and established the Multiple Habitat Planning Area (MHPA) as a planned habitat preserve for sensitive biological resources. The MHPA is currently being assembled through the preservation of public lands and public acquisition of private lands from willing sellers. Other participating jurisdictions and special districts prepared separate Subarea Plans for their portion of the planned habitat preserve based on biological, economic, ownership and land use criteria (City of San Diego, 1996). The status of the Subarea Plans and assembly of the preserve for each of the jurisdictions are described below.

City of San Diego MSCP/MHPA

The City of San Diego MSCP subarea plan has been prepared pursuant to the overall MSCP guidelines to address habitat conservation goals within the City boundaries. The City MHPA delineates 52,000 acres of core biological resource areas and corridors targeted for conservation. The City MSCP subarea plan also includes a Framework Management Plan and Specific Management Policies and Directives for management of resources within the MHPA.

In accordance with the approved MSCP implementing agreement between the participating jurisdictions and the wildlife agencies, California Department of Fish and Game (CDFG) and the United States Fish and Wildlife Service (USFWS), each jurisdiction must provide annual reporting on the status of the planned habitat preserve assembly. As of September, 2001, the City of San Diego had conserved within the MHPA a total of 29,703 acres of the planned 52,012-acre goal. Approximately 16,945 acres of the remaining 22,309 acres are obligated as open space in association with public open space referred to as "cornerstone lands" and open space approved as a part of approved private projects that has not yet been placed in a conservation easement or dedicated to the City. The remaining 5,364 acres of open space required to assemble the preserve will be acquired through future private conservation and acquisition of open space with public funds.

Plans for acquisition of approximately 3,643 acres of private land for the City's MHPA have been prioritized to include large areas of vacant land near the limits of planned development. Areas targeted for acquisition include land referred to as the "Del Mar Mesa" in the central portion of the City adjacent to Los Peñasquitos Canyon Preserve. Priority acquisition areas also include vacant land along the eastern border of the City in East Elliott, immediately south of Miramar Marine Air station and north of SR-52. Areas of vacant land associated with canyons along the border with Mexico on Otay Mesa are also targeted for preservation.

The remaining open space areas, approximately 1,721 acres, to be acquired for the MHPA will generally be located in the central portions of the City and are associated with smaller

development projects. Many development and public works projects within the City limits will be required to preserve open space associated with isolated "urban canyons" and drainages located within the MHPA.

County of San Diego

The County of San Diego Subarea of the MSCP covers approximately 115,701 acres. The Subarea is divided into three segments: 1) the Lake Hodges Segment in the northern portion of the county; 2) the Metro-Lakeside Jamul segment that covers 56,949 acres in the eastern portion of the county and; 3) the South County Segment. As of September 2001, a total of 49,886.8 acres have been preserved and 1,548.2 impacted through development within the County of San Diego portion of the MSCP. The preservation of 49,886.8 acres represents approximately 49% of the 101,000-acre goal within the County Subarea.

City of Chula Vista

The City of Chula Vista Subarea consists of 33,365 acres. The City of Chula Vista Subarea Plan is currently being completed and is anticipated to be approved by the USFWS and the CDFG in June of 2002. Although the plan is still in draft format, development has occurred within Chula Vista that has affected the MHPA within the City of Chula Vista. As of September 2001, approximately 3,936 acres were impacted and a total of 9,461 acres of habitat, have been preserved as permanent open space.

Other MSCP Jurisdictions

For the remaining jurisdictions participating in the MSCP, subarea plans are in draft form and have not yet been approved by the USFWS and CDFG. The cities of Del Mar and Coronado have prepared draft Subarea Plans. The City of Coronado MSCP subarea plan addresses coastal biological communities along the Silver Strand. The primary concern addressed by the Del Mar MSCP subarea plan is the southern portion of the San Dieguito Lagoon.

The City of Santee is currently redrafting its MSCP subarea plan to address comments by the USFWS and the CDFG. The Santee MSCP subarea plan encompasses approximately 10,000 acres, of which 57% is developed and 43% is undeveloped. A previous draft of the subarea plan sought to conserve approximately 2,300 acres.

North County Multiple Habitat Conservation Plan

The MHCP subregion encompasses the seven incorporated cities of northwestern San Diego County (Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach and Vista). This joint effort is being coordinated by the San Diego Association of Governments. Approximately 29,895 acres of natural vegetation remain in this subarea. These remnant natural areas are highly fragmented, existing mostly as small-scattered patches surrounded by development or agriculture, except for a few larger blocks of habitat within certain cities. The MHCP jurisdictions identified focused planning areas (FPAs) within which some lands will be dedicated for open space and habitat conservation.

The study area for the MHCP totals 29,895 acres while the overall Focused Planning Area is proposed to be 18,435 acres of native habitat and vegetation communities. The conserved

vegetation communities are anticipated to provide adequate habitat for approximately 60 plant and animal species.

A draft of the MHCP Plan, along with subarea plans for individual cities, as distributed for public review in June 2001. It is anticipated that the Environmental Impact Report/ Environmental Impact Statement (EIR/EIS) currently being prepared for the MHCP will be completed in 2002. Following completion of the EIR/EIS, the MHCP Plan and the individual subarea plans can be approved by local jurisdictions and an implementing agreement between the local jurisdictions and the USFWS and CDFG for endangered species take authorization can be completed.

MHCP Subarea Plans

The boundary of the subarea plans for Escondido and San Marcos are contiguous with the City of San Diego. The Escondido Subarea Plan FPA is proposed to be approximately 6,570 acres with areas near Lake Hodges and San Pasqual valley characterized by native habitat proposed to be conserved as permanent open space. The San Marcos Subarea Plan FPA is proposed to be approximately 1,800 acres with FPA open space in the vicinity of the City of San Diego proposed to be conserved immediately to the west of Lake Hodges.

City of Poway Habitat Conservation Plan/NCCP Subarea Plan

In 1996, the City of Poway prepared a Habitat Conservation Plan (HCP) that serves as an NCCP plan and, therefore, provides for take of habitat for endangered species and establishment of an open space preserve. The City of Poway encompasses 25,000 acres and the plan establishes a 13,000-acre Mitigation Area where habitat conservation will be emphasized. A total of 78% of habitat within this mitigation area will be conserved.

Cities of La Mesa and El Cajon MSCP Subarea Plans

Both the cities of La Mesa and El Cajon intend to participate in the NCCP program. The City of La Mesa MSCP subarea plan has been approved by the USFWS and the CDFG. The City's remaining habitat area consists largely of coastal sage scrub. However all losses of habitat within the City will be mitigated outside the City boundaries. The City of El Cajon has prepared a draft MSCP Subarea Plan but has not yet submitted it to the USFWS and CDFG.

County of San Diego MSCP North County Subarea and Multiple Habitat Conservation Open Space Program

The County of San Diego intends to prepare multiple species conservation plans for the remainder of the unincorporated lands within San Diego County. The MSCP North County Subarea will include Valley Center, Fallbrook, Rainbow, Bonsall and San Pasqual areas within the unincorporated county. Currently, the County is collecting environmental data to prepare the Plan. It is the intent of the county that the North County Subarea Plan would provide adequate habitat for many of the 85 species covered by the MSCP including additional species such as the endangered Stephen's kangaroo rat and the fairy shrimp. Major components of the plan would include coordination of State Highway 76 construction and extending the San Luis Rey River valley habitat preserve system. It is anticipated that a subarea plan will be available for review by 2002. The County's Multiple Habitat Conservation and Open Space Program will include the

remainder of the unincorporated county. The County of San Diego has deferred planning efforts within this subregion until it completes its North County Subarea Plan MSCP amendments.

Adjoining Jurisdictions - General Plan Updates

Three large jurisdictions contain most of the population and control much of the land use in southwestern San Diego County. They are the City of San Diego, the County of San Diego, and the City of Chula Vista. The jurisdictions are tied together through the City's Metro Wastewater System. The three jurisdictions make up the bulk of the subregional habitat preserve planning effort, the MSCP. The three jurisdictions jointly plan regional parks. While the County and Chula Vista are not yet constrained with dwindling vacant land, all three have embarked on an effort to update their respective General Plans.

County of San Diego General Plan 2020

The General Plan 2020 is a multi-year project that began in August of 1998, to update the San Diego County General Plan. The current general plan for the unincorporated County has not been fully updated since 1979 and has been substantially modified over the years. Since 1979, significant growth and change has occurred which has led to the incorporation of coastal cities and to the annexation of lands on the fringes of the unincorporated areas such as Otay Ranch and Montgomery area into the City of Chula Vista and various County "islands" (e.g. Miramar Ranch North) into the City of San Diego.

General Plan 2020 will establish a framework by enabling the unincorporated communities to grow, thereby shaping the future of the County. The outcome will be an updated County General Plan which protects the environment, focuses population growth to specified areas, and provides adequate public facilities and services for the additional citizens.

The Steering Committee and Interest Group Committee will assist the County in the preparation of General Plan 2020. General Plan policy recommendations will be made to the County Planning Commission and Board of Supervisors.

The assessment of regional alternatives is important in the planning process. Once a preferred alternative is selected as a framework for the general plan, critical elements such as land use, circulation, conservation, open space, public facilities, housing, safety, and noise will be prepared. During this time, local community plans will be amended/updated to reflect the selected regional plan. An environmental impact report analyzing the effect of the plan will be prepared and the draft general plan will be presented at public hearings. After revisions are made during the public review process, the San Diego County General Plan 2020 will be finalized and subsequently adopted by the County Board of Supervisors and become the leading document for future development in the unincorporated areas of the County.

The County's General Plan Update assumes that most elements and community plans will be updated concurrently. This effort could take several years. The County's effort differs from the City's effort in that the City General Plan Update is phased with incremental approvals so that the City's effort can allow for adaptive implementation. The proposed City of Villages, as identified in the Strategic Framework Element, is the initial phase; it lays out conceptual guidelines for future infill and redevelopment and contains a work program which will guide the

implementation of the strategy through subsequent General Plan Element updates, community plan amendments and/or updates, and associated rezones. As previously stated, these subsequent actions are discretionary and would require subsequent, separate CEQA environmental review.

City of Chula Vista

The City of Chula Vista has initiated a comprehensive General Plan update. Most current planned growth would occur in large master planned communities in eastern Chula Vista, including the 23,000-acre, Otay Ranch. This expansion area has an expected population of approximately 68,000. The buildout of this area may extend beyond 2020. Otay Ranch has been planned as a series of villages with core densities averaging from 14.5 to 18 dwelling units per acre (gross) depending on whether planned transit ways traverse the villages. In these villages, rights-of-way for future rapid transit extensions have been reserved.

The General Plan update will examine existing neighborhoods to determine what areas are likely to remain stable and where transitional areas exist where revitalization and intensification may be appropriate to accommodate future anticipated growth. This would focus upon some of Chula Vista's older portions, generally west of I-805 and along I-5. These areas include the City of Chula Vista's urbanized core and redevelopment areas, and some of the prime candidates for infill projects with mixed-use and higher densities.

A joint South Bay Transit First Program with MTDB, Chula Vista and other jurisdictions is refining proposed transit routes and station locations to provide a framework for identifying areas where transit supportive land uses are appropriate in this area.

Chula Vista may modify the previously forecasted need for approximately 9,000 residential units based on SANDAG's Preliminary 2030 Regional Forecast, which has indicated a lower regional need for housing units than the Region 2020 forecast.

In considering the possible outcomes of the growth management policies of these adjoining jurisdictions, the combined effects of the City of San Diego, Chula Vista, and the County to accommodate continued growth may result in adverse effects to regional traffic congestion and air quality. Whatever the eventual consequences, San Diego, Chula Vista, and the County are connected in assembling the subregional habitat preserve and planning the regional park system and laying the groundwork for improved connections in an expanded regional transit system.

IMPACTS

- Issue 1: Will the proposal result in a conflict with the environmental goals, objectives and recommendations of the *Progress Guide and General Plan*?
- Issue 2: Will the proposal result in a conflict with adopted environmental plans?
- Issue 3: Will the proposal result in a land use which is inconsistent with adopted community plan land use designations or incompatibility with adjacent land uses?

Inconsistency/conflict with environmental goals of an adopted land use plan

Generally, the proposed City of Villages strategy, as identified in the Strategic Framework Element, would contain the intent of the current plans described in the previous section. This is especially true for the plans' environmental goals and policies that address habitat, wildlife, natural open space, and natural drainages. The implementation of these goals and policies is assured by the adopted Multiple Species Conservation Program, the ESL ordinance and new open space zones, and the proposed City of Villages strategy would pose no direct or indirect impacts on these resources.

Most community plans specifically provide for adequate parking. These plan goals are currently being implemented with citywide and planned development ordinance parking standards. The proposed City of Villages strategy with its proposed alternative mode accessibility would likely result in reduced parking requirements as a potential site is redeveloped as a village. The result would likely be, at a minimum, a net decrease in parking spaces over time.

The proposed City of Villages strategy, as applied in the Levi-Cushman Specific Plan area as a potential Subregional District, proposes higher intensity development than what is currently allowed on this site. The proposed policy changes, if approved, would only affect the site if changes to the specific plan are subsequently pursued and adopted. The need for additional public open space, the proposed City of Villages strategy, and plans for a regional San Diego River Park may affect this adopted specific plan.

Airport Land Use Compatibility

Issue 4: Will the proposal result in land uses that are not compatible with aircraft accident potential as defined by a SANDAG Airport Land Use Plan?

The City of Villages strategy proposes changes in growth patterns. However, the proposed strategy would not change the existing general land uses. However, there are three areas identified for subsequent, potential villages and three corridors which could result in increased land use intensity, that are located in the noise impact area of Lindbergh Field. These areas are:

- Two potential villages along Bacon Street in Ocean Beach
- A portion of the potential urban village center along Midway Drive
- The potential 4th and 5th Avenue corridor in Banker's Hill
- The potential corridor along West Point Loma Boulevard between Bacon Street and Sunset Cliffs Boulevard
- The potential corridor along India Street, south of Spruce Street

Significance of Impacts

According to the City's significance guidelines, inconsistency or conflict with the environmental goals, objectives, or guidelines of a community plan or the General Plan are considered a significant land use impact. However, the proposed City of Villages strategy, as identified in the Strategic Framework Element, is an update of the City's *Progress Guide and General Plan*. If this strategy were adopted, it would guide future growth within the City. However, it does not change land uses as designated in adopted community, specific, and precise plans. As

community plans are updated and/or amended to allow development consistent with the City of Villages, the community plans goals and policies would be adjusted to reflect the new village strategy. However, land use impacts would be revised in future environmental analysis associated with community plan updates or amendments or individual project proposals and may be found to be significant at that point in time given the higher level of detailed information available. The proposed growth policy would not pose a significant land use impact.

Existing regulations require review of any subsequent development proposals for consistency with the airport land use plans. Therefore, the proposed project would not pose a significant impact related to airport land use compatibility.

MITIGATION MEASURES

Since there would be no significant impact, no mitigation is required.

B. Transportation/Circulation

Existing Conditions

During the 1990's, while the population in the San Diego region increased 12.6%, the weekday vehicle miles of travel (VMT) increased from 61.1 million VMT in 1990 to 72.5 million VMT in 2000, an 18.7% increase. The rate of growth of VMT was nearly one and one-half as high as the population increase. The greater increase in number of miles driven is attributed to the increasing two-worker households and emerging work commutes from Riverside County. By 2020, the daily VMT is expected to increase by another one-third.

In the City of San Diego, the trolley extension to Qualcomm Stadium and Interstate 15 was completed through the Mid-Cities Communities. The population growth combined with continued dependence on passenger car travel and limited facilities improvements have resulted in more traffic congestion.

Level of service (LOS) is a method used to describe traffic flow conditions on road segments. Levels of service are described as follows:

-
- LOS A - Free flow conditions where there is little or no restrictions of speed or maneuverability. Speed is in the highest range and density of vehicle on the roadway is low.*
- LOS B - Stable flow conditions where some restrictions begin. For freeways, the density is low and restriction maneuverability is low. There is little probability of major restrictions in speed or flow.*
- LOS C - Stable flow conditions where freedom to maneuver becomes restricted; speeds can only approach 75% of the maximum.*
- LOS D.- Speeds begin to decline slightly and density begins to increase with increasing flows more noticeably limited maneuverability.*
- LOS E- Extremely unstable conditions where maneuverability and psychological comfort becomes extremely poor. Speeds and flow rates fluctuate. There is little choice in speed selection; headway become short and operating speeds subject to rapid fluctuation. Significant delays become possible. Driving comfort is low, and accidents become potentially high.*
- LOS F - Stop and go conditions, considerable delays with forced flow where speeds are reduced for short time periods to zero with high densities.*
-

The standard for the acceptable level of service on existing roads within the City of San Diego, was set as part of the 1990 Growth Management Program; the acceptable level of service was changed from LOS C to LOS D. Twenty-five street segments in San Diego have been identified which currently operate at an unacceptable LOS E or F, which indicates slow-moving traffic in congested conditions.

The communities in which these poor levels of service occur include:

- Mira Mesa (portions of Mira Mesa Boulevard),
- Carmel Valley (portions of Via de la Valle, El Camino Real, and Carmel Valley Road),
- Kearny Mesa (a portion of Balboa Avenue - SR 274),
- Midway-Pacific Highway area (portions of Pacific Highway, Sports Arena Boulevard, Midway Avenue and Rosecrans Street),
- College area (portions of College Avenue and El Cajon Boulevard),
- Coastal communities (portions of Sunset Cliffs Boulevard, Mission Boulevard, Garnet Avenue, Torrey Pines Road, and Prospect Street),
- Mission Valley (a portion of Mission Center Road),
- Mid-City communities (portions of University Avenue),
- Otay Mesa (a portion of Otay Mesa Road),
- University City (Genesee Avenue – Torrey Pines Road to SR 52)
- University City (La Jolla Village Drive)

Current freeways and expressways experiencing LOS F within the City of San Diego include:

- I-5 at Del Mar Heights Road
- I-5 between Carmel Valley and I-805
- I-5 between Balboa and De Anza undercross
- I-5 between 1st Avenue and Coronado Bridge
- I-5 between 28th Street and National Avenue
- I-8 between Nimitz Boulevard and Mission Bay Drive
- I-8 between Hotel Circle Drive North and SR 163
- I-8 between Mission Center Road and I-15
- I-8 between Waring Road and College Avenue
- I-15 north of Ranch Bernardo Road
- I-15 between Camino del Norte and Carmel Mountain Road
- SR 52 between Regents Road and I-805
- SR 52 between I-15 and Santo Road
- SR 94 between offramp and Home Avenue
- SR 94 between I-805 and Euclid Avenue
- SR 94 east of College Avenue
- SR 163 between I-15 and SR 52
- SR 163 between Friars Road and Genesee Avenue
- SR 163 between University Avenue and I-5
- I-805 between Miramar Road and SR 52
- I-805 between Kearny Villa Road and Friars Road
- I-805 between Camino del Rio South and Adams Avenue
- I-805 between Market Street and Ocean View Boulevard

Existing Transit System

In general, the existing transit system, in particular the transit bus system, is geared to serving the least demanding rider. For some of the current riders, the transit system may be their only choice of transportation. Generally, the majority of the current transit riders are not overly sensitive to their personal travel experience; they must adjust their travel schedule to the available transit system.

Table IV-1 shows current commute times on the existing transit system traveling from selected locations throughout the City to Downtown and to Mission Valley (Fashion Valley). The table is based on current transit bus route and trolley schedules and shows estimated travel and frequency of service (maximum wait times). For example, riding on Route 7 bus from 40th Street and University Avenue to Downtown would take a waiting time of about 12 minutes and would take 34 minutes to reach 4th Avenue and Broadway. The average speed on this bus route is five miles per hour. This route is the most used with most frequency of service and the most profitable route within the City. It travels along University Avenue which is congested and the roadway is relatively narrow. Express bus service travels faster such as Route 50 from University Towne Center to Downtown; it takes 36 minutes to reach downtown and averages 21 mph. However, the frequency of service is 50 minutes and its service is limited to weekday commute hours. For comparison, the trolley from the station at Euclid Avenue and Market Street takes 21 minutes to reach Downtown; it travels at 13 mph, and it has a reliable frequency of 15 minutes. Currently there is no late night-early morning public transit service anywhere in the City. These two bus routes are indicative of current level of convenience in choosing public transit in most parts of the City currently not serviced by the trolley. (See the Background section in the Introduction for a description of the proposed Transit First vision.)

Bicycling

The proposed City of Villages strategy, in its attempt to reduce personal vehicle use, promotes the use of bicycles for short-range trips in and around the proposed villages. In addition, bicycling is one of the four Transportation Control Measures (TCM) adopted in the regional strategy to attain clean air. Because of the system of mesa and east-west drainages, extensive north to south travel by bicycle is challenged by steep climbs. However, along most of the coast, the terrain is flat and could be more conducive to bicycle travel. Two miles on a bike trip would typically take ten minutes; this distance comprises nearly half of all home-based, non-work trips. Use of bicycles for these trips reduces air pollutants and car trips. Currently in the region there are 73 miles of dedicated bike paths, 665 miles of separated bike lanes and 228 miles of shared bike routes. The adopted bicycle TCM set a goal of constructing 25 miles of bikeways each year. Table IV-2 lists the bikeway improvements within the City for the past four years by community plan areas.

Table IV-1
Examples of Current Transit Minimum Am Weekday Commute Times (In Minutes)
On Public Transit Year 2001

Trip Start Location	Downtown SD (4th & Broadway) Travel Time/Speed/Frequency/ (Bus Route)	Fashion Valley Center Travel Time/Speed/Frequency/ (Bus Route)
40 th St. @ University	21 min/10mph/30 min/(70*) or 34 min/5mph/12min/(7)	17+5+9 min/30 min/(7 to 8 to 25)
40 th St. @ El Cajon Blvd.	38 min/5mph/6 min/(15) or 28 min/5mph/30 min/(115)	12 + 11 min/30 min/(115 to 6)
Grand/Garnet @ Mission	39 min/13mph/30 min/(30*)	31 min/30 min/(27)
San Ysidro	41 min/21mph/15 min/TROLLEY	57 min/15 min/TROLLEY
Euclid Ave @ Market St.	21 min/13mph/15 min/TROLLEY	29 + 27 min/15 min/TROLLEY
University Town Centre	36 min/21mph/30 min/(50*) or 60 min/12mph/60 min/(5)	28 min/15 min/(41)
Mira Mesa Blvd @ I-805	48 min/18mph/30 min/(210*) or 11 + 21 min/26mph/30 min/(21 to 50*)	5 + 28 min/30 min/(60 to 41)
Mira Mesa Blvd @ I-15	31 min/30mph/30 min/(210*)	45 min/30 min/(20)
Linda Vista @ Comstock	41 min/30 min/(25)	8 min/30 min/(25)
5 th Ave @ University	14 min/12mph/30 min/(11)	22 min/30 min/(25) or 9 min/60 min/(16)
Rosecrans @ Nimitz	9 min/27mph/60 min/(23)	8+6 min/30 min/(28) to TROLLEY
Fashion Valley	23 min/16mph/15 min/TROLLEY	-----
San Diego State	22+23 min/16mph/30 min/(81) to TROLLEY or 44 min/9mph/30 min/(11)	22 min/30 min/(81)
UC San Diego	47 min/30 min**/(150*) or 85 min /30 min/(34)	38 min/15 min/(41)
College Grove	43 min/12mph/60 min/(5)	17+22 min/30 min/(936 to 81)
Clairemont Mesa @ Complex	28 min/19mph/15 min/(20)	15 min/15 min/(20)

* Limited commute-time express transit bus

** Highly variable

**Table IV-2
Bikeway Projects Funded - City of San Diego: 1997-2000**

<u>Project Name</u>	<u>Community Plan Area</u>
Rose Creek Bike Path	Mission Bay Park and Pacific Beach
Friars Road at Pacific Highway	Linda Vista
SR 56 Bike Path	Rancho Penasquitos
Qualcomm Stadium/Zion Ave Bikeway Study	Mission Valley and Navajo
Sorrento Valley Road at Sorrento Valley Blvd. Coastal Rail Trail Crossing Feasibility Study	Torrey Pines
Ocean Beach (Pac Hwy) to Mission Valley Bike Path Connection Feasibility Study	Mission Valley
Camino de la Reina (Avenida del Rio to Camino de la Siesta) Bike Path	Mission Valley
Camino Santa Fe (Calle Cristobal to Lopez Canyon) Bike Lanes	Mira Mesa
Fay Avenue (Nautilus Street to Camino de la Costa) Bike Path	La Jolla
Carmel Valley Road (Sorrento Valley Road to McGonigle Road) Bike Path	Torrey Pines
Interstate 15 (Camino del Rio South to Landis Street) Bike Path	Mid-City
San Diego River Bike Path III (Qualcomm Way to Qualcomm Stadium) Feasibility Study	Mission Valley
Via de la Valle (San Andreas Way to El Camino Real) Bike Lanes	Via de la Valle

Bicycle Master Plan

The City Council has recently adopted a comprehensive update to the City's Bicycle Master Plan. This plan is referenced in the Transportation Element of the Progress Guide and General Plan. The adoption of this plan allows the City to apply for State administered Bicycle Transportation Account funds. The new plan proposes a comprehensive network of bicycle facilities for better access and an enhanced interface with the transit system. The new plan consolidates information on bicycle facilities in one document. It includes information on existing and planned facilities and design standards.

