University of California, Irvine Medical Center
Long Range Development Plan

Draft Environmental Impact Report
SCH No. 200021111

Volume II

Prepared for:

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October 18, 2002

VOLUME II

Appendices

APPENDIX A

NOTICE OF PREPARATION AND INITIAL STUDY

UNIVERSITY OF CALIFORNIA
ENVIRONMENTAL CHECKLIST FORM

1. PROJECT INFORMATION

Project Title: University of California, Irvine Medical Center Long Range Development Plan

Project Location: UCI Medical Center, 101 City Drive South, Orange, CA 92868

Lead Agency Name and Address: The University of California; 1111 Franklin Street, 12th floor, Oakland, CA 94607

Project Sponsor's Name and Address: University of California, Irvine Medical Center; 101 City Drive South, Orange, CA 92868

Contact Person and Phone Number: Ned Reynolds, Associate Director of Planning, UCI Medical Center Planning and Development Services; (714) 456-6904

Custodian of the Administrative Record for This Project: Ned Reynolds (see above)

Notice of Preparation Review Period: A 30-day public review period has been established for the Notice of Preparation in accordance with the State CEQA Guidelines. Your response must be sent at the earliest possible date, but not later than 30 days after receipt of this notice. Comments on the analysis contained herein may be sent to Ned Reynolds (see above).

2. PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The University of California at Irvine (UCI) Medical Center is depicted in its regional and local context in Exhibits 1 and 2, respectively. The UCI Medical Center is located at 101 City Drive South, in the City of Orange, Orange County, California. The Medical Center site is bounded by Chapman Avenue to the north, Dawn Way to the south, the Santa Ana Freeway (I-5) to the east, City Drive South to the west. Regional access to the Medical Center is provided via I-5, the Garden Grove Freeway (SR-22), and the Orange Freeway (SR-57).

The proposed project would be implemented at the existing UCI Medical Center site. Land uses in the immediate area include the Orangewood Children's Home, County Fire Station, the County of Orange Betty Lou Lamoreaux Juvenile Justice Center, and the Theo Lacy Facility (County jail) to the south; I-5 to the north and east; City Drive, The Block shopping center, office buildings, and the DoubleTree hotel to the west.

The UCI Medical Center is approximately 32 acres and is situated in an urbanized setting. The project site is relatively flat with minimum topographical relief. The maximum onsite elevations range from 129 to 135 feet above mean sea level (msl).

The Medical Center site is developed and contains approximately 55 structures and facilities, as depicted in Exhibit 3.

2.2 UCI MEDICAL CENTER BACKGROUND

The Medical Center began operation on the site of the present UCI Medical Center on September 1, 1914 as the Orange County General Hospital, a County facility. The present, main acute hospital unit was dedicated on July 1, 1963. In 1966, the facility became a community hospital and its name was changed to the Orange County Medical Center.

The California College of Medicine became affiliated with UCI in 1965 after operating for 60 years as a private medical institution in Los Angeles.

In fall 1968, the California College of Medicine moved into Medical Surge I facilities located on the UCI campus in the City of Irvine. In December 1967, at the request of the University President, UCI had authorized a study of the community need for a University Hospital. The study recommended that a 350-bed teaching hospital be constructed on the UCI campus in the City of Irvine. Ongoing changes in State of California funding priorities resulted in the cancellation of plans for a new hospital facility on the UCI campus and acquisition of the Orange County Medical Center. In 1969, the University constructed Medical Surge II on the main UCI campus to provide instructional resources and academic units for first- and second-year medical students, as well as offices, faculty research laboratories, and a medical library. In July 1968, UCI and the County of Orange entered into an agreement to establish the Orange County Medical Center (now the UCI Medical Center) as a key clinical teaching resource for the UCI College of Medicine. On July 1, 1976, the Orange County Medical Center was acquired by the University of California.

As a part of the University's assessment of facility needs, the University performed a seismic evaluation of its acute care health facilities and related buildings at the Medical Center, and classified each building into seismic performance categories, in accordance with the Alquist Hospital Seismic Safety Act, Senate Bill (SB) 1953 and UC Seismic Policy. SB 1953 was enacted as a result of the 1994 Northridge Earthquake to require that acute care health facilities are structurally retrofitted, replaced, or decommissioned to meet current seismic regulations. All acute care facilities must be capable of remaining fully functional and operational for at least 72 hours after a major earthquake in order to provide required emergency medical services to those in need. Acute care facilities are required to develop and submit a compliance plan to the OSHPD indicating the intent and actions to be taken to ensure compliance. For hospitals constructed before 1973, such as the UCI Medical Center, structural retrofits are required by the year 2008 for life safety, by 2030 for fully operational acute care services, and by 2002 for non-structural retrofits.

2.3 PROJECT OBJECTIVES

The UCI Medical Center's mission and strategic goals are the guiding principles for the physical planning of the Medical Center. The Medical Center's mission is "To provide high quality patient care in a manner that supports the education and research programs of the UCI College of Medicine."

These principles are based on the vision that the UCI Medical Center is a dynamic organization that is:

- "Dedicated to continuously improving quality of care and organizational performance;
- A financially sound clinical enterprise that provides for the continuum of care necessary to fulfill the mission of the College of Medicine;
- Committed to providing the continuance of care necessary to further the mission of the UCI College of Medicine.

- A recognized leader in providing for the advancement of medical care through teaching and research activities."

In support of these strategic goals, the objectives of the UCI Medical Center Long Range Development Plan Project include:

- Updating the UCI Medical Center Long Range Development Plan to best meet the UCI Medical Center's planning goals and current regulatory requirements.

- Serving as a framework for the physical development of the UCI Medical Center to provide adequate facilities in support of the strategic mission of the Medical Center.

- Establishing a physical design which represents the best possible relationship between the UCI Medical Center's teaching and research goals, patient care needs, site character, and allowing for the proper integration with the surrounding community.

- Providing a high-quality physical environment for patients and their families, faculty, students, staff, and visitors.

- Meeting the seismic retrofit and replacement needs of the UCI Medical Center consistent with the requirements of State law (SB 1953) and the Office of Statewide Health Planning and Development (OSHPD) through the orderly phasing out of older structures at the UCI Medical Center.

- Providing for the efficient staging of seismic retrofit projects and the economic utilization of existing facilities.

- Providing a critical mass of activities necessary to support the future operational and research space needs of the UCI Medical Center.

- Utilizing new construction in order to provide the most flexible space for the highest priority functions.

- Accommodating the increasing need for medical services to the growing population in Orange County.

2.4 PROJECT DESCRIPTION

UCI Medical Center Long Range Development Plan

Each campus and off-campus medical center in the University of California (UC) system is required to periodically reexamine its academic goals and formulate physical plans to support these goals. This reexamination takes the form of a Long Range Development Plan (LRDP), which guides the physical development of the campus to achieve the academic, research, patient care, and community service missions of the institution. The LRDP identifies goals to be achieved during the buildout period of the LRDP, and estimates the types and amounts of new building space required the achieve these goals.

The proposed UCI Medical Center LRDP will serve as the "general plan" to guide the physical development of the UCI Medical Center. It does not constitute a commitment to any specific projects, construction schedules, or funding priorities. As such, the University has determined that a Program EIR will be required to assess the potential environmental effects associated with implementation of the UCI Medical Center LRDP project. The Program EIR is intended to also provide project-level environmental analysis for near-term individual construction projects associated with the LRDP. Subsequent, individual construction projects will require project-specific review and approval by The University of California Regents, in accordance with CEQA.

Project Characteristics

A key element in implementing strategic initiatives is to have facilities that are able to accommodate them to the fullest extent possible. The UCI Medical Center's existing facilities have been evaluated as a part of an ongoing master planning process. The evaluation determined that there is a shortage of space at the Medical Center. As the Medical Center's functions continue to grow, space rationing will be required if no expansion of the Medical Center occurs. Future space needs will be prioritized so that the limited resources available will be assigned in a manner which best supports the Medical Center's mission.

The project applicant, the University of California at Irvine (UCI) is proposing to prepare the UCI Medical Center LRDP to allow for the phased reuse of the existing UCI Medical Center site with an intensification of medical center facilities. No expansion of the project site boundaries is assumed. The proposed project is intended to provide building space, circulation, parking, and infrastructure sufficient to support the patient care, teaching, and research missions of the UCI Medical Center and College of Medicine. Sufficient is defined as enough to meet the needs of a given use and, in the context of the Medical Center's basic mission, is intended to indicate no more and no less space, resources permitting, than is required.

The existing UCI Medical Center contains approximately 910,365 gross square feet of development, distributed between the following categories of facilities. Table 1 quantifies existing uses.

- ***Inpatient Facilities*** include the hospital and neuropsychiatric facilities.
- ***Ambulatory Care Facilities*** provide out-patient services, including cancer care, occupational therapy, dialysis, and diagnostic services.
- ***Academic and Research Facilities*** include academic, department, and research offices, research and psychiatry labs, classrooms, and medical library.
- ***Administration Facilities*** are located throughout the Medical Center to support medical and research uses at the facility.
- ***Service Facilities*** include storage facilities, the steam plant, and electrical facility.
- ***Parking*** is provided at the Medical Center and a remote lots in the project vicinity. Parking is provided in two parking structures and surface parking at the Medical Center; surface parking is also provided off the site.

The proposed UCI Medical Center LRDP project would allow for the intensification of development at the facility resulting in the provision of approximately 1,902,049 total square feet of onsite facilities, excluding parking. The proposed project assumes the provision of all Medical Center parking on the site. This intensification assumes the demolition of some of the existing structures, as well as the rehabilitation/alteration of other structures to increase their efficiency and allow for compliance with the Alquist Hospital Seismic Safety Act, Senate Bill 1953 and UC Seismic Policy.

TABLE 1
UCI MEDICAL CENTER EXISTING LAND USES

Facility Category	Existing Area (GSF)	Number of Beds/Spaces in Use
Inpatient	374,695	382 beds
Ambulatory Care	167,633	n/a
Academic and Research	264,203	n/a
Administrative	56,440	n/a
Service	47,394	n/a
Total:	**910,365 GSF**	**382 hospital beds**

GSF: gross square feet
Note: The UCI Medical Center is licensed for 462 beds.
Source: Lee, Burkhart, Liu, Inc., July 1999.

The UCI Long Range Development Plan is proposed to identify the general development and redevelopment areas within the existing Medical Center campus where the following three categories of land uses will be accommodated:

- Clinical/Academic
- Service/Support
- Parking

With the exception of the near-term projects identified in the subsequent discussion, no site-specific structures would be identified in the LRDP. Development areas within the overall project boundaries for these three categories will be identified.

The proposed project assumes the provision of 524 hospital beds, an increase of 62 beds above the number of licensed beds at the UCI Medical Center (462 beds). Beds would be distributed to respond to target specific programs and services, and to increase operational efficiency and cost effectiveness. It is anticipated that beds would be distributed based on the following service categories:

Hospital Bed Distribution	Current Beds In Use	Proposed Beds
Adult Critical Care	40	100
Medical/Surgical	175	199
Women's and Children's	85	136
Neuropsychiatry	82	89
Total	382 beds	524 beds

Multi-bed wards are not assumed. Patient care units are planned as a mix of private and semi-private rooms.

Bed Type	Current	Proposed
Private Beds	38%	82%
Semi-Private Beds	22%	18%
Multi-Bed Wards (3+ beds)	40%	0%
Total	100%	100%
Note: Does not include Neuropsychiatric and Infant Special Care.		

Phasing

The Long Range Development Plan would be phased to minimize disruptions to services. The Long Range Development Plan will identify the physical needs of the UCI Medical Center to the planning horizon of year 2015. Anticipated near-term projects expected to be constructed by year 2008 are as follows:

- Replacement hospital
- Parking and transportation improvements

Actions

Anticipated approval authority by the University of California and other public agencies whose action is required (e.g., permits, financing approval, or participation agreement) are identified below:

The Regents of the University of California

- Certification of the UCI Medical Center Long Range Development Plan Final Environmental Impact Report

- Approval of the UCI Medical Center Long Range Development Plan Project

Cities of Orange and Garden Grove and County of Orange

- Coordination of potential circulation improvements

3. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

√	Aesthetics		Agriculture Resources	√	Air Quality
	Biological Resources	√	Cultural Resources	√	Geology/Soils
√	Hazards & Hazardous Materials	√	Hydrology/Water Quality	√	Land Use/Planning
	Mineral Resources	√	Noise	√	Population/Housing
√	Public Services		Recreation	√	Transportation/Traffic

√ Utilities/Service Systems √ Mandatory Findings of Significance

4. DETERMINATION

On the basis of the initial evaluation that follows:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

√ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. A TIERED ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental document is required. FINDINGS consistent with this determination will be prepared.

A Program EIR will be prepared to evaluate the potential environmental impacts associated with the construction and implementation of the UCI Medical Center Long Range Development Plan project. The UCI Medical Center Long Range Development Plan Program EIR is a Program EIR in accordance with state California Environmental Quality Act (CEQA) Guidelines §15168. The Program EIR provides a comprehensive evaluation of the reasonable anticipated scope of the project. It is intended to serve as an informational document for public agency decisionmakers and the general public regarding the objectives and components of the proposed project, and any potentially significant environmental impacts that may be associated with the planning, construction, and operation of the project, as well as to identify appropriate feasible mitigation measures and alternatives that may be adopted to reduce or eliminate these significant impacts. This Program EIR is also intended to provide project-level environmental analysis for near-term building projects within the Medical Center. This Program EIR is further intended to serve as the primary environmental document for all future entitlements associated with the proposed project, including all discretionary approvals requested or required to implement the project. A lead agency can approve subsequent actions without additional environmental documentation unless as otherwise required by Public Resources Code §21166, state CEQA Guidelines §15162. The University of California Regents, which has the principal responsibility for processing and approving the project, and other public agencies (i.e., responsible and trustee agencies) that may use this Program EIR in their decision making or permitting processes, will consider the information in this Program EIR along with other information that may be presented during the CEQA process.

Richard Demerjian, Director | Date
UCI Office of Campus & Environmental Planning

5. EVALUATION OF ENVIRONMENTAL IMPACTS

The following evaluation is based on a preliminary assessment of the potential effects of the proposed project. Detailed analyses to be conducted as a part of the EIR may determine that impacts are less than significant, either before or after mitigation.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. AESTHETICS–Would the project:				
a) Have a substantial adverse effect on a scenic vista?	□	□	□	√
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	□	□	□	√
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	√	□	□	□
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	√	□	□	□
2. AGRICULTURE RESOURCES–Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	□	□	□	√
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	□	□	□	√
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	□	□	□	√
3. AIR QUALITY–Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	√	□	□	□
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	√	□	□	□
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	√	□	□	□
d) Expose sensitive receptors to substantial pollutant concentrations?	√	□	□	□
e) Create objectionable odors affecting a substantial number of people?	□	□	√	□

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
4. BIOLOGICAL RESOURCES–Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or U.S. Fish and Wildlife Service (USFWS)?	☐	☐	☐	√
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS?	☐	☐	☐	√
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	√
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	√
e) Conflict with any local applicable policies protecting biological resources?	☐	☐	☐	√
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?	☐	☐	☐	√
5. CULTURAL AND PALEONTOLOGICAL RESOURCES–Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	√	☐	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	√	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	√	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	√	☐	☐
6. GEOLOGY AND SOILS–Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	√
ii) Strong seismic ground shaking?	√	☐	☐	☐
iii) Seismic-related ground failure, including liquefaction?	√	☐	☐	☐

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☐	☐	√
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	√	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite/offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	√	☐	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	√	☐	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	√
7. HAZARDS AND HAZARDOUS MATERIALS–Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	√	☐	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	√	☐	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 1/4-mile of an existing or proposed school?	√	☐	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	√
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	√
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	√	☐	☐	☐
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	√	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	√
8. HYDROLOGY AND WATER QUALITY–Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	√	☐

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	√
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation onsite or offsite?	☐	☐	√	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite?	☐	☐	√	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	√	☐
f) Otherwise substantially degrade water quality?	☐	☐	√	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	√
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	√	☐	☐	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	√	☐	☐	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	√
9. LAND USE AND PLANNING–Would the project:				
a) Physically divide an established community?	☐	☐	☐	√
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the LRDP, general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	√	☐	☐	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	√
10. MINERAL RESOURCES– Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	√

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	√
11. NOISE–Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies?	√	☐	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	√	☐	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	√	☐	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	√	☐	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	√
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	√	☐	☐	☐
12. POPULATION AND HOUSING–Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	√	☐	☐	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	√
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	√
13. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	√	☐	☐	☐
Police protection?	√	☐	☐	☐
Schools?	√	☐	☐	☐

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Parks?	√	☐	☐	☐
Other public facilities?	√	☐	☐	☐
14. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	√	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	√	☐
15. TRANSPORTATION/TRAFFIC–Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	√	☐	☐	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	√	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	√	☐	☐	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	√	☐
e) Result in inadequate emergency access?	☐	☐	√	☐
f) Result in inadequate parking capacity?	☐	√	☐	☐
g) Conflict with applicable policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	√
16. UTILITIES AND SERVICE SYSTEMS–Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	√	☐	☐	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	√	☐	☐	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	√	☐	☐	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	√	☐	☐	☐

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	√	□	□	□
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	√	□	□	□
g) Comply with applicable federal, state, and local statutes and regulations related to solid waste?	√	□	□	□
17. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	√	□	□	□
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	√	□	□	□
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	√	□	□	□

Fish and Game Determination

Based on the information above, there is no evidence that the project has a potential for a change that would adversely affect wildlife resources or the habitat upon which the wildlife depends. The presumption of adverse effect set forth in 14 CCR 753.5 (d) has been rebutted by substantial evidence.

___ Yes (Certificate of Fee Exemption)

√ No (Pay fee)

6. NARRATIVE DISCUSSION OF CHECKLIST EVALUATION

1. AESTHETICS–Would the UCI Medical Center Project:

a) Have a substantial adverse effect on a scenic vista? or

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The UCI Medical Center site and surrounding area is flat; the site is located within an urbanized setting and the existing Medical Center site is developed. The Medical Center is bounded by a freeway (I-5), shopping center, roadways, and office and institutional uses. This portion of I-5 is not a scenic highway, nor are there any scenic vistas in the project vicinity. These issues will not be addressed in the EIR.

c) Substantially degrade the existing visual character or quality of the site and its surroundings? or

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Potentially Significant Impact. Intensification of the existing site will result in changes to the visual character of the site. The EIR analysis will address the potential for significant impacts associated with the implementation of the project. The compatibility of the proposed project with surrounding land uses and policies and guidelines regarding aesthetics, light, and glare will be evaluated.

<u>Aesthetics Study Methodology</u>

The aesthetics evaluation in the EIR is expected to identify development areas for the Medical Center site's three land use categories: Clinical/Academic, Service/Support, and Parking. The character of the existing aesthetic environment and visual resources, including a discussion of views within the site and views from surrounding areas to the site would be identified. The visual assessment would be based on the anticipated levels of intensity, including maximum building heights, within the development areas of the site. The compatibility of the project's height, intensity, signage, and building materials with the surrounding area will be assessed. Potential shade and shadow impacts will be determined where known. Potential light and glare impacts, particularly with respect to building materials and exterior lighting, associated with the development of the project will be evaluated. Mitigation measures will be recommended to reduce potential aesthetic and light and glare impacts to the extent feasible.

2. AGRICULTURE RESOURCES–Would the UCI Medical Center Project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? or

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? or

c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

No Impact. The project site and surrounding area are not designated "Farmland" and are not in agricultural production. Project implementation will not result in the conversion of Farmland to non-agricultural uses. The property is not subject to an agricultural contract under the Williamson Act and is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, the topic of Agricultural Resources will not be addressed in the EIR.

3. AIR QUALITY–Would the UCI Medical Center Project:

a) Conflict with or obstruct implementation of the applicable air quality plan? or

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? or

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? or

d) Expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impact. The Medical Center is within the South Coast Air Basin and is monitored by the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board. The South Coast Air Basin is a non-attainment area for ozone (O_3), carbon monoxide (CO), and fine particulate matter (PM_{10}). The project's short-term and long-term air quality emission levels, and consistency with applicable air quality management regulations and guidelines will be addressed in the EIR.

e) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. Medical Center uses do not generate significant odors. No significant impacts would be anticipated; this issue will not be addressed in the EIR.

Air Quality Study Methodology

As a part of the EIR, an air quality analysis will be prepared describing existing conditions, including regional and local air quality and meteorology, and the state, federal, and regional air quality regulatory framework. The air quality analysis would address construction and operational impacts associated with the proposed project. Construction impacts are associated with the following activities: grading/excavation, debris removal, exhaust emissions from construction equipment, and employee vehicles. Operational impacts are associated with increased vehicular traffic and activities on the project site. The analysis would compare regional and local traffic impacts from the project with existing conditions and future conditions without the project, using current approved emission factors, traffic estimates, and approved SCAQMD and Caltrans methodologies. The potential for carbon monoxide concentrations that could adversely affect sensitive receptors in the project area will be determined. Project-specific and cumulative impacts will be identified using SCAQMD recommended thresholds of significance for air quality impacts.

The intensification of the UCI Medical Center assumes that certain existing structures will be demolished and others rehabilitated/altered. Because many of the Medical Center's structures were constructed prior to the mid-1970s when asbestos-containing building materials were being manufactured and used in construction projects, demolition and rehabilitation/alteration efforts may require mitigation to prevent the release of asbestos-containing building materials into the air. The disposition of hazardous materials is subject to regulations set forth at a federal and state level. The potential for significant impacts will be addressed in the EIR.

4. BIOLOGICAL RESOURCES–Would the UCI Medical Center Project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? or

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service? or

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? or

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? or

e) Conflict with any local applicable policies protecting biological resources? or

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?

No Impact. The UCI Medical Center is a developed site and supports minimal decorative landscaping. As a result, the project site supports habitat that is of low value for wildlife. There are no plant or wildlife species expected to occur on the project site that are considered sensitive at either the federal, state, or local level. The project site is not part of any wildlife movement corridor. There are no riparian or wetland habitats, or any other environmentally sensitive habitat areas within the Medical Center. Implementation of the project would not result in a decrease in the diversity of species or number of plants or animals, or a reduction in the number of unique, rare, or endangered plant or animal species, or conflict with provisions of Orange County Natural Community Conservation Plan Program, or any other habitat conservation plan. Further, the project will result in the removal of only non-native landscaping, which would be replaced by project landscaping. Because of the limited vegetation impacts, no significant impacts to animal life are expected. As the project will have no impacts on wildlife as defined in the Fish and Game Code §711.2, the project will not contribute to potential cumulative development impacts to such wildlife. Therefore, the topic of Biological Resources will not be addressed in the EIR.

5. CULTURAL AND PALEONTOLOGICAL RESOURCES–Would the UCI Medical Center Project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Potentially Significant Impact. The UCI Medical Center contains structures dating back to 1914. Implementation of the LRDP project is expected to result in the demolition of some existing structures and rehabilitation/alteration of others. These actions could result in significant impacts to historic resources should it be determined that affected structures are considered historically significant. The CEQA Guidelines state that "a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Substantial adverse changes to the significance of an historical resources (e.g., demolition, destruction, relocation, or alteration of the resource or its immediate surroundings is considered a significant impact. Potential impacts to historic resources will be addressed in the EIR.

<u>Historic Resources Study Methodology</u>

As a part of the EIR, an historic resources inventory will be prepared to characterize existing structures on the site, as well as identify their potential significance. This information will be used to evaluate the potential effects of LRDP implementation on onsite resources. Measures will be recommended to mitigate impacts to the degree feasible. Potential measures can include but are not limited to retention of structures onsite, relocation of structures, and documentation of structures.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? or

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? or

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant With Mitigation Incorporated. The UCI Medical Center site is developed and has been subject to ongoing demolition and construction activities. Associated with these activities, no prehistoric archaeological or paleontological resources have been noted. However, archaeological and paleontological resources can be uncovered and consequently impacted by excavation and construction activities. Any potential impacts to prehistoric archaeological and paleontological resources are expected to mitigated to a less than significant level through implementation of the following measures. No further assessment of prehistoric archaeological and paleontological resources in the EIR is assumed.

Implementation of the following mitigation measures as conditions of project approval are assumed as a part of the UCI Medical Center project.

<u>Prehistoric Archaeological Resources Mitigation Measures</u>

- A SOPA-certified archaeologist shall be retained to perform periodic project-specific inspections of ground disturbing activities. The archaeologist shall be allowed to divert or direct grading in the areas of resources in order to facilitate evaluation and, if necessary, salvage any buried artifacts that may be uncovered.

– A final monitoring report, including an itemized inventory and pertinent field data, shall be sent to the University of California and to the South Central Coastal Information Center at the University of California, Los Angeles following the completion of each construction project.

– Any recovered prehistoric and historic artifacts shall be offered, on a first right-of-refusal basis, to a repository with a retrievable collection system and an educational and research interest in the materials such as the Fowler Museum of Cultural History (UCLA) or California State University, Fullerton, or alternatively to the Pacific Coast Archaeological Society where collections are held locally.

Paleontological Resources Mitigation Measures

- A qualified paleontologist shall be retained to perform periodic project-specific inspections of excavations and to salvage exposed fossils. The paleontologist shall be allowed to divert or direct grading in the areas of an exposed fossil in order to facilitate evaluation and, if necessary, salvage the exposed fossil.

– During monitoring, any scientifically significant specimens shall be properly salvaged after evaluation by, and under the supervision of, the paleontologist. During fossil salvage, contextual stratigraphic data shall also be collected. This will include lithologic descriptions, localities plotted on a USGS 7.5' Series topographic quadrangle, photographs, and field notes.

– Specimens shall be prepared to the point of identification, identified, and curated on a long-term loan basis in a suitable repository that has a retrievable storage system, such as the Los Angeles County Museum of Natural History.

– A final report shall be prepared at the end of earthmoving activities for each construction project, and shall include an itemized inventory of recovered fossils and appropriate stratigraphic and locality data. This report shall be sent to the University of California to signify the end of mitigation. Another copy shall accompany any recovered fossils, along with field logs and photographs, to the designated repository.

6. GEOLOGY AND SOILS–Would the UCI Medical Center Project:

ai, aiv) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: i) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; or iv) landslides?

No Impact. The UCI Medical Center is not in an Alquist-Priolo Zone or identified as being in an area subject to liquefaction (source: California Division of Mines and Geology). The Medical Center site is relatively flat with minimum topographical relief. The maximum onsite elevations range from 129 to 135 feet above mean sea level (msl) across the 32-acre site. There is no visible or documented evidence of onsite conditions that could result in landsliding or slope failure. Therefore, these issues will not be addressed in the EIR.

aii, aiii) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: ii) Strong seismic ground shaking? or, or iii) seismic-related ground failure, including liquefaction? or

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite/offsite landslide, lateral spreading, subsidence, liquefaction or collapse? or

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Potentially Significant Impact. The UCI Medical Center is located in a region of historic seismic activity. Land uses at the Medical Center would be subject to groundshaking during a seismic event. The State of California has established “seismic performance” categories for older hospitals (pre-1973 local approved, non-conforming buildings) and new hospitals (post-1973 Office of Statewide Health Planning & Development [OSHPD] approved, conforming buildings). The Structural Performance Categories (SPC) are based on building age, construction type, and physical condition; Non-structural Performance Categories (NPC) are based primarily on the bracing of equipment, fire sprinkler/alarm systems, emergency power, medical gases, and communication systems. Acute care facilities are required to develop and submit a compliance plan to the OSHPD indicating the intent and actions to be taken to ensure compliance. For hospitals constructed before 1973, such as the main hospital at UCI Medical Center, structural retrofits are required by the year 2008 and non-structural retrofits by year 2002.

The site is situated on the Santa Ana River floodplain immediately adjacent to the existing Santa Ana River channel. Recent alluvial deposits underlie the site to depths of 80 to 100 feet. Below the recent alluvium is older alluvium or stream terrace deposits to depths of 800 feet. The potential for soil settlement, and/or the potential presence of unstable and expansive soils will be assessed in the EIR.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant. As noted, the project site is a relatively flat, developed site. In accordance with county and state requirements, as individual construction projects are proposed, the project contractor will be required to implement measures to control short-term potential siltation and erosion on and off of the site. No further assessment in the EIR is required.

Implementation of the following measures as conditions of project approval are assumed as a part of the UCI Medical Center project.

<u>**Erosion Control Measures**</u>

- The University shall construct interceptor ditches and diversion dikes to divert runoff away from graded areas during the implementation of the LRDP.
- Erosion control during construction activities shall be maximized to the extent feasible; adequate erosion control methods may include, but are not limited to the following:
  - During construction, soil on any graded slopes shall be revegetated where feasible.

- During grading or before any landscape areas have established root, straw, wood chips, or plastic shall be used to stabilize the ground.

- Air-born and vehicle-born sediment shall be controlled during construction by the regular sprinkling of exposed soils; the moistening of vehicle loads; and by providing gravel and paved driveways between the construction site(s) and public streets.

- Sediment shall be removed from storm flows with sediment filters, before the runoff leaves the construction site.

- During the period of construction activity, vegetation shall be protected from traffic by the use of fences. Buffer strips of vegetative filter strips, such as tall strands of grass, shall be used to protect against sediment buildup.

- Street sweeping services will be required for to maintain the quality of surface water being discharged.

• After individual construction projects are completed, the following measures, as applicable, shall be observed in order to protect and promote landscaping at the UCI Medical Center as a form of erosion control:

  - Landscaping shall be placed along manufactured slopes, drainageways, or other disturbed areas which are subject to sheet flows.

  - Mulch shall be added to topsoil prior to landscaping, to reduce the erosive force of raindrops and encourage plant establishment.

  - In areas where soil is inhospitable to plant growth, topsoiling shall be used to create a medium more suitable for landscaping.

  - Slopes shall be scarified or grooved to aid in the establishment of vegetative cover from seed, and to reduce slope runoff velocity.

• If construction occurs between the period of October 15 to April 15, the University shall implement project-specific erosion control measures to control any runoff from construction site.

• The level of construction site sediment and the velocity of sheet flows shall be minimized by the use of sandbag, gravel bag, or straw bale barriers. The barriers shall be placed around drainage inlets. Due to the short life expectancy of these barriers (i.e., one rainy season), these shall be used only where other measures of sediment control are not possible.

• To reduce/eliminate mud and sediment carried by vehicles or runoff onto public right-of-ways, a temporary gravel entrance shall be located at every construction site entrance, where needed. The gravel shall cover the entire width of the entrance, and its length shall be no less than fifty feet.

• Filter berms, consisting of a ridge of gravel, shall be placed across graded right-of-ways to decrease and filter runoff levels while permitting construction traffic to continue. Prior to the stabilization of the construction site area, sediment flows shall be prevented from entering storm drainage systems by the construction of temporary filter inlets around existing storm drain inlets. The sediment trapped in these impounding areas shall be removed after each storm.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The proposed project does not require the use of a septic tank or an alternative wastewater disposal system. Therefore, this issue will not be addressed in the EIR.

<u>Geology and Soils Study Methodology</u>

In addition to providing additional needed square footage at the UCI Medical Center, the proposed project is intended to implement seismic upgrades in compliance with the Alquist Hospital Seismic Safety Act, Senate Bill 1953.

As a part of the University's assessment of facility needs, the University performed a seismic evaluation of its acute care health facilities and related buildings at the Medical Center. The EIR section will address potential effects of seismic activity on existing and future land uses at the Medical Center. The EIR will address this information, as well a soils and geology information to be prepared as a part of the EIR.

7. HAZARDS AND HAZARDOUS MATERIALS–Would the UCI Medical Center Project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? or

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? or

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 1/4-mile of an existing or proposed school?

Potentially Significant Impact. Hazardous materials are used during medical diagnosis and treatment, research, and facility operation and maintenance. Hazardous materials typically used in small quantities include chemical reagents, solvents, radioisotopes, paints, cleansers, pesticides, photographic chemicals, and biohazardous substances. Similarly, different types of hazardous wastes are generated (usually in small quantities) through these activities.

The Lyon School, located at the Orangewood Children's Home, is located within 1/4-mile of the UCI Medical Center. The potential for impacts to this existing school will be addressed in the EIR.

As a part of implementation of the proposed LRDP project, the University has assumed that some structures constructed before the mid-1970s will be demolished and/or rehabilitated/altered. Therefore, there is a potential for encountering asbestos-containing building materials in the roof/ceiling and floor tiles and building insulation. In accordance with the South Coast Air Quality Management District (SCAQMD) Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities), any demolition work involving asbestos-containing materials must be identified and potential emissions from asbestos must be determined. Compliance with federal and state regulations would mitigate any potential impacts to a level that is considered less than significant.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The UCI Medical Center is listed on the Environmental Protection Agency (EPA) Facility Index System Database (FINDS). This system was developed by the EPA to be able to cross reference sites for which the EPA maintains files. Not all sites on the list have had a previous violation. For those sites where there has been a prior violation, it has been remediated. No sites with current violations are listed on the FINDS system. (Source: VISTA Information Solutions, Inc., February 23, 2000).

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The project site is not located within an airport land use plan or within two miles of a public airport/public use airport. No further discussion in the EIR is required.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Potentially Significant Impact. The UCI Medical Center has an existing helipad. As a part of the proposed project, the helipad would be relocated but remain on the grounds of the Medical Center. Helipads are subject to review by the California Department of Transportation Division of Aeronautics (site approval permit and helipad permit), and by the Federal Aviation Administration. The compatibility of the relocation site with onsite and offsite land uses will be addressed in the EIR.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. The objective of phasing the implementation of the LRDP is to minimize disruptions to services, including the emergency response/evacuation plans. The EIR will describe these plans.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact. The Medical Center is in an urbanized area. No wildlands are intermixed or adjacent to the site. Therefore, no exposure to people or the project site itself would result; no impacts would occur. This issue will not be addressed in the EIR.

<u>Hazards and Hazardous Materials Study Methodology</u>

The EIR will address the potential adverse impacts on human health and the environment due to the exposure to hazardous materials that could be encountered as a result of implementation of the UCI Medical Center LRDP project. Potential effects to be addressed include those associated with any existing contaminated sites, and the potential exposure to hazardous materials used, stored, or transported during construction projects and ongoing operational activities at the Medical Center. As a part of the EIR, the University will investigate whether the Medical Center is on any list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

Because of the potential health hazards associated with asbestos dust, this potential impact is considered significant. Individual construction projects will require compliance with notification and removal processes identified in SCAQMD Rule 1403. This issue will be addressed in the EIR.

8. HYDROLOGY AND WATER QUALITY–Would the UCI Medical Center Project:

a) Violate any water quality standards or waste discharge requirements? or

f) Otherwise substantially degrade water quality?

Less Than Significant Impact. Implementation of the LRDP is not expected to generate substantial increases in or the degradation of the quality of runoff because the Medical Center site is currently developed, and with the exception of landscaping, does not have impervious surfaces. The Federal Clean Water Act establishes a framework for regulating potential surface water quality impacts, mandating sewage treatment, and regulating wastewater discharges, and requires communities and industries to obtain National Pollutant Discharge Elimination System (NPDES) permits to discharge storm water to urban storm sewer systems. The NPDES program is administered by the California Regional Water Quality Control Boards (RWQCB). The County of Orange has adopted the Drainage Area Management Plan (DAMP) to satisfy the NPDES program requirements. It is anticipated that the implementation of appropriate point-source structural and non-structural Best Management Practices (BMPs) consistent with the DAMP will ensure compliance with these plans. Although no significant impacts are anticipated, the EIR will address the how the project will comply with mandated programs and policies with respect to runoff and water quality.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

No Impact. The depth to groundwater beneath and adjacent to the site ranges from 75 to 100 feet. The lack of significant variation in water levels between well sites suggests that the lack of groundwater barriers within or adjacent to the site. Exploratory borings did not note the presence of perched groundwater. This issue will not be addressed further in the EIR.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation onsite or offsite? or

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite? or

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. No significant changes in the onsite drainage system are anticipated as a part of LRDP implementation which would result in changes to the onsite or offsite drainage patterns. Further, as identified above, the Medical Center is a developed site with predominately impervious surfaces. Intensification of land uses would not result in new impervious surfaces or significant changes in the amount of surface runoff.

The University will coordinate with affected agencies to assess their ability to continue to provide adequate stormwater systems for the project site. The study methodology is addressed in subsection 16, Utilities and Services Systems, of this Initial Study.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? or

No Impact. There is no existing housing on the Medical Center campus; no housing is proposed as a part of the project.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? or

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Potentially Significant Impact. The project site is within a 100-year floodplain area (source: Federal Emergency Management Agency (FEMA) Digital Q3 Flood Data). The Medical Center is located contiguous to the Santa Ana River. All structures would need to be elevated above the projected flood surface elevation. Site design with respect to the floodplain will be addressed in the EIR.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. The project site is surrounded by flat land. The movement of water through the Santa Ana River Channel would not result in a seiche or tsunami.

<u>Hydrology and Water Quality Study Methodology</u>

The EIR will assess whether implementation of the LRDP will result in any new significant impacts to water quality and runoff. The Federal Clean Water Act establishes a framework for regulating potential surface water quality impacts, mandating sewage treatment, and regulating wastewater discharges, and requires communities and industries to obtain National Pollutant Discharge Elimination System (NPDES) permits to discharge storm water to urban storm sewer systems. The NPDES program is administered by the California Regional Water Quality Control Boards (RWQCB). The County of Orange has adopted the Drainage Area Master Plan (DAMP) to satisfy the NPDES program requirements. It is anticipated that the implementation of appropriate structural and non-structural Best Management Practices (BMPs) consistent with the DAMP would mitigate any potential significant impacts.

The project will also address how the project will be implemented to mitigate potential impacts associated with the site's location within a floodplain.

9. LAND USE AND PLANNING–Would the UCI Medical Center Project:

a) Physically divide an established community? or

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The site is currently developed with medical facilities, and will not displace any land uses unrelated to the existing Medical Center. Further, the project site is not in or contiguous to the natural community conservation plan area.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the LRDP, general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Potentially Significant Impact. The existing land use designation for the UCI Medical Center is *Institutional*. No change in designation is required as a part of the proposed project. The proposed LRDP project represents an intensification of the existing land uses found at the Medical Center site. The compatibility of the project with existing and planned development in the project vicinity, as well as consistency with plans and policies will be evaluated in the EIR.

Land Use and Planning Study Methodology

The EIR will analyze the project's compatibility with existing and planned land uses adjacent and in the vicinity of the site, as well as consistency with applicable planning and policy documents; mitigation will be provided, as needed.

10. MINERAL RESOURCES–Would the UCI Medical Center Project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? or

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? or

No Impact. The Medical Center site does not contain any known mineral resources (source: City of Orange General Plan). Therefore, this topic will not be addressed in the EIR.

11. NOISE–Would the UCI Medical Center Project:

a) Exposure of persons to or generation of noise levels in excess of standards established in any applicable plan or noise ordinance, or applicable standards of other agencies? or

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? or

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact. The project has the potential to generate short-term construction-related noise increase, and long-term vehicular and operational noise increases associated with the intensification of land uses. A noise study will be prepared as a part of the EIR.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Potentially Significant Impact. Certain demolition and construction activities, including the use of pile drivers, can generate short-term groundborne vibration. The potential for this impact will be addressed in the EIR.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The project site is not located within any airport land use plan, and is located more than two miles away from a public or public use airport or private airstrip. No further assessment in the EIR is required.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Potentially Significant impact. As previously discussed, the UCI Medical Center has an existing helipad. The helipad will be relocated within the Medical Center as a part of the proposed project, and will be subject to review and approval by the California Department of Transportation Division of Aeronautics and the Federal Aviation Administration. Any change in noise levels associated with this relocation will be assessed in the EIR.

Noise Study Methodology

A noise assessment will be prepared to evaluate potential noise impacts of the proposed project, focusing on short-term construction noise, long-term changes in noise levels in the project area, and changes in ambient noise levels associated with increased onsite activity. The FHWA highway noise model (“FHWA Highway Traffic Noise Prediction Model,” FHWA-RD-77-108) will be used in conjunction with noise measurements to describe existing noise levels in the project vicinity.

Noise impacts associated with the project’s traffic on adjacent land uses will be assessed in terms of the CNEL noise scale based on traffic assumptions prepared for the LRDP project and vehicle mix assumptions. Increases in noise levels due to the project will be determined. Onsite and offsite areas that will experience a significant noise increases will be identified, the absolute noise levels experienced in these areas will be determined, and the resulting land use/noise compatibility discussed. Project noise impacts will be assessed based on total increases in the ambient noise level and potential exceedances of City of Orange and University standards.

12. POPULATION AND HOUSING–Would the UCI Medical Center Project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Potentially Significant Impact. The proposed project would generate short-term employment opportunities during construction. These employment opportunities could be filled by the local labor pool. Increases in long-term employment opportunities at the UCI

Medical Center could result in an increase in population within the County of Orange. The potential for significant impacts associated with this population increase will be addressed in the EIR.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? or

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. There is no existing or planned housing at the UCI Medical Center. Therefore, no housing or persons will be displaced as a part of the implementation of the LRDP project. Because the project boundaries are the same as the existing facility, no impacts would occur. This issue will not be addressed in the EIR.

Population and Housing Study Methodology

The EIR will identify existing population, employment, and housing trends in the City of Orange and surrounding communities, estimate employment generation, and examine issues related to housing demand created by new employment opportunities associated with the UCI Medical Center project. Potential impacts will be identified, and measures will be recommended.

13. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, parks, etc?

Potentially Significant Impact. The potential for the proposed project to adversely affect service levels or require the construction of new facilities to serve the project will be assessed as a part of the EIR.

Public Services Study Methodology

As a part of the EIR, the University will coordinate with affected service and utility providers to determine if the project can be adequately served.

14. RECREATION

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? or

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less Than Significant Impact. The proposed expansion of the Medical Center will not result in the direct need for recreational facilities, nor are employees or visitors to the hospital expected to use recreational facilities in the project vicinity excessively and thereby resulting in any significant impacts to these existing and/or planned recreational facilities. This issue will not be addressed in the EIR.

15. TRANSPORTATION/TRAFFIC–Would the UCI Medical Center Project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? or

b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways? or

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Potentially Significant Impact. The project has the potential to generate short-term construction-related and long-term operational traffic, as well as helicopter traffic. A traffic study will be prepared as a part of the EIR.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. Implementation of the UCI Medical Center LRDP project will occur at the existing Medical Center site. Onsite roadways would be designed to accommodate the anticipated levels of traffic generated by the project. Continued use of the site for medical care is not expected to create offsite safety hazards to existing roadways. This issue will not be addressed further in the EIR.

e) Result in inadequate emergency access?

Less Than Significant Impact. During construction, emergency access to/into the Medical Center will need to continue to be provided to adequately serve the site. Construction staging will be addressed in the EIR.

f) Result in inadequate parking capacity?

Less Than Significant With Mitigation Incorporated. Parking for the Medical Center is currently provided onsite and at remote offsite parking lots. The proposed LRDP project assumes that all Medical Center parking will need to be provided onsite. The Medical Center will need to be designed to accommodate the parking need for LRDP buildout. As a part of the EIR, the University will determine the number of parking spaces needed to service the Medical Center. An assessment of providing all parking onsite will be provided in the EIR.

g) Conflict with applicable policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

No Impact. The existing UCI Medical Center provides onsite bicycle racks. The Orange County Transportation Authority (OCTA) provides bus service to the Medical Center. Such uses will continue to be accommodated at the Medical Center. No further assessment in the EIR is assumed.