Impact

- Issue 1. Will the proposal result in a substantial impact upon existing or planned private and public, regional multi-modal transportation systems?

- Issue 2. Will the proposal result in roadway traffic generation in excess of specific/community plan allocation?
- Issue 3. Will the proposal result in an increase in projected traffic which is substantial in relation to the capacity of the street system?

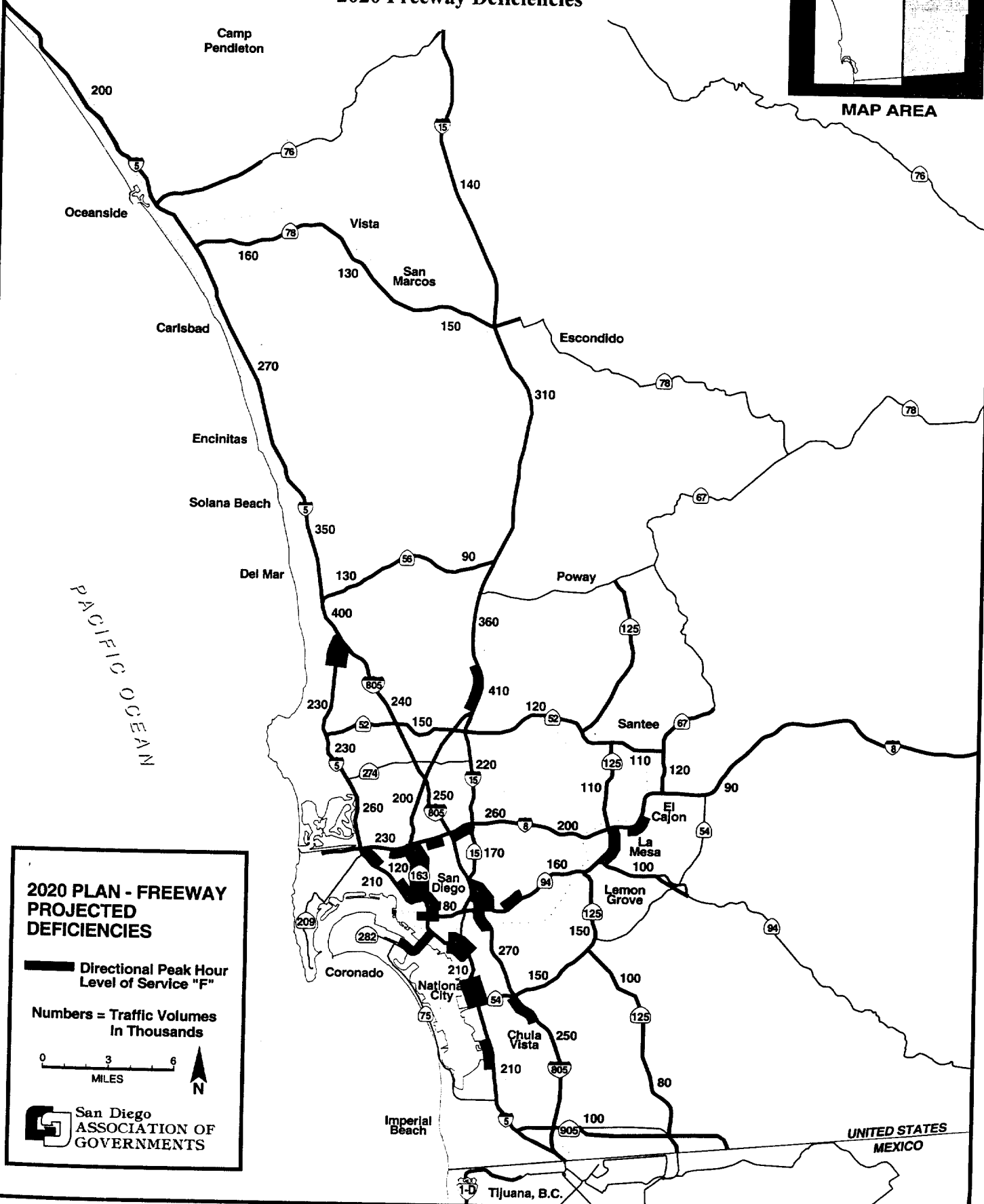
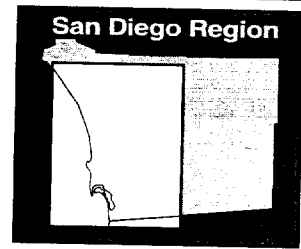
Freeways and Highways

SANDAG's 2020 Regional Transportation Plan (RTP) (April, 2000) estimates that there are 77 miles of a total of 616 (12.5%) directional-miles of freeways and expressways within the region which are currently deficient, operating at LOS F. These directional miles are twice the 308 miles of freeways and expressways. With the following RTP improvements, it is estimated that even with more people and more vehicles anticipated with the City of Villages, the deficient directional miles (the LOS F freeways and expressways in the year 2020) can be expected to be reduced to 29 miles of the 734 total miles (4%) in 2020. These needed improvements include:

- High Occupancy Vehicle (HOV) lanes on I-5 and I-15;
- Completion of the middle section of SR 56 linking I-5 with I-15 from Carmel Valley to Rancho Penasquitos;
- Completion of SR 125 from the border to Poway;
- Completion of SR 54 to El Cajon;
- Completion of SR 52 to SR 67; and
- Completion of SR 905 from the border to I-805

Figure 5 shows the 29 miles of deficient freeways and expressways in the year 2020 on the completed road system.

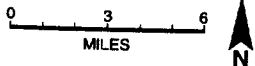
Figure 5
2020 Freeway Deficiencies



**2020 PLAN - FREEWAY
PROJECTED
DEFICIENCIES**

**Directional Peak Hour
Level of Service "F"**

**Numbers = Traffic Volumes
In Thousands**



**San Diego
ASSOCIATION OF
GOVERNMENTS**

SANDAG modeled the proposed City of Villages strategy with the freeway constraint assumptions for the year 2020. Results of this modeling are shown in the following Table IV-3.

Table IV-3
Freeway And Expressway Impacts - City Of Villages (COV)
Urbanized Core - Year 2020 (1,000 ADT's)

	<u>No Project</u>	<u>COV</u>		<u>No Project</u>	<u>COV</u>
State Rte 163			State Rte 94		
North of Downtown	124	127	East of I-5	131	139
South of I-8	216	220	Approach I-15	195	205
North of I-8	185	187	East of I-15	182	188
North of Mission Valley	224	227	East of I-805	184	188
			Approach College	154	156
Interstate 8			Interstate 805		
East of I-5	239	245	South of SR 94	295	299
Approach SR 163	255	260	North of SR 94	275	277
Between SR 163 & I-15	270	274	North of I-15	205	209
Between I-805 & I-15	261	263	South of I-8	229	233
East of Fairmount Ave.	269	270	North of I-8	225	226
East of College	219	219	N. of Mission Vly	221	225
Interstate 5			Interstate 15		
South of SR 94	201	202	South of SR 94	118	120
North of SR 94	197	198	North of SR 94	121	125
Junction of SR 163	238	238	North of I-805	169	172
North/west of SR 163	245	248	South of I-8	178	181
North of Laurel	209	212	North of I-8	245	249
North of Washington	213	215	N. of Mission Vly	240	244
North of I-8	247	249			
South of Clairemont Dr.	252	253			

Table IV-3 shows that the largest numeric and percentage impact would occur on SR 94 with impacts ranging from increases of 6.1% nearest to Downtown decreasing to a 1.3% increase east of College Avenue. The smallest numeric and percentage increases were predicted on Interstate 5 where the increases ranged from 0.4% to 1.4%; generally, the increases decreased both north and south of Downtown. Increases on Interstate 8 ranged from 2.5% to zero moving east to College Avenue. State Route 163 increases ranged from 2.3% to 1.3%; Interstate 805 ranged from 0.4% to 2.0%, and Interstate 15 showed an even increase of 1.6% to 1.8% except for an 3.3% north of its junction with SR 94.

For the surface streets within the urban core area, the modeling showed increases in the First-Fourth Avenue corridor connecting Hillcrest with Downtown. In Mission Valley, the results show significant traffic increases on Camino del Rio South west of Qualcomm Way and the

north-south roads, Mission Center Road and Via las Cumbres, which across the river showed increases. In addition, Linda Vista Road showed significant increases.

A traffic model was performed by SANDAG for four scenarios - no project proposal and proposed City of Villages with smart growth assumptions and no project and proposed City of Villages with existing conditions throughout the region. The results for each model run scenario, were presented for regionwide, citywide, downtown area (Centre City), and the intra-City (trips beginning or ending within the City).

As discussed previously, one of the major regional efforts is to provide HOV facilities on I-5 and I-15. The model runs indicate a high use of these facilities; in comparison with all trips, HOV riderships made up nearly 40%. In terms of auto occupancy, it was predicted that the current rate of 1.1 persons per vehicle would increase to 1.35 in the year 2020. This expected driver behavioral change combined with HOV improvements and completed freeway system resulted in the modeled decrease of 77 miles of current deficient freeways to 29 miles in 2020. The implementation of the transit vision would also contribute to this decrease. In addition to carpooling's positive effect on traffic flow, it along with traffic flow improvements (e.g. HOV facilities) have long been identified as two of four Transportation Control Measures (TCM) in the region's strategy to improve air quality.

Transit and Walking

Table B-4 shows the percentage of daily transit and walking trips by trip during peak and non-peak hour for the Citywide scenario. The model used trips generated by the potential 30,000 attached homes estimated for analysis of the proposed City of Villages.

The traffic model results showed that over 16% of home-to-work trips for the City wide area in 2020, were attributed to transit use and walking. Home-work trips comprise 11% of all daily trips. Transit is ideally suited to provide service in key home-to-work travel corridors, during peak periods, because there are many people traveling the same route, at the same time. The potential effectiveness of the Transit First plan in employment centers is provided for illustrative purposes, below.

Two trip types; home-to-other (e.g. shopping trips) and non-home (e.g. lunch trips), comprise 29% and 49%, respectively. The traffic model results showed that transit use and walking was estimated to comprise 9% of the home-other trips citywide and 7% of the non-home trips, based on Citywide 24-hour average. Due to the relative higher percentage of trips other than home to work trips and the relative smaller percentage of transit use and walking, for all trips, the transit use and walking was estimated to comprise slightly over 9% citywide. Traffic model results show that the use of personal vehicles decreases substantially for home-to-work trips and, with increased occupancy, remains the predominate preferred mode of transportation for any scenario in the year 2020.

A second traffic model run was conducted to estimate the effects of possible increased employment at the potential villages and refinement of the expanded transit system such that future stations were located closer to the potential villages and transit routes were added to villages. The results showed that for all trips, the transit, walking, and bicycling trips would approach 10%, a one-half percent more than the initial model results. This increase was primarily

attributed to the transit refinement rather than the increased employment. This table also contained existing transit and walking/bicycling trip percentages. See attached revised Table IV-4.

Table IV-4
Percentage of Daily Transit, Walking & Biking, and Carpooling Trips
By Trip Type and Peak-Off-Peak Period
For Four Scenarios
Citywide - Year 2020

	Home-Work			Home-Other			Non-Home			Total (all trips)						
	Smart Growth	Existing Conditions		Smart Growth	Existing Conditions		Smart Growth	Existing Conditions		Smart Growth	Existing Conditions					
	No Project	City Of Villages*	No Project	City Of Villages*	No Project	City Of Villages*	No Project	City Of Villages*	No Project	City Of Villages*	No Project	City Of Villages*				
Off-Peak Transit	11.0	11.1	10.9	11.0	3.3	3.3	3.2	3.3	1.2	1.2	1.2	1.2	2.9	3.0	2.9	2.9
Off-Peak Walking & Biking	2.0	2.0	1.9	2.0	5.0	5.1	5.1	5.2	5.5	5.5	5.6	5.6	5.5	5.5	5.5	5.5
Off-Peak Carpool	10.9	11.0	10.9	11.0	49.6	49.5	49.6	49.5	42.8	42.8	42.8	42.8	40.8	40.7	40.8	40.8
Peak Hour Transit	13.8	13.8	13.6	13.7	3.8	3.8	3.8	3.8	1.4	1.4	1.4	1.4	5.0	5.1	4.9	5.0
Peak Hour Walking & Biking	2.0	2.1	2.0	2.1	5.1	5.2	5.1	5.2	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Peak Hour Carpool	10.7	11.7	10.7	10.7	49.9	49.8	49.9	49.8	43.0	43.0	43.0	43.1	35.0	35.0	35.2	35.1
Total Transit	12.8	12.8	12.7	12.8	3.5	3.5	3.4	3.4	1.3	1.3	1.3	1.3	3.8	3.8	3.7	3.7
Total Walking & Biking	2.0	2.1	2.0	2.1	5.1	5.2	5.1	5.2	5.6	5.6	5.6	5.5	5.5	5.6	5.6	5.6
Total Carpool	10.8	10.7	10.8	10.8	49.8	49.6	49.7	49.6	42.8	42.8	42.8	42.8	38.5	38.5	38.6	38.6

*Proposed Project

Table IV-4-Continued
Percentage of Daily Transit and Walking & Biking Trips
By Trip Type and Peak-Off-Peak Period
with Transit First Refinements and Increased City of Villages Employment
Citywide - Year 2020

	Home-Work		Home-Other		Non-Home		Total (all trips)	
	Ex. Land Use (Yr 2020)		Ex. Land Use (Yr 2020)		Ex. Land Use (Yr 2020)		Ex. Land Use (Yr 2020)	
	Existing Conditions (Year 2000)	With Transit 1st w/out CoV	Existing Conditions (Year 2000)	With Transit 1st w/out CoV	Existing Conditions (Year 2000)	With Transit 1st w/out CoV	Existing Conditions (Year 2000)	With Transit 1st w/out CoV
Off-Peak Transit	3.6	11.0	1.6	3.3	0.3	1.3	1.2	2.9
Off-Peak Walking & Biking	0.1	2.0	0.5	5.2	0.1	5.8	0.3	5.8
Peak Hour Transit	6.6	15.7	2.2	4.4	0.5	1.7	2.8	5.7
Peak Hour Walking & Biking	0.1	2.1	0.5	5.3	0.1	5.9	0.3	6.0
Total Transit	5.5	14.0	1.8	3.7	0.3	1.4	1.8	4.0
Total Walking & Biking	0.1	2.1	0.5	5.2	0.1	5.8	0.3	5.9

**Proposed Project*

Centre City, with its concentrated employment, cultural, entertainment, institutional, and attached higher density residential uses in close proximity to extensive transit opportunities is an example of how transit use and walking trips can be increased where there is good transit service and village like characteristics. The overall percentage of transit and walking trips in Downtown is nearly twice the citywide percentage.

Significance of Impact

The potential additional 17,000 to 37,000 attached homes which could result through implementation of the proposed City of Villages project could ultimately generate 180,000 to 240,000 additional trips. These additional trips would pose direct and cumulative traffic impacts. The expected features of the proposed project, namely the expanded and improved transit system and the village design and location, would encourage transit use and make walking and biking safer and more attractive. This increase in modal choice for the new residents of the villages and the surrounding community is reflected in the regional transportation modeling performed for the City of Villages project. The modeling indicated that 18.1% of all home-work, peak hour trips would be by transit and walking compared to today's 6.7% mode split.

Traffic congestion on the freeway system would continue to be a regional problem; therefore, the project's traffic impact is significant. However, the congestion would occur with or without the proposed City of Villages.

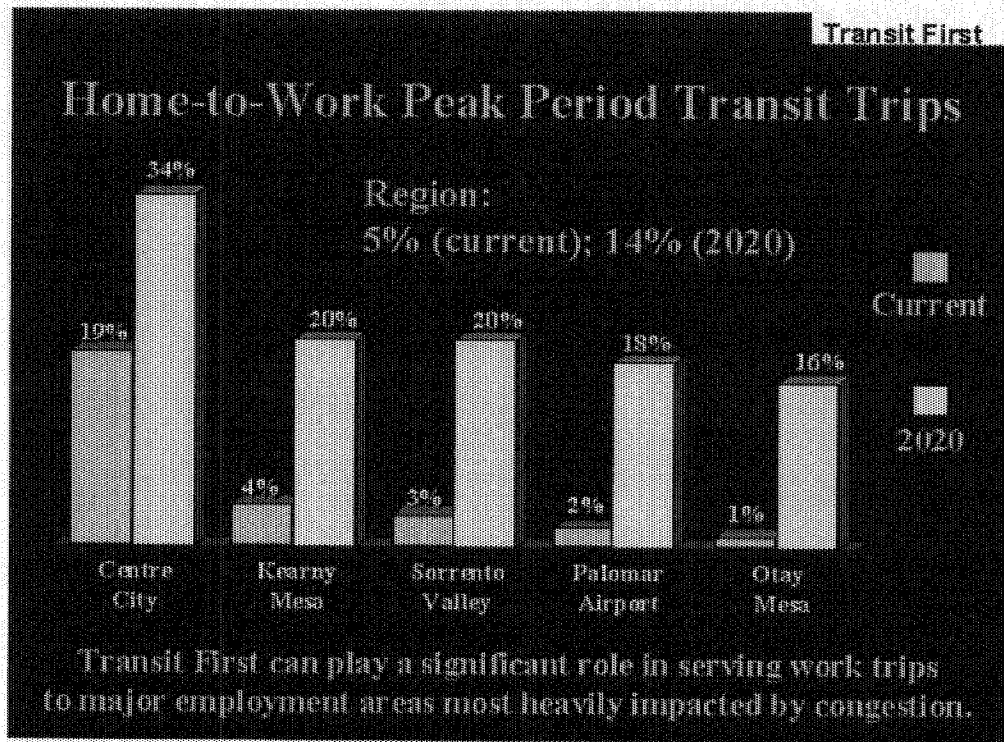
As subsequent implementing discretionary actions such as community plan amendments, rezones, or permits are required for larger village development, more specific traffic analysis would be required. These traffic analysis may refine the contribution of the alternative transportation modes and anticipated traffic impacts could be further reduced.

Parking

The expressed goal of the proposed strategy is to create more compact urban villages which are less dependant on personal vehicles. Many of the identified potential village sites are existing retail commercial centers with extensive surface parking. The City of Villages strategy seeks to create conditions that will reduce the demand for parking, and the space devoted to the automobile, through factors including: mixed-use development; comfortable, attractive sidewalks; multiple and direct pedestrian street connections; high quality transit service; improved bicycle facilities; and use of parking management tools. The strategy also recommends a more efficient use of parking spaces, and the development of community parking structures to help address today's parking needs while planning for a less auto-dependant future. In addition, the Transit Oriented Development Design (TOD) Guidelines, which call for reduced parking standards for some types of development, are proposed to be used as a part of the discretionary project development review process of potential village projects. In some cases, projects may be designed to allow a transition from a greater number of parking spaces to a lesser number over time, as village-like character and transit services are phased in. Therefore, space for space replacement of parking associated with new village development may not occur and could pose a potential significant impact. The parking problem and its solution would be better defined with subsequent project-specific design.

Mitigation Measures

As partial mitigation, the proposed City of Villages encourages and supports the use of vastly improved and expanded transit, walking, and bicycling systems. This is to be accomplished in part by concentrating and directing growth into activity centers, promoting transit-oriented design, improving bicycle facilities, and supporting implementation of transit priority measures on roadways. The proposed City of Villages project, combined with regional efforts by SANDAG and MTDB to implement the Transit First Plan could result in the additional residents engendered by this proposal, as well as existing residents, to choose alternative less impactive, transportation modes. The planned HOV facilities are expected to increase regional carpooling and provide free flowing access for transit along congested corridors. The modeling for the proposed City of Villages strategy showed a conservative effect of the proposed villages on its resultant increased walking and transit use. These measures are partial mitigation, and significant future traffic congestion impacts will not be reduced to a level of insignificance.



Source: MTDB

C. Air Quality

Existing Conditions

The City of San Diego is in the San Diego Air Basin (SDAB). The SDAB includes the coastal plains and foothills in San Diego County. Air quality in the basin is dependent on three major factors. They are the meteorology, the topography, and the demographics of the region. The populated, urbanized portion of the San Diego Air Basin has semi-arid coastal climate. Annual rainfall varies from an about 10 inches along the coast to about 16 inches in the foothills. The bulk of the rain occurs in the winter months. During the warmer seasons, San Diego rarely receives air pollutant-cleansing precipitation.

The normal wind pattern in the air basin is a gentle, onshore breeze which builds to about 7 to 11 knots in the mid-afternoon. Air pollutants emitted along the more densely populated, coastal areas in the morning rush hour and throughout much of the workday are blown inland on a regular basis. After sunset as the land cools, the wind direction changes to blow towards the coast at about three to four knots.

The average annual temperature at Lindbergh Field located at 13 feet elevation is 63.2 degrees Fahrenheit. The average high temperature in midsummer is 78 degrees. Metropolitan San Diego experiences an average of about 3,200 hours of sunshine each year. This abundant sunshine chemically alters air pollutants into photochemical smog. The region's warm temperatures speed this reaction.

As the sea breeze laterally transports air pollutants inland towards the mountains, a topographic barrier, a meteorological barrier and the marine inversion layer, traps air pollutants horizontally. Meteorological data from Kearny Mesa shows that the base of the inversion changes from an annual average of 850 feet altitude at 4:00 a.m. to 1400 feet at 4:00 p.m. As the region's abundant sunshine heats the air pollutant filled air near the ground, this air rises and cools. Upon reaching the base of the subsidence inversion layer, the air pollutants become trapped. Air pollutants produced in the populated areas along the coast are blown against the eastern foothills and trapped under the warm marine layer. Areas such as Alpine, at a critical location east of the populated coast and at an elevation of 2,000 feet near the base of the inversion, experiences high concentration of locally transported air pollution.

The combination of the climatic factors in San Diego, the dryness, the warmth, and the sunshine, which are valued by residents and tourists, also pose a high potential for smog. Meteorological studies by the Federal Environmental Protection Agency showed that San Diego has the greatest air pollution potential in the United States. The topography of the City of San Diego consists of the coast and the coastal plain dissected by numerous drainages. Significant landforms include the uplifted Pt. Loma Peninsula, Mission Valley, Soledad Mountain, and the 1,591 feet high Cowles Mountain in the eastern portion of the City of San Diego. The San Diego Air Basin includes these landforms plus the foothills and the western slopes of the Cuyamaca/Laguna Mountains.

The demographics of the City of San Diego has been described in the environmental setting of this document. The population of the City of San Diego, according to the U.S. Census, increased

from 1.12 million in 1990 to 1.22 million in 2000, a 9 percent increase. The region's population increased from 2.48 million in 1990 to 2.81 million in 2000, a 13 percent increase. The population is concentrated along the coast and within 14 miles of the coast within the coastal plain. While the bulk of the air pollution in the region is produced along the populated coastline areas, these pollutants are transported inland on most days by late morning and early afternoon sea breezes. Consequently, the inland foothill areas receive the impact of regional air pollution.