Transportation/Traffic Study Methodology

A traffic study will be prepared to evaluate the phased implementation of the UCI Medical Center project. The traffic study is anticipated to include the following components: 1) identification of existing traffic conditions on the project site and in the traffic study area; 2) evaluation of future traffic conditions with the addition of cumulative projects but without the proposed project; and 3) evaluation of future traffic conditions with the addition of cumulative projects and the proposed project. It is anticipated that the following intersections will be analyzed as a part of the traffic study:

State College Blvd./Katella Avenue
SR-57 southbound ramps/Katella
SR-57 northbound ramps/Katella
State College Blvd./Orangewood Ave.
Lewis Street/Chapman Avenue
Manchester Ave./Chapman Avenue
The City Drive/Chapman Avenue
I-5 southbound ramps/Chapman Ave.
SR-57 southbound ramps/Chapman
SR-57 northbound ramps/Chapman
City Boulevard East/City Way
City Drive/City Way
Lewis Street /City Parkway East
Lewis St./Lampson Avenue/Metropolitan
The City Drive/Metropolitan
The City Drive/SR-22 westbound ramps
The City Drive/SR-22 eastbound ramps
Haster Street/SR-22 westbound offramp
Haster/SR-22 westbound/Garden Grove Blvd.
Lewis Street/Garden Grove Boulevard
The City Drive/Garden Grove Boulevard
Bristol Street/Garden Grove Boulevard

In addition to vehicular traffic, the EIR will address: a) methods to provide adequate emergency access during construction activities at the Medical Center; b) potential for changes in the amount of or flight path for helicopters using the Medical Center helipad; and c) how the site will accommodate alternative transportation modes.

16. UTILITIES AND SERVICE SYSTEMS–Would the UCI Medical Center Project:

a) **Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? or**

b) **Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? or**

c) **Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? or**

d) **Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? or**

e) **Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? or**

f) **Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? or**

g) **Comply with applicable federal, state, and local statutes and regulations related to solid waste?**

Potentially Significant Impact. The potential for the proposed project to adversely affect utilities, including service levels or require the construction of new facilities to serve the project will be assessed as a part of the EIR.

Utilities Study Methodology

As a part of the EIR, the University will coordinate with affected service and utility providers to determine if the project can be adequately served.

STATE OF CALIFORNIA—BUSINESS AND TRANSPORTATION AGENCY

DEPARTMENT OF TRANSPORTATION

DISTRICT 12
3347 Michelson Drive Suite 100
Irvine, CA. 92612-0661

GRAY DAVIS

RECEIVED
APR 03 2000
PLANNING OFFICE

FAX AND MAIL

March 30, 2000

Mr. Ned Reynolds
University of California, Irvine Medical Center
The City Drive, Rt.131
Orange, CA 92868-3298

File: IGR/CEQA
SCH#: 200002111
Log #: 701
P.M.:034.676

Subject: NOP. DEIR UC Irvine Medical Center Long Range Development Plan

Dear Mr. Reynolds,

Thank you for the opportunity to review and comment on the above project. The project site is located at 101 City Drive South. It is bounded by Chapman Avenue to the north, Dawn Way to the south, the Santa Ana Freeway (I-5) to the east, and City Drive South to the west. Regional access is provided via I-5, the Garden Grove Freeway (SR-22), and the Orange Freeway (SR-57).

The lead agency, University of California, Irvine, proposes to allow for phased reuse of the existing UCI Medical Center site with an intensification of medical center facilities, including some rehabilitation and demolition of existing structures to increase efficiency and allow for seismic retrofit compliance, to provide approximately 1,902,049 total square feet of onsite facilities, excluding parking.

Caltrans District 12 status is a responsible agency on this project and has reviewed the Notice of Preparation for a Draft Environmental Impact Report dated February 28,2000 and has the following comments:

- An Encroachment Permit from Caltrans will be required for any work within Caltrans Right of Way.
- Should an Encroachment Permit be required, a copy of the Storm Water Pollution Prevention Plan (SWPPP) should be submitted with the permit application and this project must comply with the requirements set forth in the Caltrans Statewide NPDES Permit (Order No. 99-06-DWQ, NPDES No. CA000003). Any runoff draining into Caltrans Right of Way from construction or the resulting project, must comply with the current discharge requirements of the Regional Water Quality Control Board.
- Measures must be incorporated to contain all vehicle loads and avoid any tracking of materials, which may fall or blow onto Caltrans roadways or facilities.
- Proposed cci for alternative driveway from UCI Medical Center onto Chapman Avenue allows for only a right-hand turn in and a right-hand turn out of center. Would like to see specific phasing plan in this area with EIR.
- Traffic circulation impacts and mitigation measures need to be adequately addressed in terms of demand at The City Drive at the SR-22 interchange. The analysis needs to take into account other projects in the area including the

expansion of The Block, a high rise office building, and the proposed SR-22/The City Drive interchange modifications by OCTA.

- This project will have a definite traffic impact in the area surrounding I-5, SR-22 and SR-57 Freeways. Please provide a through-out Traffic Analysis Study that includes existing traffic conditions, future traffic conditions, plus cumulative projects with/without the proposed project, levels of service, emergency accesses, projected traffic for year 2020 and mitigation measures in the future EIR.

Please continue to keep us informed of this project and other future developments, which could potentially impact our Transportation facilities. If you have any questions or need to contact us please do not hesitate to call Maureen El Harake at (949) 724-2086.

Sincerely,

Robert F. Joseph

Robert F. Joseph, Chief
Advanced Planning Branch

cc: Terry Roberts, OPR
Ron Helgeson, HDQRTRS Planning
Leslie Manderscheid, Environmental Planning Branch B
Mike Varipapa, Project Management I-5 N
Adnan Maiah, Project Management SR-22
Ahmed Abou-Abdou, Project Management I-5 S
Saied Hashemi, Traffic Operations North

Orange County Fire Authority
PO Box 86, Orange, CA 92856-9086 • 180 S. Water St., Orange CA 92866-2123

Chip Prather, Fire Chief (714) 744-0400 www.ocfa.org

March 24, 2000

RECEIVED
MAR 29 2000
UCI Campus & Environmental Planning

Mr. Richard Demerjian
Office of Campus & Environmental Planning
UCI
3600 Berkeley Place
Irvine, CA 92697-2325

SUBJECT: NOP of DEIR-Irvine Medical Center Long Range Development Plan

Dear Mr. Demerjian:

Thank you for the opportunity to review the subject project. The Orange County Fire Authority does not provide the initial emergency and fire service delivery to the project area. However, our helicopter and paramedics do frequent the facility for patient care purposes.

While we have no additional information to provide relative to the proposed project at this time, we request that any subsequent documentation or information be forwarded to me at the above address. You can also reach me at (714) 744-0484 if you need any additional information about this response.

Sincerely,

Nancy Foreman

Nancy Foreman
Advance Planning

County of Orange
Planning & Development Servi

Post-it® Fax Note 7671	Date	# of pages ▶
To Ned Reynolds	From O. Harryman	
Co./Dept. UCI Med. Ctr.	County Planning	
Phone #	Phone # 834-2522	
Fax # 456-8749	Fax # 834-6132	

Sent to Campus ofc by mistake

APR 0 3 2000

NCL 00-23

Mr. Ned Reynolds
UCIMC
101 The City Drive, RT. 131
Orange, CA 92868-3298

SUBJECT: NOP for the UC Irvine Medical center Long Range Development Plan (LRDP)

Dear Mr. Reynolds:

The above referenced item is a Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the University of California, Irvine (UCI). The proposed LRDP will serve as the "general plan" to guide the physical development of the UCI Medical Center. As such, the University has determined that a Program EIR will be required to assess the potential environmental effects associated with implementation of the UCL Medical Center LRDP project. The Program EIR is intended to also provide project-level environmental analysis for near-term individual construction projects associated with the LRDP. Subsequent, individual construction project will require project-specific review and approval by The University of California Regents, in accordance with CEQA. The UCI Medical Center is located at 101 The City Drive in the City of Orange.

The County of Orange has reviewed the NOP and offers the following comments:

FLOOD

Water Quality

1. The Draft EIR needs to discuss typical urban pollutants that may be discharged by storm water or irrigation from the project and the type of Best Management Practices (BMPs) that will be implemented to mitigate the impact of these urban pollutants. Specific BMPs such as catch basin inserts, filters, oil/water separators and street and parking lot sweeping practices need to be discussed to mitigate the impact of parking lots, which contribute heavy metals, oil and grease and other storm water pollutants. This water quality discussion should also address how the project will comply with the requirements of Appendix G of The Drainage Area Management Plan (DAMP)and the Water Quality Management Plan for post construction

2. The DEIR must also discuss applicable state NPDES permits required for construction projects over five acres (State General Construction Activity Storm Water Permit) or for projects less than five acres but part of a development that exceeds five acres. In addition the DEIR must also discuss the applicability and compliance required by state NPDES permits (State Industrial Activity Storm Water Permit) for certain industrial facilities.

3. On page 25, item f), of the Long Range Development Plan Initial Study under Hydrology and Water Quality, it is stated that the Medical Center does not have impervious surfaces and that the implementation of the future project will not result in additional runoff pollution. This is not accurate. Roof tops and paved surfaces, which dominate the site, are considered impervious.

4. The EIR should also address:

    (1) Existing conditions of receiving waters as identified in the Water Quality Control Plan-Santa Ana River Basin (Basin Plan), with it goals and objectives for surface water quality.

    (2) Water quality impairments in downstream receiving waters as reflected in the Clean Water Act 303 (d) list and 1996 California Water Quality Assessment Report.

    (3) The potential surface water quality impacts of the project construction activities, long-term runoff impacts of new impervious surfaces, pesticides and fertilizers applied to landscaping, future pesticide or fertilizer spills from accidents and/or improper resident storage or the use and disposal of chemicals; mitigation for project water quality impacts including:

        A) Preparation of a construction Stormwater Pollution Prevention Plan under State NPDES requirements.

        B) Incorporation of flood control improvements sensitive in design to potential water quality impacts.

        C) Development of a long-term post-construction water quality management plan, describing commitments to installation and maintenance of structural facilities and conduct of non-structural Best Management Practices (BMPs) consistent with the DAMP New Development Appendix.

If a need for special BMPs is identified pursuant to the DAMP New Development Appendix G, the following measures could be considered:

A) Incorporation of Federal EPA/NOAA guidance measures for coastal nonpoint source pollution

B) Incorporation of measures from the State Municipal BMP Manual.

C) Incorporation of other measures from the State Urban Runoff Technical Advisory Committee Report and Recommendations.

DRAINAGE

5. The DEIR needs to discuss in detail the existing and post development discharges associated with the project and the adequacy of the existing drainage systems such as storm drains and off-site channels that will ultimately carry these discharges.

6. We recommend that the discharges in item 1 above be calculated based on the 100-year storm in accordance with the County's Hydrology Manual.

FLOODING

7. In addition to discussing the potential for flooding associated with the Santa Ana River and the need for the project to comply with FEMA floodplain regulations, other sources of flooding such as dams need to be addressed.

WASTE MANAGEMENT

8. The City of Orange is responsible for meeting the Assembly Bill 939 (AB 939) mandate of 50% disposal reduction by the start of this year, and for preparing AB 939 solid waste planning documents. These documents include the Source Reduction and Recycling Element (SRRE), the Household Hazardous Waste Element (HHWE), and the Non-Disposal Facility Element (NDFE).

9. Construction-and demolition-generated waste (C&D is heavy, inert material. This material creates significant problems when disposed of in landfills; since C&D debris does not decompose, it takes up valuable landfill capacity. Additionally, since C&D debris is heavy when compared with paper and plastic, it is more difficult for the County and cities to reduce the tonnage of disposed waste. For this reason C&D waste debris has been specifically targeted by the State of California for diversion from the waste stream. Projects which will generate C&D waste should emphasize deconstruction and diversion planning, rather than demolition. Deconstruction is the planned, organized dismantling of the prior construction project, which allows maximum use of the deconstructed materials for recycling in other construction projects and sends a minimum of the deconstruction material to landfills.

10. We recommend that this project address a waste reduction plan for the C&D waste generated from this project. This plan should be coordinated with the recycling coordinator for the City of Orange to help ensure AB 939 requirements are properly addressed.

Thank you for the opportunity to respond to the NOP. Please send one complete set of the DEIR to me at the above address when they become available. If you have any questions, please contact me or feel free to call Charlotte Harryman directly. Charlotte may be reached at (714) 834-2522.

Very truly yours,

George Britton

George Britton, Manager
Environmental and Project
Planning Services Division

CH

CITY OF ANAHEIM, CALIFORNIA

Planning Department

March 22, 2000

APR 3 2000

Ned Reynolds
UCIMC
101 The City Drive, Rt. 131
Orange, CA 92868-3298

Re: Notice of Preparation of Environmental Impact Report for the "UC Irvine Medical Center Long Range Development Plan" – University of California Irvine

Dear Mr. Reynolds:

Thank you for the opportunity to review and comment on the above-referenced document. City of Anaheim staff offers the following comments:

<u>Traffic Impacts</u> - The City's Traffic and Transportation staff request that the EIR analyze, at a minimum, the following intersections for peak hour traffic:

- Gene Autry Way and State College Boulevard
- Orangewood Avenue and Lewis Street
- I-5 and The City Drive/State College Boulevard at the on/off ramps

Should you have any questions regarding these traffic-related comments, please contact John Lower, Anaheim's Traffic and Transportation Manager, at (714)765-5183.

Please forward any subsequent public notices and/or environmental documents regarding this project to my attention at the address listed below. If you have any questions regarding this response, please do not hesitate to contact me at (714) 765-5139, Extension 5750.

Sincerely,

Joseph W. Wright,
Associate Planner

RECEI...
APR 07 2000
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cc: John Lower, Public Works
Alfred Yalda, Public Works

jwright/envrevie/other/ucirvine2

DRUG USE

AIRPORT LAND USE COMMISSION
FOR ORANGE COUNTY
3160 Airway Avenue • Costa Mesa, California 92626 • 949.252.5170 fax: 949.252.5178

March 22, 2000

Mr. Ned Reynolds
UCIMC
101 The City Drive
Rt. 131
Orange, CA 92868-3298

Subject: NOP - DEIR - UCIMC Long Range Development Plan

Dear Mr. Reynolds:

After reviewing the subject NOP, the Airport Land Use Commission for Orange County (ALUC) wishes to comment on the following specific issue of concern to the Commission.

Section 15 c) of the Initial Study indicates a "Potentially Significant Impact" to air traffic patterns, levels, and locations. As you know, numerous private-use heliports are located in the immediate, and general, vicinity of the UCIMC project, including the UCIMC heliport itself. Furthermore, the adjacent I-5 Freeway serves as an official FAA VFR Helicopter Route, for rotorcraft traversing central Orange County. Accordingly, the DEIR should analyze thoroughly the potential impacts on nearby heliport facilities, as well as on the established air traffic in that locale. Of particular concern is whether the future development at UCI will include new high-rise structures. If such should be the case, rooftop red Obstruction Lighting should be included in all pertinent project designs.

Should the UCIMC Long Range Development Plan necessitate the re-location or replacement of any existing heliport; then the FAA Regional Office, Caltrans/Aeronautics Program, and the Orange County ALUC will become responsible agencies, under FAR Part 77 and California PUC Chapter 4 (note particularly Section 21661.5), respectively. The DEIR should cite these agencies, and the statutes under which they derive their regulatory powers, so as to ensure compliance with Federal and State law.

Thank you for the opportunity to comment on this important public project. The Commission looks forward to receiving a copy of the DEIR when it becomes available. If you have questions please contact me at 949-252-5170 or Alfred Brady at 949-252-5123.

Sincerely,

Joan S. Golding

Joan S. Golding
Executive Officer

ORANGE COUNTY SANITATION DISTRICT

phone:
(714) 962-2411

mailing address:
P.O. Box 8127
Fountain Valley, CA
92728-8127

street address:
10844 Ellis Avenue
Fountain Valley, CA
92708-7018

March 28, 2000

Ned Reynolds
UC Irvine Medical Center
101 The City Drive, Rt. 131
Orange, CA 92868

SUBJECT: Notice of Preparation for a Draft Environmental Impact Report for UC Irvine Medical Center Long-Range Development Plan

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This letter is in response to your notice that the University of California (UC) will prepare a Draft Environmental Impact Report (EIR) for the UC Irvine Medical Center Long-Range Development Plan (LRDP) dated February 28, 2000. The project site is bounded by Chapman Avenue to the north, Dawn Way to the south, the Santa Ana Freeway (I-5) to the east, and City Drive South to the west, in the City of Orange. The proposed project will redevelop areas within the existing Medical Center campus to accommodate additional clinical, academic, and support facilities.

The Orange County Sanitation District (District) is the regional sewering agency for the project site. The local sewer service provider for the UC Irvine Medical Center is the City of Orange (City). The District recommends that you contact the City to solicit comments from that agency. The City will need to determine if sufficient capacity exists in the local sewer(s) for the proposed redevelopment.

The District's previous planning has shown institutional land use for proposed site. The existing flow for the project area appears to be tributary to our 39-inch sewer located on Lewis Street. To adequately assess the potential impacts to our facilities, we request that UC Irvine or the City provide the District with the projected sewage flows and clearly define where the sewer(s) will connect into the District's collection system. This information should be included in the EIR.

For your calculations, use flow coefficients listed below:

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- 727 gpd/acre for estate density residential (0-3 d.u. /acre);
- 1488 gpd/acre for low density residential (4-7d.u. /acre);
- 3451 gpd/acre for medium density residential (8-16 d.u./acre);
- 5474 gpd/acre for medium-high density residential (17-25 d.u./acre);
- 7516 gpd/acre for high density residential (26-35 d.u./acre);
- 2262 gpd/acre for commercial/office;

Ned Reynolds
Page 2
March 28, 2000

- 3167 gpd/acre for industrial;
- 2715 gpd/acre for institutional;
- 5429 gpd/acre for high intensity industrial/commercial;
- 150 gpd/room for hotels and motels;
- 50 gal./seat for restaurants, and
- 129 gpd/acre for recreation and open space usage.

Thank you for the opportunity to comment on the proposed project. If you require additional information, please contact Jim Herberg or Angie Anderson at (714) 593-7310 or 7305, respectively.

David A. Ludwin, P.E.
Director of Engineering

DAL:AA:jak
H:\wp.dta\eng\EIRS\2000\UCI Medical Ctr.doc

c: City of Orange, Jim Donovan

South Coast
Air Quality Management District
21865 E. Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 · http://www.aqmd.gov

March 14, 2000

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MAR 21 2000
PLANNING OFFICE

Mr. Ned Reynolds
UCI Medical Center
Planning and Development Services
101 The City Drive, Rt. 131
Orange, CA 92868-3298

Dear Mr. Reynolds:

Notice of Preparation of an Environmental Impact Report
UC Irvine Medical Center Long Range Development Plan

The South Coast Air Quality Management District (AQMD) appreciates the opportunity to comment on the above-mentioned document. The AQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the Draft Environmental Impact Report (EIR).

Air Quality Analysis
The AQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The AQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the AQMD's Subscription Services Department by calling (909) 396-3720.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction and operations should be considered. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the evaluation. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures
In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the AQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additionally, AQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Pursuant to state CEQA Guidelines Section 15126 (c), any impacts resulting from mitigation measures must also be discussed.

Data Sources
AQMD rules and relevant air quality reports and data are available by calling the AQMD's Public Information Center at (909) 396-3600. Much of the information available through the Public Information Center is also available via the AQMD's World Wide Web Homepage (http://www.aqmd.gov).

The AQMD is willing to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. Please call Dr. Charles Blankson, Transportation Specialist, CEQA Section, at (909) 396-3304 if you have any questions regarding this letter.

Sincerely,

Steve Smith

Steve Smith, Ph.D.
Program Supervisor, CEQA Section
Planning, Rule Development and Area Sources

SS:CB:li

ORC000309-03LI
Control Number

SOUTHERN CALIFORNIA

ASSOCIATION of GOVERNMENTS

Main Office

818 West Seventh Street
12th Floor
Los Angeles, California
90017-3435

t (213) 236-1800
f (213) 236-1825

www.scag:ca.gov

March 20, 2000

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MAR 24 2000
PLANNING OFFICE

Mr. Ned Reynolds
UC Irvine Medical Center
101 The City Drive, Rt. 131
Ontario, CA 92868-3298

RE: **Comments on the Notice of Preparation for a Draft Environmental Impact Report for the UC Irvine Medical Center Long Range Development Plan - SCAG No. I 20000096**

Dear Mr. Reynolds:

Thank you for submitting the **Notice of Preparation for a Draft Environmental Impact Report for the Draft Environmental Impact Report for the UC Irvine Medical Center Long Range Development Plan** to SCAG for review and comment. As areawide clearinghouse for regionally significant projects, SCAG assists cities, counties and other agencies in reviewing projects and plans for consistency with regional plans.

In addition, The California Environmental Quality Act requires that EIRs discuss any inconsistencies between the proposed project and the applicable general plans and **regional plans (Section 15125 [d])**. If there are inconsistencies, an explanation and rationalization for such inconsistencies should be provided.

Policies of SCAG's Regional Comprehensive Plan and Guide and Regional Transportation Plan, which may be applicable to your project, are outlined in the attachment. **We expect the DEIR to specifically cite the appropriate SCAG policies and address the manner in which the Project is consistent with applicable core policies or supportive of applicable ancillary policies. Please use our policy numbers to refer to them in your DEIR. Also, we would encourage you to use a side-by-side comparison of SCAG policies with a discussion of the consistency or support of the policy with the Proposed Project.**

Please provide a minimum of 45 days for SCAG to review the DEIR when this document is available. If you have any questions regarding the attached comments, please contact Jeffrey Smith, Senior Planner at (213) 236-1867. Thank you.