There are both state and federal standards for clean air. (See Table IV-5.) The San Diego County Air Pollution Control District (APCD) monitors the concentrations of air pollutants at eight monitoring stations strategically located throughout the air basin. Both the state and the federal government regulate six criteria air pollutants. They are photochemical smog (ozone), nitrogen dioxide, lead, sulfur dioxide, and PM-10 (inhalable particulates). The small inhalable dust particles are 10 microns in diameter or smaller. In addition to the six pollutants, the state also has standards for sulfates, visibility reducing dust, and hydrogen sulfides. San Diego does not meet the federal or state standards for the more stringent state standards for nitrogen dioxide and inhalable particulates. Since the early to mid-1980's, with slight setbacks in the late 1980's, San Diego had attained the federal standard for carbon monoxide (CO). As a result, San Diego was designated as an area for maintenance of attainment in the mid-1990s. Effect of exposure to low levels of CO is well understood. Carbon monoxide interferes with the red blood cells' ability to carry oxygen; the results of exposure include dizziness and slowed reaction. As with other air pollutants, children, the elderly, and persons with respiratory problems are first to be effected.

While the SDAB has been designated an attainment area for CO, CO exhaust emissions can potentially cause a direct, localized impact at or near the proposed development. It should be noted that primary source of this pollutant is the motor vehicle (over 80 percent). CO is a product of incomplete combustion of fossil fuel; unlike ozone, CO is emitted directly out of a vehicle exhaust pipe. There still remains a possibility for localized adverse effects of elevated CO levels on sensitive receptors. The optimum condition for the most impactful, localized effect, would be cool and calm weather (stable and reduced air mixing layer) at a congested major roadway intersection (e.g. arterials and majors) where vehicles are either idling or adjacent to freeways where commuters are crawling along at a stop and go pace. The SDAB has been in attainment of the CO health standard since 1990. It has been over ten years since this health standard has been exceeded; these past exceedances either were recorded in downtown San Diego or near the I-15 interchange in Escondido during the winter months. The hourly federal and state health standard is 20 ppm; at this level, the inhaled CO begins to adversely effect the oxygen carrying capacity of human blood. Initial exposure at this level results in sluggishness; in general, at this level it starts to effect children, the elderly and other sensitive receptors. It should be noted that motor vehicles are becoming much more efficient and their CO exhaust emissions are expected to be significantly decreased. For example, it is estimated that the average passenger car in 2020 would emit at most, one-half the CO exhaust emissions as the current average car.

**Table IV-5
Ambient Air Quality Standards**

Pollutant	Ave. Time	California Standards			National Standards		
		Concentration	Method	Primary	Secondary	Method	
Oxone ¹	1 hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	0.12 ppm (235 µg/m ³)	0.12 ppm (235 µg/m ³)	Ethylene Chemiluminescence	
Carbon Monoxide	8 hour	9.0 ppm (10 µg/m ³)	Non-Dispersive Infrared Spectroscopy (NDIR)	9.0 ppm (10 mg/m ³)	9.0 ppm (10 mg/m ³)	Non-Dispersive Infrared Spectroscopy	
	1 hour	20 ppm (23 µg/m ³)		35 ppm (40 µg/m ³)	35 ppm (40 µg/m ³)		
Nitrogen Dioxide	Annual Average	--	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m ³)	0.053 ppm (100 µg/m ³)	Gas Phase Chemiluminescence	
	1 hour	0.25 ppm (470 µg/m ³)		--	--		
Sulfur Dioxide	Annual Average	--	Ultraviolet Photometry	80 µg/m ³ (0.03 ppm)	--	Pararosaniline	
	24 hours	0.04 ppm (105 µg/m ³)		365 µg/m ³ (0.14 ppm)			
	3 hour	--		--	1300 ppm (0.5 µg/m ³)		
	1 hour	0.25 ppm (655 µg/m ³)		--	--		
Suspended Particulate Matter ¹ (PM ₁₀)	Annual Geometric Mean	30 µg/m ³	Size Selective Inlet (S.S.I.)	--	--		
	Annual Arithmetic Mean	--				Size Selective Inlet (S.S.I.)	
	24 hours	50 µg/m ³		50 µg/m ³	50 µg/m ³		
Sulfates	24 hours	25 µg/m ³	Turbidimetric Barium Sulfate	--	150 µg/m ³	--	
Lead	30-day Average	1.5 µg/m ³	Atomic Absorption	--	--	--	
	Calendar Quarter	--	--	1.5 µg/m ³	1.5 µg/m ³	Atomic Absorption	
Hydrogen Sulfide	1 hour	0.03 ppm (42 µg/m ³)	Cadmium Hydroxide STRactan	--	--	--	
Vinyl Chloride	24 hours	0.010 ppm (26 µg/m ³)	Gas Chromatography	--	--	--	

Source: CARB, November 1997

Notes: On July 16, 1997, U.S. EPA adopted new national standards for ozone, PM₁₀ and PM_{2.5}. The attainment designations based on the new standards are expected to occur in September 2000 for ozone and PM₁₀, and in September 2002 for PM_{2.5}.

ppm = parts per million

µg/m³ = micrograms per cubic metermg/m³ = milligrams per cubic meter

San Diego has not had a problem with sulfur containing air pollutants mainly because the region's electrical generation uses low sulfur fuel and nuclear energy. Airborne lead had not been a problem because of the use of unleaded gasoline. Combustion of leaded gasoline in pre-catalytic converter installed automobiles was the primary source of lead in the air. Historically, air quality management plans in San Diego have targeted reducing reactive organic gas emissions as the means to attain the federal clean air standards for photochemical smog (ozone). Recent strategy, beginning with the 1994 State Implementation Plan (SIP), also target the other ozone precursor, oxides of nitrogen (NO_x) even though the air basin has been designated as an attainment area for NO_x since 1982.

Reactive organic gases (ROG) are produced by the incomplete combustion of fossil fuels and the evaporation of solvents in such fluids as paints and cleaning fluids. Oxides of nitrogen (NO_x), exhaust pollutants from high temperature combustion of fossil fuels, and reactive organic gases in the presence of sunlight photochemically reacts in the atmosphere to produce ozone (photochemical smog). Ozone has been a continual air quality problem in the San Diego Air Basin. San Diego has not exceeded the federal health standard for ozone, concentrations measured in one hour over 12 parts per hundred million (pphm), for the past three years. Exceedances of the state ozone standard of 9 pphm has been drastically reduced from 192 days in 1981 to 24 days in 2000. Adverse health effects of smog include eye, nose, and throat irritation and possible long-term contribution to lung cancer and respiratory diseases. In addition, smog reduces visibility, cracks rubber, and damages plants

Table IV-6 shows the recent ozone trends in San Diego from 1996 through 2000. The number of days exceeding the federal ozone standard at five of the eight air quality monitoring stations throughout the air basin are shown in addition to the basin-wide totals. Two stations are within the City; two, Del Mar and Chula Vista, are indicative of air quality at other portions of the City, and the Alpine station is indicative of a receptor area of the pollution transported east from the polluted coastal areas. It should be noted from Table IV-6 that while the readings along the south-coastal areas measured at the Otay Mesa, Chula Vista, and downtown San Diego stations have historically been lower than those from north-coastal or inland stations, the three monitoring stations showed no exceedance days of the federal standard for the five-year period. The Alpine station, located in the foothills at a critical elevation, records the highest number of exceedance days in the air basin. In 1987, the Quality of Life Board, an advisory panel of scientists for the City, concluded that Alpine's measured ozone concentration is an indicator for air quality and air pollution control in the entire San Diego Air Basin. In 2000, 19 days over the state standard were recorded in Alpine.

**Table IV-6
Number of Exceedance Days Over Federal (12pphm)
And State (9pphm) Ozone Standards* - San Diego**

AIR QUALITY MONITORING STATION	<u>2000</u>		<u>1999</u>		<u>1998</u>		<u>1997</u>		<u>1996</u>	
	Federal/State	Federal/State	Federal/State	Federal/State	Federal/State	Federal/State	Federal/State	Federal/State	Federal/State	
DOWNTOWN	0	1	0	0	0	1	0	5	0	1
OTAY MESA	0	2	0	1	0	0	0	10	0	6
KEARNYMESA	0	5	0	3	1	4	0	7	0	7
CHULA VISTA	0	0	0	4	0	2	0	10	0	1
DEL MAR	0	0	0	1	0	1	0	4	0	2
EL CAJON	0	5	0	3	1	14	0	7	0	8
ALPINE	0	19	0	21	8	47	0	29	2	45
BASINWIDE	0	24	0	27	9	54	1	43	2	51

Source: SDAPCD

An occasional weather condition transports air pollutants from Los Angeles/Orange counties to cause high levels of smog concentrations in San Diego. This condition is a mild Santa Ana wind condition. During Santa Ana winds the morning and early afternoon wind direction changes from onshore breezes to offshore. Pollutants produced in Los Angeles/Orange counties are blown out to the ocean. When the mild condition stops, the predominate onshore wind blows the pollutants south and east to subject San Diego's coastal areas with the highest smog levels each year. This condition is visually evident by a brownish bank of air which looms offshore to the northwest during Santa Ana winds. The potential of mild Santa Ana conditions to occur, is less than ten percent of the number of days per year. The State Air Resources Board reported that about one-half of the times when these conditions occurred, ozone or ozone precursors were transported from the South Coast Air Basin to San Diego, and a little over one-quarter of the times when these conditions occurred no transport of smog was found to impact San Diego. Besides surface winds which transport pollutants to San Diego from the adjoining air basin, it is also suspected that pollutants can be transported by upper level wind patterns.

Table IV-7 shows the number of days the ozone standard in San Diego can be attributed to transport of pollutants from the South Coast Air Basin (SCAB), which includes Los Angeles, Orange, Riverside, and portion of San Bernardino Counties. The San Diego APCD reports that 18 out of 27 exceedance days over the state standard in 1999 were the result of pollutant transport from SCAB. Overall, the percentage of the number of transport days since 1980 has averaged one-half of the exceedance days attributable to pollutant

transport from the SCAB. This table also shows the number of days that San Diego exceeded the state clean air standard for ozone. The state standard of 9 pphm was exceeded on 160 days in 1988. This number of days was the highest since 1981 when there were 192 exceedance days.

**Table IV-7
Number Of Exceedance Days Over
State (9pphm) Ozone Standards – SDAB and SCAP**

	<u>80</u>	<u>81</u>	<u>82</u>	<u>83</u>	<u>84</u>	<u>85</u>	<u>86</u>	<u>87</u>	<u>88</u>	<u>89</u>	<u>90</u>	<u>91</u>	<u>92</u>	<u>93</u>	<u>94</u>	<u>95</u>	<u>96</u>	<u>97</u>	<u>98</u>	<u>99</u>
SDAB Exceedance Days Attributed to Locally Produced Air Pollutants	53	91	55	66	76	69	64	79	82	96	86	52	57	39	41	43	23	15	23	9
SDAB Exceedance Days due to Transport from LA-Orange Counties	114	101	65	59	70	79	67	48	78	62	53	54	40	51	38	53	28	28	31	18
San Diego Air Basin* Basinwide Totals	167	192	120	125	146	148	131	127	160	158	139	106	97	90	79	96	51	43	54	27
South Coast Air Basin** Basinwide Total Number of Exceedance Da	210	233	198	192	209	207	217	196	216	211	185	184	190	185	165	153	141	144	107	111
Los Angeles County	189	216	180	178	196	201	209	190	205	192	168	159	174	158	142	127	109	89	68	NA
Orange County Portion	119	107	79	110	107	101	101	81	96	81	80	71	63	59	46	39	27	13	22	NA

* Source: SDAPCD **Source: ARB

Table IV-8 compares measured ozone concentrations from 1990 through 1999 for San Diego and South Coast Air Basin (SCAB). The federal ozone standard was relaxed from 8 pphm to the present 12 pphm in 1979; the California standard has remained unchanged. Between 1990 and 1999, levels for the maximum, one-hour ozone concentration measurements measured in SCAB averaged 60 percent higher than the levels in San Diego. During this same time period, the maximum one-hour concentrations in SCAB decreased 47 percent; for San Diego the reduction was 38 percent. Between 1990 and 1999, levels for the maximum, eight-hour ozone concentration measurements measured in SCAB averaged 47 percent higher than the levels in San Diego. During this same time period, the maximum one-hour concentrations in SCAB decreased 31 percent; for San Diego the reduction was 36 percent.

Table IV-8
Comparison Of Measured Ozone Levels (Parts Per Million)
Over Time By Air Basin

Maximum One-Hr Concentration	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>
San Diego Air Basin	0.200	0.210	0.170	0.187	0.147	0.162	0.138	0.136	0.164	0.124
South Coast Air Basin	0.330	0.320	0.300	0.280	0.300	0.256	0.239	0.205	0.244	0.174
Maximum 8-Hour concentration										
San Diego Air Basin	0.145	0.145	0.133	0.154	0.121	0.122	0.117	0.112	0.141	0.100
South Coast Air Basin	0.193	0.203	0.218	0.208	0.203	0.173	0.148	0.206	0.142	0.195

Areas such as San Diego that are not in attainment of state clean air standards are required to meet the standards as soon as possible and reduce non-attainment pollutants by at least five percent per year. The California Clean Air Act of 1988 (CCAA) requires a revised air quality strategy for smog, nitrogen dioxide, sulfur dioxide, and carbon monoxide to be submitted to the California Air Resources Board by mid-1991. The CCAA assigns non-attainment areas into three attainment classes.

The San Diego Air Basin is currently classified as a serious non-attainment area; with this serious classification, the San Diego area was required to:

- Permit no net increase in air pollutant emissions from new or modified commercial/industrial stationary sources.
- Install best available retrofit air pollution controls on all existing stationary sources.
- Adopt transportation control measures to substantially reduce passenger vehicle trips.
- Control heavy-duty truck traffic during peak traffic hours.
- Install control programs for indirect sources, commercial/employment centers that attract vehicle trips.

The 1990 emission inventory for San Diego County was 310 tons per day of Reactive Organic gas and 240 tons per day of oxides of nitrogen. The Reactive Organic gas inventory is approximately 32 percent stationary or areas sources and 68 percent mobile. The oxide of nitrogen inventory is overwhelmingly mobile: 88 percent versus the 12 percent contribution from stationary and area sources. Table IV-9 shows the State Air Resources Board's emissions inventory estimates for San Diego for the year 2000. The table shows air pollutant emission in tons per day for reactive organic gas (ROG), oxides of nitrogen (NO_x), and carbon monoxide (CO) emissions. The significant contribution pollution from personal vehicle use to the regional air quality is clearly shown. It was estimated that cars and pick-up trucks accounted for 38 percent of the Reactive Organic gas, 36 percent of the oxides of nitrogen, and 54 percent of the CO. The current estimate

represents nearly a 22 percent reduction in Reactive Organic gas and a slight 2 percent reduction in NO_x from the 1990 estimate.

Table IV-9
ARB Estimates Of Air Pollutants (Tons Per Day)
San Diego Air Basin - Year 2000

	Reactive Organic Gas	Oxides Of Nitrogen	Carbon Monoxide
Cars And Pickups	93.64	85.05	851.98
Other On-Road Mv's	34.51	61.15	294.79
Construction/Off-Road Motor Vehicles	32.57	68.20	275.71
Fuel Combustion	4.17	16.40	39.28
Waste Disposal	2.79	0.27	0.15
Cleaning/Coatings	32.28	N/A	N/A
Fuel Marketing	4.58	N/A	N/A
Industrial	4.78	0.12	0.27
Solvent Evaporation	35.24	N/A	N/A
Miscellaneous	7.55	3.04	67.23
Wildfires	1.56	2.10	44.93
Totals	243.07	236.35	1574.35

Ozone Attainment Strategy - 1994 State Implementation Plan (SIP)

Previous photochemical modeling simulations have indicated that federal ozone standard violations resulting from local pollution could be eliminated with combined ROG and NO_x reductions of 26 percent and 27 percent, respectively, from the 1990 baseline. Based on this assessment, San Diego's plan predicted attainment of the federal standard without any additional controls beyond existing local, state, and federal regulations. Therefore, San Diego proposed no additional controls in its attainment strategy and relies instead on the emission reductions achieved through the continued implementation of existing programs. Foremost among these are reductions from California's motor vehicle program. Table IV-10 summarizes estimated emissions reductions needed to attain the federal ozone

standard in San Diego. The Clean Air Act specifies 1990 as the base year or starting point for all emission reduction calculations. The carrying capacity is the amount of VOC and NOx that modeling indicates can be emitted into the air while still keeping the region's air under the federal ozone standard. The difference between the two is the reduction needed to attain the federal ozone standard. San Diego's attainment strategy, summarized in Table IV-10, shows how these reductions are expected to be achieved. In this case, all of the required reductions are covered by existing programs. Additional state measures, scheduled to take effect before 1999, provide added insurance that the required progress will be made.

Table IV-10
Emission Reductions (tons/day)
Needed to Attain in San Diego County

	VOC (tpd)	NOx (tpd)
1990 Baseline Emissions Inventory	313	238
SIP BUDGET - TOTAL	232	175)
<i>(Motor Vehicle Subtotal)</i>	<i>(114)</i>	<i>(89.6)</i>
2000 ARB Emissions Inventory	243	236)
<i>(Motor Vehicle Subtotal)</i>	<i>(128)</i>	<i>(146)</i>

Impact

- Issue 1. Will the proposal result in air emissions which would substantially deteriorate ambient air quality?
- Issue 2. Will the proposal result in the exposure of sensitive receptors to substantial pollutant concentrations?

The state computer model, URBEMIS 7G, was used to estimate air pollutant emissions resulting from the potential 17,000 to 37,000 attached homes which might result from the subsequent implementation of the proposed City of Villages strategy. Table IV-11 shows the result of the modeling. Results include pollutants from motor vehicles use caused by the additional homes, construction of these new homes, and area source pollutants. Area source pollutants include use of house paints, fireplaces, landscape equipment, and evaporation of solvents in consumer products. The model indicated that development design features, design, and siting which encourage walking and bicycling in and around the potential villages and the vastly expanded public transit to these villages and along corridors, result in only 9 percent- 10 percent potential reduction in the motor vehicle emissions.

Table IV-11
AQ Modeling - ARB:Urbemis 7g Results
Estimated 2020 Project Air Pollution Emissions (Tons Per Day)

	Reactive Organic Gas		Oxides Of Nitrogen		Carbon Monoxide	
	17K DU'S	37K DU'S	17K DU'S	37K DU'S	17K DU'S	37K DU'S
Motor Vehicles	0.30	0.65	0.78	1.70	2.72	5.91
Area Sources	3.06	6.66	0.17	0.36	6.39	13.91
Construction	0.08	0.18	Neg	Neg	Neg	0.01
Totals	3.44	7.49	0.95	2.06	9.11	19.83

Significance of Impact

For this analysis, it was assumed that all potential village centers and corridors would redevelop and result in a maximum of 37,000 attached homes. Table IV-9 shows that passenger cars and pick-up trucks accounted for 93.64 tons of daily ROG emissions or 38 percent of the total estimate for 2000. Table IV-11 shows the declining trend of air pollutant emissions from passenger cars; roughly, the average car in 2020 would emit less than 20 percent of the emissions as in 2001. This reduction is similar for pick-up trucks. Even considering that vehicle use might continue to grow faster (1.5) than population increase (1.2) and assuming the maximum redevelopment of 37,000 additional attached homes, a rough estimate of ROG emissions in 2020 would be less than the current 243 daily tons of ROG. Currently, at an estimated 243 daily tons of ROG which is slightly higher than the estimated budget of ROG emissions (235 tons), the San Diego Air Basin has met the federal clean air standard for ozone for the past three years without a concurrent significant reduction in NO_x emissions. This difference of the current versus the budget level of ozone-causing pollutants, may suggest that the proposed project's contribution would not significantly deteriorate ambient air quality for the region's current air quality concern, ozone.

Another consideration is the growth forecast used in the air quality strategy to attain the ozone standard. The baseline for ROG and NO_x, the SIP budget, was established based on projections in the early 1990's, a projection similar to SANDAG's Series 8. For the county, Series 8 predicted 3.76 million people by 2015. This was slightly higher (3 percent) than the recent 2020 forecast. The 2020 forecast was used in the 2020 Regional Transportation Plan. This plan had an air quality conformity analysis which demonstrated that the motor vehicles accommodated by this plan would not adversely effect regional air quality effort to attain the ozone standard. Specifically, the analysis compared the regional motor vehicle emissions to the SIP budget. The proposed City of Villages might result in a potential maximum of 37,000 attached homes; the number of people living in these additional homes is less than 3 percent of the previously projected population for 2020.

Without a comprehensive update of the regional air quality forecast strategy by the SDAPCD and/or the CARB, using revised population growth forecast and considering the City's proposed City of Villages strategy, the impact to air quality is moot at best. In addition, the EMFAC modeling results for 37,000 additional attached homes, estimated pollutant levels from construction, solvent usage (area sources), and motor vehicles (even with mitigation of increased transit and bicycle use and walking) are in exceedance of City's significance criteria. While the project impact on the regional air quality is questionable, its estimated pollutant definitely exceed the City's criteria; therefore, the project's air quality impact is considered significant and unmitigated.

Mitigation

Mitigation for air quality impacts is similar to mitigation for traffic congestion in that flattening out or distributing the peak-hour traffic will reduce congestion and will benefit air quality through faster, more efficient combustion of fossil fuels in progressively cleaner motor vehicles. However, in an area such as San Diego where the population has continually increased and regional efforts towards densification and improved transit have begun, another available solution is vehicle trip reduction. Trip reduction requires a dramatic sociological change from freeway/passenger car dominance to public transportation or alternative mode such as walking or bicycling. Between 1982 and 1987, four Transportation Control Measures (TCM's) were implemented as part of the regional strategy to attain clean air. They were bicycling, carpooling, transit improvements, and traffic flow improvements. The proposed City of Villages strategy compliments the two alternative mode TCM's, bicycling and transit improvements, as well as walkability through proposed vision of intensification of redeveloped/infilled mixed uses and concentration of higher density attached homes in villages and transit corridors.

In addition to these local TCM's, the state was required to establish by the year 2000:

- Stricter California vehicle emissions standards,
- Adopt controls for off-road and construction vehicles, utility engines and boats,
- Adopt stricter evaporation specifications for fuels, and
- Control evaporative emissions (ROG) from certain area sources - consumer products containing oils, solvents, and other organic compounds.

Solutions to traffic congestion and subsequent air quality impacts on major roads and prime arterials cannot be resolved through the community planning process. Prime arterials and major roads carry traffic through a community. Solutions other than continual road-widenings, such as alternative transportation modes, require regional planning and coordination. Most of these larger roads could accommodate transit modes. To plan the routes, connections, stops, frequency and destinations to attract ridership requires regional planning. This regional effort has begun, and the proposed City of Villages strategy promotes the required land uses to implement the Regional Transportation Vision and the Transit First project.

The air quality model indicated that development design features, design, and siting which encourage walking and bicycling in and around the potential villages and the vastly expanded public transit to these villages and along corridors, result in a minimal 9 percent-10 percent potential reduction in the motor vehicle emissions. Potential partial mitigation measures and their effectiveness are described in Table IV-12.

It should be noted that there is a possibility that once potential villages are in place, transit service is vastly improved, and walking and bicycling become more attractive residents in areas surrounding the villages and corridors would be further encouraged to use these alternative modes of transportation. The current modeling does not account for these potential collateral benefits.

Although partially mitigated, the project's air quality impact remains significant and unmitigated.