Sincerely,

J. DAVID STEIN
Manager, Performance Assessment and Implementation

COMMENTS ON THE PROPOSAL TO DEVELOP A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE UC IRVINE MEDICAL CENTER LONG RANGE DEVELOPMENT PLAN SCAG NO. I 20000096

PROJECT DESCRIPTION

The proposed Project consists of a proposed Long Range Development Plan for the UC Irvine Medical Center. The proposed Development Plan would allow for the phased reuse of the existing medical center with an intensification of medical center facilities, providing approximately 1,902,049 sq. ft. of onsite facilities.

CONSISTENCY WITH REGIONAL COMPREHENSIVE PLAN AND GUIDE POLICIES

The **Growth Management Chapter (GMC)** of the Regional Comprehensive Plan and Guide (RCPG) contains the following policies that are particularly applicable and should be addressed in the Draft EIR for the Project.

3.01 The population, housing, and jobs forecasts, which are adopted by SCAG's Regional Council and that reflect local plans and policies, shall be used by SCAG in all phases of implementation and review.

Regional Growth Forecasts

The Draft EIR should reflect the most current SCAG forecasts which are the 1998 RTP (April 1998) Population, Household and Employment forecasts for the Orange County Council of Governments (OCCOG) subregion and the City of Irvine. These forecasts follow:

OCCOG Subregional Forecasts	**2000**	**2005**	**2010**	**2015**	**2020**
Population	2,859,100	3,005,700	3,105,500	3,165,400	3,244,800
Households	910,100	952,400	1,013,100	1,064,100	1,102,300
Employment	1,381,700	1,550,700	1,717,400	1,882,600	2,116,600

City of Irvine Forecasts	**2000**	**2005**	**2010**	**2015**	**2020**
Population	135,700	143,900	149,300	152,600	157,000
Households	44,900	47,300	50,700	53,500	55,700
Employment	157,000	171,000	184,900	198,700	218,100

3.03 The timing, financing, and location of public facilities, utility systems, and transportation systems shall be used by SCAG to implement the region's growth policies.

The **Regional Transportation Plan (RTP)** also has goals, objectives, policies and actions pertinent to this proposed project. This RTP links the goal of sustaining mobility with the goals of fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging fair and equitable access to residents affected by socio-economic, geographic and commercial limitations. Among the relevant goals, objectives, policies and actions of the RTP are the following:

<u>Core Regional Transportation Plan Goals</u>

1. *Meet the need for mobility and access to transportation of an increased employment and population base in the subregions and region, reduce congestion to 1990 or better levels of performance and enhance the movement of goods.*

2. *Ensure that transportation investments are cost-effective, protect the environment, promote energy efficiency and enhance the quality of life.*

3. *Serve everyone's transportation needs in a safe, reliable and economical way, including those who depend on public transit, such as the elderly, handicapped and disadvantaged.*

4. *Develop regional transportation solutions that complement subregional transportation systems and the needs of cities, communities and subregions.*

5. *Promote transportation strategies that are innovative and market-based, encourage new technologies and support the Southern California economy.*

Core Regional Transportation Plan Objectives (Regional Performance Indicators*)

1. *Mobility - Transportation Systems should meet the public need for improved access, and for safe, comfortable, convenient and economical movements of people and goods.*
   - *Average Work Trip Travel Time in Minutes – 22 minutes*
   - *PM Peak Highway Speed – 33 mph*
   - *Percent of PM Peak Travel in Delay (All Trips) – 33%*

2. *Accessibility - Transportation Systems should ensure the ease with which opportunities are reached. Transportation and land use measures should be employed to ensure minimal time and cost.*
   - *Work Opportunities within 25 Minutes – 88%*

3. *Environment - Transportation Systems should sustain development and preservation of the existing system and the environment. (All Trips)*
   - *Meeting Federal and State Standards – Meet Air Plan Emission Budgets*

4. *Reliability - Reasonable and dependable levels of service by mode. (All Trips)*
   - *Transit – 63%*
   - *Highway – 76%*

4. *Safety - Transportation Systems should provide minimal, risk, accident, death and injury. (All Trips)*
   - *Fatalities Per Million Passenger Miles – 0.008*
   - *Injury Accidents – 0.929*

5. *Livable Communities - Transportation Systems should facilitate Livable Communities in which all residents have access to all opportunities with minimal travel time. (All Trips)*
   - *Vehicle Trip Reduction – 1.5%*
   - *Vehicle Miles Traveled Reduction – 10.0%*

6. *Equity - The benefits of transportation investments should be equitably distributed among all ethnic, age and income groups. (All trips)*
   - *Low-Income (Household Income $12,000)) Share of Net Benefits – Equitable Distribution of Benefits*

7. *Cost-Effectiveness - Maximize return on transportation investment. (All Trips)*
   - *Net Present Value – Maximum Return on Transportation Investment*
   - *Value of a Dollar Invested -- Maximum Return on Transportation Investment*

- The numeric Regional Plan Objectives are not applicable on a project level, since the objectives are based upon performance of the regional system as a whole. Furthermore, several important policy issues are not accommodated in the Regional Plan Objectives, such as environmental impacts other than air quality. Individual projects must be evaluated by the local implementing agency and the goals and policies (i.e. mobility, accessibility, environment, reliability, safety, equity, Livable Communities, and cost-effectiveness) evaluated and weighed during the final project development. Such evaluation could occur via the MIS and/other environmental review processes. Projects are then proposed for funding through the RTIP which must be consistent with the RTP.

Core Regional Transportation Plan Policies

4.01 Transportation investments shall be based on SCAG's adopted Regional Performance Indicators.

4.02 Transportation investments shall mitigate environmental impacts to an acceptable level.

4.04 Transportation Control Measures shall be a priority.

4.06 Implementing transit restructuring, including Smart Shuttles, freight improvements, advanced transportation technologies, airport ground access and traveler information services are RTP priorities.

4.08 All existing and new public transit services, facilities and/or systems shall be fully accessible to persons with disabilities as required by applicable sections of the 1990 Americans with Disabilities Act.

4.10 All existing and new public transit services shall be provided in a manner consistent with Title VI of the 1964 Civil Rights Act, prohibiting intentional discrimination and adverse disparate impact with regard to race, ethnicity, or national origin.

4.11 All existing and new public transit services, facilities and/or systems shall evaluate the potential for private sector participation through the use of competitive procurement.

4.16 Maintaining and operating the existing transportation system will be a priority over expanding capacity.

4,17 Alternatives to highway expansion must be evaluated before giving regional approval to expand single occupancy lanes.

GMC POLICIES RELATED TO THE RCPG GOAL TO IMPROVE THE REGIONAL STANDARD OF LIVING

The Growth Management goals to develop urban forms that enable individuals to spend less income on housing cost, that minimize public and private development costs, and that enable firms to be more competitive, strengthen the regional strategic goal to stimulate the regional economy. The evaluation of the proposed project in relation to the following policies would be intended to guide efforts toward achievement of such goals and does not infer regional interference with local land use powers.

3.04 *Encourage local jurisdictions' efforts to achieve a balance between the types of jobs they seek to attract and housing prices.*

3.05 *Encourage patterns of urban development and land use which reduce costs on infrastructure construction and make better use of existing facilities.*

3.08 *Encourage subregions to define an economic strategy to maintain the economic vitality of the subregion, including the development and use of marketing programs, and other economic incentives, which support attainment of subregional goals and policies.*

3.09 *Support local jurisdictions' efforts to minimize the cost of infrastructure and public service delivery, and efforts to seek new sources of funding for development and the provision of services.*

3.10 *Support local jurisdictions' actions to minimize red tape and expedite the permitting process to maintain economic vitality and competitiveness.*

GMC POLICIES RELATED TO THE RCPG GOAL TO IMPROVE THE REGIONAL QUALITY OF LIFE

The Growth Management goals to attain mobility and clean air goals and to develop urban forms that enhance quality of life, that accommodate a diversity of life styles, that preserve open space and natural resources, and that are aesthetically pleasing and preserve the character of communities, enhance the regional strategic goal of maintaining the regional quality of life. The evaluation of the proposed project in relation to the following policies would be intended to provide direction for plan implementation, and does not allude to regional mandates.

3.11 *Support provisions and incentives created by local jurisdictions to attract housing growth in job rich subregions and job growth in housing rich subregions.*

3.12 *Encourage existing or proposed local jurisdictions' programs aimed at designing land uses which encourage the use of transit and thus reduce the need for roadway expansion, reduce the number of auto trips and vehicle miles traveled, and create opportunities for residents to walk and bike.*

3.13 *Encourage local jurisdictions' plans that maximize the use of existing urbanized areas accessible to transit through infill and redevelopment.*

3.14 *Support local plans to increase density of future development located at strategic points along the regional commuter rail, transit systems, and activity centers.*

3.15 *Support local jurisdictions strategies to establish mixed-use clusters and other transit-oriented developments around transit stations and along transit corridors.*

3.16 *Encourage developments in and around activity centers, transportation corridors, underutilized infrastructure systems, and areas needing recycling and redevelopment.*

3.17 *Support and encourage settlement patterns which contain a range of urban densities.*

3.18 *Encourage planned development in locations least likely to cause environmental impact.*

3.21 *Encourage the implementation of measures aimed at the preservation and protection of recorded and unrecorded cultural resources and archaeological sites.*

3.22 *Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards.*

3.23 *Encourage mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage, and to develop emergency response and recovery plans.*

GMC POLICIES RELATED TO THE RCPG GOAL TO PROVIDE SOCIAL, POLITICAL, AND CULTURAL EQUITY

The Growth Management Goal to develop urban forms that avoid economic and social polarization promotes the regional strategic goal of minimizing social and geographic disparities and of reaching equity among all segments of society. The evaluation of the proposed project in relation to the policy stated below is intended guide direction for the accomplishment of this goal, and does not infer regional mandates and interference with local land use powers.

3.24 *Encourage efforts of local jurisdictions in the implementation of programs that increase the supply and quality of housing and provide affordable housing as evaluated in the Regional Housing Needs Assessment.*

3.25 *Encourage the efforts of local jurisdictions, employers and service agencies to provide adequate training and retraining of workers, and prepare the labor force to meet the challenges of the regional economy.*

3.26 *Encourage employment development in job-poor localities through support of labor force retraining programs and other economic development measures.*

3.27 *Support local jurisdictions and other service providers in their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social services, recreational facilities, law enforcement, and fire protection.*

AIR QUALITY CHAPTER CORE ACTIONS

The **Air Quality Chapter** core actions related to the proposed project include:

5.07 *Determine specific programs and associated actions needed (e.g., indirect source rules, enhanced use of telecommunications, provision of community based shuttle services, provision of demand management based programs, or vehicle-miles-traveled/emission fees) so that options to command and control regulations can be assessed.*

5.11 *Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, subregional and local) consider air quality, land use, transportation and economic relationships to ensure consistency and minimize conflicts.*

WATER QUALITY CHAPTER RECOMMENDATIONS AND POLICY OPTIONS

The **Water Quality Chapter** core recommendations and policy options relate to the two water quality goals: to restore and maintain the chemical, physical and biological integrity of the nation's water; and, to achieve and maintain water quality objectives that are necessary to protect all beneficial uses of all waters.

11.07 *Encourage water reclamation throughout the region where it is cost-effective, feasible, and appropriate to reduce reliance on imported water and wastewater discharges. Current administrative impediments to increased use of wastewater should be addressed.*

CONCLUSIONS

All feasible measures needed to mitigate any potentially negative regional impacts associated with the proposed project should be implemented and monitored, as required by CEQA.

- - -

ENDNOTE

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

Roles and Authorities

SCAG is a ***Joint Powers Agency*** established under California Government Code Section 6502 et seq. Under federal and state law, SCAG is designated as a Council of Governments (COG), a Regional Transportation Planning Agency (RTPA), and a Metropolitan Planning Organization (MPO). SCAG's mandated roles and responsibilities include the following:

SCAG is designated by the federal government as the Region's ***Metropolitan Planning Organization*** and mandated to maintain a continuing, cooperative, and comprehensive transportation planning process resulting in a Regional Transportation Plan and a Regional Transportation Improvement Program pursuant to 23 U.S.C. '134(g)-(h), 49 U.S.C. '1607(f)-(g) et seq., 23 C.F.R. '450, and 49 C.F.R. '613. SCAG is also the designated ***Regional Transportation Planning Agency***, and as such is responsible for both preparation of the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) under California Government Code Section 65080.

SCAG is responsible for developing the demographic projections and the integrated land use, housing, employment, and transportation programs, measures, and strategies portions of the ***South Coast Air Quality Management Plan***, pursuant to California Health and Safety Code Section 40460(b)-(c). SCAG is also designated under 42 U.S.C. '7504(a) as a ***Co-Lead Agency*** for air quality planning for the Central Coast and Southeast Desert Air Basin District.

SCAG is responsible under the Federal Clean Air Act for determining ***Conformity*** of Projects, Plans and Programs to the Air Plan, pursuant to 42 U.S.C. '7506.

Pursuant to California Government Code Section 65089.2, SCAG is responsible for ***reviewing all Congestion Management Plans (CMPs) for consistency with regional transportation plans*** required by Section 65080 of the Government Code. SCAG must also evaluate the consistency and compatibility of such programs within the region.

SCAG is the authorized regional agency for ***Inter-Governmental Review*** of Programs proposed for federal financial assistance and direct development activities, pursuant to Presidential Executive Order 12,372 (replacing A-95 Review).

SCAG reviews, pursuant to Public Resources Code Sections 21083 and 21087, ***Environmental Impact Reports*** of projects of regional significance for consistency with regional plans [California Environmental Quality Act Guidelines Sections 15206 and 15125(b)].

The Gas Company®

Orange Coast Region

March 20, 2000

Southern Califor[n]
Gas Company

Mailing Address:
Box 3334
Anaheim, CA
92803-3334

University of California, Irvine Medical Center
101 The City Drive, Rt. 131
Orange, CA 92868-3298

Attention: Ned Reynolds

Subject: UC Irvine Medical Center Long Range Development Plan

This letter is not to be interpreted as a contractual commitment to serve the proposed project but, only as an information service. Its intent is to notify you that the Southern California Gas Company has facilities in the area where the above named project is proposed. Gas facilities within the service area of the project could be installed, altered or abandoned as necessary without any significant impact on the environment.

It is extremely important that you furnish us with plans, including profiles, and subsequent plan revisions as soon as they are available. A minimum of twelve (12) weeks is needed to analyze the plans and design alterations for any conflicting facilities. Depending on the magnitude of the work involved, additional time may be required to clear the conflict. Please keep us informed of construction schedules, pre-construction meetings, etc., so that we can schedule our work accordingly.

Any additional information regarding construction particulars and any costs associated may be obtained by contacting our Anaheim District Office by calling 714 / 634-3065.

Sincerely,

Robert A Warth

Robert Warth
Technical Supervisor

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APPENDIX B

AIR QUALITY STUDY AND SCREENING HEALTH RISK ASSESSMENT

UCI MEDICAL CENTER LONG RANGE DEVELOPMENT PLAN
AIR QUALITY

THE PROJECT

The proposed project is an update to the Long Range Development Plan (LRDP) of the University of California at Irvine (UCI) Medical Center. Each campus of the University of California is required to periodically reexamine its academic goals and formulate physical plans to support these goals. This reexamination takes the form of an LRDP to guide the physical development of a campus to achieve the academic, research, and community services goals of the institution and, for medical centers, patient care.

The UCI Medical Center, located at 101 The City Drive in the City of Orange, is situated on a separate campus from the main campus in Irvine. In addition to its main facility in Orange, the UCI Medical Center also includes outpatient health centers in Anaheim, Irvine, Orange, Santa Ana, and Westminster. There are also separate outpatient clinics on both the main UCI campus in Irvine and the Medical School campus in Orange. No modifications to these health centers are proposed as part of the LRDP. The LRDP would provide for expanding the UCI Medical Center campus to meet current and anticipated needs; providing for seismic retrofits to existing structures, as needed, and modifying existing buildings, where necessary, to provide a high-quality physical environment for patients and their families, faculty, students, staff, and visitors.

ENVIRONMENTAL SETTING

California is divided by the California Air Resources Board (CARB) into air basins which share similar meteorological and topographical features. The City of Orange is in the South Coast Air Basin (SCAB), a 6,600 square mile area comprising Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin's climate and topography are highly conducive to the formation and transport of air pollution. Peak ozone concentrations in the last two decades have occurred at the base of the mountains around Azusa and Glendora in Los Angeles County and at Crestline in the mountain area above the City of San Bernardino. Both peak ozone concentrations and the number of exceedances have decreased everywhere in the SCAB throughout the 1990's. Concentrations in Orange County have either declined or remained very low, despite the population growth that has continued during this period. Carbon monoxide concentrations have also dropped significantly throughout the air basin as a result of strict new emission controls and reformulated gasoline sold in winter months.

Regulatory and Planning Requirements

Regionally, the South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG) prepare the Air Quality Management Plan (AQMP), which contains measures to meet state and federal requirements. When approved by CARB and the federal EPA, the AQMP becomes part of the State Implementation Plan (SIP).

Federal Attainment Status

The SCAB, the nation's only "extreme" O_3 nonattainment area, has until 2010 to achieve the national 1-hour ozone standard. Deadlines for CO and PM_{10} attainment in the SCAB are 2000 and 2005, respectively. The national NO_2 standard was regularly exceeded in Los Angeles County until 1992. The SCAB was the only area in the nation still designated an NO_2 nonattainment area until 1998 when it was redesignated attainment by the EPA. Although the national one hour CO standard was attained more than 10 years ago, the 8-hour national standard was exceeded at two stations in Los Angeles County in 2000. However, the number of days exceeding that standard in Los Angeles County decreased from 20 in 1996 to 2 in the year 2000. The entire Basin continues to be designated a CO nonattainment area even though there have been no exceedances outside of Los Angeles County for more than five years.

In July 1997, the EPA promulgated stricter standards for ozone and fine particulates (PM2.5), with up to 15 years allowed for attaining the PM2.5 standard. Attainment of the new 8-hour ozone standard would not be required until after the 1-hour standard is achieved. The PM_{10} standard was revised, but the existing PM_{10} standard remains in effect until attainment is achieved. Until there has been sufficient monitoring for the EPA to designate the PM2.5 attainment status for each region, the PM_{10} standard will remain the particulate standard of reference.

State Standards

California standards are generally stricter than national standards, but there is no penalty for nonattainment. California and national ambient air standards for the four pollutants for which the South Coast Air Basin is now, or was until recently, a federal nonattainment area are shown on Table 1.

Regional Planning to Meet Standards

The region adopted new plans in 1989 to meet federal standards and in 1991 to meet state standards. The SCAQMD revised these attainment plans in 1994 and 1997. EPA announced in December 1998 its intent to disapprove the 1997 AQMP, and in December 1998, the AQMD adopted, and the ARB approved, a revised 1997 Plan that added more measures to make attainment of the national 1-hour ozone standard by the 2010 deadline more certain, as requested by the EPA. The 1999 AQMP, as the revised 1997 AQMP is now called, was approved by the EPA in the April 10, 2000 Federal Register and replaced the 1994 AQMP as the federally enforceable SIP for the region.

Existing Air Quality

The City of Orange is in the Central Orange County Source Receptor Area (SRA17). The air monitoring station for this source receptor area is located in Anaheim. The four pollutants for which the South Coast Air

Basin is designated a nonattainment area for national ambient standards are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), and fine particulate matter (PM_{10}). O_3, a colorless toxic gas, irritates the lungs and damages materials and vegetation. NO_2, a secondary contaminant formed through a reaction between nitric oxide (NO) and atmospheric oxygen, irritates the lungs at high concentrations and contributes to ozone formation. PM_{10} causes a greater health risk than larger-sized particles, since these fine particles can be inhaled more easily and irritate the lungs by themselves and in combination with gases. CO interferes with the transfer of oxygen to the brain. Local levels of the four pollutants for which the Basin is now or has recently been a federal nonattainment area are shown for the past five years and compared to national and state air quality standards in Table 1.

Summary

There were minor changes in readings of all pollutants over the five-year time frame, but concentrations have remained relatively constant. Readings in SRA 17 are generally low for all pollutants and did not show the marked improvements in air quality recorded in other areas of the air basin where concentrations were extremely high at the beginning of the period and exceedances of national standards were more common. Ozone concentrations were slightly higher in 2000 than in 1999, but declined again in 2001.

TABLE 1
CENTRAL ORANGE COUNTY (SRA 17)
AIR MONITORING STATION

Pollutant Standards	1997	1998	1999	2000	2001*

Ozone (O_3)					
State standard (1-hr. avg. 0.09 ppm)					
National standard (1-hr avg. 0.12 ppm)					
National standard (8-hr avg 0.08 ppm)					
Maximum 1-hr concentration (in ppm)	0.10	0.14	0.10	0.13	0.11
Maximum 8-hr concentration (in ppm)	0.09	0.11	0.08	0.08	0.07
Number of days state standard exceeded	1	10	1	9	2
Number of days national 1-hr standard exceeded	0	2	0	1	0
Number of days national 8-hr standard exceeded	n/m	4	0	1	0
Carbon Monoxide (CO)					
State standard (1-hr. avg. 20 ppm)					
National standard (1-hr avg. 35 ppm)					
State standard (8-hr. avg. 9.1 ppm)					
National standard (8-hr avg. 9.5 ppm)					
Maximum concentration 1-hr period (in ppm)	8	8	8	8	11
Maximum concentration 8-hr period (in ppm)	5.8	5.3	5.3	6.8	4.7
Number of days state/nat'l 1-hr standard exceeded	0	0	0	0	0
Number of days state 8-hr standard exceeded	0	0	0	0	0
Number of days national 8-hr standard exceeded	0	0	0	0	0
Nitrogen Dioxide (NO_2)					
State standard (1-hr avg. 0.25 ppm)					
National standard (0.0534 AAM in ppm)					
Annual arithmetic mean (in ppm)	.0332	.0336	.0327	.0300	.0293
Percent national standard exceeded	0	0	0	0	0
Maximum 1-hr concentration	0.13	0.13	0.12	0.13	0.12
Number of days state 1-hr standard exceeded	0	0	0	0	0
Suspended Particulates (PM10)					
State standard (24-hr. avg. 50 $\mu g/m^3$)					
National standard (24-hr avg. 150 $\mu g/m^3$)					
Maximum 24-hr concentration	91	81	122	126	93
Percent samples exceeding state standard	18.3	19.7	39	13	20
Percent samples exceeding national standard	0	0	0	0	0
Suspended Particulates (PM2.5)					
National Standard (24-hr. avg. 65 $\mu g/m^3$)					
Maximum 24-hr concentration	nm	nm	69	114	71
Percent of samples exceeding national standard			2	2.2	0.4

* Incomplete data
ppm: parts per million
$\mu g/m^3$: micrograms per cubic meter
n/m: not monitored

Source: SCAQMD Air Quality Data 1997 through 2001.