**Table IV-12
Mitigation Measures For Reducing Motor Vehicle Emissions
From Residential Projects**

Mitigation Measure	Supporting Factors to enhance Effectiveness	Effectiveness
Provide neighborhood-serving shops and services within or adjacent to (1/4 to 1/2 mile) residential project.	Direct pedestrian/bicycle access is available. Medium or high residential densities located closer to commercial areas. Jurisdiction has design guidelines addressing issues such as pedestrian access, parking, compatibility with neighboring land uses, etc.	1% to 4% (all trips)
Provide transit facilities, e.g., bus bulbs/turnouts, benches, shelters, etc.	Transit service is available in/adjacent to project. Project is of sufficient density to support transit service. Transit service with frequent headways. Consultation with transit provider during project design, review	0.2% to 2% (all trips)
Provide shuttle service to regional transit system or multimodal center.	Transit station or multimodal center located within 5 miles of project. Medium to high residential densities.	0.1% to 0.5% (all trips)
Provide shuttle service to major destinations such as employment, centers shopping centers, schools.	Destinations located within 5 miles of project. Medium to high residential densities.	0.1 % to 0.3% (all trips)
Provide bicycle lanes and/or paths, connected to community-wide network.	Local jurisdiction has adopted comprehensive bicycle plan Project is located adjacent to, or within 1/4 mile of, Class I bicycle path or Class II bicycle lane. Routes are direct and convenient, not curving recreational paths.	0.1 % to 2% (all trips)
Provide sidewalks and/or paths, connected to adjacent land uses, transit stops and/or community-wide network.	Destinations such as commercial areas, schools, parks, community centers, etc are nearby. Cul-de-sacs are discouraged, or easements are provided for pedestrian access. Shade trees/landscaping provided.	0.1 % to 1 % (all trips)
Provide interconnected street network, with a regular grid or similar interconnected street pattern.	Multiple ingress/egress points are available. Large, multi-lane arterials are discouraged. Reduced street widths and curb radii. Cul-de-sacs are discouraged. Street trees required.	1 % to 5% (all trips)
Provide satellite telecommute centers in large residential developments.	*Most effective if residential area is located far from employment centers.	0.1 % to 1 .5% (all trips)

D. Paleontological Resources

Existing Conditions

Paleontological resources are the fossilized remains and/or traces of prehistoric plant and animal life exclusive of human remains or artifacts. Fossil remains such as bones, teeth, shells, and wood are found in geologic deposits (rock formations). Significant paleontological resources represent a limited, non-renewable, and sensitive scientific and educational resource.

The potential for fossil remains at a location can be predicted through previous correlations that have been established between the fossil occurrence and the geologic formations within which they are buried. For this reason, knowledge of the geology of a particular area and the paleontological resource sensitivity of particular rock formations makes it possible to predict where potential fossils may be encountered.

The City of San Diego is in the Coastal Plain Province, and contains several rock formations. This province is underlain by a sequence of marine and non-marine sedimentary rock units that record portions of the last 140 million years of earth history. Over this period of time, the relationship of land and sea has fluctuated drastically, such that today there are ancient marine rocks preserved up to elevations about 900 feet above sea level.

Late Quaternary Alluvium

The sediments at the bottom of streambeds of the later Quaternary alluvium are generally younger than 10,000 years old. Fossils are usually not found in these deposits in the Coastal Plain Province. However, there is one notable exception in San Diego; teeth and limb bones of a mammoth were found in floodplain deposits of the Tijuana River Valley. The floors of Otay Valley, Mission Valley, Rose Canyon, Sorrento Valley, and San Dieguito Valley are the sites where later Quaternary alluvial deposits are found. Because of their young age, they are assigned a low paleontological resource sensitivity.

Unnamed River Terrace Deposits

Deposits of coarse-grained, gravelly sandstones, pebble and cobble conglomerates, and claystones occur along the edge of many of the larger coastal valleys. These deposits generally occur at levels above the active stream channels and represent the sediments of ancient river courses. These river terrace deposits are anywhere from 10,000 to 500,000 years old. Fossils of "Ice Age" mammals have been collected from the South Bay Freeway, such as ground sloth, mammoth, wolf, camel, and mastodon. The San Dieguito Valley yielded well-preserved ground sloth. All of these important sites have been discovered in construction-related excavations. The "unnamed river terrace deposits" occur along the margins of the larger coastal river valleys, like Otay Valley, Mission Valley, and San Dieguito Valley. A moderate resource sensitivity is assigned to this formation.

Unnamed Marine Terrace Deposits

The Coastal Plain Province is characterized by a “stair step” sequence of elevated marine terraces, which are uplifted sea floors, and their associated marine and non-marine sedimentary covers. The lower marine terraces are referred to as “unnamed marine terrace deposits” that are about 80,000 to 180,000 years old. A large variety of marine vertebrate and invertebrate fossils have been found in these terraces. The “unnamed marine terrace deposits” occur locally along the entire coast of San Diego, and are given a moderate to high resource sensitivity.

Bay Point Formation (Pleistocene)

The Bay Point Formation is a nearshore marine sedimentary deposit that is about 220,000 years old. This formation has produced a large and diverse amount of well-preserved marine invertebrate and vertebrate fossils. The Bay Point formation is exposed along the northern shore of Mission Bay (i.e. Crown Point) and along the San Diego waterfront. It is assigned a high resource sensitivity.

Lindavista Formation (Pleistocene)

This distinctive rust-brown-colored formation represents a marine and/or non-marine terrace deposit. These deposits accumulated on the sea floor during a period of dropping sea levels. Today, these deposits form the extensive mesa surfaces characteristic of the Otay Mesa, San Diego Mesa, Linda Vista Mesa, Kearny Mesa, and Mira Mesa areas. Fossils are rare in the Lindavista Formation and have only been recorded in a few areas. The formation is assigned a low resource sensitivity.

San Diego Formation (Pliocene)

The San Diego Formation is exposed extensively from Otay Mesa and Otay Ranch to Mission Valley, with isolated occurrences stretched out along the Rose Canyon Fault Zone at Tecolote Canyon, Balboa Avenue, Rose Canyon, and all along the southern slopes of Mount Soledad from I-5 to the sea cliffs at Pacific Beach. The San Diego Formation is a marine sedimentary deposit. The formation has rich fossil beds that have yielded extremely diverse assemblages of marine organisms. In addition, rare remains of terrestrial mammals and fossil wood and leaves have been recovered from this fossiliferous formation. This diverse group of fossils represents one of the most important sources in the world of information on Pliocene marine organisms and environments, and is given a high paleontological resource sensitivity.

Otay Formation (Miocene)

The Otay Formation is a river deposited, sedimentary rock unit. Numerous fossil localities have been discovered in the upper portion of the formation. Well-preserved remains of a diverse assemblage of terrestrial vertebrates were found here. Based on recent discoveries, the Otay Formation is now considered the richest source of late Oligocene terrestrial vertebrates in California. This formation is exposed throughout, from approximately the

latitude of SR-94 south to the International Border, and from I-805 east to the base of the San Ysidro Mountains and San Miguel Mountain. Part of the formation is exposed extensively in the area around Lower Otay Lake, as well as in patches along the north side of the San Ysidro Mountains as far east as Sycamore Canyon. The upper third of the Otay Formation is assigned a high paleontological resource sensitivity, because of its important fossils. The lower portion of the formation is assigned a moderate resource sensitivity.

Sweetwater Formation (Miocene)

The Sweetwater Formation is a non-marine rock unit. This formation was deposited in a river channel setting, and some exposures of the formation may represent ancient soils. Fossils were collected from the lower part of the formation, which consisted of dental remains of opossums, insectivores, and rodents. Only a few non-diagnostic mammal teeth are known from the upper portion. The Sweetwater Formation crops out from Otay Valley northward and eastward to at least Encanto and Casa de Oro. Good exposures occur around Lower Otay Lake, at the confluence of Wolf Canyon and Otay Valley, and in the area of the confluence of Long Canyon and Sweetwater Valley. Sweetwater Formation is assigned a moderate paleontological resource sensitivity.

Mission Valley Formation (Eocene)

This formation is the only Eocene rock unit in southern California to have a radiometric date directly associated with fossil mammal localities. The marine strata of the Mission Valley Formation have produced abundant and generally well-preserved remains of marine microfossils, macroinvertebrates, and vertebrates. Fluvial strata of the formation have produced well-preserved examples of petrified wood and fairly large and diverse assemblages of fossil land mammals. The fact that marine microfossils and land mammals occurred at the same time is extremely important, as it allows for the direct correlation of terrestrial and marine faunal time scales. The formation crops out discontinuously from Otay Valley in the south to at least Miramar Reservoir in the north, and from Old Town in the west to Spring Valley and Santee in the east. The Mission Valley Formation represents one of the few instances in North America where such comparisons are possible, and they are assigned a high paleontological resource sensitivity.

Stadium Conglomerate (Eocene)

The Stadium Conglomerate is made up of two conglomeratic units that are distinct both with regard to the time period of formation and to the composition of the formation.

The two units occur together in some places, but only one may be present in other areas. The formation occurs in Mission Valley and Murphy Canyon, Tierrasanta, Rancho Penasquitos, and Rancho Bernardo areas. Where it occurs in Murphy Canyon, there have been sparse, but well-preserved remains of rhinoceros, primates and small mammals. Because of the sparseness of resources, the formation has a moderate resource value.

Where it occurs in Scripps Ranch, Rancho Penasquitos, and Carmel Mountain Ranch, there have been recovered well-preserved remains of rodents, bats, tapirs and primates. Because of the diverse and well-preserved remains of terrestrial vertebrates, the formation where it occurs has been assigned a high resource sensitivity.

The lower member of the Stadium Conglomerate occurs from the south side of Mission Valley to Rancho Bernardo. Sparse marine fossil remains and fossils of land mammals have been found near the base of the formation. This part of the Stadium Conglomerate is assigned a high resource value, due to the moderately diverse assemblages of terrestrial mammals.

Friars Formation (Eocene)

The Friars Formation consists mainly of sandstones, siltstone, mudstones, and cobble conglomerate. It is rich in vertebrate fossils, especially terrestrial mammals such as primates, rodents, artiodactyls, and perissodactyls. Well-preserved remains of marine microfossils and macroinvertebrates, and remains of fossil leaves have been recovered from the Friars Formation. The formation crops out from Mission Valley north to Rancho Bernardo in the east, and Rancho Santa Fe in the west. In the south, the formation extends from Tecolote Canyon east to Santee and Lakeside. This formation is given a high paleontological resource sensitivity.

Scripps Formation (Eocene)

The Scripps Formation is considered to be potentially fossiliferous almost everywhere it occurs. Most of the fossils known from this formation consist of remains of marine organisms (i.e. bony fishes, sharks, rays, etc.) and land mammals (i.e. uinthere, brontothere, rhinoceros, and artiodactyl). Well-preserved pieces of fossil wood have also been recovered from the Scripps Formation. This formation crops out from Presidio Park in the south, north to Del Mar, and from Clairemont east to La Jolla Valley. Based on the joint occurrence of marine invertebrate fossils and terrestrial vertebrates, the formation is assigned a high resource sensitivity.

Ardath Shale (Eocene)

The Ardath Shale has yielded diverse and well-preserved assemblages of marine microfossils, macroinvertebrates, and vertebrates. This formation crops out from Soledad Valley in the north to La Jolla, Pacific Beach, and Clairemont in the south. Because of its production of diverse and well-preserved assemblages of fossils, a high resource sensitivity is given to this formation.

Torrey Sandstone (Eocene)

The Torrey Sandstone has produced important remains of fossil plants and marine invertebrates. Many of the plant remains are from taxa related to species that today live in brackish-water marsh and/or riparian woodland environments in subtropical and tropical regions of Southeast Asia and the southeastern U.S. Their occurrence in the Torrey

Sandstone suggests that the Eocene climate in this area was warmer and wetter than the modern climate. The formation occurs from Sorrento Valley in the south to Batiquitos Lagoon in the north, and from the coast inland to La Jolla Valley. Because of the coarse-grained nature of the Torrey Sandstone and the generally poor state of preservation of fossils, the formation has a moderate paleontological resource sensitivity rank.

Delmar Formation (Eocene)

Fossils from this formation consist of well preserved to poorly preserved remains of estuarine invertebrates and estuarine vertebrates. The Delmar Formation crops out from Sorrento Valley in the south to Batiquitos Lagoon in the north. The best exposures of the formation occur in the sea cliffs from Torrey Pines State Reserve to Encinitas. The Delmar Formation has produced important remains of terrestrial vertebrate fossils and is assigned a high paleontological resource sensitivity.

Mount Soledad Formation (Eocene)

The Mount Soledad Formation has yielded fossils of various kinds of marine organisms including mollusc, planktonic foraminiferas, benthonic foraminiferas and pollen. This formation has a rather limited areal distribution, and is exposed in roadcuts on the western and eastern sides of Rose Canyon. It is also exposed in the sea cliffs at Tourmaline Beach, in artificial slopes at the north end of Point Loma, and in canyon slopes of Mount Soledad. Although the extent of known fossil occurrences is limited, its sedimentary nature suggests greater potential. This is especially true for the upper fine-grained sandstone and siltstone portion of the formation, which is given a moderate resource sensitivity. The lower conglomeratic portion of the formation has a lower resource sensitivity.

Unnamed Formation

The "Unnamed formation" is only known to occur in the Rose Canyon area of San Diego, between Mission Bay on the south and SR-52 on the north. Fossils from this formation include dental remains of multituberculates, opossums, insectivores, primates, "condylarths", and rodents. This unique assemblage includes the oldest Eocene terrestrial mammal fossils known from the west coast of the U.S. Because of those discoveries, the "Unnamed formation" is assigned a high paleontological resource sensitivity.

Pomerado Conglomerate (Eocene)

The lower portion of the Pomerado Conglomerate has produced remains of fossil terrestrial mammals including primates, protoreodonts, and insectivores. The middle part of the conglomerate has yielded remains of nearshore marine molluscs, as well as unidentifiable mammal bone fragments. The upper conglomerate member has yielded a single fragmentary jaw of an unidentified artiodactyl. The Pomerado Conglomerate crops out from La Mesa to the south to at least Miramar Reservoir in the north, and from there eastward to Santee. Because of the predominantly coarse-grained nature of the Pomerado Conglomerate and its largely unproven resource potential, it is assigned a moderate paleontological resource sensitivity.

Cabrillo Formation (Cretaceous)

The Cabrillo Formation is composed mainly of sandstones and conglomerates, and is approximately 70 million years old. Fossils from this formation are not well known and consist of remains of marine invertebrates and vertebrates. The Cabrillo Formation crops out along the eastern and southwestern sides of the Point Loma peninsula in both sea cliff exposures and roadcuts. It is also exposed on the western, northern, and eastern flanks of Mount Soledad. Based on the unproven resource potential of the formation, a moderate paleontological sensitivity is given.

Point Loma Formation (Cretaceous)

The Point Loma Formation was deposited on an ancient sea floor. Well-preserved remains of many types of fossil marine invertebrates and vertebrates are known from this formation. In addition, the formation has produced sparse remains of terrestrial plants and dinosaurs. Taken together, the paleontological resources of the Point Loma Formation represent some of the best-preserved examples of late Cretaceous marine fossils known from California and one of the few sources of dinosaur fossils in the state. The formation is well exposed along the western margin of Point Loma and along the northern flank of Mount Soledad. The Point Loma Formation has produced diverse and well-preserved assemblages of marine invertebrate fossils, as well as rare dinosaur remains, and is assigned a high paleontological sensitivity.

Lusardi Formation (Cretaceous)

No identifiable fossils have been recovered from the Lusardi Formation in San Diego. The Cretaceous age of this rock unit coupled with its terrestrial depositional setting suggest the potential presence of dinosaurs and other terrestrial vertebrates. The Lusardi Formation is exposed in Lusardi Canyon and La Zanja Canyon near Rancho Santa Fe, along Poway Road east of Poway, in the Alpine area, near San Vicente Reservoir, and east of Palomar Airport in Carlsbad. This formation is assigned a moderate resource sensitivity based on its unproven potential.

Impacts

Issue: Will the proposal result in the loss of paleontological resources?

Many fossil sites presently on record in San Diego have been discovered during construction operations. Weathering quickly destroys most surface fossil materials, and it is not until fresh, unweathered exposures are made by grading that well-preserved fossils can be recovered. Adverse impacts occur when excavation activities cut into fossiliferous geological deposits, and cause physical destruction to fossil remains.

Once a subsequent development is subject to CEQA environmental review, the initial study would identify whether it is likely that potential subsurface, fossil resources are present on the site. If there is a moderate or high potential for fossils to be present on a particular site,

monitoring for paleontological resources is required during grading in order to mitigate potential significant impacts.

Significance of Impacts

Several current community plans identify preservation of paleontological resources as an environmental goal for their community. Since the proposed City of Villages would ultimately result in the redevelopment/infill of large, existing surface parking, it would encourage the development of separate parking structures or subterranean garages. While mass grading into fossil-bearing bedrock is not envisioned, there is a possibility of deep excavations for subterranean garages. If the excavated geologic formation has a high probability for fossils and the required excavation is into unweathered bedrock, fossils may be unearthed. If these fossils are unweathered and well-preserved and if they add to our knowledge of paleo-ecology or represent type specimens, these resources must be considered significant

Mitigation

In the case of fossil resources, there has been enough scientific study of the San Diego region that the geologic rock formations likely to contain important fossils have been identified. The potential adverse impact of the proposed project could be reduced if the regulations required construction monitoring under appropriate circumstances. It is a standard City procedure that when a discretionary development project is proposed in a geologic formation that has been identified as yielding important resources and the site development requires grading deep enough to reach unweathered bedrock, monitoring for paleontological resources would be required during grading. However, paleontological resources even if detected, can be mitigated with strict adherence to standard mitigation measures.

When there is a possibility that the proposed excavation could encounter unweathered portions of a known fossiliferous rock formation. The following preventative measures would need to be implemented to mitigate any significant impacts paleontological resources:

- A letter of verification shall be provided stating that a qualified paleontologist and /or paleontological monitor has been retained to implement the monitoring program. The requirement for paleontological monitoring shall be noted on the grading plans. All persons involved in the paleontological monitoring shall be approved by the City's Land Development Review (LDR).
- The qualified paleontologist shall attend any preconstruction meetings to discuss grading plans with the grading and excavation contractor.
- The paleontologist or paleontological monitor shall be on site full time during the initial cutting of previously undisturbed and unweathered areas within the known fossil-bearing geologic formation. Monitoring may be increased or decreased at the

discretion of the qualified paleontologist, in consultation with Land Development Review, and will depend on the rate of excavation, the materials excavated and the abundance of fossils.

- The paleontologist shall have the authority to divert, direct, or temporarily halt construction activities in the area of discovery to allow recovery of fossil remains. The paleontologist shall immediately notify LDR staff of such finding at the time of discovery. LDR shall approve salvaging procedures to be performed before construction activities are allowed to resume.
- If significant fossils are detected, the paleontologist shall be responsible for preparation of fossils to a point of identification as defined in the City of San Diego Paleontological Guidelines and submitting a letter of acceptance from a local qualified curation facility.
- Prior to the issuance of a certificate of occupancy, a paleontological monitoring results report, with appropriate graphics, summarizing the results, analysis, and conclusions of the paleontological monitoring program shall be submitted to LDR for approval. Where appropriate, a brief negative result letter report would satisfy this requirement.

E. Geologic Hazards

Existing Conditions

San Diego is located in a seismically active area. The active Rose Canyon Fault traverses the City from Downtown, runs parallel to the eastern shores of Mission Bay and out to the ocean at south La Jolla Shores. Fieldwork has confirmed that the Rose Canyon Fault is active as defined in the Alquist-Priolo Special Studies Zone Act (1972); it has displaced 6,000 to 9,000 year old sediments. It is predicted that this fault could generate moderate to large earthquakes of a magnitude of 6 to 7 on the Richter scale. In the City of San Diego, besides the possible rupture displacement which may result from a movement along the Rose Canyon Fault, there is another potential geologic hazard of extreme shaking of wet, unconsolidated alluvium. This potential hazard exists around Mission Bay, in Mission Valley, and in Downtown. This ground shaking effect is liquefaction. Its occurrence is not only dependant on movement along Rose Canyon Fault, but also on larger, active faults to the east. These are the San Jacinto, Elsinore, and San Andreas faults. The southeastern portion of the City is traversed by another clearly identified fault zone, the La Nacion Fault. However, this fault has not moved/ruptured in the last 20,000 years; therefore it is not considered active. See attached Figure 6 for the location of these two fault zones.

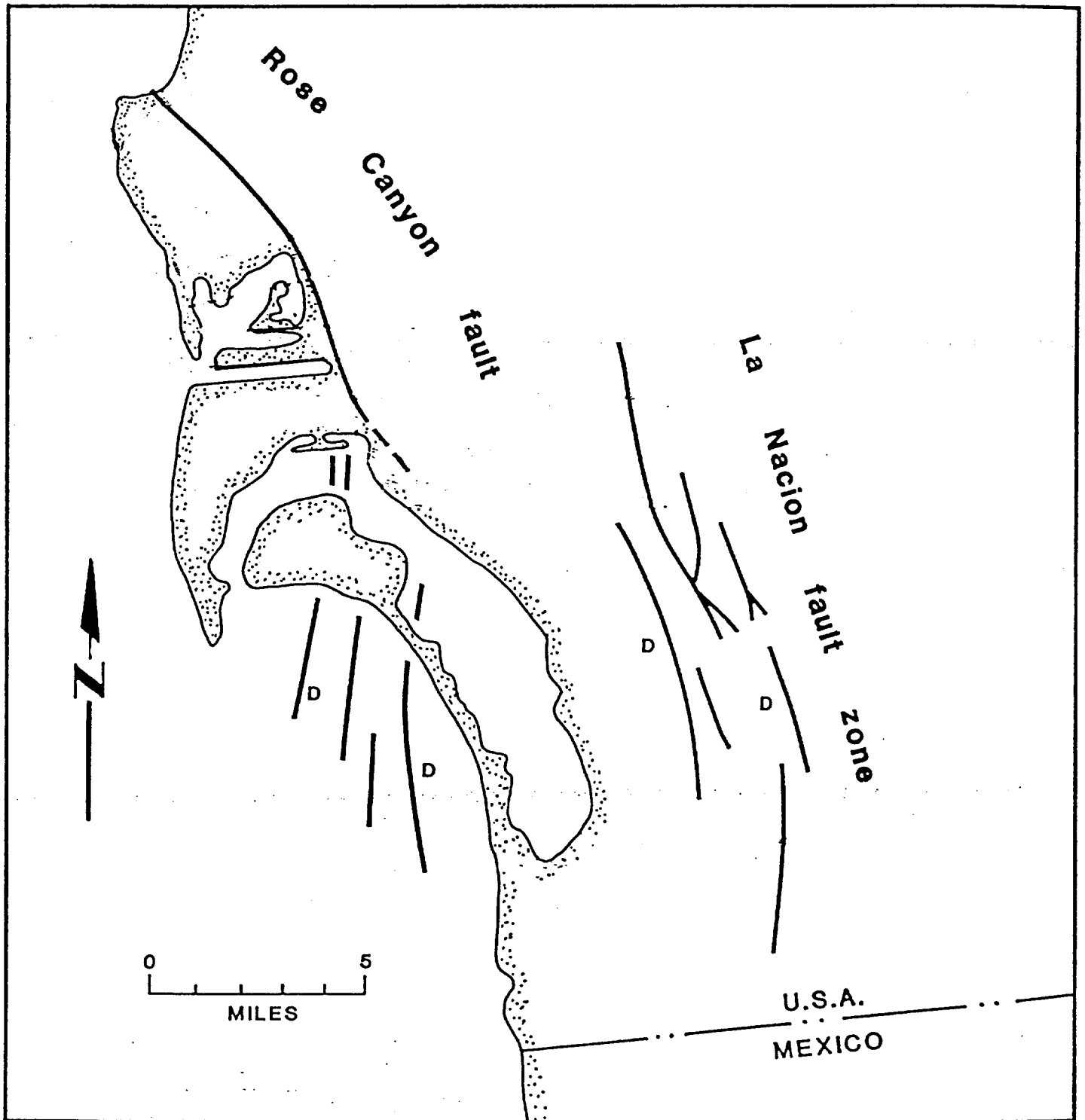
Impact

- Issue 1. Will the proposal result in exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?
- Issue 2. Will the proposal result in any increase in wind or water erosion of soils, either on or off the site?

The proposed City of Villages strategy, when implemented, would eventually result in land use intensification in Mission Valley and Downtown. Numerous previous geotechnical reports have been conducted in both areas. No structure is allowed to straddle the Rose Canyon Fault, and those built near the fault trace are required to conduct detailed, subsurface geotechnical studies to assure that any proposed structure would be seismically sound.