SIGNIFICANCE CRITERIA

A project's air quality impacts can be separated into short-term impacts due to construction and long-term permanent impacts from project operations. Determination of significant impact is the responsibility of the lead agency, which is the University of California. Appendix G to the Environmental Checklist Form from the October 1998 CEQA Guidelines Revisions states that, where they are available, the significance criteria established by the applicable air quality management, or air pollution control, district may be relied upon to determine if the project would:

- Conflict with or obstruct implementation of the applicable air quality plan?
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
- Result in a cumulatively considerable net increase of any of the criterion's pollutants for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releases of emissions which exceed quantitative thresholds for ozone precursors)?
- Expose sensitive receptors to substantial pollutant concentrations?
- Create objectionable odors affecting a substantial number of people?

For projects in the South Coast Air Basin, the University relies on significance thresholds recommended by the SCAQMD in its CEQA Air Quality Handbook, as revised in November 1993 and approved by the SCAQMD's Board of Directors. The SCAQMD's emission thresholds apply to all federally regulated air pollutants except lead, which is not exceeded in the SCAB. Construction and operational emissions are considered by the SCAQMD to be significant if they exceed the thresholds shown in Table 2.

TABLE 2
EMISSION THRESHOLDS OF SIGNIFICANCE[1]

	Construction		**Operations**
Pollutant	**pounds/day**	**tons/quarter**	**pounds/day**
Carbon Monoxide (CO)	550	24.75	550
Sulfur Oxides (SO_x)	150	6.75	150
Nitrogen Oxides (NO_x)	100	2.5	55
Particulate Matter (PM10)	150	6.75	150
Reactive Organic Compounds (ROC)	75	2.5	55

Source: South Coast Air Quality Handbook, 1993
1 Toxic emissions are considered significant if they expose sensitive receptors to a cancer risk of 1 in 1 million or 10 in 1 million if best available control technology for toxics (T-BACT) is employed.

In addition to the above thresholds, the SCAQMD considers any increase in emissions which exceeds the state CEQA Guideline parameters listed previously. An increase in carbon monoxide concentrations in an area that already exceeds national or state CO standards is also considered significant if the increase exceeds one part per million (ppm) for a 1-hour average or 0.45 ppm for an 8-hour average.

AIR QUALITY IMPACTS

Air quality impacts of a project may occur during construction and operation on both a regional and local scale. Construction impacts include airborne dust from grading, demolition and dirt hauling and gaseous emissions from heavy equipment, delivery and dirt hauling trucks, employee vehicles, and paints and coatings. Operational impacts occur from utility usage and vehicles traveling to and from the completed site. These impacts may affect regional pollutants, such as ozone, where the impacts occur at some distance from the source, or localized pollutants, such as carbon monoxide, where the impacts occur very close to the emissions source.

Construction Impacts

The UCI Medical Center site is relatively flat and totals 33 acres. No expansion of the site is planned. The existing Medical Center contains approximately 910,365 gross square feet of development within approximately 43 structures and facilities. In addition, there are 1,590 parking spaces in two parking structures and surface lots throughout the campus.

The proposed intensification of development at the UCI Medical Center would result in approximately 1,902,049 gross square feet (gsf) of onsite facilities and 4,200 parking spaces, inclusive of new and retained development. The existing medical center contains approximately 910,365 gsf of buildings, inclusive of 391 hospital beds, and 1,590 surface and structured parking spaces. As a part of the Phase I project, 269,041 gsf of development (inclusive of 205 hospital beds) and 418 parking spaces would be demolished. Phase I development includes the construction of 581,000 gsf of buildings (inclusive of 287 hospital beds) and 260 onsite parking spaces. Therefore, at the end of Phase I there would be 1,199,741 gsf of uses (inclusive of 473 hospital beds) and 1,432 spaces.

At full LRDP implementation (inclusive of Phase I), 523,703 gsf of structures and buildings (inclusive of 205 hospital beds) and 600 parking spaces will have been demolished. New construction would total 1,515,387 gsf (inclusive of 341 hospital beds) and 3,210 parking spaces. At completion, the UCI Medical Center would result in 1,902,049 gsf feet of medical and related uses (inclusive of 527 hospital beds) and 4,200 onsite parking spaces. Buildout of the LRDP will occur after completion of Phase I, extending through the year 2015.

Although both demolition and grading/excavation require the use of trucks to haul debris and excavated soil from the site, the amount of exported soil (45,000 cubic yards) would exceed the amount of exported debris (36,019 cubic yards) and the excavated soil would be removed over a shorter period of time (12-15 weeks compared to 14-18 weeks for debris removal). This would result in more truck trips per day and fewer total trips in the quarter. Therefore, the peak day and peak quarter would occur during the grading and excavation phase for the new hospital. Truck and heavy equipment emissions would be different, but lower, during other phases of construction. Employee vehicle emissions would be similar in all phases. Final painting, parking lot surfacing, and landscaping would occur after the peak day and are not included in the totals for Tables 3 and 4. Although paints and other coatings, including asphalt, must comply with SCAQMD regulations and would, therefore, be reduced to the maximum extent feasible, the highest ROC emissions would still occur during this subsequent phase.

Demolition. Phase I will result in the demolition of approximately 269,041 square feet of facilities. However, the existing hospital will not be demolished until after the replacement hospital is completed. All demolition will occur either prior to or after the peak quarter; therefore, PM_{10} totals are not included in this analysis. However, all demolition, including that required prior to beginning Phase I, that required at the conclusion of Phase I and that required in subsequent phases will follow the mitigation procedures listed in this document for abating fugitive dust or PM_{10} emissions. In addition, some buildings may contain asbestos, which is a hazardous substance. Prior to demolition, the contractor will comply with requirements of SCAQMD Rule 1403 regarding asbestos control during demolition and renovation. This rule insures that asbestos is removed and encapsulated prior to demolition so that no asbestos fibers are released to the atmosphere.

Grading/Excavation. Soil may be left disturbed during excavation of a building's footprint, during grading for landscaping, roads and walkways, or when exposed for storing project-related equipment. The SCAQMD *CEQA Handbook* estimates that each acre of disturbed soil creates 26.4 pounds/day of PM_{10}. The LRDP specifies that construction will be phased in order to minimize impacts at the Medical Center. To account for worst-case conditions, this air quality analysis assumes that existing uses on the new hospital site have been demolished and are exposed on the peak day and throughout the peak quarter. An area adjacent to the hospital is also assumed to be exposed for storing equipment. This phase is estimated to last 12 to 15 weeks. For the purpose of this analysis, the grading/excavation phase is assumed to require 15 weeks to complete. This would result in 242 pounds of PM_{10} on the peak day and 6.75 tons in the peak quarter, without mitigation.

Debris Loading. The analysis assumes there will be 39 truck round trips a day over a period of 65 days, each averaging 25 miles one way, to dispose of the soil excavated for foundations and hospital basement. Trucks will be loaded directly by excavator/dozers and will not require stockpiling on the site. The analysis also assumes there would be four round trips a day by heavy duty trucks to bring supplies and equipment. Peak day and peak quarter truck emissions are shown in Tables 3 and 4 under the heading "Trucks." No fugitive dust emissions are assumed in transport because all truck loads will be securely covered.

TABLE 3
MAXIMUM DAILY CONSTRUCTION EMISSIONS[a]

	Pollutant				
Source Category	**Carbon Monoxide (CO)**	**Reactive Organic Compounds (ROC)**	**Oxides of Nitrogen (NO_x)**	**Oxides of Sulfur (SO_x)**	**Particulate Matter (PM_{10})**
Earthmoving and Grading (Fugitive Dust)	n/a	n/a	n/a	n/a	211

Diesel-Powered Equipment	83	34	212	25	19
Trucks	26	3	53	6	1
Employee Vehicles	271	26	24	0	1
Maximum Daily Construction Emissions	**380**	**63**	**289**	**31**	**242**
SCAQMD Significance Thresholds for Construction	550 lb/day	75 lb/day	100 lb/day	150 lb/day	150 lb/day
Significant?	No	No	**YES**	No	**YES**

a. in pounds per day
n/a: not applicable
Source: JHA Environmental Consultants, 2002.

TABLE 4
PEAK QUARTER CONSTRUCTION EMISSIONS[a.]

Source Category	Pollutant				
	Carbon Monoxide (CO)	**Reactive Organic Compounds (ROC)**	**Oxides of Nitrogen (NO_x)**	**Oxides of Sulfur (SO_x)**	**Particulate Matter (PM_{10})**
Earthmoving and Grading (Fugitive Dust)	n/a	n/a	n/a	n/a	6.86
Diesel-Powered Equipment	2.70	1.10	6.88	0.82	0.63
Trucks	0.83	0.10	1.72	0.20	0.05
Employee Vehicles	8.79	0.86	0.78	0.00	0.05
Maximum Quarter Construction Emissions	**12.32**	**2.06**	**9.38**	**1.02**	**17.59**
SCAQMD Significance Thresholds for Construction	24.75 tons/qtr	2.5 tons/qtr	2.5 tons/qtr	6.75 tons/qtr	6.75 tons/qtr
Significant?	No	No	**YES**	No	**YES**

a. in tons per quarter
n/a: not applicable
Source: JHA Environmental Consultants, 2002.

Exhaust Emissions From Construction Equipment. The peak construction day and quarter will occur during the grading and excavation phases. The project will require heavy duty and small equipment, which do not emit significant pollution. Representative heavy equipment use for this period includes 1 off-highway water truck, 4 dozers, 2 excavators, 1 scraper, 1 roller, and 6 pieces of miscellaneous equipment. The truck is assumed to operate four hours a day, and all other equipment for eight hours on the peak day and to average four hours a day during the peak quarter. Exhaust emissions for this equipment were calculated on the basis of heavy equipment emission factors contained in Tables A9-8-A in the SCAQMD *CEQA Handbook*.

Trucks. Dirt would be exported from the Medical Center and disposed of at the nearest disposal site. Excavation activities for Phase I will occur over an estimated 12- to 15-week period. Phase I will result in the excavation of approximately 45,000 cubic yards of soil. Excavated soils will be exported from the Medical Center site. Assuming that the capacity of the haul trucks is 20 cubic yards per truck and the trucks will be filled with up to 18 cubic yards to prevent loss of dirt in transport, approximately 2,500 truck trips will be generated, or an average of 38.46 truck trips per day over the 15-week or 65-day quarter. For purposes of the analysis, the disposal site is assumed to be 25 miles from the project site. There would also be four round trips per day to bring equipment and supplies to the site. The distance for these trips is assumed to be 10 miles each way.

Employee Vehicles. Different workers are on the site at different phases of construction. The maximum average number of construction workers is estimated to be 750. The largest number of employees would be expected during the building erection and finishing stages. However, the analysis assumes, under worst case conditions, that all 750 workers are required on the peak day and throughout the 65-day peak construction quarter. Worker vehicle trips are assumed at the regional trip length of 11.2 miles each way and would park offsite and be shuttled to the UCI Medical Center.

Paints and Coatings. Finishing will not occur in the peak quarter; therefore, ROC emissions from this source are not included in the totals. The project contractor will use SCAQMD-compliant coatings and approved application methods to reduce emissions from these sources to the maximum extent feasible.

Summary of Construction Impacts

Without mitigation, there will be significant emissions of NOx, and PM_{10} on the peak day and in the peak quarter.

Operational Impacts

Regional

As described earlier, the project will be completed in two phases. Phase I will be completed by 2008 and the and the buildout of the LRDP by 2020. Traffic impacts for Phase I were calculated by the Traffic Consultant for the year 2010. Full operational impacts at buildout were calculated for 2020.

Phase I, including both the remaining existing and new facilities, would generate 14,128 average daily trips in 2010 compared to 13,800 existing trips associated with the existing Medical Center. At full LRDP implementation, the project site would generate 24,694 average daily trips, inclusive of Phase I development.

Emissions were calculated with the California Air Resources Board model, URBEMIS 2001, with the assignment of trips based on land uses. Emissions were calculated for summertime conditions.
Emissions were calculated with the California Air Resources Board model, URBEMIS 2001, with the assignment of trips based on land uses. Emissions were calculated for summertime conditions.

A comparatively small amount of pollution will occur from gaseous emissions from natural gas and electricity usage. NOx emissions from electrical are no longer capped by SCAQMD Regulation XX, which required that new emissions be offset. Therefore, all electrical generation emissions are included in the total. Utility emissions were calculated using Tables A9-11 and A9-12 in the SCAQMD CEQA Handbook. All numbers were rounded to the nearest pound.

Daily operational emissions for both Phase I and at buildout are shown in Table 5.

Significance

Full LRDP implementation will result in significant emissions of ROC and NOx, based on SCAQMD significance thresholds.

Local

To determine the potential for local carbon monoxide hot spots, two intersections were selected for modeling with the ARB model, CALINE4. These two intersections are: The City Drive at The City Way, where the greatest project-related increases in traffic would occur, and I-5 southbound on-ramp at Chapman Avenue, where the highest project-related level of service change would occur.

TABLE 5
NET INCREASE IN DAILY OPERATIONAL EMISSIONS
(in pounds per day)[a.]

Source Category	Pollutant				
	Carbon Monoxide (CO)	**Reactive Organic Compounds (ROC)**	**Oxides of Nitrogen (NO_x)**	**Oxides of Sulfur (SO_x)**	**Particulate Matter (PM_{10})**
PHASE I					
Vehicle Emissions	96	8	8	0	6
Utilities	38	1	14	0	1
Daily Operational Emissions	**134**	**9**	**22**	**0**	**7**
SCAQMD Significance Thresholds for Operations	550 lbs/day	55 lbs/day	55 lbs/day	150 lbs/day	150 lbs/day
Significant?	**No**	**No**	**No**	**No**	**No**

FULL LRDP IMPLEMENTATION					
Vehicle Emissions[a.]	991	68	60	1	80
Utilities	142	8	44	2	8
Daily Operational Emissions	**1133**	**76**	**104**	**3**	**88**
SCAQMD Significance Thresholds for Operations	550 lbs/day	55 lbs/day	55 lbs/day	150 lbs/day	150 lbs/day
Significant?	**YES**	**YES**	**YES**	**No**	**No**

[a.] vehicle emissions calculated with URBEMIS 2001
Note: Daily utility emissions based on annual utility emission factors provided by UC Irvine.

Source: JHA Environmental Consultants, 2002

The analysis of possible future carbon monoxide hot spots was conducted in accordance with procedures and parameters outlined in the Caltrans Protocol for Assessing Carbon Monoxide developed by consultants at UC Davis. Emission factors for use in conformity analyses in the South Coast Air Basin were selected in consultation with CARB staff in Sacramento. The decision was made to use EMFAC7G for this analysis because that emission factor model was used in determining the SCAB emissions budget in the approved State Implementation Plan (SIP) for the basin and is therefore the foundation upon which federal conformity is based.

It is important to note that CARB's understanding of motor vehicle emissions has improved since the development of the 7G model, as is reflected by CARB's new EMFAC2000 model. The revised version of 7G used in this analysis does not reflect CARB's latest understanding of motor vehicle emissions and how they are expected to change in the future. The Caline model was developed when each individual vehicle produced far higher amounts of carbon monoxide than at present and increases in traffic always resulted in higher concentrations of CO. For future years, when CO emissions per vehicle decrease, reconfigurations of traffic at intersections sometimes result in the model showing slightly lower peak concentrations even when there are slight increases in traffic.

This EIR analysis is based on project plus cumulative. Consistent with SCAQMD requirements, background concentrations at the nearest monitoring site were added to modeled concentrations to provide a margin of safety. Existing and future concentrations projected by the SCAQMD in 2002 were used for the 2000, 2010, and 2020 baselines. The SCAQMD projections show a decline in 2000 and 2010 levels and over those in 1999, but no change after 2010.

As required by the CO Protocol, 8-hour CO concentrations are assumed at 70 percent of 1-hour concentrations. Existing and future 1-hour and 8-hour CO concentrations are shown in Tables 6 through 9. Tables 6 and 7 apply to the Phase I project. Tables 8 and 9apply to the full LRDP implementation project.

The following assumptions were used in the CALINE4 analyses for 1-hour and 8-hour carbon monoxide concentrations:

- Extrapolation of 8-hour averages using techniques outlined in the Caltrans CO Protocol at 0.70 of the 1-hour modeled concentrations.

- A temperature of 52 degrees Fahrenheit.

The SCAQMD has established criteria for determining if CO increases from a project are significant. Since all sites in California currently meet the state and national 1-hour CO standards, and are projected to meet these standards in the future, the 8-hour concentrations are now the focus for determining whether there would be a significant impact. A project would have a significant impact if it would cause projected CO concentrations to exceed 9.0 ppm (which is the 8-hour California ambient air quality standard) when there would be no exceedance without the project. Where CO concentrations would exceed 9.0 ppm whether or not the project is constructed, the project would be considered significant for CO air quality impacts if its contribution would increase future CO 8-hour concentrations by 0.45 ppm or more.

Significance

The tables show that there would be no exceedance of a state or national CO standard in either 2010 or 2020, even when adding the SCAQMD's projected future year background concentrations for the Anaheim station to the modeled concentrations, as specified in the SCAQMD's *CEQA Air Quality Handbook*. The only apparent CO hotspot, using this methodology, would be the existing traffic at the I-5 southbound on-ramp at Chapman Avenue, where the 8-hour adjusted concentration is projected as 10.0 ppm or 1.0 ppm greater than the state 8-hour CO standard of 9.0 ppm.

TABLE 6
PHASE I: PEAK 1-HOUR CO CONCENTRATION (in ppm)

Intersection	Existing			Phase I: 2010				Project Increase	Significant Impact?
	2000	Modeled Existing Intersection	Adjusted Existing Intersection	2010	Monitored Concentration Without Project	Modeled Concentration With Phase I	Adjusted With Phase I		
A.M. Peak Hour									
I-5 SB On-Ramp/Chapman	7.70	4.90	12.60	5.80	4.00	4.00	9.80	0.00	No
The City Drive/The City Way	7.70	5.30	13.00	5.80	3.40	3.40	9.20	0.00	No
P.M. Peak Hour									
I-5 SB On-Ramp/Chapman	7.70	7.00	14.70	5.80	4.40	4.60	10.40	0.20	No
The City Drive/The City Way	7.70	4.90	12.60	5.80	3.00	2.60	8.40	-0.40	No

Source: SCAQMD. *2000 Air Quality Data*. Peak 1-hr. CO concentration at Anaheim (SRA 17) monitoring station

TABLE 7
PHASE I: PEAK 8-HOUR CO CONCENTRATION (in ppm)

Intersection	Existing			Phase I: 2010				Project Increase	Significant Impact?
	2000	Modeled Existing Intersection	Adjusted Existing Intersection	2010	Monitored Concentration Without Project	Modeled Concentration With Phase I	Adjusted With Phase I		
A.M. Peak Hour									
I-5 SB On-ramp/Chapman	5.10	3.43	8.53	3.90	2.80	2.80	6.70	0.00	No
The City Drive/The City Way	5.10	3.21	8.31	3.90	2.38	2.38	6.28	0.00	No
P.M. Peak Hour									
I-5 SB On-ramp/Chapman	5.10	4.90	10.00	3.90	3.08	3.22	7.12	0.14	No
The City Drive/The City Way	5.10	3.43	8.53	3.90	2.10	1.82	5.72	-0.28	No

Source: SCAQMD. *2000 Air Quality Data*. Peak 1-hr. CO concentration at Anaheim (SRA 17) monitoring station.

TABLE 8
FULL LRDP IMPLEMENTATION: PEAK 1-HOUR CO CONCENTRATION (in ppm)

	Existing			Full LRDP Implementation					
Intersection	**2000**	**Modeled Existing Intersection**	**Adjusted Existing Intersection**	**2020**	**Monitored Concentration Without Project**	**Modeled Concentration With Full LRDP Implementation**	**Adjusted With Project**	**Project Increase**	**Significant Impact?**
A.M. Peak Hour									
I-5 SB On-Ramp/Chapman	7.70	4.90	12.60	5.80	3.40	3.60	9.40	0.20	No
The City Drive/The City Way	7.70	5.30	13.00	5.80	2.10	2.30	8.10	0.20	No
P.M. Peak Hour									
I-5 SB On-Ramp/Chapman	7.70	7.00	14.70	5.80	3.90	4.30	10.10	0.40	No
The City Drive/The City Way	7.70	4.90	12.60	5.80	2.20	3.30	9.10	1.10	No

Source: SCAQMD. *2000 Air Quality Data*. Peak 1-hr. CO concentration at Anaheim (SRA 17) monitoring station

TABLE 9
FULL LRDP IMPLEMENTATION: PEAK 8-HOUR CO CONCENTRATION (in ppm)

	Existing			Full LRDP Implementation					
Intersection	**2000**	**Modeled Existing Intersection**	**Adjusted Existing Intersection**	**2020**	**Monitored Concentration Without Project**	**Modeled Concentration With Full LRDP Implementation**	**Adjusted With Project**	**Project Increase**	**Significant Impact?**
A.M. Peak Hour									
I-5 SB On-ramp/Chapman	5.1	3.43	8.53	3.9	2.38	2.52	6.42	0.14	No
The City Drive/The City Way	5.1	3.21	8.31	3.9	1.47	1.61	5.51	0.14	No
P.M. Peak Hour									
I-5 SB On-ramp/Chapman	5.1	4.90	10.0	3.9	2.73	3.01	6.91	0.28	No
The City Drive/The City Way	5.1	3.43	8.53	3.9	1.54	2.31	5.44	0.77	No

Source: SCAQMD. *2000 Air Quality Data*. Peak 1-hr. CO concentration at Anaheim (SRA 17) monitoring station.

CONFORMITY

The Clean Air Act requires that all federal plans, projects and programs, including any federal funding of local and state projects, conform to the adopted State Implementation Plan (SIP) for the area in which the project is located. The US EPA issued two sets of Conformity rules in 1993. These rules were adopted by the South Coast Air Quality Management District as Regulation IX, Rule 1901 General Conformity and Rule 1902 Transportation Conformity. The Transportation Conformity Rule applies to highway and transit projects, unless they are categorically exempt. All other types of projects are governed by the General Conformity Rule, which is much less specific in its analysis requirements than the Transportation Rule. In general, a project must be consistent with the applicable growth projections contained in the SIP and be consistent with the attainment strategies set forth in the plan.

Employment at the UCI Medical Center in 2001 was 6,079 persons. This is inclusive of UCI Medical Center and College of Medicine staff, faculty, volunteer faculty, residents, and medical students. Employment is projected to increase to 7,116 by 2010, and to 7,817 by 2020. The proposed project conforms to the federal requirements. The employment projected for the Medical Center is within the employment forecasts for Orange County through 2020. These employment forecasts are incorporated within the 1999 regional Air Quality Management Plan, which is the approved SIP for the region. The project does not directly add new population. It is part of the infrastructure assumed in the 1999 AQMP as necessary to support existing and projected population in 2020. Therefore, the project is consistent with the applicable SIP.

The project would not require any federal permits or receive federal funding. Therefore, the project would not be subject to Clean Air Act conformity regulations.

MITIGATION MEASURES

Construction Mitigation Measures

The University will ensure that the following mitigation measures are employed in order to reduce construction emissions to the maximum extent feasible. These measures will reduce PM_{10} emissions from grading, demolition, and debris loading by 60%, as shown in Tables 10 and 11.

1. All construction contractors will comply with SCAQMD regulations, including Rule 402, the Nuisance Rule, and Rule 403, Fugitive Dust. Because the area undergoing grading is below the size for which Rule 403 requires that a grading plan be developed and submitted to the District prior to beginning work, it is exempt from this portion of the rule. However, the rule requires that all grading projects apply at least one of the best available control measures for fugitive dust. To insure that the project is in full compliance with both dust regulations and that there is no nuisance impact off the site, the contractor will do all of the following:

    A. Moisten soil not more than 15 minutes prior to moving soil or conduct whatever watering is necessary to prevent visible dust emissions from exceeding 100 feet in any direction.

B. Apply chemical stabilizers to disturbed surface areas (completed grading areas) with five days of completing grading or apply dust suppressants or vegetation sufficient to maintain a stabilized surface.

C. Water excavated soil piles hourly or cover with temporary coverings.

D. Cease grading during periods when winds exceed 25 miles per hour.

E. Water exposed surfaces at least twice a day under calm conditions. Water as often as needed on windy days when winds are less than 25 miles per day or during very dry weather in order to maintain a surface crust and prevent the release of visible emissions from the construction site.

F. Wash mud-covered tires and undercarriages of trucks leaving construction sites.

G. Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud which would otherwise be carried off by trucks departing project sites.

H. Securely cover loads with a tight fitting tarp on any truck leaving the construction sites to dispose of debris.

The following measure will reduce equipment emissions by 10%.

A. Turn off equipment when not in use for longer than 5 minutes.

Significance After Mitigation

Implementation of required South Coast Air Quality Management District regulations would reduce air emissions from the UCI Medical Center project. After applying mitigation, construction emissions of NO_x would remain significant and unavoidable for the peak day, and NO_x emissions would remain significant and unavoidable for the peak quarter. Implementation of required South Coast Air Quality Management District regulations would reduce air emissions from the full LRDP implementation project. With the implementation of mitigation, operational emissions would remain significant and unavoidable for CO, ROC, and NO_x. At full LRDP implementation, the project's contribution to cumulative impacts is considered significant and unavoidable.

TABLE 10 PHASE I: MAXIMUM DAILY CONSTRUCTION EMISSIONS AFTER MITIGATION (in pounds per day)					
	Pollutant				
Source Category	**Carbon Monoxide (CO)**	**Reactive Organic Compounds (ROC)**	**Oxides of Nitrogen (NO_x)**	**Oxides of Sulfur (SO_x)**	**Particulate Matter (PM_{10})**
Total Daily Emissions Before Mitigation	380	63	289	31	242
Earthmoving/Grading (Fugitive Dust) (60% reduction)	n/a	n/a	n/a	n/a	84
Diesel-Powered Equipment (10% reduction)	75	31	191	23	17
Trucks	26	3	53	6	1
Employee Vehicles	271	26	24	0	1
Maximum Daily Construction Emissions	**372**	**60**	**268**	**29**	**103**
SCAQMD Significance Thresholds for Construction	550 lb/day	75 lb/day	100 lb/day	150 lb/day	150 lb/day
Significant?	No	No	**Yes**	No	No
n/a: not applicable Source: JHA Environmental Consultants, 2002.					

TABLE 11 PHASE I: PEAK QUARTER CONSTRUCTION EMISSIONS AFTER MITIGATION (in tons per quarter)					
	Pollutant				
Source Category	**Carbon Monoxide (CO)**	**Reactive Organic Compounds (ROC)**	**Oxides of Nitrogen (NO_x)**	**Oxides of Sulfur (SO_x)**	**Particulate Matter (PM_{10})**
Total Emissions Before Mitigation	12.32	2.06	9.38	1.02	17.59
Earthmoving/Grading (Fugitive Dust) (60 percent reduction)	n/a	n/a	n/a	n/a	2.74
Diesel-Powered Equipment (10 percent reduction)	2.43	0.99	6.19	0.74	0.57
Trucks	0.83	0.10	1.72	0.20	0.05
Employee Vehicles	8.79	0.86	0.78	0	0.05
Maximum Daily Construction Emissions	**12.05**	**1.95**	**8.69**	**0.94**	**3.41**
SCAQMD Significance Thresholds for Construction	24.75 tons/qtr	2.5 tons/qtr	2.5 tons/qtr	6.75 tons/qtr	6.75 tons/qtr
Significant?	No	No	**YES**	No	Np
n/a: not applicable Source: JHA Environmental Consultants, 2002.					

URS

Technical Memorandum

Date August 27, 2002

To Mr. Richard Demerjian, UCI Medical Center

From Yijin Wang, Jeff Davis and Paul Nguyen, URS Corporation

Subject **Screening Health Risk Assessment with Refined Modeling for the Medical Center at University of California, Irvine (Final)**

At the request of the Medical Center at University of California, Irvine (UCI Medical Center), URS Corporation has conducted a screening health risk assessment (HRA) for the proposed new UCI Medical Center located in the City of Orange. Our primary objective is to provide a document describing the potential health effects of emissions resulting from the operation of the new UCI Medical Center. Based on the data provided by the UCI Medical Center, a screening HRA was conducted to estimate the health effects at the nearby receptors. This Technical Memorandum presents the emissions estimation approach, screening HRA methodology, and the results of the screening HRA for the proposed UCI Medical Center.

Based on the assumptions made, the results of this screening HRA showed that the potential maximum cancer risks at the nearest off-site residential and commercial receptors due to the routine operation of the new UCI Medical Center are 0.3 in one million (0.3×10^{-6}) and 4.6 in one million (4.6×10^{-6}), respectively. The diesel emergency generators contribute 82% and 65% to the total cancer risks at the maximum residential and commercial receptors, respectively. The maximum cancer risks at all receptors are below the South Coast Air Quality Management District (SCAQMD) significant level for public notification of 10 in one million (10×10^{-6}). The potential maximum chronic hazard index to the nearest receptors is 0.05, below the significant level of 1.0. The potential maximum acute hazard index to the nearest receptors is 0.8, below the level of 1.0 required by the SCAQMD for public notification.

This screening analysis adopted a simplified HRA approach used in the Screening HRA conducted by URS for the University of California, Los Angeles (March, 2002). Assumptions were made when data were not available at the time of analysis. Since the screening risk assessment is only based on the limited data and a simplified HRA approach, therefore it is recommended that further analysis be conducted when the detailed source characteristics are available to determine the more detailed maximum individual cancer risks and maximum non-cancer risks from the new UCI Medical Center. A summary of the analysis results for the new UCI Medical Center is presented in Table 1.

Emissions Estimates

The proposed sources of emissions are from the new research laboratories, inpatient and outpatient facilities, standby emergency generators, and boilers. No other types of emission sources were evaluated in the screening HRA.

A list of air toxic chemicals and their annual quantities that are associated with the construction of the new laboratories is presented in Table 2. Due to lack of manifest data demonstrating the amount of chemicals being shipped out as chemical waste, loss factors were applied to the chemicals used in the laboratories. The loss factors were derived from a study prepared for Stanford University for the Stanford Biology-Chemistry Quadrangle Project (Decision Focus 1989) where a number of Principal Investigators and Lab Coordinators were interviewed in a detailed survey.

Emissions from natural gas boilers were estimated using natural gas combustion factors from the Ventura County Air Pollution Control District (VCAPCD). The annual natural gas consumption resulting from the construction of the new Medical Center was provided by the UCI Medical Center (i.e., 2,462,765 Therms). The estimated emissions from the boilers in the new UCI Medical Center are presented in Table 3.

Emissions from the standby emergency generators were estimated using diesel combustion factors from US EPA AP-42 and manufacturer's data for diesel particulate matter (PM). The total annual diesel fuel usage (i.e., 13,282 gallons) resulting from the construction of the new UCI Medical Center was used to calculate the emissions (Table 4). The projected operating hours for each of the three future new emergency generators would be approximately 35 hours per year. A total of eight emergency generators would be operating if needed.

No information was available to directly calculate the potential hourly emissions from the laboratories and boilers. Therefore, the maximum hourly emissions were estimated using the annual average usage and total annual operating hours. It is assumed that the operating schedule for the boilers is 24 hours per day, 365 days per year. The operating schedule for the research laboratories is 10 hours per day, 5 days per week, and 52 weeks per year. For the emergency generators, the hourly fuel consumption under the anticipated load of 67% (i.e., 79.3 gal/hr) provided by the UCI Medical Center staff was used to estimate the hourly emissions. The hourly and annual emissions estimated above were used to assess the potential health risks associated with emissions resulting from the routine operation of the new UCI Medical Center.

Screening HRA Methodology

The screening HRA methodology is a simplified risk assessment using the most recent SCAQMD Risk Assessment Procedures for Rules 1401 and 212 (Version 6.0, August 2000) as a reference. The toxicity values used in this analysis are provided in Table 5.

The HRA estimates the potential risk of contracting cancer (carcinogenic risk), other long-term health effects (chronic non-carcinogenic effects), and short-term health effects (acute non-carcinogenic effects) that may impact the general public. Off-site receptors located at the property boundary and beyond and up to 1 kilometer from the boundary were analyzed.

Cancer risks in excess of 10 in one million (1×10^{-5}) are considered significant and will require reporting to the impacted area. As required for this HRA, carcinogenic risks are calculated as the increased probability of a person developing cancer, assuming that the person is exposed to a given concentration of a compound known (or suspected) of causing cancer for a period of 24 hours per day, 365 days per year for 70 years (lifetime exposure).

The potential for non-carcinogenic health effects is determined differently and is calculated as the ratio of predicted concentrations to a level that is known to have either long-term or short-term health effects for a given compound that may affect a given part of the body (hazard quotients). The sum of the hazard quotients is the hazard index. For a hazard index greater than 1.0, the public shall be notified in accordance with California Health and Safety Code Section 44362 and the most recently SCAQMD approved "Public Notification Procedures for Phase I and II Facilities Under the Air Toxics Hot Spots Information and Assessment Act".

This screening HRA was conducted to determine the maximum cancer risks, and chronic and acute hazard indices from the new UCI Medical Center. In order to perform a screening HRA, source information including maximum annual emissions and hourly emissions for each air toxic, stack height or building dimensions, operation schedule, and geographic location of the source are needed. Due to the fact that no detailed information was available, assumptions were made to conduct the analysis.

The concentration of a contaminant decreases as it disperses away from the point of release. Dispersion factors (X/Q) are numerical estimates of amount of dispersion that occurs under specific conditions. The amount of dispersion depends on the distance traveled, the height of release, and meteorological conditions such as wind speed and atmospheric stability. Dispersion modeling was conducted to estimate the X/Q for the new UCI Medical Center. The Industrial Source Complex Short Term model (ISCST3, Version 00101) and the actual meteorological data from Anaheim Station were used in the simulations. The concentrations at on-site and off-site receptors impacted by the emissions from the new UCI Medical Center were estimated using the ISCST3 modeling. Based on the information provided by the UCI Medical Center, the sources were assessed as point sources. The details of source characteristics were not available at the time of this analysis; therefore assumptions were made to conduct the analysis. For the emergency generators, URS obtained a Caterpillar manufacturer specification (spec) sheet representative of the proposed 1750 kW generators to determine source release parameters and a diesel PM emission factor. The spec sheet is included as an attachment to this memorandum. The following parameters were used in the modeling:

- Inpatient Facilities
    - Stack Height – 93 feet
    - Stack Diameter – 1 foot
    - Exhaust Velocity – 3 meters per second (m/s)
    - Exhaust Temperature – 293 Deg. K (68 Deg. F)

- Outpatient Facilities
    - Stack Height – 33 feet
    - Stack Diameter – 1 foot
    - Exhaust Velocity – 3 m/s
    - Exhaust Temperature – 293 Deg. K (68 Deg. F)

- Research Laboratories
    - Stack Height – 48 feet
    - Stack Diameter – 1 foot
    - Exhaust Velocity – 3 m/s
    - Exhaust Temperature – 293 Deg. K (68 Deg. F)

- Boilers
    - Stack Height – 18 feet
    - Stack Diameter – 1 foot
    - Exhaust Temperature – 450 Deg. K (350 Deg. F)
    - Exhaust Velocity – 10 m/s

- Existing Emergency Generators
  - Stack Diameter – 10 inches
  - Stack Height – 18 feet
  - Exhaust Temperature – 600 Deg. K (620 Deg. F)
  - Exhaust Velocity – 35 m/s

- New Emergency Generators
  - Stack Diameter – 12 inches
  - Stack Height – 18 feet
  - Exhaust Temperature – 700 Deg. K (800 Deg. F)
  - Exhaust Velocity – 45 m/s

Maximum Individual Cancer Risk

Once the dispersion factor is estimated from ISCST3, the Maximum Individual Cancer Risk (MICR) can be quantified. The equation for calculating MICR is:

$$\mathrm{MICR} = Q_{tons} \times X/Q \times U \times MP \times LEA$$

Where:

Q_{tons} – Maximum emission rate in tons/yr
X/Q – Dispersion factor in (micrograms per cubic meter [$\mu g/m^3$])/(tons/yr)
U – Unit risk factors in $(\mu g/m^3)^{-1}$
MP – Multi-pathway factor
LEA – Lifetime exposure adjustment factor

U is a unit factor to measure the cancer potency of a carcinogen. The unit factor is the estimated probability that a person will contract cancer as a result of inhalation of a concentration of 1 $\mu g/m^3$ of the toxic air contaminants over a period of 70 years.

Multi-pathway is used for substance that may contribute to risk from exposure pathways other than inhalation. These substances deposit on the ground in particulate form and contribute to risk through ingestion of soil or backyard garden vegetables or through other routes.

LEA is the lifetime exposure adjustment factor. For all residential or sensitive receptors, an LEA of 1.0 was used. For the off-site commercial receptors, it is assumed that a lifetime is 46 years instead of 70 years. LEA of 0.66 (46 years/70 years) was used for labs and diesel generators; LEA of 0.14 was used for boilers since they would operate 24 hours per day, 365 days per year.

Acute Hazard Index and Chronic Hazard Index

Non-cancer health risks due to the short-term (acute) and long-term (chronic) exposure of the air toxic are assessed for the proposed UCI Medical Center. The hazard index calculated is referred as the individual substance hazard index. The equations used to calculated the Chronic Hazard Index (HIC) and Acute Hazard Index (HIA) per target organ are as follows:

$$\text{Total } HIC_{\text{target organ}} = \{ \sum[Q_{ton} \text{ x } (X/Q) \text{ x } MP]/\text{Chronic } REL_{tac}\}_{\text{target organ}}$$

$$\text{Total } HIA_{\text{target organ}} = \{ \sum [Q_{hr} \text{ x } (X/Q)_{hr}]/\text{Acute } REL_{tac}\}_{\text{target organ}}$$

Where:
$HIC_{\text{target organ}}$ – Chronic Hazard Index
$HIA_{\text{target organ}}$ – Acute Hazard Index
$ChronicREL_{tac}$ – Reference Exposure Level (REL) ($\mu g/m^3$)
$AcuteREL_{tac}$ – REL ($\mu g/m^3$)

REL is used as an indicator of potential adverse non-cancer health effects. An REL is a concentration ($\mu g/m^3$) or dose (mg/kg-day) at which no adverse health effects are anticipated. HIC is based upon an annual average emission per year, whereas the HIA is based upon a maximum one-hour emission level except for arsenic, carbon tetrachloride, and chloroform.

The screening HRA evaluated maximum health risks individually from each of the sources described above. In addition, worst-case impacts were estimated by summing the maximum individual health risks. This screening HRA used a simplified risk assessment approach with assumptions for the source characteristics. The final SCAQMD permitting required for installation and commissioning of the generators will require more detailed modeling and risk assessment utilizing detailed source data to determine impacts at a greater level of accuracy at the nearest off-site residential and commercial receptors. The results from this screening HRA are presented below.

Screening HRA Results

The screening HRA assessed health risks at the nearest residential and commercial receptors. For the UCI Medical Center, the nearest residential receptors are more than 500 meters away. Maximum Cancer Risks, Maximum HIC and Maximum HIA are presented in Tables 6 through 8. For HIC and HIA, the affected target organs are shown in the tables. In addition, the tables also present the risk levels and hazard indices at commercial receptors. The MICR at the nearest off-site residential receptor ($MICR_{MAXresidential}$) was estimated to be 0.3 in one million (0.3×10^{-6}). The MICR at the nearest off-site commercial receptors ($MICR_{MAXcommercial}$) (predicted at the boundary of the facility) was estimated to be 4.6 in one million (4.6×10^{-6}). Emergency generators are the major contributor for the cancer risks at both commercial and residential receptors. The maximum cancer risks at all receptors are below the SCAQMD significant level for public notification of 10 in one million (10×10^{-6}). The Maximum Chronic Non-cancer Hazard Indices ($HIC_{MAXresidential}$ and $HIC_{MAXcommercial}$, respectively) were estimated to be 0.001 and 0.05, respectively, below the significant level of 1.0. The maximum acute hazard index (HIA_{MAX}) was estimated to be 0.8, also below the significant level of 1.0. Diesel emergency generators contribute 64% to the total acute hazard index, while lab emissions contribute 22% and boilers contribute 14%.

Conclusions

This analysis indicated that potential health risks due to the routine operation of the new UCI Medical Center would be below the SCAQMD significant levels for public notification. However, it is important to note that the results were based on assumptions developed using data available at the time of this memorandum. For example, the analysis assumed that the proposed new 1750 kW generators had a diesel PM emission factor (EF) of 0.084 grams per brake horsepower-hour (g/bhp-hr). Specifications obtained from the manufacturer confirm that the diesel PM EF of 0.084 g/bhp-hr can be achieved under 75% load. Prior to the commencement of the installation of the generators, a more detailed HRA will be conducted in support of the SCAQMD permitting process when the specific source characteristics for all new proposed equipment will be available to confirm or refine the results presented in this memorandum.

Table 1. Summary of the Results For The New UCI Medical Center

Source	$MICR_{Residential}$	$MICR_{Commercial}$	$HIC_{maxresidential}$	$HIC_{maxcommercial}$	HIA_{max}
Labs	3.1E-08	1.6E-06	4.7E-04	3.8E-02	1.8E-01
Boilers	2.3E-08	2.9E-08	3.6E-04	3.2E-03	1.1E-01
Diesels	2.8E-07	3.0E-06	2.2E-04	3.5E-03	5.3E-01
Total	3.4E-07	4.6E-06	1.1E-03	4.5E-02	8.3E-01

$MICR_{residential}$ - Maximum Individual Cancer Risk for residential receptors

$MICR_{commercial}$ - Maximum Individual Cancer Risk for commercial receptors

$HIC_{maxresidential}$ - Maximum Chronic Hazard Index for residential receptors

$HIC_{maxcommercial}$ - Maximum Chronic Hazard Index for commercial receptors

HIA_{max} - Maximum Acute Hazard Index

Inpatient, outpatient and research labs are summed and presented in the category of Labs

Table 2. Emissions From the Proposed New Laboratories

Pollutant	Cas. No.	Projected Usage	Density	Loss Factor	Total Emissions
		gallons	lb/gal		lbs/year
1,1,1 Trichloroethane	71556	7.7	11.2	5%	4.3
Carbon Tetrachloride*	56235	50.0		50%	25.0
Chloroform	67663	15.4	12.4	5%	9.5
Formaldehyde	50000	46.1	9.2	10%	42.3
Hydrogen Chloride	7647010	229.6	9.9	5%	114.0
IPA	67630	191.1	7.8	20%	296.6
Mercury*	7439976			5%	0.5
Methanol	67561	231.1	6.6	20%	304.7
Methylene Chloride	75092	7.7	11.1	5%	4.3
n-Hexane	110543	115.2	5.5	5%	31.9
Nickel Compound	7440020			5%	0.2
Nitric Acid	7697372	4.6	11.7	5%	2.7
Phenol	108952	46.2	8.8	5%	20.4
Phosphoric Acid	7664382	4.6	10.0	5%	2.3
Sodium Hydroxide	1310732		9.4	5%	2.3
Sulfuric Acid	7664939	172.2	15.0	5%	129.3
Toluene	108883	15.4	7.2	5%	5.5
Triethylamine	121448	7.7	6.0	5%	2.3
Xylene	1210	15.4	7.2	5%	5.5

1. Based on the information provided by the UCI Medical Center, it was assumed that 2% of the total amount of mercury was emitted to the air.
2. The amount of chemicals shipped offsite were not available, thus loss factors derived from a study from Stanford University was used.
3. Density was assumed since no MSDSs were available for this analysis
4. Data with * are in pounds
5. 50% of the loss factors were applied to CFC-113 and Carbon Tetrachloride
6. Checmial usage for inpatient, outpatient and research are presented as laboratory

Emissions (lbs/year) = Volume (gallons) x Density (lb/gal) x Loss Factor

Table 3. Emissions From Natural Gas Boilers

Pollutant	Cas. No.	Emission Factor* lbs/MMcf	Emissions lbs/yr
Acetaldehyde	75070	0.0043	1.01
Acrolein	107028	0.0027	0.63
Benzene	71432	0.058	13.60
Ethyl Benzene	100414	0.0095	2.23
Formaldehyde	50000	0.0123	2.88
Hexane	110543	0.0063	1.48
Naphalene	91203	0.0003	0.070
PAHs (Excluding Naphalene)	1150	0.0001	0.023
Propylene	115071	0.731	171.46
Toluene	108883	0.0366	8.58
Xylenes	1210	0.0272	6.38

*Projected natural gas usage is 2,462,765 Therms, which is equivalent to 235 MMcf.