The proposed City of Villages would result in redevelopment and infill and would not increase impervious surfaces which may result in adverse impacts to natural hydrology and water quality with increased erosion. The proposals resultant new redevelopment or infill projects on targeted large surface parking lots could have greater water quality effects; redevelopment would not only eliminate a large non-point source of urban runoff but would replace it with lower level parking and would capture runoff for treatment. During construction, recent regulations require the capture and treatment of all runoff from the site. Significant water erosion would not result from the proposed project.

FIGURE 6: ROSE CANYON FAULT



Significance of Impact

Most geologic constraints are mitigable with proper engineering design and solutions and avoidance of active fault with sufficient setback of any proposed structure. All potential significant geologic impacts can be mitigated with strict adherence to the recommendations of the required site-specific, subsurface geotechnical investigations and all applicable regulatory requirements.

Mitigation Measures

The following measures should be considered in areas such as Downtown and Mission Valley where there are potential seismic risks. The measures for the project site preparation, site design, and construction would be specified in a site-specific study; typical measures would include:

- Monitor for differential settlement during construction.
- Assure proper compaction.
- Remove any undocumented fill.
- Install a well-compacted structural fill with geotextile reinforcing, where necessary.
- Complete a subsurface geotechnical investigation to evaluate the thickness of unconsolidated material determined to be susceptible to ground shaking. This investigation should provide site-specific grading recommendation, foundation design criteria, and design of surficial improvements.
- Prepare and implement a site-specific erosion control plan.

F. Noise

Existing Conditions

Noise is unwanted sound. The effects of sound are somewhat subjective in that the receptor determines the level of nuisance and there is a wide range of tolerance. However, there are occurrences where most agree that certain levels of sound are clearly unwanted. Unwanted sound occurs when it causes disruption of speech communication and disturbance of sleep or rest. This is the point where sound becomes noise. In addition, there are physical and psychological effects when people are exposed to elevated sound levels. These effects include constriction of blood vessels, changes in respiratory and heart rates, increased muscle tension and increased stress and irritability due to continued disrupted sleep. Extreme levels of sound, such as standing close to a jet engine, can cause pain and hearing damage.

Noise levels are measured and expressed in decibels (dB), a measure of pressure. The measurement of sound for noise analysis limits the frequency to a relatively small range which most humans can detect. This measuring scheme is called "A"-weighted sound level (dBA).

While A-weighted sound levels may adequately indicate the detectable noise level at any time, rarely are there conditions of continuous noise at a constant level. People are exposed to numerous noise sources from all directions, at varying distances, and at all levels. To describe the time-varying character of noise, community noise equivalent level (CNEL) is used. CNEL is the A-weighted sound level averaged at a certain location over a 24-hour day. It is calculated by adding 5 dB to sound levels in the evening (7pm to 10pm) and 10 dB to sound levels at night (10pm to 7am).

Impacts

- Issue 1. Will the proposal result in exposure of people to noise levels which exceed the City's adopted noise ordinance?
- Issue 2. Will the proposal result in exposure of people to current or future transportation noise levels which exceed standards established in the Transportation Element of the General Plan?

In residential areas, the City noise standard is 65 dBA community noise equivalent level for exterior usable areas. For interior areas of hotels, motels, and attached homes, the standard is 45 dBA community noise equivalent level. While the City Noise Ordinance has no interior standard for noise, the CEQA threshold is 45 dBA.

There are two dominant sources of noise: the ever-present roadway traffic noise and noise along flight paths of the area's airports and military airfields. Residents along freeways and major roads and those residing near airports and under flight paths may experience levels

exceeding the City standards, thereby exposing them to significant noise impacts. Signal crossings for the trolley may also pose significant noise impacts for residences in the immediate vicinity of the trolley.

Traffic noise

The proposed City of Villages strategy has identified potential village sites and corridors which may be adjacent to roads carrying enough traffic to pose significant noise impacts. Generally, significant noise impacts could occur if the resultant attached homes are within 50 feet of the center line of the closest lane of a road carrying 8,500 vehicles per day or within 100 feet of a road carrying 16,500 vehicles. In addition, potential village sites along area freeways may experience significant noise levels. It should be noted that elevated sites above busy roads and freeways would be subject to higher exposure than those below the roadway. The proposed project identifies several corridors and villages for potential, subsequent intensification. Future attached homes along the following roads may be subject to significant traffic noise impacts:

- Bacon Street south of Voltaire (Lindbergh)*
- Euclid Avenue at Market Street (trolley)
- Friars Road-Mission Valley (at Mission Center)
- Garnet Avenue at Soledad Mountain
- Genesee Avenue at Balboa Ave
- Linda Vista Road at Via Las Cumbres
- Imperial Avenue west of 32nd Street (trolley)*
- Imperial Avenue west of Valencia Parkway (trolley)
- Market Street east of 25th Street*
- Mira Mesa Blvd at Black Mountain Road
- Mira Mesa Blvd at Camino Ruiz
- Mission Gorge Road north of I-8
- Morena Blvd north of Tecolote
- National Avenue at I-15*
- Palm Avenue west of Saturn Blvd
- Sports Arena Blvd west of Rosecrans*
- West Point Loma Blvd at Cable Street*
- 4th Avenue south of Laurel (Lindbergh)*
- 5th Avenue south of Laurel (Lindbergh)*
- 30th Street between University and El Cajon Blvd

The above roadways identified with an asterisk are potentially subject to traffic noise at 50 feet from the centerline of the road and the others are subject to significant noise at 100 feet. Some of the potential significant noise areas (as indicated) are also subject to noise from the trolley and from Lindbergh Field aircraft noise.

The proposed City of Villages strategy would ultimately result in mixed-use development and moderate to high-density residential units. All resultant residential units would be attached, multifamily and would be reviewed for noise impacts whether they are subject to discretionary review or not. They would be reviewed for noise ordinance compliance at the time of the issuance of building permits.

Significance of Impact

The Transportation Element of the *Progress Guide and General Plan* states that residential uses are compatible with annual community noise equivalent level of up to 65 decibels. There are clearly areas which exceed the 65 dBA CNEL that are identified by the proposed City of Villages for possible residential intensifications. However, there would be no impacted areas with elevated significant noise levels which could not be mitigated.

Mitigation Measures

All new residential development with exterior noise levels above 65dBA community noise equivalent level are determined to be exposed to significant noise impacts, and interior noise levels exceeding 45 dBA would also expose residents to a significant noise impact. For most construction methods and standard construction materials used in this area, exterior noise levels can be expected to be reduced only by 15 dBA. For areas impacted by airport noise to achieve the interior noise standard the following measures may be required: additional insulation, double-pane windows, solid doors, less window area, mechanical ventilation, and upgraded construction material. These additional features would be required for all new homes at the time building permits are obtained.

For traffic noise, significant noise levels can be mitigated with noise attenuation in addition to special construction material. These noise attenuation levels can be reduced through such features as berms, solid walls (masonry or Plexiglas), setback, and site design where the residential structure is set at an optimal angle from the noise source or is blocked from noisy roads by structures containing less sensitive uses. The noise attenuating site design features for residential uses can be more easily accomplished with a mixed-use development.

G. Storm Water/Water Quality

Existing Conditions

Water Quality - Point and Non-Point Sources

The 1972 Clean Water Act established the National Pollutant Discharge Elimination System (NPDES) permit program to regulate the discharge of pollutants from industrial, commercial, and institutional processes, and point sources to waters of the United States (US). Since then, considerable strides have been made in reducing conventional forms of pollution, from known sources such as sewage treatment plants and industrial facilities, through the implementation of the NPDES program and other federal, state, and local programs. The adverse effects of some of the persistent toxic pollutants were addressed through manufacturing and land use restrictions and through cleanup of contaminated sites. On the other hand, pollution from land runoff (including atmospheric deposition, urban, suburban, and agricultural) was largely unabated until the 1987 Clean Water Act amendments, which established a framework for regulating urban storm water runoff and other non-point source pollutants. These sources, including urban storm water runoff, now contribute a larger portion of many kinds of pollutants than those from the more thoroughly regulated point sources. (City of San Diego, November 2001.)

Non-point source pollution, which is the diffused, fugitive pollution not traceable to a specific source, poses public health risk and safety concerns. Urban runoff potentially contains a host of pollutants ranging from aesthetic nuisances such as trash and debris to materials harmful to biological system such as oil and grease, sediments, nutrients, metals, and toxic chemicals to organisms which endanger human health such as bacteria and viruses. These contaminants can adversely affect receiving and coastal waters, associated biota, and public health. While the impact of urban runoff pollution may not be immediately realized, the eventual, cumulative effect can be dramatic. Urban runoff pollution is not only a problem during rainy seasons, but also year-round due to unconstrained use of imported water. (City of San Diego, November 2001).

Storm water pollution affects human life and aquatic plant and animal life. Potentially harmful viruses and bacteria are found in our coastal waters along with soil particles, solids/ debris, litter, oil, and chemical compounds. Oil and grease from parking lots and roads, leaking petroleum storage tanks, pesticides, cleaning solvents, and other toxic chemicals can contaminate storm water and this contamination can be transported into water bodies and receiving waters. Fertilizer constituents from lawns and golf courses can cause algal blooms and encourage microbial growth to create an increasing downward spiral of biological activity know as eutrophication. Disturbances of the soil from construction grading can allow silt to wash into storm channels and receiving waters making them muddy, turbid, and inhospitable to natural aquatic organisms. Many artificial surfaces of the urban environment such as galvanized metal, paint, or preserved wood containing metals, contribute to pollution by run on or leaching by storm water as the surfaces corrode, flake, dissolve, or decay. Heavy metals are toxic to aquatic organisms and

may bio-accumulate to eventually effect animals high on the food chain including humans. (City of San Diego, November 2001.)

Impaired Water Bodies within City

Section 303(d) of the federal Clean Water Act (CWA, 33 USC 1250, *et seq.*, at 1313(d)), requires States to identify waters that do not meet water quality standards after applying certain required technology-based effluent limits (“impaired” water bodies). States are required to compile this information in a list and submit the list to USEPA for review and approval. This list is known as the Section 303(d) list of impaired waters. As part of this listing process, States are required to prioritize waters/watersheds for future development of Total Maximum Daily Loads (TMDLs). The California State Water Resources Control Board (SWRCB) and local Regional Water Quality Control Boards (Regional Boards) have ongoing efforts to monitor and assess water quality, to prepare the Section 303(d) list, and to subsequently develop TMDLs. The State’s most recent list was approved in 1998 and contains 509 water bodies, many listed as being impaired for multiple pollutants. (Regional Board, website November 2001.)

The Impaired water bodies list is currently being updated by the Regional Board. A draft of the 2002 list of impaired water bodies has been released by the SDRWQCB for public review. Impaired water bodies within the City of San Diego as shown on the draft 2002 list are presented in Table IV-13. Identified, specific pollutant which placed these water bodies on the list are also presented. The water quality objectives for the specific pollutants or stressors affecting the impaired water bodies are listed in Table IV-14.

Table IV-13
Impaired Water Bodies within City of San Diego
(Draft November 2001)

Water Body Name	Pollutant/Stressor
San Diego Bay	Copper levels, Sediment Toxicity, Benthic Community Effects
Los Penasquitos Lagoon	Sedimentation/siltation
Torrey Pines State Beach	Total Coliform Bacteria Counts; High Fecal Coliform and Enterococci Bacteria Counts
Lake Hodges	Hydrologic Subarea Water Color, Nitrogen, Phosphorus, Total Dissolved Solids
Mission Bay	Eutrophic Conditions, Lead levels, High Fecal Coliform Bacteria Counts
San Diego River, Lower	Chlordane, Phosphorus levels, High Total Dissolved Solids level, Low Dissolved Oxygen level, High Fecal Coliform Bacteria Counts
Pacific Ocean, Coronado	Hydrologic Area ¹ High Total, Enterococci and Fecal Coliform Bacteria Counts
Pacific Ocean, Tijuana	Hydrologic Unit ¹ High Total, Enterococci and Fecal Coliform Bacteria Counts
Pacific Ocean, San Diego	Hydrologic Unit ¹ High Total, Enterococci and Fecal Coliform Bacteria Counts

Tijuana River	Eutrophic Conditions Low Dissolved Oxygen level, High Fecal Coliform Bacteria Counts, High Synthetic Organic Chemical levels, Trash, Trace Elements
Tijuana River Estuary	Eutrophic Conditions High Coliform Bacteria Counts, Trash, Pesticides, Lead, Nickel, Thallium levels. Low Dissolved Oxygen level
Chollas Creek Cadmium	Copper, Lead, Zinc levels (Toxicity), High Coliform Bacteria Counts
Tecolote Creek	Cadmium, Copper, Lead, Zinc levels (Toxicity), High Coliform Bacteria Counts

1. Includes beach areas and beach closings due to high bacteria counts.

Table IV-14
Regional Board Water Quality Objectives for Pollutants/Stressors
Exceeded in Impaired Water Bodies within the City of San Diego

Pollutant/Stressor	Regional Board Objective¹
Total Coliform Bacteria	Contact Recreation Use 20% of samples in 30-day period: 1000 colonies/100ml; Single Sample 10,000/100ml Salt and Freshwater Beaches-1000 colonies/ml if the ratio of fecal coliform/total coliform exceeds 0.1 ²
Fecal Coliform Bacteria	Contact Recreation Use- Five samples in any 30 day period should not exceed 200 colonies/100 ml
Enterococci Bacteria	Contact Recreation Use -Single sample 104 colonies/100ml; Steady State 35 colonies/100ml;
Total Dissolved Solids ¹	300-2100 mg/l
Dissolved Oxygen	Cold Freshwater Habitat beneficial use waters not less than 6.0mg/l; Marine Habitat or Warm Freshwater Habitat use not less than 5.0mg/l
Water color	20 color units
Phosphorus	0.1mg/l (high levels lead to eutrophic conditions) ³
Chlordane	Levels in fish tissue samples should not exceed 1.1 ppb
Nitrogen	0.25mg/l (high levels lead to eutrophic conditions) ³
Cadmium	0.005mg/l ³
Copper	1.0mg/l ³
Thallium	0.002 mg/l
Lead	National Toxics Rule *
Zinc	National Toxics Rule *

1. Objectives from 1994 Water Quality Control Basin Plan unless otherwise noted.

2. California Department of Health Services objective

3. Objective from Basin Plan for Inland Surface Waters

*National Toxics Rule- Toxicity expressed in mg/liter in water column and is a function of water hardness with a conversion factor.

Regulatory Framework for Addressing Water Quality within City

Municipalities in San Diego County collect and discharge storm water and urban runoff containing pollutants through their storm water conveyance systems. The San Diego Regional Water Quality Control Board (Regional Board) issued the required NPDES permit (commonly referred to as the Municipal Permit for San Diego Copermittees) to local jurisdictions including the City of San Diego, which requires the implementation of programs to reduce pollutants in storm water and urban runoff. This permit, originally issued in 1990, was significantly revised when it was renewed on February 21, 2001 as Order No. 2001-01, NPDES No. CA0108758, "Waste Discharge Requirements for

Discharges of Urban Runoff From the Municipal Separate Storm Sewer Systems (MS4) Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District.”

The City of San Diego is currently preparing a Urban Runoff Management Plan (URMP) and the Standard Urban Stormwater Mitigation Plan (SUSMP) in accordance with requirements of the State Water Resources Control Board NPDES permits procedure. These documents will address the process that the City will undertake to improve water quality. The elements of the City program as described in the draft URMP and SUSMP documents are summarized below.

Urban Runoff Management Program

The requirement to implement a program for development planning is based on federal and state statutes including: Section 402 (p) of the Clean Water Act, Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (ACZARA), and the California Water Code. The Clean Water Act amendments of 1987 established a framework for regulating urban runoff discharges from municipal, industrial, and construction activities under the NPDES program. The Municipal Permit requires the implementation of a Jurisdictional Urban Runoff Management Program (URMP). The primary objectives of the Jurisdictional URMP requirements are to:

- Ensure that discharges from municipal urban runoff conveyance systems do not cause or contribute to a violation of water quality standards;
- Effectively prohibit non-urban runoff discharges; and
- Reduce the discharge of pollutants from urban runoff conveyance systems to the Maximum Extent Practicable (MEP statutory standard).

Implementation activities for each program area listed above are contained in the URMP. Each City department is responsible for performing those tasks that are applicable and necessary to be in compliance with the City’s Municipal Permit. This includes implementing the applicable procedures and policies to address the activities covered in the permit issued to the City of San Diego by the Regional Board, providing the appropriate staff training, keeping records of compliance activities, performing self-assessments, and preparing status reports for an annual report.

Standard Urban Storm Water Mitigation Plan

The Model Standard Urban Storm Water Mitigation Plan (SUSMP) was developed to address post-construction urban runoff pollution from new development and redevelopment projects that fall under “priority project” categories. The goal of the Model SUSMP is to develop and implement practicable policies to ensure that urbanization does not increase the urban runoff flow rates, velocities or pollutant loads from a project site. This goal may be achieved through site-specific controls and/or drainage area-based or shared structural treatment controls. This Model SUSMP, collectively adopted by the Copermittees, contains

Best Management Practices (BMPs) that must be used for certain designated project types to achieve this goal. The Copermittees are required to adopt the requirements set herein their own Local SUSMP.

Under the Local SUSMP, the City of San Diego will approve the SUSMP project plan(s) as part of the development plan approval process for discretionary projects, and prior to issuing permits for ministerial projects. To allow flexibility in meeting SUSMP design standards, structural treatment control BMPs may be located on- or off-site, used singly or in combination, or shared by multiple developments, provided certain conditions are met.

All new development and significant redevelopment projects that fall into one of the following “priority project” categories are subject to these SUSMP requirements. In the instance where a project feature, such as a parking lot, falls into a priority project category, the entire project is subject to these SUSMP requirements. These categories are:

- Residential development of 100 units or more
- Residential development of 10 to 99 units
- Commercial development greater than 100,000 square feet
- Automotive repair shops
- Restaurants
- Hillside development greater than 5,000 square feet
- Projects discharging to receiving waters within Environmentally Sensitive Areas
- Parking Lots > 5,000 square feet or with > 15 parking spaces and potentially exposed to urban runoff
- Streets, roads, highways, and freeways which would create a new paved surface that is 5,000 square feet or greater

Watershed Management Plans

The City of San Diego is participating in a regional effort to develop plans to improve water quality on a larger watershed approach. The State Water Resources Control Board (SWRCB) set up requirements for improving water quality based on a watershed approach through passage of the Costa-Machado Water Act of 2000 (Proposition 13). Article 2 of the Costa-Machado Water Act established the Watershed Protection program to, “provide funds to assist in implementing watershed plans to reduce flooding, control erosion, improve water quality, and improve aquatic and terrestrial species habitats to restore natural systems of groundwater recharge, native vegetation, water flows, and riparian.”

In accordance with the requirements of the SWRCB and the Costa-Machado Water Act, the City of San Diego, in conjunction with the City of Poway, City of Del Mar, and the County of San Diego, is in the process of developing a Watershed Management Plan, in accordance with the watershed urban runoff management plan requirements of the Municipal Permit,

that will identify specific water quality issues and propose measures to improve water quality within the Los Peñasquitos watershed. The Los Peñasquitos Lagoon, the receiving body for the watershed, is considered impaired by the California Unified Watershed Assessment. Stressors such as sedimentation and encroachment of urban development are resulting in changes to velocity and volume of stream flow as well as increased pollutants in urban runoff. Based on an assessment of existing conditions within the watershed, the Watershed Management Plan will identify specific locations for wetland enhancement and restoration projects as well as measures to address hydrology, including adjustments to stream flows, velocity and volumes. The projects recommended in the Plan would provide for long-term solutions to water quality issues associated with the watershed.

The City of San Diego and the County of San Diego are also in the process of preparing watershed management plans for other watersheds in the region. Plans will be prepared based on the watershed approach adopted by the SWRCB and the Regional Board for the San Dieguito River, Mission Bay, and the San Diego River watersheds. Similar to the planning effort for the Los Peñasquitos watershed these management plans will seek to identify solutions to specific issues affecting water quality.

Information and measures identified in the individual watershed management plans will be integrated into a regional planning effort currently being completed. The SWRCB and the Regional Board have authorized the preparation of a Regional Wetlands and Watershed Management Plan for Coastal Southern California. It is anticipated that watershed plans completed in the next one to two years will be the basis for identifying any regional solutions available to improve water quality.

Storm Water Management through Multiple Species Conservation Program

The Multiple Species Conservation Program (MSCP) is a regional effort between local jurisdictions, federal and state agencies to develop a comprehensive habitat conservation-planning program that addresses multiple species habitat needs and the preservation of native vegetation communities in southwestern San Diego County. The City of San Diego MSCP Subarea Plan has been prepared pursuant to the overall MSCP guidelines to address habitat conservation goals within the City boundaries. The City Multiple Habitat Planning Area (MHPA), which is identified in the City MSCP Subarea Plan delineates a 52,000-acre core biological resource areas and corridors targeted for conservation. The City MSCP Subarea Plan also includes a Framework Management Plan and Specific Management Policies and Directives for management of resources within the MHPA.

In association with management of MHPA lands, the City MSCP Subarea Plan contains guidelines for minimizing impacts of urban development on upland and wetland ecosystems and water quality. All developments proposed adjacent to the MHPA must conform to the Land Use Adjacency Guidelines of the City MSCP Subarea Plan. The Land Use Adjacency Guidelines require that all new and proposed parking lots and developed areas in and adjacent to the MHPA must treat urban runoff prior to discharging into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals,

petroleum products, exotic plant materials, and other elements that might degrade or harm the natural environment. Potential impacts can be minimized through the use of a variety of measures including natural detention basins, grass swales or mechanical trapping devices. The MSCP also requires that these systems are maintained routinely throughout the life of a project.

The City MSCP Subarea Plan also requires that land uses such as recreation and agriculture, that use chemicals or generate potentially toxic byproducts, incorporate storm water best management practices to reduce impacts caused by the application and/or drainage of such materials into the MHPA. Where applicable, the requirement to minimize impacts to water quality is also incorporated into leases on publicly owned property as leases come up for renewal.

The City MSCP Subarea Plan provides specific management directives requiring that restoration of native riparian habitat take place within many of the important drainage systems and watersheds within the City. For example, the portion of the Los Peñasquitos Watershed located within the City of San Diego is addressed in the City MSCP Subarea Plan. Major drainages within the Los Peñasquitos watershed including Los Peñasquitos Canyon, Lopez Canyon, Carmel Creek, and portions of Carroll Canyon are located within the MHPA. The guidelines and Specific Management Policies of the City MSCP Subarea Plan require that enhancement of these drainages take place, where appropriate. The Subarea Plan also requires restoration and enhancement of native riparian lands within the Otay River Valley, Tijuana River Valley as well as several smaller "urban canyons" within the central and southern portions of the City. Many of these drainages are surrounded by urban development and restoration of native riparian areas is intended to minimize impacts from urban runoff to water quality as well as provide habitat for animal and plant species.

Opportunities for Coordinated Citywide Effort

The majority of the watershed of the urbanized core eventually drains into San Diego Bay, Mission Bay, or the Pacific Ocean via the San Diego River. Major drainages include Tecolote and Rose Creeks which empties into Mission Bay and Chollas Creek, Otay River, and Sweetwater River which empties into San Diego Bay. Feeding these drainages are runoff from various urban canyons. Some of these urban canyons, although they may be relatively small in size and have been isolated by surrounding development, have been placed into the City's planned habitat preserve, the MHPA. They were counted as contributing areas to the City's MSCP effort; specifically, their acreages were accounted for in the MHPA.

Most of these canyons have lost their full compliment of wildlife species but most retain some of the natural vegetation. University of California, San Diego (UCSD) conducted surveys in the mid-1980's to determine the remaining habitat values of isolated urban canyons; 32 of these canyons are located in the City of San Diego and 10 have been placed in the MHPA. The U.S. Fish and Wildlife Service has resurveyed these canyons last year; the forthcoming results would be used to determine any changes in resource value since the

initial evaluation fifteen years ago. In keeping with standard procedure, the City has taken advantage of the gradient of these canyons for the placement of sewer pipelines. Eight of these UCSD-studied canyons contain aging sewer pipelines which have surpassed their expected service life and now need to be replaced and/or serviced. Table IV-15 lists the UCSD-studied canyons, their size and locations and their MHPA status and sewer maintenance needs.