** Ventura County Air Pollution Control District, AB 2588 Combustion Emission Factors, lb/MMcf
***The ratings for each boiler is 48 MMBTU/hr

Emissions (lbs/year) = Fuel Usage (MMcf) x Emission Factor (lbs/MMcf)

Fuel Usage = 235 MMcf

Table 4. Emissions From The New Diesel Emergency Generators

Pollutant	Cas. No.	Emission Factor*	Emissions
		lbs/1000 gallons	lbs/yr
1,3 Butadiene	10699	0.0054	0.07
Acetaldehyde	75070	0.1051	1.40
Acrolein	107028	0.0127	0.17
Benzene	71432	0.1278	1.70
Formaldehyde	50000	0.1617	2.15
Naphalene	91203	0.0116	0.15
PAHs (Excluding Naphalene)	1150	0.0114	0.15
Propylene	115071	0.3535	4.70
Toluene	108883	0.056	0.74
Xylenes	1210	0.039	0.52
Diesel PM	11101	4.4	58.50

* US EPA, AP-42 Table 3.3-1, Table 3.3-2, October 1996 (converted using the heating value for diesel, 137 MMBTU/1000 gal)

Projected diesel usage after the construction will be 13,282 gallons; the existing diesel fuel oil usage is 4,962 gallons

Emissions (lbs/year) = Fuel Usage (gallons) x Emission Factor (lbs/1000 gallons)

Annual Fuel Usage (gallons) = 13,282

<u>Diesel PM EF Calculation (lbs/1000 gallons)</u>

Mfg PM EF @ 67% load (g/bhp-hr) =	0.084	Fuel Con @ 67% load (gal/hr) =	79.3
Bhp @ 67% load, 1171 kW =	1885	Mfg PM EF (lbs/1000 gallons) =	4.4
Mfg PM EF @ 67% load (lbs/hr) =	0.35		

Table 5. Unit Risk Factor (U), Reference Exposure Level (REL) and Multi Pathway Adjustment Factors (MP)

Pollutant Name	Cas. No.	Cancer	MP	Chronic	MP	Acute	Avg. Hours
1,1,1 Trichlorethane	71556			1.00E+03	1	6.80E+04	1
1,3 Butadiene	10699	1.70E-04	1	2.00E+01	1		
Acetaldehyde	75070	2.70E-06	1	9.00E+00	1		
Acrolein	107028			6.00E-02	1	1.90E-01	1
Arsenic	7440382	3.30E-03	2.7	3.00E-02	5.7	1.90E-01	4
Benzene	71432	2.90E-05	1	6.00E+01	1	1.30E+03	1
Cadmium	7440439	4.20E-03	1	2.00E-02	16		
Carbon Tetrchloride	56235	4.20E-05	1	4.00E+01	1	1.90E+03	7
Chlorobenzene	108907			1.00E+03	2.8		
Chloroform	67663	5.30E-06	1	3.00E+02	1	1.50E+02	7
Copper	7440508					1.00E+02	1
Ethyl Benzene	100414			2.00E+03	1		
Formaldehyde	50000	6.00E-06	1	3.00E+00	1	9.40E+01	1
CFC-113	76131		1	7.00E+02			
Freon 22	75456		1	5.00E+04			
Hexavalent Chromium	18540299	1.50E-01	1.01	2.00E-01	1		
Hydrogen Chloride	7647010			9.00E+00	1	2.10E+03	1
IPA	67630			7.00E+03	1	3.20E+03	1
Lead	7439921	1.20E-05	1				
Mercury	7439976			9.00E-02	1.6	1.80E+00	1
Methanol	67561			4.00E+03	1	2.80E+04	1
Methylene Chloride	75092	1.00E-06	1	4.00E+02	1	1.40E+04	1
Naphalene	91203			9.00E+00	1		
n-Hexane	110543			7.00E+03	1		
Nickel	7440020	2.60E-04	1	5.00E-02	1	6.00E+00	1
Nitric Acid	7697372					8.60E+01	1
PAHs (Excluding Naphalene)	1150	1.10E-03	12.7				
Phenol	108952			2.00E+02	1	5.80E+03	1
Phosphoric Acid	7664382			7.00E+00	1		
Propylene	115071			3.00E+03	1		
Sodium Hydroxide	1310732					8.00E+00	1
Sulfuric Acid and Oleum	7664939					1.20E+02	1
Toluene	108883			3.00E+02	1	3.70E+04	1
Triethylamine	121448					2.80E+03	1
Xylene	1210			7.00E+02	1	2.20E+04	1
Diesel PM	11101	3.00E-04	1	5.00E+00	1		

*SCAQMD Risk Assessment Procedures for Rules 1401 and 212, Table 8A

** Data for Diesel Particulates Matters are from the state Office of Environmental Health Hazard Assessment (OEHHA).

Table 6a. Screening Risk Assessment Maximum Individual Cancer Risk ($MICR_{MAXresidential}$)

Pollutant Name	Case No.	Emissions (Q)			Cancer	MP	Cancer Risk		
		Lab	Boilers	Diesel ICE			Lab	Boilers	Diesel ICE
			lbs/year						
1,1,1 Trichlorethane	71556	4.3E+00			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
1,3 Butadiene	10699			7.2E-02	1.7E-04	1.0E+00	0.0E+00	0.0E+00	1.8E-10
Acetaldehyde	75070		1.0E+00	1.4E+00	2.7E-06	1.0E+00	0.0E+00	8.4E-11	5.4E-11
Acrolein	107028		6.3E-01	1.7E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Arsenic	7440382				3.3E-03	2.7E+00	0.0E+00	0.0E+00	0.0E+00
Benzene	71432		1.4E+01	1.7E+00	2.9E-05	1.0E+00	0.0E+00	1.2E-08	7.1E-10
Beryllium	7440417				2.4E-03	6.9E+00	0.0E+00	0.0E+00	0.0E+00
Cadmium	7440439				4.2E-03	1.0E+00	0.0E+00	0.0E+00	0.0E+00
Carbon Tetrchloride	56235	2.5E+01			4.2E-05	1.0E+00	2.3E-08	0.0E+00	0.0E+00
Chlorobenzene	108907				0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Chloroform	67663	9.4E+00			5.3E-06	1.0E+00	1.1E-09	0.0E+00	0.0E+00
Copper	7440508				0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ethyl Benzene	100414		2.2E+00		0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Formaldehyde	50000	4.2E+01	2.9E+00	2.1E+00	6.0E-06	1.0E+00	5.5E-09	5.3E-10	1.9E-10
Hexavalent Chromium	18540299				1.5E-01	1.0E+00	0.0E+00	0.0E+00	0.0E+00
Hydrogen Chloride	7647010	2.2E+01			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
IPA	67630	3.0E+02			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Lead	7439921				1.2E-05	1.0E+00	0.0E+00	0.0E+00	0.0E+00
Manganese	7439965				0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Mercury	7439976	4.4E-01			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Methanol	67561	3.0E+02			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

Table 6a. Screening Risk Assessment Maximum Individual Cancer Risk ($MICR_{MAXresidential}$)

Pollutant Name	Case No.	Emissions (Q)			Cancer	MP	Cancer Risk		
		Lab	Boilers	Diesel ICE			Lab	Boilers	Diesel ICE
			lbs/year						
Methylene Chloride	75092	4.3E+00			1.0E-06	1.0E+00	9.3E-11	0.0E+00	0.0E+00
Naphalene	91203		7.0E-02	1.5E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
n-Hexane	110543	3.2E+01	1.5E+00		0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Nickel	7440020	2.4E-01			2.6E-04	1.0E+00	1.4E-09	0.0E+00	0.0E+00
Nitric Acid	7697372	2.7E+00			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
PAHs (Excluding Naphal	1150		2.3E-02	1.5E-01	1.1E-03	1.3E+01	0.0E+00	1.0E-08	3.0E-08
Phenol	108952	2.0E+01			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Phosphoric Acid	7664382	2.3E+00			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Propylene	115071		1.7E+02	4.7E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Selenium	7782492				0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Sodium Hydroxide	1310732	2.3E+00			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Sulfuric Acid and Oleum	7664939	1.3E+02			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Toluene	108883	5.5E+00	8.6E+00	7.4E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Triethylamine	121448	2.3E+00			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Xylenes	1210	5.5E+00	6.4E+00	5.2E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Diesel PM	11101			5.8E+01	3.0E-04	1.0E+00	0.0E+00	0.0E+00	2.5E-07
Total							**3.1E-08**	**2.3E-08**	**2.8E-07**

X/Q Values	Lab	4.36E-02 (ug/cu.m)/(ton/yr)	Data From ISCST3 Output
	Boilers	6.16E-02 (ug/cu.m)/(ton/yr)	Data From ISCST3 Output
	Diesel	2.88E-02 (ug/cu.m)/(ton/yr)	Data From ISCST3 Output
MET Value	1	The actual meteorological data was used to develop the X/Q	
LEA	1	Risk Assessment Procedures For Rule 1401 and 212, Table 9	

$MICR_{MAX} = Q_{TON} \times \text{Annual } X/Q \times MET \times U \times MP_{MICR} \times LEA$

Table 6b. Screening Risk Assessment Maximum Individual Cancer Risk ($MICR_{MAXcommercial}$)

Pollutant Name	Case No.	Emissions (Q)			Cancer	MP	Cancer Risk		
		Lab	Boilers lbs/year	Diesel ICE			Lab	Boilers	Diesel ICE
1,1,1 Trichlorethane	71556	4.3E+00			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
1,3 Butadiene	10699			7.2E-02	1.7E-04	1.0E+00	0.0E+00	0.0E+00	1.8E-09
Acetaldehyde	75070		1.0E+00	1.4E+00	2.7E-06	1.0E+00	0.0E+00	1.0E-10	5.6E-10
Acrolein	107028		6.3E-01	1.7E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Arsenic	7440382				3.3E-03	2.7E+00	0.0E+00	0.0E+00	0.0E+00
Asbestos	1332214				6.3E-02	1.0E+00	0.0E+00	0.0E+00	0.0E+00
Benzene	71432		1.4E+01	1.7E+00	2.9E-05	1.0E+00	0.0E+00	1.5E-08	7.4E-09
Beryllium	7440417				2.4E-03	6.9E+00	0.0E+00	0.0E+00	0.0E+00
Cadmium	7440439				4.2E-03	1.0E+00	0.0E+00	0.0E+00	0.0E+00
Carbon Tetrchloride	56235	2.5E+01			4.2E-05	1.0E+00	1.2E-06	0.0E+00	0.0E+00
Chlorobenzene	108907				0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Chloroform	67663	9.4E+00			5.3E-06	1.0E+00	5.8E-08	0.0E+00	0.0E+00
Copper	7440508				0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ethyl Benzene	100414		2.2E+00		0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Formaldehyde	50000	4.2E+01	2.9E+00	2.1E+00	6.0E-06	1.0E+00	2.9E-07	6.7E-10	1.9E-09
Hexavalent Chromium	18540299				1.5E-01	1.0E+00	0.0E+00	0.0E+00	0.0E+00
Hydrogen Chloride	7647010	2.2E+01			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
IPA	67630	3.0E+02			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Lead	7439921				1.2E-05	1.0E+00	0.0E+00	0.0E+00	0.0E+00
Manganese	7439965				0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Mercury	7439976	4.4E-01			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Methanol	67561	3.0E+02			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

Table 6b. Screening Risk Assessment Maximum Individual Cancer Risk ($MICR_{MAXcommercial}$)

Pollutant Name	Case No.	Emissions (Q)			Cancer	MP	Cancer Risk		
		Lab	Boilers lbs/year	Diesel ICE			Lab	Boilers	Diesel ICE
Methylene Chloride	75092	4.3E+00			1.0E-06	1.0E+00	4.9E-09	0.0E+00	0.0E+00
Naphalene	91203		7.0E-02	1.5E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
n-Hexane	110543	3.2E+01	1.5E+00		0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Nickel	7440020	2.4E-01			2.6E-04	1.0E+00	7.3E-08	0.0E+00	0.0E+00
Nitric Acid	7697372	2.7E+00			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
PAHs (Excluding Naphale	1150		2.3E-02	1.5E-01	1.1E-03	1.3E+01	0.0E+00	1.3E-08	3.2E-07
Phenol	108952	2.0E+01			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Phosphoric Acid	7664382	2.3E+00			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Propylene	115071		1.7E+02	4.7E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Selenium	7782492				0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Sodium Hydroxide	1310732	2.3E+00			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Sulfuric Acid and Oleum	7664939	1.3E+02			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Toluene	108883	5.5E+00	8.6E+00	7.4E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Triethylamine	121448	2.3E+00			0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Xylenes	1210	5.5E+00	6.4E+00	5.2E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Diesel PM	11101			5.8E+01	3.0E-04	1.0E+00	0.0E+00	0.0E+00	2.6E-06
Total							**1.6E-06**	**2.9E-08**	**3.0E-06**

X/Q Values	Lab	3.49E+00 (ug/cu.m)/(ton/yr)	Data From ISCST3 Output
	Boilers	5.50E-01 (ug/cu.m)/(ton/yr)	Data From ISCST3 Output
	Diesel	4.53E-01 (ug/cu.m)/(ton/yr)	Data From ISCST3 Output

MET Value 1 The actual meteorological data was used to develop the X/Q

LEA 0.14 for boilers
0.66 for others

$MICR_{MAX} = Q_{TON} \times \text{Annual } X/Q \times MET \times U \times MP_{MICR} \times LEA$

Table 7a. Screening Risk Assessment Chronic Hazard Index ($HIC_{residential}$)

Pollutant Name	Case No.	Emissions (Q)			Chronic REL	MP_{HIC}	TARGET ORGANS									
		Lab	Boilers lbs/year	Diesel ICE			CV/BL	CNS/PNS	ENDO	EYE	IMMUN	KIDN	GI/LV	REPR	RESP	SKIN
1,1,1 Trichlorethane	71556	4.31E+00			1.00E+03	1.00E+00	0.00E+00	9.38E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,3 Butadiene	10699			7.17E-02	2.00E+01	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.16E-08	0.00E+00
Acetaldehyde	75070		1.01E+00	1.40E+00	9.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.68E-06	0.00E+00
Acrolein	107028		6.33E-01	1.69E-01	6.00E-02	1.00E+00	0.00E+00	0.00E+00	0.00E+00	3.66E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.66E-04	0.00E+00
Arsenic	7440382				3.00E-02	5.70E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	71432		1.36E+01	1.70E+00	6.00E+01	1.00E+00	7.39E-06	7.39E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.39E-06	0.00E+00	0.00E+00
Cadmium	7440439				2.00E-02	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon Tetrchloride	56235	2.50E+01			4.00E+01	1.00E+00	0.00E+00	1.36E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-05	1.36E-05	0.00E+00	0.00E+00
Chlorobenzene	108907				1.00E+03	2.80E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chloroform	67663	9.45E+00			3.00E+02	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.87E-07	6.87E-07	6.87E-07	0.00E+00	0.00E+00
Ethyl Benzene	100414		2.23E+00		2.00E+03	1.00E+00	0.00E+00	0.00E+00	3.43E-08	0.00E+00	0.00E+00	3.43E-08	3.43E-08	3.43E-08	0.00E+00	0.00E+00
Formaldehyde	50000	4.23E+01	2.88E+00	2.15E+00	3.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.47E-04	0.00E+00
CFC-113	76131	2.70E+02			7.00E+02	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexavalent Chromium	18540299				2.00E-01	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hydrogen Chloride	7647010	2.16E+01			9.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.23E-05	0.00E+00
IPA	67630	2.97E+02			7.00E+03	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.24E-07	0.00E+00	9.24E-07	0.00E+00	0.00E+00
Manganese	7439965				2.00E-01	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mercury	7439976	4.36E-01			9.00E-02	1.60E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	67561	3.05E+02			4.00E+03	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.66E-06	0.00E+00	0.00E+00
Methylene Chloride	75092	4.27E+00			4.00E+02	1.00E+00	2.33E-07	2.33E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphalene	91203		7.04E-02	1.54E-01	9.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.87E-07	0.00E+00
n-Hexane	110543	3.19E+01	1.48E+00		7.00E+03	1.00E+00	0.00E+00	1.06E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-07	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	2.43E-01			5.00E-02	1.00E+00	1.06E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-04	0.00E+00
Phenol	108952	2.04E+01			2.00E+02	1.00E+00	2.23E-06	2.23E-06	0.00E+00	0.00E+00	0.00E+00	2.23E-06	2.23E-06	0.00E+00	0.00E+00	0.00E+00
Phosphoric Acid	7664382	2.30E+00			7.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.15E-06	0.00E+00
Propylene	115071		1.71E+02	4.70E+00	3.00E+03	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E-06	0.00E+00
Toluene	108883	5.53E+00	8.58E+00	7.44E-01	3.00E+02	1.00E+00	0.00E+00	1.32E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.32E-06	1.32E-06	0.00E+00
Xylenes	1210	5.53E+00	6.38E+00	5.18E-01	7.00E+02	1.00E+00	0.00E+00	4.64E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.64E-07	0.00E+00
Diesel PM	11101			5.85E+01	5.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.68E-04	0.00E+00
Total							**1.16E-04**	**2.55E-05**	**3.43E-08**	**8.81E-04**	**0.00E+00**	**3.87E-06**	**1.67E-05**	**2.56E-05**	**1.06E-03**	**0.00E+00**

X/Q Values	Lab	4.36E-02 (ug/cu.m)/(ton/yr)	Data From ISCST3 Output
	Boilers	6.16E-02 (ug/cu.m)/(ton/yr)	Data From ISCST3 Output
	Diesel	2.88E-02 (ug/cu.m)/(ton/yr)	Data From ISCST3 Output
		Data from Table 2A for Lab and Diesel Engines, from Table 2B for Boilers , SCAQMD Rule 1401 HRA Procedures	
MET Value	1	The actual meteorological data was used to develop the X/Q	
LEA	1	Risk Assessment Procedures For Rule 1401 and 212, Table 9	

Target Organ — Risk Assessment Procedures For Rule 1401 and 212, Table 10A

$HIC_{target\ organ}$= {sum[Q_{TON} x Annual X/Q x MET x MP_{HIC}]/Chronic REL}$_{target\ organ}$

Table 7b. Screening Risk Assessment Chronic Hazard Index ($HIC_{commercial}$)