**Table IV-15
UCSD Studied Canyons**

UCSD Studied Canyons within City of San Diego	Estimated Acreage	General Location	UCSD Studied Canyons within MHPA	UCSD Studied Canyons within MHPA that are also within Sewer System Canyon Study
Florida	254	Florida Dr./Balboa Park	Yes	No
Sandmark	208	Serra Mesa	Yes	No
34th Street	133	@ SR 94 and I-15	Yes	Yes
Balboa Terrace	128	N of Balboa/Moraga & Claire. Mesa Blvd	No	Yes
Alta La Jolla	81.9	North of Van Nuys (to Nautilus)	Yes	Yes
Kate Sessions	63.1	Portion of park; North Pacific Beach	Yes	No
Laurel	24	East of I-5	No	No
Camino Coralino	22.4	@ Jutland (Clairemont Mesa)	No	No
Canon	21.4	SR 209 (Pt. Loma)	No	No
Zena	21	E of College Ave. (the Grove)	No	No
Baja	20.7	S of Montezuma; W of College	No	No
Auburn	20.7	E of Euclid/Home Ave		
Washington	19.9	North & along Washington @ I-5	No	Yes
Syracuse	18.5	North of 52; Standley Park	No	No
32nd Street South	15.7	North of B Street (South Park)	No	No
47th Street	15.6	West of Euclid/Home Ave	No	No
Chollas	15.4	Chollas Parkway/Mid-City		
	Yes	Yes		
60th Street	15.1		Yes	No
Juan Street	14.7	Presidio/Old Town	Yes	No
Acuna	12.5	S of Clairemont Mesa Blvd	No	Yes
Edison	11.7	@ Gesner	No	Yes
Raffee	11.7	Clairemont; N of Balboa	No	No
Spruce	10.6		No	No
54th Street	8.9		Yes	No
Titus	8.6	Washington Creek/@Alameda	Yes	Yes
Chateau	8.1	South of Clairemont Mesa Blvd	No	No
Newport	5.3	Ocean Beach	No	No
Aber	4	North of Jutland	No	No
Talbot	3.5		No	No
Poinsettia	3		No	No
El Mac	2.7	N of Pt Loma Nazarene	No	No
32nd Street North	1		No	No

Currently, all urban canyons have storm water outlets from surrounding streets and land uses; the canyons have been made conveyances to transport urban runoff to the bays and ocean. With residents using water equivalent to 40-inch per year annual rainfall to maintain their lawns and with a growing population, some of the urban canyons which historically only carried seasonal flows, now contain year-round flows caused by urban runoff. The recent regulation requires the City to treat this urban runoff.

These conditions present an opportunity to enhance the urban canyons. Triggered by the need to control/treat urban runoff and to replace, remove, or maintain the sewer pipelines within these urban canyons, the City can seed the enhancement of the wildlife habitat value of these canyons through the directed use of mitigation or restoration monies required for sewer, water, storm water, or other utility work in these canyons. With increased urban runoff, these canyons can now support transplanted native riparian vegetation. Once established, these canyons could become habitat for urban wildlife species; perhaps not the rare, sensitive species which require special management, protection, and larger connected areas but those existing birds, reptiles, and smaller animals which can be encountered in close proximity to the neighborhood and adds to the quality of urbanized living. In addition, naturalized, green riparian trees add to the visual quality of the neighborhood, and new passive recreational use of these open space areas can be enjoyed by surrounding residents in the compact, urban core of the future.

The enhancement of urban canyons, especially those which the City received credit for placing into the MHPA, is becoming a possibility. The major effort to assemble the connected, large portions of the planned habitat preserve should be completed within ten years or sooner. Once the large habitat areas are assembled, some of the Citywide efforts could be shifted to the MHPA's urban canyons. This changing focus combined with the urgent need to prevent old sewer pipeline from rupturing in the canyons, the immediate requirement to treat urban runoff, and the ever-present need for urban open space and amenities, the enhancement of urban canyons could be realized. This effort can be supported by citizens/volunteers who have expressed their interest in protecting these neighborhood resources; the effort needs the combined work of at least five City departments including management by City Park and Recreation, Open Space Division.

Update of General Plan Conservation Element

The City of San Diego intends to incorporate water quality and watershed protection principles into the draft Strategic Framework Element of the *Progress Guide and General Plan* through an update of the Conservation and the Environment Elements. General policy recommendations address water quality and watershed protection are currently being considered by the City. It is anticipated that policies included in the Conservation Element update would advocate use of site design and BMP measures available for incorporation into private and public development proposals. In addition to providing guidance for individual developments, the updated element will contain policies and guidelines related to an overall approach to water quality improvement that addresses entire watersheds.

Impacts

- Issue 1. Will the proposal result in discharge into surface or ground waters, or in any alteration of surface or groundwater quality, including, but not limited to temperature, dissolved oxygen or turbidity?
- Issue 2. Will the proposal result in discharge into surface or ground waters, significant amounts of pesticides, herbicides, fertilizers, gas, oil, or other noxious chemicals?
- Issue 3. Will the proposal result in changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?

The proposed City of Villages strategy could potentially result in 17,000 to 37,000 attached homes by 2020. These attached units would be concentrated in potential mixed-use villages where redevelopment has replaced large surface parking areas with subterranean parking. All runoff would need to initially be captured and treated; runoff into the garages would be conveyed and treated in sewer system. All automobile drippings in the garage areas would be treated. Although these villages would contain abundant trees and landscaping, the plants would be drought tolerant, low water use species, and they would be efficiently drip irrigated (per the ordinance). Lawn area would be minimal. Runoff would be reduced. All new development must comply with requirements which would conserve water and capture the reduced runoff.

Significance of Impact

The potential new development which may result from the implementation of the proposed City of Villages strategy, would have less surface parking and less runoff into the storm drains, require less irrigation, and, therefore, would not pose a significant water quality effect.

Mitigation Measures

Since there are no significant effects, no mitigation is required.

H. Water Resources and Conservation

Existing Conditions

Regional Water Use

County Water Authority (CWA) imports water and supplies 75% to 95% of the potable water needs in its service area which includes all of the City of San Diego. Regional historic water use trends for the past decade are shown in Table IV-16. The trend is difficult to quantify because water use is dependant on highly variable rainfall and evaporation rates and should increase with the population growth. The historic average annual is 10 inches measured at Lindbergh Field. Table IV-16 shows that average for the ten years was 12 inches but the annual rainfall amount varied from 5 to 22 inches. There was a drought in the late 1980's through the early 1990's and the region experienced a recession in the early 1990's, these conditions also influenced water use. The total use also varied; however, there was more water used in 2000 than in 1990, nearly a six percent increase. The three-year running average indicates a somewhat gradual increase, 4% increase from 1992 to 2000. The regional population growth was 12.6% between 1990 and 2000. A comparison of the per capita water consumption shows that there was a nearly a five percent decrease in water use between 1990 and 2000; this may reflect the water conservation measures implemented during the preceding drought years. CWA estimates that by 2020, the per capita would decrease by an additional 14.6%. Less dependence on imported water would be due to increasing recycling through reclamation and development and use of treated groundwater sources by the year 2020. In addition, seawater desalination may become a viable option. To attempt to stabilize the need for imported water, CWA has begun a emergency storage project. The first of these projects is the planned 24,000 acre-foot Olivenhain Reservoir in inland North County; excavation for this reservoir has begun.

Table IV-16
Historic Water Use (acre-feet) for
the CWA Service Area - San Diego

	<u>Water Use (AF)</u>	<u>% Change from Previous Year</u>	<u>Running 3-Year Average</u>	<u>Rainfall (inches) at Lindbergh Field</u>
1999	646,645	--	---	8
1991	585,619	-9%	---	12
1992	503,210	-14%	578K	13
1993	548,673	+9%	546K	18
1994	536,907	-2%	529K	10
1995	526,053	-2%	537K	17
1996	615,900	+17%	530K	5
1997	621,739	+9%	588K	8
1998	562,225	-9%	600K	22
1999	619,409	+10%	601K	7
2000	695,000	+12%	625K	--

Data Source: SDCWA

CWA plans to construct several projects that will enable them to delivery additional water, increase the flexibility of the aqueduct system, or relocate sections of existing pipeline from areas that have changed in ways that impact the pipeline. For the next 10 years, CWA will construct numerous small facilities to improve the operation of the aqueduct system. New flow control facilities are needed in some areas to deliver water from CWA pipelines to the local distribution systems. Pumping stations will be constructed in low-lying areas to maintain adequate flows to higher elevations, or to allow the flow of water to be reversed if needed. Pressure control facilities will be constructed to maintain adequate water pressure in the system. Additional valves will allow the CWA greater control over the flow of water. New meters will enable the CWA to record the amount of water received by member agencies more accurately. The new CWA facilities within the City of San Diego include the following:

- Miramar Pumping Station Rehabilitation
- Miramar Pumping Station Valve and Meter Vaults
- Rancho Peñasquitos Pipeline Pressure Control Facility

Ongoing preventive maintenance projects are also a part of CWA's CIP, and are intended to prolong the service life of the aqueduct system. The projects include the Aqueduct Protect Program, the replacement/relining of existing prestressed concrete cylinder pipes, and other operational enhancements and system modifications.

The CWA prepared a draft *Regional Report on Water Supply and Infrastructure*, dated November 2001. This draft report estimated that the project demand of 813,00 acre-feet of water (265 trillion gallons) in the year 2020 will be met by list of projected supplies; this demand was based on the 2020 projection. This draft report is an attachment to this Environmental Impact Report and is incorporated by reference. (See Attachment 5.)

City of San Diego

Generally, the City of San Diego currently needs about 40% of the water imported by the CWA. For the fiscal year 1999, the City used 170,771 of CWA-imported water; this represented 65% of the City's total water needs (1999 was a drought year preceded by a very wet year).

The City's available water is stored in surface lakes and underground basins. There are three lakes within the City used to store potable water: Lake Murray, Miramar Reservoir, and Lake Hodges. There are numerous groundwater basins throughout the area which are important for agricultural production. These include the San Dieguito Valley, Lake Hodges basin, San Pasqual Valley, San Diego River Basin, and the Tijuana River basin.

Because San Diego is located on a semi-arid plain, it relies heavily on imported water. This imported water is stored in the City's nine holding reservoirs: Lakes Barrett, El Capitan, Hodges, Miramar, Morena, Murray, Otay, San Vincente, and Sutherland. These reservoirs are also designed to collect natural surface runoff from their watershed areas; this natural

source during years of normal to heavy precipitation, can be a significant amount. Because of the vulnerability of the City's imported water pipelines to natural disasters, including earthquakes, much of the local water supply is stored for meeting emergency needs.

The CWA is in the process of implementing an emergency water storage plan. An Environmental Impact Report for the plan was certified in 1996. The plan has several elements including previously mentioned new reservoir near Olivenhain and increasing the storage capacity at the City's San Vicente Reservoir located in east county community of Lakeside. These improvements are proposed to ensure water availability in the event of shot-term failure of the imported water supply.

City municipal water supplies are treated at one of three treatment plants in the City - Alvarado, Miramar, or Otay. It is then delivered to residents and businesses through 2,608 miles of pipeline with the help of 45 water-pumping stations. These plants provide the public with an average of 180 million gallons of water daily.

In 1985, the City established its Water Conservation Program to reduce San Diego's dependence upon imported water. It is designed to provide the customers of San Diego with the necessary tools and incentives to permanently conserve water.

One of the City's most popular water conservation programs is the Ultra-Low Flush Toilet Rebate Program. In this program, participants receive a rebate for installing a ultra-low flush toilet; these water-efficient units uses 1.6 gallons per flush (gpf) compared to the conventional toilet which use over 3.5 gpf. Another program related to this, is the Community Based Toilet Replacement Program. This program provides complimentary ultra-low flush toilets to qualified water customers. There is also the City Facilities Retrofit Program, which installs ultra-low flush toilets in City owned and operated buildings.

Because of the many efforts in the past ten years, more and more customers are learning to use less water. Initial stages of implementation of conservation programs in 1991 through 1994, over 12 billion gallons of water were estimated to be conserved.

City Water Reclamation System

The City's North City Water Reclamation Plant (NCWRP) opened in 1997. Initially, the NCWR was constructed with a capacity to produce 30 million gallons per day of reclaimed water; it has room on its site at I-805 and Miramar Road and has built-in, expandable features which would allow a future capacity of 45 mgd, if the demand arises. In addition, a second water reclamation plant has been approved for construction in the Tijuana River Valley; this plant would have the capacity to produce 14 mgd.

Currently, the predominate use of the reclaimed water is for landscape irrigation. Current estimates show that irrigation accounts for 60% of water use in the City. There are studies being conducted to analyze the possible use of highly purified reclaimed water for industrial/ manufacturing purposes. The service area for the NCWRP is the north central portion of the City. Over 175 customers have been secured for reclaimed water use. They

include the City of Poway, MCAS Miramar, Torrey Pines Golf Course, CALTRANS' freeway landscaping, and UCSD as well as City Park and Recreation and various landscape maintenance districts. These users consume about 7 mgd of reclaimed water.

The City has adopted a Reclaimed Water Distribution Master Plan for the Northern and Central Service Areas. This plan would construct dedicated pipelines to distribute reclaimed water produced at the NCWRP. The planned distribution system includes 30 miles of larger backbone pipelines feeding 18 miles of smaller off backbone pipelines with ten storage tanks and ten pump stations. In addition, all new larger developments including subdivisions in this service area have been required to install separate, connecting pipelines for reclaimed water use.

An aquaculture plant is operating in the San Pasqual Valley; this plant produces one mgd of reclaimed water.

The City's South Bay WRP, the approved plant in the Tijuana River Valley, would provide up to 7 mgd of reclaimed water to the communities of Otay Mesa and Nestor and City of Imperial Beach. The distribution system is being planned by the Otay Water District.

Future water reclamation plants in Mission Valley and in the Otay River Valley were sited with the adoption of the City's Clean Water Program in 1991. These plants would be designed and constructed when sufficient need for reclaim water arises. The potential service areas are Mission Valley and the south-central portions of the City of San Diego and Otay Ranch in Chula Vista.

Impacts

- Issue 1. Will the proposal result in the use of excessive amounts of water ?
- Issue 2. Will the proposal result in landscaping which is predominantly non-drought resistant vegetation or in the use of excessive amounts of water?

A project will normally have a significant effect on the environment if it will either substantially deplete groundwater resources or encourage activities which will result in the use of large amounts of water.

A significant portion of municipal water is currently used for landscaping irrigation. All new commercial, employment, and multi-family development including those which would result from the proposed City of Villages strategy, must comply the City's Landscape Ordinance which requires low-water-use planting and irrigation design.

The Landscape Regulations require automatic control irrigation systems which would reduce over watering. In addition, rain sensor shutoffs and moisture-sensing devices are required. These measures would conserve water by controlling irrigation water application. The regulations limit the amount of landscaped area that can be planted as turf to ten

percent. Since lawn grasses require higher amounts of water than other types of landscaping materials, the limitation on turf area would conserve water. The regulations require mulch on planting areas. Mulch helps conserve water because it reduces evaporation of moisture from the soil underneath.

In general, the Landscaping Regulations encourage the use of native or naturalized plant materials for vegetation of manufactured slopes, and as much as possible around new development without jeopardizing fire safety. Native and naturalized plants, once established, do not require irrigation.

The City Water Department estimates that daily per capita consumption of potable water for an attached home is currently 25% lower than a single-family home; this difference is expected to be 50% in 2020. It is projected that while the per capita use for a single family home is expected to increase nearly 24% by 2020, the use for a n attached home would decrease by 17%. The lower use for attached homes is the generally attributable to lower landscaped area per attached unit.

The number of reclaimed water users is expected to increase from the current 170 to 1000 users in 2020; the use of reclaimed water is projected to be over 17 mgd. The combined capacity of the two reclamation plants is 44 mgd. This excess capacity may be used for groundwater discharge to augment the City's aquifers and provide natural storage.

The Building Code would require that all new development that consume municipal water to install low-flush toilets and low-flow showerheads.

Significance of Impact

The proposed City of Villages strategy could result in addition of 17,000 to 37,000 additional attached homes. This would result in a need to use 2.9 mgd to 6.3 mgd in 2020 (less than one percent of projected demand/supply). The subsequent redevelopment and infill would ultimately result upon implementation of the proposed growth strategy. The subsequent redevelopment would replace existing development which most likely is neither water-efficient nor connected for reclaimed water use. In addition, if the number of new attached homes is built in villages or corridors, they would use less water than single-family homes. There may be some replacement of detached units with the implementation of the proposal; this may result in slight reduction in the net overall water use.

Current water consumption within the City is 217 mgd; it is projected to increase to 272 mgd by 2020. The potential additional attached homes would need an additional 1% to 2% of this projected water use for 2020. The irrigation needs would be lower. The new development would be required to install ultra-low flush toilets and water efficient showerheads. There would be excess capacity of reclaimed water which could offset potable water use. For these reasons, the project's effect on water resources and conservation is not considered significant.

Mitigation Measures

Since there would be no significant impact, no mitigation is required.

I. Historical Resources

Existing Conditions

The San Diego region has a diverse cultural background. The earliest known human occupation was about 10,000 years ago. Prehistoric cultures were nomadic hunters and gatherers. Some of the cultures migrated between the mountains and the coast on a seasonal basis, generally using the major drainages as travel corridors. Shellfish from the shore and plant foods from riparian areas were gathered in the coastal regions. Projectile points which have been found indicate that early cultures hunted to provide materials for food and clothing. There are many questions about the prehistoric cultures including determinations about changes in modes of subsistence and the relationship of coastal cultures to the inland cultures.

Prehistory

Evidence of man in San Diego dates back to 10,500 years ago. The earliest archaeological culture is the Paleo-Indian culture of the San Dieguito Complex. This early Native-American culture generally spanned a period extending from 6000 BC to 8500 BC. Recovered material culture of these people consists primarily of scrapers, scraper planes, choppers, large blades, and spear points. These hunting and game-processing tools were made predominately from fine-grained volcanic rock. These people were primarily nomadic hunters evidenced by the recovered tools and the scarcity of milling implements.

Spurred by a change in regional climate and an associated change in subsistence strategies, a subsequent Native American culture emerged before 6000 BC and replaced the San Dieguito Complex. In the southern portion of the county, this Early Archaic culture is the La Jolla Complex. This Native-American culture lasted from 6000 BC to AD 0. These people inhabited the coastal areas and subsisted on shellfish and plants from the shores of the ocean, bays, and lagoons. Recovered cultural material from these people consists primarily of crude stone grinding tools (mano and metate) and flexed burials. Their burial sites have been recovered during excavations in ocean view plots on the sea bluffs of La Jolla Farms. They were gatherers, combing the shores for food, but the nature of their use of the coast either as permanent residents or seasonal campers, has not been determined.

At the beginning of the first millennium and continuing until the arrival of Portola, the first Spanish explorer to visit San Diego in 1769, this area was occupied by the Cuyamaca Complex, a late prehistoric culture. The people of this complex are the ancestors to the current Kumeeyaay people. Before Spanish colonization, the ancestral Kumeeyaay were a far ranging, hunting and gathering culture lived from the coast to the eastern mountains. They added pestle and mortar to the mano and metate indicating the emphasis of acorns as a primary food staple. They also used bow and arrows with points made of obsidian from Imperial County and pottery. In addition, to further distinguish themselves from the earlier Native American culture, these people cremated their dead. Recovered cultural material includes pottery, urns, scapers, stone-tool industry, and clay-lined hearths. The evidence of

industry and the use of possible imported materials suggests a regional exchange, a newly forming commerce with outlying cultures.

History

There are three historic periods in San Diego history. The historic periods begin with Spanish exploration-colonization and include the study of non-indigenous cultures. The Spanish Period was from 1769 to 1822; the Mexican Period was from AD 1822 to 1846; and the American Period was from AD 1846 to the present.

San Diego is a City that is rich with history. Since 1977, seventeen surveys have been performed, identifying 2,036 properties as potentially historic. However, the actual number of properties is considerably less due to multiple listings. The areas of Grant Hill and Sherman Heights, a portion of Golden Hill, and a block in North Park are designated as historic districts. A large number of surveyed properties of potential historic value exist in the Downtown-Centre City area as well as in communities of La Jolla, Ocean Beach, Uptown, North Park, Mid-City, and Kensington. The Central Mesa area of Balboa Park, with its remaining exhibit buildings from the World Expositions of 1915 and 1935, has been designated a National Historic Landmark.

San Diego's built environment reflects over 200 years of architectural history. Examples of every major period and style remain, although few pre-World War II areas retain neighborhood-level architectural integrity due to several major building booms when older structures were demolished prior to preservation efforts. The post-war development areas are approaching sixty years, and there are still portions of these areas which have been well maintained and therefore have retained their original integrity/setting. These areas should be identified and considered for their potential historic value, and, if determined to be appropriate, designated. The preservation of these areas would retain representative examples of the development of the City, preserve the uniqueness of the designated neighborhoods, and enhance the sense of community.

Impacts

- Issue 1. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archaeological site?
- Issue 2. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, object, or site?
- Issue 3. Will the proposal result in adverse physical or aesthetic effects to an architecturally significant building, structure, or object?

Potential Archaeological Resource

The proposed City of Villages strategy has identified the area in the vicinity of I-5 off ramp at Garnet Avenue as a potential neighborhood village center. This area has a possibility of

containing a portion of a suspected prehistoric village site. The potential, subsequent intensification of land use (e.g. subterranean parking) on this site may result in an adverse effect on a subsurface archaeological resource. If this growth strategy is approved and this site is subsequently becomes planned and zoned for higher intensities, the potential for significant subsurface resources must be addressed prior to grading.

Potential Historic Resources

The proposed City of Villages strategy has identified the following three sites as potential neighborhood village centers:

25th Street in Golden Hill

The west side of 25th Street between SR-94 and Russ Boulevard is in the Greater Golden Hill Historic District. Each of the five and one-half blocks on the west side of 25th Street has historic buildings which contribute to the historic district. Any new development which may ultimately result from this proposed growth strategy would most likely be adjacent to a historic structure. New development on the east side outside the district may adversely effect the setting/integrity of this historic district.

East San Ysidro Boulevard east of I-805

This area contains the historic El Toreador Motel. Any new development which may ultimately result from this proposed growth strategy may effect the setting/integrity of this historic area.

South side of Crosby Street between Harbor Drive and National Ave

This area contains the historically designated Chicano Park. Any new development which may ultimately result from this proposed growth strategy would may effect the setting/integrity of this designated park, a cultural feature.

The proposed City of Villages strategy has identified San Ysidro Boulevard west of I-805 as a potential transit corridor. This corridor traverses the potentially historic Little Lander's Colony. In addition, the designated San Ysidro Free Public Library is located on this potential transit corridor. Any new development which may ultimately result from this proposed growth strategy, may effect the setting/integrity of the potentially historic area and the designated library.

Significance of Impacts

The proposed City of Villages strategy may potentially result in land use intensification on an area with possible significant archaeological resources, on three areas with significant historic resources, and in an area of potential historic value. If the proposed growth strategy is adopted and these areas are selected for intensification, there could be potentially significant impacts to historic resources. If subsequent development results in the loss of a designated structure, reuse and alternatives to the proposal must be addressed.

Mitigation Measures

The resultant, potential redevelopment and infill is inconsistent with the continuing use of existing surface parking lots and/or the construction of new surface parking lots. The resultant desired urban residential densities and mixed-uses would most likely require subterranean parking levels. The subsurface excavation may adversely effect potential subsurface cultural resources.

Whenever potentially significant subsurface cultural resources are suspected and if these resources are determined to be significant, the preferred mitigation measure is either avoidance or preservation in place. The City's Historical Resources Guidelines (as amended June, 2000) suggests the following mitigation measures for preservation:

- Site development design to avoid significant resources;
- Planning open space to preserve resources;
- Capping the resource; and/or
- Deeding the resource into permanent conservation easements.

When avoidance of significant, subsurface cultural resources (e.g. archaeological resources) is not feasible, the mitigation measure shall include a research design and data recovery program. The required research design shall identify important research questions, link research topics to data already known to be present in the proposed development site, and explain procedures which would be used in the collection, analysis, and curation of recovered materials. The sample size and the area to be excavated for resources, would vary with the nature and size of the proposed development site.

When preservation of a significant historic structure on a development site cannot be completely implemented, all feasible mitigation measures to minimize the significant impact to the historic resource shall be taken. These required mitigation measures can include, but are not limited to:

- Preparing a historic resource management plan;
- Repairing damage to the historic structure according to the federal Secretary of Interior Standards for Rehabilitation;
- Adding new construction which is compatible to the historic resource; and/or
- Screening incompatible new construction from view through the use of barriers and/or landscaping, which would be in keeping with the historic period and character of the resource.

The last two measures, which address preserving the setting and screening of significant historic resources, are also appropriate to resultant development adjoining a significant historic structure. The goal of these measures is to preserve the integrity and context of the significant resource.

When preservation of a significant historic structure on a development site is not viable and the historic structure needs to be moved off-site, the relocation shall be performed in accordance with National Parks Service standards. The relocation site shall duplicate, as closely as possible, the original location. In addition, the historic structure shall be documented according to Historic American Building Survey (HABS) or Historic American Engineering Record (HAER) standards.

When the significant historic structure cannot be preserved or relocated and it needs to be demolished, it shall be documented according to HABS or HAER standards prior to demolition.

As discussed above, impacts to significant historic resources can be mitigated with strict adherence to standard mitigation measures. Any action involving a historically designated structure would trigger a discretionary permit and is subject to CEQA review. The loss of a historically designated structure may be mitigated. However, the proposal which results in the loss would be subject to addressing alternatives including reuse of the structure and disclosing the evaluation in a site-specific environmental impact report.

Any potential impacts to significant historical resources posed by the subsequent intensification allowed by the implementation of this proposed growth strategy can be mitigated. Therefore, the potential impacts of this growth strategy on historical resources are considered significant and mitigable.

J. Wastewater

Existing Conditions

Metro Wastewater System (Metro)

Opened in 1963, the Point Loma Wastewater Treatment Plant (PLWTP) treats up to 190 million gallons (mgd) of wastewater per day from a 450 square mile area; this service area includes the City of San Diego as well all adjoining jurisdictions. An upgrade of the 40-acre treatment facilities nearing completion, would increase its capacity to 240 mgd.

The treated wastewater, the effluent, from the PLWTP is discharged via the Point Loma Ocean Outfall into the ocean. The ocean outfall built in 1963, was extended in 1993 from a length of two miles off the coast of Point Loma to its present length of 4.5 miles. Twelve feet in diameter and operating via gravity-feed, the outfall ends at a depth of 320 feet and splits into a Y-shaped diffuser to ensure wide dispersal of effluent into ocean waters. The Point Loma Outfall is one of the longest and deepest in the world.

Once the wastewater is treated and the effluent is dispersed into the ocean the remaining solids (sludge) are piped to the recently constructed Metro Biosolids Center (MBC). Prior to the MBC construction in early 1998, the City processed sludge in open air, drying ponds on southern portion of Fiesta Island in Mission Bay; these beds have been restored back to parkland.

MBC provides two treatment operations: thickening and digestion of the raw sludge generated at the North City Water Reclamation Plant (NCWRP), and dewatering of blended wet biosolids from both the Point Loma Water Treatment Plant (PLWTP) and the NCWRP. The MBC is connected to the NCWRP via a five-mile pipeline and to PLWTP via a 17-mile pipeline.

The product of the sludge processing at MBC are biosolids, nutrient-rich, organic material. Biosolids may be used to promote growth of agricultural crops, to fertilize gardens and parks and to reclaim and replenish worn and nutrient-depleted land. Currently, biosolids are shipped to a landfill. Future use will be based on market demand.

When wastewater is collected from residents and businesses in the Metropolitan Sewerage System, it is conveyed through pipelines to the Point Loma Wastewater Treatment Plant and the North City Water Reclamation Plant. The stations pump sewage from a lower elevation collection point to a higher elevation where it can be returned to a gravity flow trunk sewer.

There are 85 sewage pump stations within the City of San Diego. Most of these have less than 500,000 gallons of wastewater-per-day flowing through them. The major pump stations in the system are:

- Pump Stations #1 and #2 are the largest pump stations in the sewerage system, pumping as much as 100 and 190 mgd respectively each day. Pump Station 2 is located in downtown San Diego on North Harbor Drive, and Pump Station 1 is located in National City.
- Pump Station #64 is located in the Sorrento Valley at the southeast corner of the Sorrento Valley Boulevard Bridge, over the flood channel, within the I-5 right-of-way. The pump station was expanded in 1998. It pumps domestic sewage collected from an 87-square-mile area which includes the communities of Carmel Valley, Rancho Bernardo, Del Mar, Mira Mesa and Rancho Peñasquitos and the City of Del Mar. Currently, Pump Station 64 pumps an average daily flow of 18 to 20 mgd to the North City Water Reclamation Plant. The pump station has a design capacity of up to 71 mgd to serve the growing North City area.
- Pump Station 65, located near Los Peñasquitos Lagoon, just off Sorrento Valley Road, transports an estimated 19 million gallons of wastewater per day to Pump Station 64.
- The Peñasquitos Pump Station, located east of I-15 off Scripps Poway Parkway, transports an estimated 32 mgd through the system.
- Ground was broken for the Grove Avenue Pump Station in July 1999. When the South Bay Water Reclamation Plant opens, this new pump station will divert wastewater in the San Ysidro Trunk Sewer from the PLWTP to the South Bay facility. The pump station will have an average capacity of 7 million gallons per day and a total capacity of 18 million gallons per day peak flow.

The North City Water Reclamation Plant (NCWRP) is the first, large-scale water reclamation plant in San Diego's history and part of the single largest sewerage system expansion in the area in more than 35 years. This state-of-the-art facility can treat up to 30 million gallons of wastewater per day generated by northern San Diego communities.

Reclaimed water produced at the NCWRP is distributed throughout the northern region of San Diego via an extensive pipeline system. More than 45 miles of distribution pipelines are installed in Mira Mesa, Miramar Ranch North, Scripps Ranch, University City and Torrey Pines to provide reclaimed water for irrigation, landscaping and industrial use. The NCWRP also provides reclaimed water for MCAS Miramar and the City of Poway.

The San Pasqual Water Reclamation Plant can treat up to 1 million gallons of wastewater per day. Opened in 1993, the purpose of the plant is to supply reclaimed water to the local community.

The wastewater received at the facility is initially treated to a primary level where solids are removed. The screened primary effluent is then fed into as many as 24 aquatic treatment ponds, where the wastewater is stabilized biologically by a combination of the an aquatic ecosystem of plants and organisms which removes pollutants from wastewater.

After the water passes through the aquatic treatment ponds, it is clarified, filtered and disinfected for use in irrigation and research.

Currently all wastewater generated in San Diego's South Bay is pumped north to the PLWTP through the South Metro Interceptor System, which includes a large sewer conveyance pipe and pumping facility. This aging system, built in the 1960s, is nearing capacity. The South Bay Water Reclamation Plant (SBWRP) will relieve the South Metro Interceptor System and provide local wastewater treatment services and reclaimed water to the South Bay.

The SBWRP is under construction west of San Ysidro near the U.S.-Mexico border, adjacent to the International Wastewater Treatment Plant (IWTP). The facility will be able to treat up to 15 million gallons per day of wastewater produced in the southern region of the City of San Diego to reclaimed water standards. The plant will provide an important and reliable new local source of reclaimed water which can be used for agriculture and landscaping.

Once constructed, the SBWTP, would discharge its effluent to the ocean via the South Bay Ocean Outfall. The outfall located near Imperial Beach, currently discharges treated Mexican wastewater from the International Wastewater Treatment Plant to the ocean. The South Bay Ocean Outfall extends approximately 3.5 miles offshore and discharges effluent at a depth of approximately 100 feet. The outfall consists of a 3.6-mile tunnel under the Tijuana Valley and estuary and approximately 1.65 miles of sea floor pipeline. A riser structure brings the pipeline up to the ocean floor.

Collection System

Metro received approval for a 7.5% rate increase; this new revenue allows the replacement of 1,000 miles of old sewer pipes in the older, urbanized neighborhoods. The sewer replacement is a 10-year program.

The trunk sewer the large pipes (36"-48" pipes) which connect the pump stations with the treatment plants have been planned to be improved SANDAG 2020 projections. Metro had just completed the North Mission Valley (Trunk Sewer) Interceptor and is currently planning/ designing the South Mission Valley Interceptor.

The smaller collector pipelines (10"-15" pipes) which connect to the trunk sewers are planned using current zoning yields. Two methods of improvement of collector pipelines would be used, either 1) pipeline rehabilitation which would install an inside lining to existing pipes in-place without increased capacity or 2) pipeline replacement where added capacity is always created by using upsized pipes.

As discussed previously in the Water Quality section, the City as standard practice has taken advantage of the generally westward gradient of the areas urban canyons and had installed sewer pipelines in these canyons. Many have been in place far past their expected service life. Due to age, grease blockage, tree roots, the occasional heavy rains, and

vandalism or a combination of these factors, many sewer pipes have ruptured. The sewer spills in canyons has been costly to the City in terms of habitat damage and fines levied by the Regional Water Quality Board. The City has identified thirty-six canyons where there are known concerns with pipelines needing replacement or pipelines needing inspection/maintenance. In some instances, these canyons containing suspect pipelines which are not easily accessed to replace, inspect, and/or maintain. City has prioritized nine sewer canyons which drain into Mission Bay as those in critical need of repair to prevent untreated wastewater spills. These critical canyon-sewers are:

- Tecolote Canyon
- Stevenson Canyon
- San Clemente Canyon
- East Clairemont Canyon
- Kearney Mesa Canyon
- Van Nuys Canyon
- Upper Rose Canyon
- Acuna Canyon
- Miramar Road Canyon

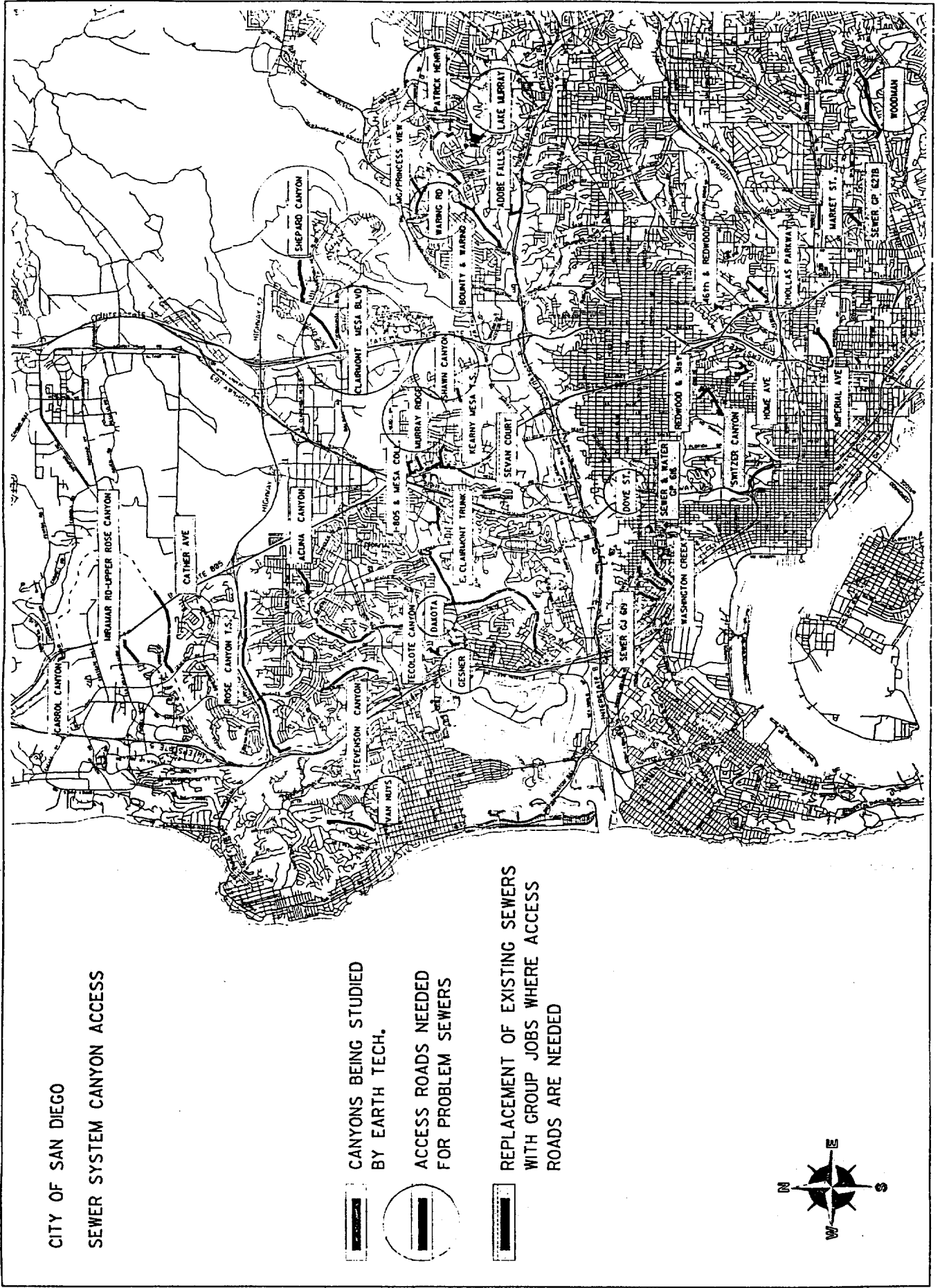
This is a separate City project currently undergoing its own CEQA environmental review. Figure 7 shows the location of the canyons listed above and 27 other canyons containing sewer pipelines where there are known concerns with pipelines needing replacement and/or pipelines needing access for inspection/ maintenance.

Impact

Currently, the Point Loma Wastewater Treatment Plant (PLWTP) serves 1.9 million people and treats on the average, 190 mgd. This is a per capita rate of 100 gallons. The 1.9 million people in Metro's service area comprise 68% of the region's population. It is projected that there would be 3.65 million people in the region by 2020; assuming that the percentage Sewer Canyons in the service remains constant, 68% of the regions population is an estimated 2.48 million in the Metro service area by 2020. PLWTP's capacity alone is 240 mgd; NCWRP's capacity is 30 mgd, and SBWTP's capacity is 15 mgd. The total Metro capacity is 285 mgd.

In the City of San Diego, the average daily water consumption per capita for residential use is 90 gallons in 2020. Using the higher usage (100 mgd), for the entire service area, Metro has the capacity to serve 2.85 million people. The proposed City of Villages could potentially result in 17,000 to 37,000 attached homes by 2020; these attached homes would use and dispose 1.1 mgd to 2.3 mgd.

FIGURE 7: CANYON SEWERS



Significance of Impact

The Metropolitan Wastewater System with its three treatment plants and ongoing pipeline replacement program, is adequate to meet all needs in the year 2020. There is adequate sewer capacity to accommodate the potential additional 17,000 to 37,000 attached homes which may result from the implementation of the proposed City of Villages growth strategy. All sewer pipeline replacement would be oversized to adequately handle future flows. Of some concern is the planned pipeline rehabilitation which would not be oversized and are designed based on existing zone of the service area. This work will be coordinated with the subsequent implementation effort (e.g. plan amendments and rezones), if and when, the proposed growth policy is approved. The proposed City of Villages strategy would not pose a significant impact on the City's wastewater treatment system.

Mitigation Measures

There is no significant impact to the wastewater treatment system; therefore, no mitigation is required.

K. Energy

Existing Conditions

Trends

The demand for electricity in San Diego has increased by over 29% between 1990 and 2000; this increase is over twice the growth in population. The growth of supply has lagged with only a 5% growth in generation and a 14% growth in transmission. Over the past fifteen years, the San Diego region has relied upon out-of-state resources to power over 50% of its energy requirements.

For much of the past year, there were statewide threats of rolling black outs and pleas for energy conservation. The State Independent System Operator which handles about 75% of electrical transmission in California, reports that electricity consumption from January to November, 2001 was 5% less than the same period in 2000; during the summer months the decrease was 8.5% in June and 9% in August. This past year showed, for at least during an emergency situation, people can conserve energy.

Regional Energy Planning

The San Diego Regional Energy Office (SDREO) has been tasked by the San Diego Association of Governments (SANDAG), the regional energy planning organization, to update and implement the current San Diego Regional Energy Plan (REP). The goal of the REP is to support future prosperity of the San Diego region through measures that ensure an adequate energy supply at a reasonable cost that is consistent with a high degree of environmental quality. The REP is a vital element of both the Regional Growth Management Strategy (RGMS) and the Regional Transportation Plan (RTP), both of which are currently being updated by SANDAG to plan for regional population growth, housing, land use, transportation, and other infrastructure needs. The updated REP will be known as the San Diego Regional Energy Strategy (RES).

The Regional Energy Strategy recognizes that the San Diego region must strive to balance

- Energy requirements of the region
- Environmental impacts of in-area generation and energy consumption
- Consequences of over reliance on import of out-of-state generation
- Increased supply versus decreased consumption
- Increased reliance on natural gas versus diversifying through the use of alternatives, such as renewables

The first step in the development of the RES is the completion of a Regional Energy Infrastructure Study to evaluate the long-term need for energy infrastructure in the region. SDREO has formed partnerships with the City of San Diego, the County of San Diego, the San Diego County Water Authority, SANDAG, the Utility Consumers Action Network (UCAN), and the Port of San Diego to conduct this study. Ultimately, the RES will address regional energy needs through the year 2030 and guide future public policy energy decisions. It is anticipated that the Regional Energy Strategy will be completed by June 2002.

Future Sources

Towards the end of late year, the federal Department of Energy issued presidential permits to allow transmission lines connecting the United States to two power plants under construction in Mexicali, Mexico. These plants would provide electricity to San Diego, Imperial Valley, and Baja California. They will have the capacity to import 1,000 megawatts to California; 1,000 megawatt can serve 750,000 homes. Locally, a power plant has been permitted to be constructed in the unincorporated portion of Otay Mesa; this is a 500-megawatt plant. Elsewhere, throughout the County, smaller, peaker plants were permitted during the 2000 energy crisis.

Impacts

Issue 1. Will the proposal result in the use of excessive amounts of fuel or energy?

Issue 2. Will the proposal result in substantial light, glare, or shading of other properties?

It appears that the energy crisis through 2001, accelerated the siting, permitting, and construction of power plants in the region and the permitting of transmission lines such that the power shortage has been resolved. The short-term crisis showed that users can conserve energy when faced with emergency shortages and high electricity costs.

The proposed City of Villages strategy could potentially result in 17,000 to 37,000 attached homes by 2020. The electricity supplied by transmission line from Mexicali and the potential electricity from the permitted power plant in Otay Mesa should adequately serve the growth in this region as well as the potential addition of attached homes which could be built if the proposed growth strategy is adopted and implemented.

The proposed City of Villages could result in a compact development of attached homes in the urbanized core. Generally, these attached homes would use less energy than detached homes. The attached homes would be located in villages where the implementing urban design features call for tree-lined sidewalks to assure a pleasant walking experience and tree-lined streets to calm traffic and enhance the visual quality. These trees if planted in abundance, besides their aesthetic value also provide practical value by shading and cooling buildings, hard surfaces, and parked cars, cooling the air through evapotranspiration, and consuming and storing carbon dioxide and providing oxygen. In addition, the most of City's urbanized core is located in the milder coastal areas where heating and cooling needs are relatively minimal and therefore, consume less energy than the suburbs to the east.

Significance of Impacts

There appears to be adequate regional energy to meet future demands. Higher energy costs may encourage continued conservation and stretch energy resources. The proposed growth policy with its urban design features would not result in the use of excessive amounts of energy and would not pose a significant effect on future energy resources.

Shading of adjoining properties would be a special concern of any resultant, potential multi-story, attached homes on the north side of identified potential east-west transit corridors. High structures could shade and limit the possibility of the adjoining single story homes to access solar

energy. The potential density of the proposed growth policy would most likely result in three to four story buildings and there are no identified east-west corridors which abut single-family areas.

Mitigation Measures

Since there is no significant effect, no mitigation is required.

L. Solid Waste Disposal

Existing Conditions

The City operates the Miramar Landfill on leased land on MCAS Miramar. Approximately 1.3 million tons of refuse were buried in the landfill in 1999; recently with citywide recycling efforts, the amount of refuse buried has been steadily decreasing. This decrease is due to recycling efforts by the City's Environmental Services Department in attempting to comply with Assembly Bill 939 (1989) which required all cities and counties to reduce the amount of refuse land filled by 50% (of the 1990 baseline total); Miramar is close to meeting this state mandate. Currently, the remaining capacity at the Miramar Landfill to accept refuse is estimated to last for 10 to 14 years. The landfill is currently filling its last excavated and lined cell, the West Miramar Phase II.

Recycling

The effort by the City to meet the state-required 50% reduction includes two measures - curbside recycling and greenery recycling. In 2000, the City collected about 360,000 tons of refuse from 305,000 residences and small businesses; only one-third (82,000 residents) received curbside recycling services. Through 2003, the City plans to extend curbside recycling to 70,000 to 80,000 residents each year; this would result in recycling opportunities for nearly all City residents. Currently, more than 90,000 tons of green and wood waste is accepted at the Miramar Landfill each year, recycling of grass cuttings and plant and tree trimmings are an essential element prolonging the landfill life. The "Greenery" operation at the Miramar Landfill accepts these landscape waste from commercial gardeners and tree trimmers as well from City Parks and maintenance crews. This organic waste is either chipped for mulch or composted for soil amendments.

Mulch can be used to suppress weed growth, control erosion, conserve water by reducing evaporation, protecting the roots of ornamental plants, and speed up topsoil production.

Construction Materials

As the City approaches its outer limits and buildable, vacant land becomes nearly nonexistent, continued growth would hopefully turn inwards and redevelopment would occur. If no reuse is proposed, redevelopment poses a concern about the disposal of waste from demolished structures.

However, there is a market for inert construction debris. Inert materials are those that are relatively clean, free of any hazardous materials. They include concrete, asphalt, asphalt roofing, aggregate, brick, rubble, and soil. Drywall is often included in this category, though it is not technically inert; it contains gypsum, a fibrous rock. Used drywall can be ground up and used as a soil amendment for agricultural use.

On large redevelopment sites an opportunity arises where demolished material can be reused in situ for the new construction. This type of recycling on a larger scale has occurred at the Uptown Center where the old Sears building and parking lot was demolished, crushed on site, and the produced aggregate was reused for construction on site. Other examples of on-site recycling are

the Downtown ballpark site, Naval Training Center, and the former General Dynamics site in Kearny Mesa. In addition, salvagers can manually reclaim windows, doors, and fixtures for reuse prior to demolition.

Methods of construction/demolition recycling include:

- Recycled aggregate, made from crushed concrete and asphalt.
- Recycled asphalt, which is asphalt pavement made with a percentage of reclaimed asphalt pavement.
- Recycled asphalt roofing to produce a road-patch, added to hot-mix asphalt or aggregate base.

Another measure which could be used in redevelopment is relocation where demolition of detached homes are proposed. These homes could be physically moved and reused elsewhere. A problem posed by reuse is the unsightly temporary storage of homes on blocks in neighborhoods prior to completion of their moves.

Impacts

The important factor is landfill capacity, Miramar Landfill would be filled and long closed by 2020. The City of San Diego has an agreement with Allied, Inc. the owner/operators of Sycamore Landfill in East Elliott to give San Diego preferred customer status if there is room to handle San Diego's waste after the municipal landfill closes.

The proposed City of Villages strategy could result in a potential to yield an additional 17,000 to 37,000 attached homes by 2020. Based on current annual generation rate for attached homes and small businesses (1.18 ton per unit), the project's additional attached homes could generate 20,000 to 44,000 tons of refuse.

Attached homes would have less landscaping waste than attached homes (as evidenced by the water usage), this may reduce the waste stream. However, some of these units would be built on redeveloped sites and there would be construction/demolition waste which would need to be disposed; this may offset the reduced waste stream of the additional attached homes.

Significance of Impacts

The proposed City of Villages strategy would identify potential area for possible intensification. The proposed growth strategy, if adopted and fully implemented, could result in 17,000 to 37,000 attached homes; these homes would generate 20,000 to 44,000 tons of waste on an annual basis. In addition, the implementation of the proposed growth strategy would most likely require demolition of existing structures; this would add to the project's impact. These impacts are considered potentially significant.

While there is some assurance that once the City's Miramar Landfill closes in 10 to 14 years, the Sycamore Landfill would be able to handle the City's refuse. There remains some uncertainty about the solid waste disposal capacity for the City to the year 2020. Currently, there is no landfill siting effort occurring in the City.

Mitigation Measure

Partial mitigation to reduce the significant waste disposal impact would be to extend the recycling program to attached homes and larger businesses. This would reduce the refuse generated by the additional attached homes and mixed use intensification potentially engendered by the proposed City of Villages growth strategy. Additional partial mitigation would be on site reuse of demolition materials for new asphalt paving and other uses.

However, the major concern is the limited remaining life of the City's Miramar Landfill and the uncertainty of adequate long-term, capacity at the privately-owned Sycamore Landfill to handle the City's projected waste stream, let alone, accommodate the additional refuse expected to be generated by the project's resultant potential yield of 17,000 to 37,000 attached homes in 2020. The project's potential impact on the future, solid waste disposal capacity remains significant and not mitigated.

M. Public Health and Safety

Existing Conditions

The proposed City of Villages strategy identifies potential areas in the urban core areas for potential residential intensifications through redevelopment and infill. This may result in exposure of the potential new residents of villages either to be closer to heavy commercial or industrial processes which store and use hazardous materials and or potentially toxic air pollutants or possibly more susceptible to exposure.

The Centre City area has 277 permitted establishments which were found in the County Haz Mat data base of operations which handle, use, treat, store and/or dispose hazardous materials.

Elsewhere in the City, the County data base was used to find operations handling hazardous materials by existing and potential transit corridors. The results are:

- Adams Avenue - 47 sites
- Alvarado Road - 77 sites
- Clairemont Drive - 54 sites
- Clairemont Mesa Blvd. - 123
- El Cajon Boulevard - 261
- Euclid Avenue - 68 sites
- Fairmount Avenue - 70
- Federal Boulevard - 37 sites
- Market Street - 104 sites
- Garnet Avenue - 78 sites
- Grand Avenue - 27 sites
- Hollister Street - 31 sites
- Home Avenue - 9 sites
- Imperial Avenue - 80 sites
- Ingraham Street - 20 sites
- Morena Boulevard - 89 sites
- Palm Avenue - 47 sites
- Park Avenue - 36 sites
- Rio San Diego Drive - 7 sites
- Rosecrans Street - 55 sites
- Turquoise Street - 11 sites
- University Avenue - 218 sites
- Voltaire Street - 21 sites
- Washington Street - 70 sites
- W. San Ysidro Blvd. - 18 sites
- 25th Street - 9 sites
- 30th Street - 59 sites

Note that older commercial corridors listed above, such as El Cajon Boulevard and University Avenue have many listed hazardous material sites.

In 1987, the California Air Toxics "Hot Spots" Information and Assessment Act was enacted. This law requires facilities emitting toxic air substance to provide local air pollution control districts with information to identify sources, assess problems, locate "hot spots, notify persons that may be exposed to significant risks, and develop strategies to reduce public risk. In the City of San Diego, APCD identified 99 sources of toxic air pollutants. All gasoline service stations, drycleaners, and auto shops are identified sources; however, they were not listed separately nor specified by location.

Impacts

Impacts associated with on-going use or sites contaminated with hazardous material pose a potential significant effect on human health.

Toxic air contaminants include pollutants known to cause cancer and other adverse health effects such as respiratory irritation or reproductive effects. Levels measured in El Cajon and Chula Vista show that toxic air pollutants had decreased 37% between 1990 and 1999. There are no specific health standards for toxic air pollutants. Its sources are similar to other pollutants in that the majority, fifty-nine percent, is estimated to be emitted from motor vehicles.

Significance of Impacts

The proposed City of Villages would result in the possible addition of 17,000 to 37,000 attached homes in potential mixed use villages and corridors within the urban core. Two areas targeted by this proposed growth policy are Mission Valley and Centre City. The condition as it relates to hazardous materials, for Centre City have been described previously in this section. For an area such as Mission Valley which was agricultural for the first part of the last century, much of the valley may have been spared any contamination from commercial/ industrial processes. Redevelopment in most parts of the long urbanized areas especially along commercial corridors, would most likely encounter hazardous materials. This would pose a significant health and safety impact.

Toxic air contaminants are required to be strictly controlled by APCD rules and regulation. APCD reports that toxic air contaminant emissions should not necessarily be equated with a significant health risk to any individual or the public.

Mitigation Measures

Mitigation of contaminated hazardous material site can only be developed when the location and its specific problem can be determined. Mitigation occurs in phases of investigation. Initially, a Phase I assessment must be conducted where the site is checked for signs of spills or empty barrels or rusted storage tanks; any indication that suggests hazardous material use and spills is noted. The second part of this initial assessment is to conduct a record search to determine any use of hazardous materials on site. If evidence suggests a potential problem, confirmation must be made by subsurface collection of soil samples and laboratory analysis of the samples. If contaminated, remediation may include soil removal or soil remediation. The level of cleanup is based upon how the site would be used once it is remediated. For instance, level of cleanup for an area of open space would be much lower than if residences were to be constructed. Remediation is usually possible but it may be costly and time consuming. These standard measures would mitigate any potentially significant effect due to hazardous materials, to below a level of significance.

N. Recreational Facilities

Existing Conditions

Existing park and recreation facilities are second to needed road improvements in identified funding deficits. The need to acquire and develop additional parkland and the need to maximize the efficiency of existing recreational facilities are of particular concern. In the urbanized core area, preliminary research includes the following new parkland needs:

- Mid-City – Development of the 170-acre Chollas Lake resource-based park
- Mission Valley – Development of approximately 20-acre community park
- San Ysidro – Acquire and develop various minor parts (unspecified locations)
- Southeastern Communities – Acquire four or five 4-5-acre sites throughout the community
- Kensington-Talmadge – Development of 4 acres of mini-parks (unidentified locations)

These are only the new parkland acquisition and/or development needs. The reason for listing only the acquisition and/or development is that these future actions may possibly result in a physical change that could pose a significant impact. These only represent a minor part of the recreational facilities needs.

The City of San Diego Park & Recreation Department operates and maintains a diverse and valued park system that serves millions of residents and visitors each year. The department is responsible for overseeing 200 City parks including Balboa Park, Mission Trails Regional Park, and Mission Bay Park, 25 miles of shoreline from Sunset Cliffs to La Jolla; 13 public pools; 2 public golf courses; 32,000 acres of open space park land; 53 recreation centers and 108 tennis courts. Figure 9 shows the City owned park and recreation facilities, including joint use facilities.

Passive recreation is considered conditionally compatible with the biological objectives of the Multiple Species Conservation Plan (MSCP), and is therefore allowed within the City's Multi-Habitat Planning Area (MHPA). Within the MHPA, recreational uses are limited to passive uses such as bird watching, photography, and trail use. Trails are located in the least sensitive areas of the MHPA, along the edges of urban land uses adjacent to the MHPA, or the seam between land uses.

The Department Of Fish And Wildlife Service gave the City credit for placing urban canyons into the MHPA, the planned habitat preserve of the MSCP. These urban canyons are smaller than some of the larger, interconnected open space areas in other parts of the City. Table IV-17 shows the amount of MHPA by community plan area. Many of these areas are City-owned open space and some may be privately owned, designated open space (See Figure 10). Many of the small canyons within the urbanized core of the City are in the MHPA (see Figure 8).

Impact

Park and recreation facilities deficiencies currently exist in the urbanized core area of the City of San Diego. The proposed City of Villages strategy may result in the addition of 17,000 to 37,000 attached homes in intensified, mixed use villages. Many of the potential village areas would be located in the urbanized core where the need for parkland and/or recreational facilities exists.

Significance of Impacts

The proposed project with a potential resultant of 17,000 to 37,000 additional attached homes beyond the current plan/zone yield would add to this shortfall and may therefore pose a significant effect on these facilities. The ultimate number of additional acres of parkland needed would depend on the actual number of housing units built, in which communities the new units would be located and whether the park acres are joint use or single use facilities. This needed detail would be determined with subsequent community plan updates or amendments.

Table IV-17
Multi-Habitat Planning Area (MHPA)
Acreege by Planning Area

<u>Plan Area</u>	<u>Acres</u>	<u>Plan Area</u>	<u>Acres</u>
Balboa Park Master Plan	169.6	Otay Mesa	2447.5
Mission Bay Master Plan	159.5	Pacific Beach	83.9
Carmel Valley	1152.3	Subarea III/Pacific Highlands	1436.5
City Heights	104.6	Peninsula	142.3
Clairemont Mesa	797.8	Rancho Bernardo	533.9
College Area	213.9	Rancho Penasquitos	1828.1
Subarea V/Del Mar Mesa	1161.5	Sabre Springs	743.6
Greater North Park	117.2	San Pasqual	6447.4
Golden Hill	26.3	San Ysidro	146.8
Kearny Mesa	365.6	Scripps Ranch	1071.4
La Jolla	541.9	Serra Mesa	242.5
Linda Vista	370.2	Skyline-Paradise Hills	105.4
Mira Mesa	2240.2	Sorrento Hills	83.9
Miramar Ranch North	285.5	Subarea II	544.3
Mission Valley	342.2	Tierrasanta	3893.6
Navajo	3091.7	Subarea IV- Torrey Highlands	491.0
Ocean Beach	15.7	Torrey Pines	1147.3
Old Town	15.9	University	1801.9
Otay Mesa-Nestor	1411.6	Uptown	263.4

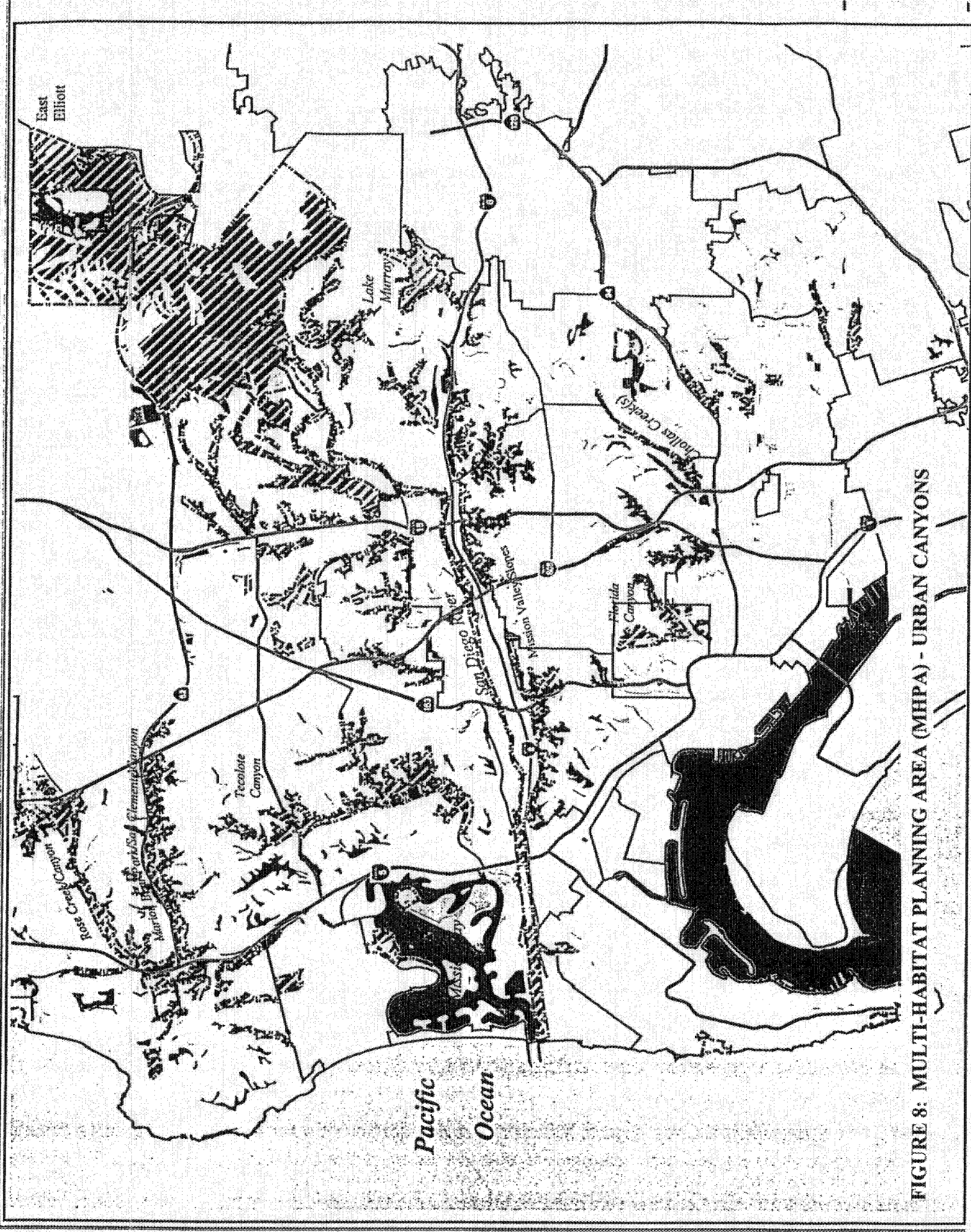


FIGURE 8: MULTI-HABITAT PLANNING AREA (MHPA) - URBAN CANYONS

Figure 9 Park and Recreation in the City of San Diego

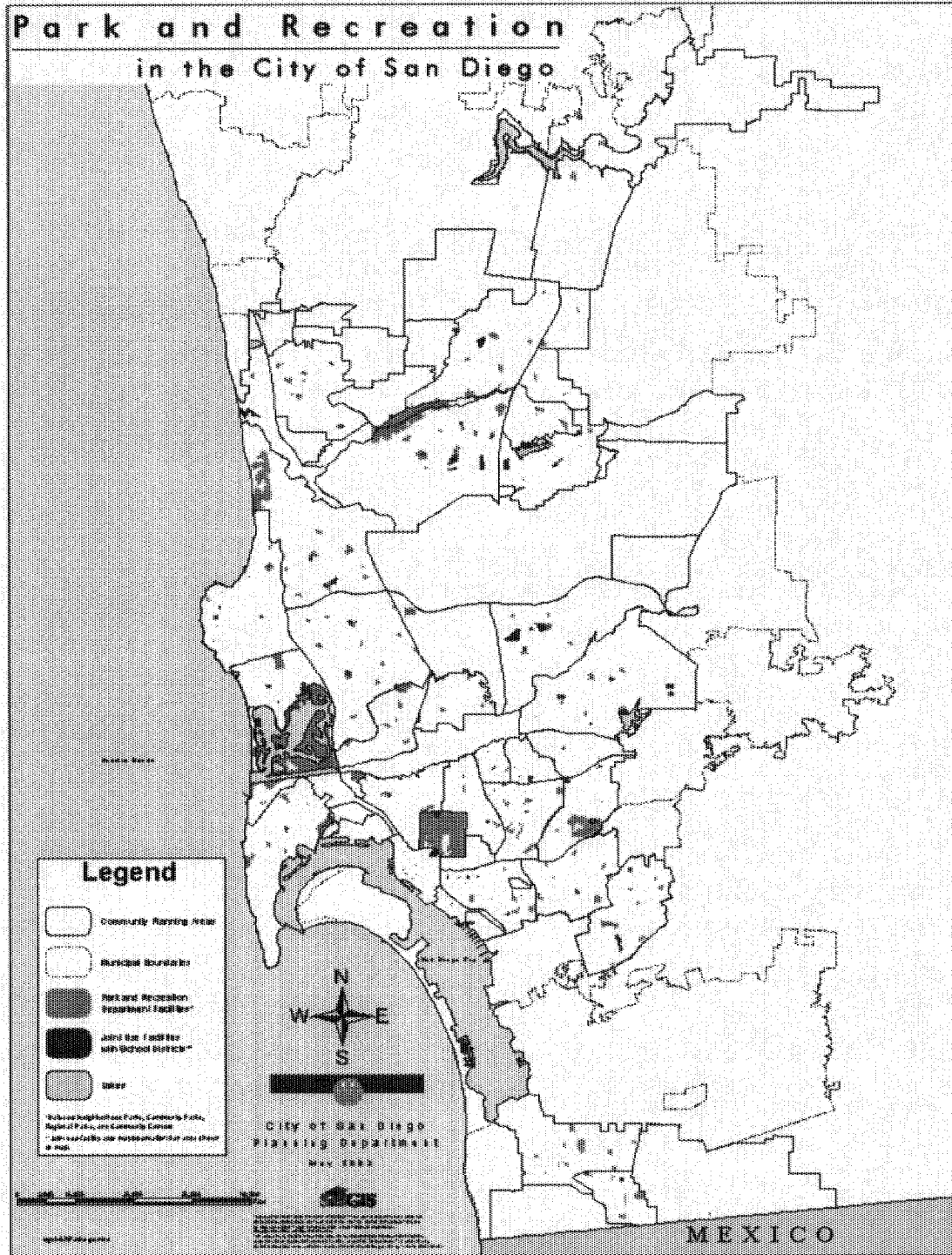
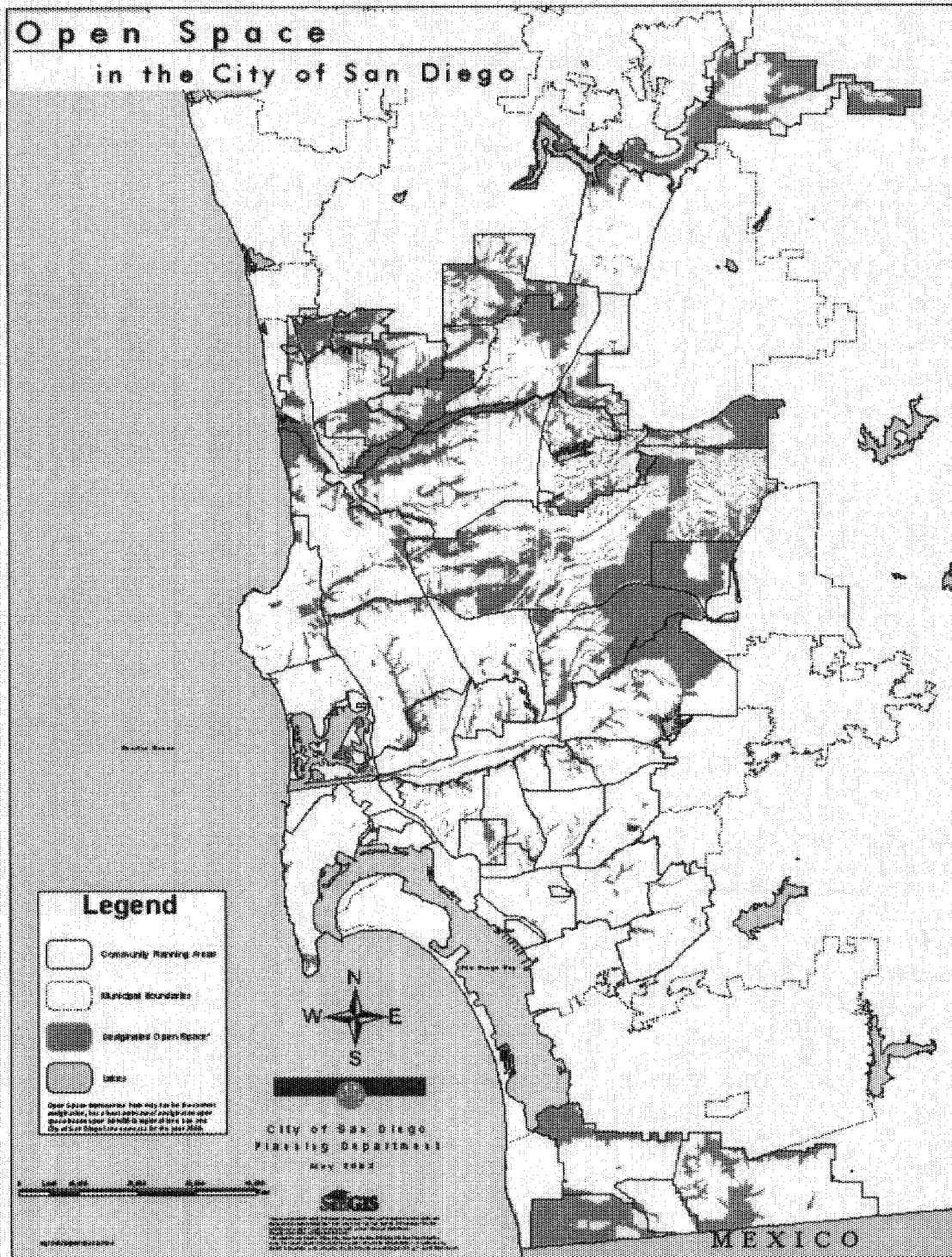


Figure 10
Designated Open Space in the City of San Diego



Mitigation

The current Recreation Element of the *Progress Guide and General Plan* states that the neighborhood and community recreational facilities should take a variety of forms in response to needs of the residents. It states further that both types of facilities should respond to the unique characteristics of the area and that the type of facilities and open space should relate to the population and use characteristics of the service area. The existing General Plan also explains that the acre-per-population requirements are guidelines and not fixed needs; where parkland is difficult to acquire, effort to provide park staff and facilities should be directed to compensate for deficiencies in park acreage.

The existing General Plan provides flexibility in the provision of adequate active recreational opportunities for future residents of attached homes within villages. The current guideline used by the City Parks and Recreation Department is 1.5-2.8 acres per one thousand people, depending on if the facility is a joint use facility. Neighborhood parks should serve a population of 3,500-5,000 within a ½-mile radius, and community parks should serve a population of 18,000-25,000 within a 1½-mile radius. These guidelines are more difficult to meet in the older, urbanized areas where much of this proposed strategy will occur and little vacant land for new park uses exists. Creative solutions however, can be utilized to meet recreational standards. Existing recreation space efficiency can be maximized through:

- Turfing fields to get greater use from them.
- Installing lighting to extend the hours of facilities.
- Creating joint use agreements between parks and schools or other institutions.

As discussed previously and as shown on Figure 7, there are opportunities for enhancement of the smaller urban canyons for wildlife, aesthetic, water quality benefit, and limited, passive recreational uses. This is especially true for those canyons containing older, failing sewer lines and stormwater outfalls. Restoration seed money can be obtained from mitigation needs for utility work in these canyons and from required water quality controls.

As mentioned in previous sections, there is an opportunity to enhance urban canyons. These canyons support transplanted native riparian vegetation with increased urban runoff. Once established, these canyons also become habitat for urban wildlife species, existing birds, reptiles, and smaller animals. This habitat adds to the quality of urbanized living, providing wildlife encounters in close proximity to neighborhoods. Naturalized, green riparian trees also add to the visual quality of the neighborhood. Surrounding residents in the compact, urban core of the future could enjoy new, limited, passive recreational use of some of these open space areas.

The enhancement of urban canyons could and is being accomplished, due to the an ever-present need for urban open space and amenities, an urgent need to prevent old sewer pipeline from rupturing in the canyons, and the immediate requirement to treat urban runoff.

The effort requires the collaborative work of at least five City departments including City Park and Recreation, Open Space Division management. Additionally, citizens/ volunteers who have expressed their interest in protecting these neighborhood resources could support this effort.

The potential resultant increased yield of attached homes and its potential significant effect on parks and recreational facilities can be mitigated to below a level of significance in several ways. One way is through the continued acquisition of active recreation parkland. This may be difficult in developed neighborhoods to obtain new parklands within the established community. The Park and Recreation Department monitors the availability of land adjacent to current parkland. In areas with land constraints, providing more activities, services, or facilities can maximize the efficiency of active recreational opportunities. Another way is to find alternative sites for enhancement/improvement of passive recreation such as the urban canyons with planted riparian trees and plants and trail system to access the canyon. However, it should be noted that no active recreation or facilities are envisioned in urban canyons nor are they proposed for mitigation. A combination of these measures would mitigate potential significant effects to below a level of significance.