Pollutant Name	Case No.	Emissions (Q) Lab	Boilers lbs/year	Diesel ICE	Chronic REL	MP_{HIC}	TARGET ORGANS CV/BL	CNS/PNS	ENDO	EYE	IMMUN	KIDN	GI/LV	REPR	RESP	SKIN
1,1,1 Trichlorethane	71556	4.31E+00			1.00E+03	1.00E+00	0.00E+00	7.52E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,3 Butadiene	10699			7.17E-02	2.00E+01	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.12E-07	0.00E+00
Acetaldehyde	75070		1.01E+00	1.40E+00	9.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.59E-05	0.00E+00
Acrolein	107028		6.33E-01	1.69E-01	6.00E-02	1.00E+00	0.00E+00	0.00E+00	0.00E+00	3.54E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.54E-03	0.00E+00
Arsenic	7440382				3.00E-02	5.70E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	71432		1.36E+01	1.70E+00	6.00E+01	1.00E+00	6.87E-05	6.87E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.87E-05	0.00E+00	0.00E+00
Cadmium	7440439				2.00E-02	1.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon Tetrchloride	56235	2.50E+01			4.00E+01	1.00E+00	0.00E+00	1.09E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-03	1.09E-03	0.00E+00	0.00E+00
Chlorobenzene	108907				1.00E+03	2.80E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chloroform	67663	9.45E+00			3.00E+02	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.50E-05	5.50E-05	5.50E-05	0.00E+00	0.00E+00
Ethyl Benzene	100414		2.23E+00		2.00E+03	1.00E+00	0.00E+00	0.00E+00	3.06E-07	0.00E+00	0.00E+00	3.06E-07	3.06E-07	3.06E-07	0.00E+00	0.00E+00
Formaldehyde	50000	4.23E+01	2.88E+00	2.15E+00	3.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	2.51E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.51E-02	0.00E+00
CFC-113	76131	2.70E+02			7.00E+02	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexavalent Chromium	18540299				2.00E-01	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hydrogen Chloride	7647010	2.16E+01			9.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.19E-03	0.00E+00
IPA	67630	2.97E+02			7.00E+03	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.41E-05	0.00E+00	7.41E-05	0.00E+00	0.00E+00
Manganese	7439965				2.00E-01	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mercury	7439976	4.36E-01			9.00E-02	1.60E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	67561	3.05E+02			4.00E+03	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.33E-04	0.00E+00	0.00E+00
Methylene Chloride	75092	4.27E+00			4.00E+02	1.00E+00	1.87E-05	1.87E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphalene	91203		7.04E-02	1.54E-01	9.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.03E-06	0.00E+00
n-Hexane	110543	3.19E+01	1.48E+00		7.00E+03	1.00E+00	0.00E+00	8.02E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.02E-06	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	2.43E-01			5.00E-02	1.00E+00	8.47E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.47E-03	0.00E+00
Phenol	108952	2.04E+01			2.00E+02	1.00E+00	1.79E-04	1.79E-04	0.00E+00	0.00E+00	0.00E+00	1.79E-04	1.79E-04	0.00E+00	0.00E+00	0.00E+00
Phosphoric Acid	7664382	2.30E+00			7.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.73E-04	0.00E+00
Propylene	115071		1.71E+02	4.70E+00	3.00E+03	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.61E-05	0.00E+00
Toluene	108883	5.53E+00	8.58E+00	7.44E-01	3.00E+02	1.00E+00	0.00E+00	4.06E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.06E-05	4.06E-05	0.00E+00
Xylenes	1210	5.53E+00	6.38E+00	5.18E-01	7.00E+02	1.00E+00	0.00E+00	1.65E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E-05	0.00E+00
Diesel PM	11101			5.85E+01	5.00E+00	1.00E+00	0.00E+00	0.00E+00	0.00E+00	2.65E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.65E-03	0.00E+00
Total							**8.74E-03**	**1.43E-03**	**3.06E-07**	**3.13E-02**	**0.00E+00**	**3.08E-04**	**1.33E-03**	**1.46E-03**	**4.46E-02**	**0.00E+00**

X/Q Values	Lab	3.49E+00 (ug/cu.m)/(ton/yr)	Data From ISCST3 Output
	Boilers	5.50E-01 (ug/cu.m)/(ton/yr)	Data From ISCST3 Output
	Diesel	4.53E-01 (ug/cu.m)/(ton/yr)	Data From ISCST3 Output
		Data from Table 2A for Lab and Diesel Engines, from Table 2B for Boilers , SCAQMD Rule 1401 HRA Procedures	
MET Value	1	The actual meteorological data was used to develop the X/Q	
Target Organ	Risk Assessment Procedures For Rule 1401 and 212, Table 10A		

$HIC_{target\ organ}$ = {sum[Q_{TON} x Annual X/Q x MET x MP_{HIC}]/Chronic REL}$_{target\ organ}$

Table 8. Screening Risk Assessment Acute Hazard Index (HIA)

Pollutant Name	Cas. No.	Emissions (Q_{hr})			Acute	AF	Target Organ								
		Lab	Boilers lbs/hr	Diesel ICE			CV/BL	CNS/PNS	EYE	IMMUN	KIDN	GI/LV	REPR	RESP	SKIN
1,1,1 Trichlorethane	71556	1.66E-03			6.80E+04	1	0.00E+00	5.82E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	107028		7.25E-05	1.01E-03	1.90E-01	1	0.00E+00	0.00E+00	6.28E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.28E-01	0.00E+00
Arsenic	7440382				1.90E-01	0.87	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	71432		1.56E-03	1.01E-02	1.30E+03	1	1.10E-03	0.00E+00	0.00E+00	1.10E-03	0.00E+00	0.00E+00	1.10E-03	0.00E+00	0.00E+00
Carbon Tetrchloride	56235	9.62E-03			1.90E+03	0.88	0.00E+00	1.06E-03	0.00E+00	0.00E+00	0.00E+00	1.06E-03	1.06E-03	0.00E+00	0.00E+00
Chloroform	67663	3.63E-03			1.50E+02	0.88	0.00E+00	5.10E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.10E-03	0.00E+00	0.00E+00
Copper	7440508				1.00E+02	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	50000	1.63E-02	3.30E-04	1.28E-02	9.40E+01	1	0.00E+00	0.00E+00	5.58E-02	5.58E-02	0.00E+00	0.00E+00	0.00E+00	5.58E-02	0.00E+00
Hydrogen Chloride	7647010	8.30E-03			2.10E+03	1	0.00E+00	0.00E+00	9.45E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.45E-04	0.00E+00
IPA	67630	1.14E-01			3.20E+03	1	0.00E+00	0.00E+00	8.53E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.53E-03	0.00E+00
Mercury	7439976	1.68E-04			1.80E+00	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	67561	1.17E-01			2.80E+04	1	0.00E+00	1.00E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-03	0.00E+00	0.00E+00
Methylene Chloride	75092	1.64E-03			1.40E+04	1	0.00E+00	2.81E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	9.33E-05			6.00E+00	1	0.00E+00	0.00E+00	0.00E+00	3.72E-03	0.00E+00	0.00E+00	0.00E+00	3.72E-03	0.00E+00
Nitric Acid	7697372	1.03E-03			8.60E+01	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.87E-03	0.00E+00
Phenol	108952	7.86E-03			5.80E+03	1	0.00E+00	0.00E+00	3.24E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.24E-04	0.00E+00
Sodium Hydroxide	1310732	8.88E-04			8.00E+00	1	0.00E+00	0.00E+00	2.66E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.66E-02	2.66E-02
Sulfuric Acid and Oleum	7664939	4.98E-02			1.20E+02	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.92E-02	0.00E+00
Toluene	108883	2.13E-03	9.83E-04	4.44E-03	3.70E+04	1	0.00E+00	3.30E-05	3.30E-05	0.00E+00	0.00E+00	0.00E+00	3.30E-05	3.30E-05	0.00E+00
Triethylamine	121448	8.92E-04			2.80E+03	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	1210	2.13E-03	7.30E-04	3.09E-03	2.20E+04	1	0.00E+00	0.00E+00	4.63E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.63E-05	0.00E+00
Total							**1.10E-03**	**7.23E-03**	**7.21E-01**	**6.06E-02**	**0.00E+00**	**1.06E-03**	**8.30E-03**	**8.26E-01**	**2.66E-02**

X/Q Values	Lab	239.2 (ug/cu.m)/(lb/hr)	Data From ISCST3 Output
	Boilers	283.1 (ug/cu.m)/(lb/hr)	Data From ISCST3 Output
	Diesel	98.2 (ug/cu.m)/(lb/hr)	Data From ISCST3 Output

(Acute Hazard Index for inpatient, outpatient and rearch are summed and presented as Lab)

AF Value 1.0 (1hr), 0.87 (4 hrs) or 0.88 (6,7,8 hrs) - Table 8B, SCAQMD Rule 1401 HRA Procedures

Acute REL Risk Assessment Procedures For Rule 1401 and 212, Table 8A

Target Organ Risk Assessment Procedures For Rule 1401 and 212, Table 10B

$HIA_{target\ organ} = \{sum[Q_{hr} \times Hourly\ X/Q \times AF]/Acute\ REL\}_{target\ organ}$

APPENDIX C

HISTORIC RESOURCES REPORT

HISTORIC RESOURCES

This section analyzes effects of the proposed project on potential historical resources. The Environmental Setting discussion will provide background information on: (1) historic preservation law, preservation policies, and preservation mechanisms at the national, state and local levels; (2) historic context of UCI Medical Center; (3) whether there are California Register of Historical Resources (California Register) or National Register of Historic Places (National Register)-eligible properties on the project site; and (4) if there are eligible-appearing historical resources, how they would be affected by the proposed project. The discussion on Thresholds for Determining Significance will define the nature of an historic resource impact, as defined under CEQA. The Project Impacts discussion will address two main questions:

(1) Are any parts of the UCI Medical Center campus historical resources, either individually or as part of a district?
(2) If any historical resources are present, would the proposed project result in significant impacts to those resources?

If any historic resources are present that would be affected, the Mitigation section explains what would be required to mitigate impacts on the resources and identify feasible mitigation measures for project effects. Finally, the Level of Significance portion of this section identifies whether there are any unmitigable historic resource impacts that would be caused by the proposed project.

ENVIRONMENTAL SETTING

As noted above, this section provides background information on:

- historic preservation law, preservation policies, and preservation mechanisms at the national, state and local levels;
- historic context of UCI Medical Center;
- a complete description of the project site; and
- whether or not any parts of UCI Medical Center should be considered individual historical resources or historic districts under CEQA.

Historic Preservation Law, Policies and Mechanisms

Federal

The National Register is the nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private effort to identify, evaluate, and protect the country's historic and archeological resources. Properties listed in the National Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The National Register is administered by the National Park Service (NPS), which is part of the U.S. Department of the Interior. Currently there are more than 70,000 listings in the National Register, including historic areas in the National Park System, over 2,300 National Historic Landmarks, and properties nominated because of are significance to the nation, a state or local community.[1]

Properties are nominated for inclusion in the National Register by the State Historic Preservation Officer (SHPO) of the state where the property is located, by the Federal Preservation Officer for properties under Federal ownership or control, or by the Tribal Historic Preservation Officer for properties located on tribal lands.

Any individual or group may prepare National Register nominations. Thorough documentation of the physical appearance and historic significance of the property is required to make a complete application. Completed nominations are submitted to Office of Historic Preservation. In California, after applications have been reviewed by staff, they are submitted to the State Historical Resources Commission (SHRC) to determine whether or not they meet the criteria for evaluation. The SHRC makes recommendations to SHPO for approval or disapproval of the designation. Nominations that are recommended by the Commission and approved by SHPO are forwarded to the Keeper of the National Register at the NPS in Washington, D.C.[2]

During the time the proposed nomination is reviewed by the SHPO, property owners and local officials are notified of the intent to nominate. Local officials and property owners are given the opportunity to comment on the nomination and owners of private property are given opportunities to object to or concur with the nomination. If the owner of a private property, or the majority of owners for a property or district with multiple owners, object to the nomination, the SHPO may forward the nomination to the NPS for a determination of eligibility. Without formally listing the property in the National Register, the NPS then determines whether or not the property is eligible for listing. If the review board and the SHPO agree on the eligibility of the property (and the owner has not objected to the nomination), the nomination is forwarded to the NPS to be considered for listing.[3]

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[1] National Register of Historic Places website: http://www.cr.nps.gov/nr/about.htm

[2] California State Office of Historic Preservation, *A Comprehensive Statewide Historic Preservation Plan for California*, 1997, 83.

[3] National Register of Historic Places website: http://www.cr.nps.gov/nr/listing.htm

Properties may qualify for listing in the National Register if they meet one or more of four intentionally broad criteria. National Register significance is clearly defined in "How to Apply the National Register Criteria For Evaluation" [4] as:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. That are associated with the lives of persons significant in our past; or
>
> C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master; or that possess high artistic values; or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. That have yielded, or may be likely to yield, information important in prehistory or history.

The National Register recognizes different types of values embodied in districts, sites, buildings and objects. Those values fall into three categories: associative value (Criteria A and B), design or construction value (Criterion C) and information value (Criterion D).

An additional critical component of eligibility is integrity. Integrity is the ability of a property to convey its significance and whether the property retains the identity for which it is significant. The National Register criteria recognize seven aspects or qualities of integrity: location, design, setting, materials, workmanship, feeling, and association. Some combination of these aspects of integrity must remain for the property to retain sufficient integrity to qualify for National Register listing.

<u>Relationship to Project</u>- None of the existing buildings, structures or objects on the UCI Medical Center site are currently listed in the National Register and no known National Register application is currently pending. The buildings, structures and objects on the project site do not appear to be eligible for listing in the National Register, either individually, or as contributors to a historic district. The remaining buildings and structures do not retain sufficient integrity of design, setting, materials, workmanship, feeling or association for consideration under Criteria A (for its association with the development of Orange County public health care) or C (for its remaining Classical

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[4] Code of Federal Regulations, Title 36, Part 60.

Revival buildings).
Refer to the Annotated 1955 Aerial photograph (Attachment 4) for a clear image of how few building remain that were part of the campus in 1955. The campus was a carefully arranged, landscaped setting, with carefully ordered buildings and structures set in a generous parklike setting by 1955. Only 11 buildings and one structure (all altered) remain from that time, and five of those eleven buildings were relocated Army-surplus barracks. The property does not retain sufficient integrity to be considered for National Register eligibility.

Federal Incentives and Programs
The following preservation incentives and programs are available at the federal level:

- **Preservation Tax Incentive Program** - Federal Historic Preservation Tax Incentives[5] are available for buildings that are National Historic Landmarks, that are listed in the National Register, and that contribute to National Register Historic Districts and certain local historic districts. Properties must be income-producing and must be rehabilitated according to standards set by the Secretary of the Interior. One of the key incentives is a 20 percent income tax credit for the substantial rehabilitation of historic buildings for commercial, industrial, and rental residential purposes permitted under the Tax Reform Act of 1986. The subject property must be listed in the National Register to qualify for the 20 percent tax credit. To be eligible, the rehabilitation cost must exceed the greater of the adjusted basis of the building, or $5,000, within a 24-month period. In California, OHP provides technical assistance in the certification of the historical significance of buildings and in the certification of the rehabilitation of the structure. A thorough review is conducted by OHP restoration architects for completeness of documentation and appropriateness of rehabilitation.[6] A 10 percent income tax credit is available for the substantial rehabilitation for nonresidential purposes of buildings constructed before 1936. The 10 percent credit is available only to properties which are not eligible for listing in the National Register.

Relationship to Project- As the subject property does not appear to be eligible for inclusion in the National Register, only the 10 percent tax credit would be available for rehabilitation. Because the property is owned by a governmental agency, it would necessitate transfer to a for-profit entity to take advantage of these credits. Also, the subject property does not appear to qualify for designation as a local landmark, therefore

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[5] The incentives were established and modified by the Tax Reform Act of 1976 (P.L. 94-455), the Revenue Act of 1978 (P.L. 95-600), the Tax Treatment Extension Act of 1980 (P.L. 96-541), the Economic Recovery Act of 1981 (P.L. 97-34) and the Tax Reform Act of 1986 (P.L. 99-514).

[6] Office of Historic Preservation, *A Comprehensive Statewide Historic Preservation Plan for California* 86, 87.

it would not qualify for a Mills Act contract.

- **National Historic Preservation Fund Grants** - The NPS provides grant funding annually to each state in support of implementing a national historic preservation program. Portions of the federal funds awarded to the state of California are in turn redistributed to Certified Local Governments (CLGs),[7] colleges and universities, non-profit organizations, owners of historic properties, and to the general public on a competitive basis. In California, OHP administers federal grant funds in accordance with federal and state grants management standards. The OHP is required to pass through ten percent of the annual federal funds received from the NPS to CLGs. In California, in support of historic preservation programs at the local level, the OHP has committed at least a 15 percent pass-thorough to CLGs.[8]

Relationship to Project- The City of Orange is not presently a CLG, therefore federal funds under this program would not be available.

State

Office of Historic Preservation- OHP is the governmental agency responsible for the statewide administration of historic preservation programs in California. The chief administrative officer for the OHP is SHPO. The SHPO is also the Executive Secretary of the State Historical Resources Commission.

In addition to their role in the identification of National Register properties, OHP and SHPO are responsible for administering the State Historical Landmark, State Point of Historical Interest, California Register of Historical Resources, California Historical Resources Information Systems, and the California Heritage Fund programs. In accordance with federal and state laws and regulations, OHP comments on the impact of proposed projects and programs on historic resources, including those owned by the State of California. OHP assists project sponsors in identifying historic resources; evaluating their significance; determining a project's impact on the resources; and finding ways to avoid or satisfactorily mitigate any adverse effects. In addition, the office develops guidelines and standards for cultural resource planning and management.[9]

The California Register of Historical Resources (California Register)- The California Register is a state adaptation of the National Register program. The California Register

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7 The concept of CLGs is explained under the Local Government subheading below.

8 *A Comprehensive Statewide Historic Preservation Plan for California* 86.

9 http://www.ohp.cal-parks.ca.gov/programs/index.htm.

of Historical Resources Program was enacted in 1992, and became official in 1998.

Potential historic resources are evaluated for inclusion in the California Register using parallel criteria to the National Register, although California Register criteria are numbered 1 to 4, rather than lettered A to D.

Relationship to Project- No buildings, structures, or objects at UCI Medical Center have been surveyed for eligibility or nominated for inclusion in the California Register. As a result of this evaluation, none of the buildings, structures or objects on the UCI Medical Center site appear to be eligible for inclusion in the California Register. None of the remaining original buildings possess sufficient integrity to convey their earlier significance, because of alterations and demolitions, changes in setting. Furthermore, an intact potential historic district is not present.

State Incentives and Programs- The following preservation incentives and programs are available at the state level:

- **California State Historical Building Code**- The SHBC provides alternative building regulations for the rehabilitation, preservation, restoration or relocation of structures designated as historic buildings.[10] Regulations contained in the SHBC are intended to facilitate restoration or accommodate changes in occupancy to preserve historic buildings and structures' original or restored architectural elements and features. The intent of the regulation is to protect California's architectural heritage by recognizing the unique construction problems inherent in historic buildings and offering an alternative code to deal with these problems. While the code provides for cost-effective approaches to preservation, it also provides for occupant safety, encourages energy conservation and facilitates access for persons with disabilities. The SHBC applies to all qualified historic structures, districts and sites. To qualify, designation must come from federal, state or local authorities. Issues the SHBC can address, with the intent tp encouraging sensitive and cost-effective rehabilitation include:

    - Accessibility- Both the Americans with Disabilities Act and the SHBC make provisions for reasonable levels of equivalency for, and, under special circumstances, exemption from, accessibility mandates.

    - Seismic/Structural- SHBC governs these issues, permitting design based on real values of archaic materials, and solutions based on engineering principles and judgement rather than on prescriptive formulas.

    - Energy- Qualified historic buildings are exempt from California energy

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10 California Code of Regulations, Part 8, Title 24.

standards, which most older buildings and structures cannot meet without alteration or loss of historic features.

- Triggers- The prompts for full upgrading to current standards, with respect to length of vacancy, change of occupancy, or percentage of value of the work proposed, and which exist in other codes, are not recognized by the SHBC, which concentrates instead on the sensitive resolution of genuine safety considerations.

- **Conservation Easements**- This instrument provides for the owners of land to convey "conservation easements"[11] to qualified non-profit organizations. In exchange, the land owner receives tax benefits[12] in the form of a charitable contribution deduction, and the value of the property for income tax purposes is adjusted to account for the effect of the easement. The easement creates restrictions on use of the property, which are binding on successive owners of the property. The purpose of a conservation easement is to ensure that land is retained in its natural, scenic, historical, agricultural, forested or open-space condition. The conservation easement may be held by qualified tax-exempt non-profit organizations whose primary purpose is the preservation, protection or enhancement of that type of resource, the state or any city, county district or other state or local government entity. In the case of an historical resource, an easement can be created which creates limits intended to protect the resource, while enabling continued use of the property.

Local
City of Orange- The City of Orange is a urban area of 25 square miles in central Orange County. Orange is among the oldest communities in the county, and its historic core is the original mile-square town that was established in 1871. Commonly known as "Old Towne," the center of the city is a National Register-listed historic district. Old Towne is the largest historic such district in California, and contains approximately 1,200 contributing resources, the highest number in the western United States.

While the City's current zoning process allows for creation of an "Historic District Zone," only one such historic district zone exists at present. Provisions for establishing a new historic district zone do not limit such districts to the Old Towne District. Rather, Orange Municipal Code (OMC) Section 17.17.040 provides, "Application for a historic district shall comply with the zoning amendment procedure for a change in the zoning district classification upon designation approval by City council as prescribed under

[11] California Civil Code, Section 815 et. seq.

[12] A conservation easement constitutes an enforceable restriction, for purposes of Section 402.1 of the Revenue and Taxation Code.

OMC Section 17.10.020. Criteria for Establishment" for a Historic District Zone, provided in OMC. Section 17.17.050, states:

> An historic district may be established to preserve landmarks and areas exemplary of architectural, archaeological, cultural, economic, social, or historical value if the landmark or area meets the following criteria:
>
> A. The resource exemplifies or reflects special elements of the City's cultural, social, economic, political, aesthetic, engineering, architectural or natural history and possesses an integrity of location, design, setting, materials, workmanship, feeling and association; and
>
> 1. It embodies distinctive characteristics of a style, type, period or method of construction, or is a valuable example of the use of indigenous materials or craftsmanship; or
>
> 2. It contributes to the significance of an historic area, being a geographically definable area possessing a concentration of historic or scenic properties or thematically related grouping of properties which contribute to each other and area unified aesthetically, by plan or physical development; or
>
> 3. It reflects significant geographical patterns, including those associated with different ears of settlement and growth, particular transportation modes, or distinctive examples of park or community planning; or
>
> 4. It embodies elements of architectural design, detail, materials, or craftsmanship that represent a significant structural or architectural achievement or innovation; or
>
> 5. It has a unique location or singular physical characteristic or is a view or vista representing an established and familiar visual feature of a neighborhood, community or the City or Orange.
>
> B. It is one of the few remaining examples in the City, region, state, or nation possessing distinguishing characteristics of an architectural or historical type, or specimen; or
>
> C. It is identified with persons or events significant in local, state or national history; or
>
> D. It is representative of the work of a notable builder, design or architect.

Relationship to Project- No buildings, structures, objects or districts on the UCI Medical Center campus are included in the City's Historic District Zone, which is limited to the Old Towne District. The City has not surveyed properties outside the Old Towne District and no previous survey was performed to determine whether the subject property might be eligible for historic district zoning. As a result of this evaluation, none of the buildings, structures or objects on the UCI Medical Center site appear to be eligible for inclusion in a local historic district zone.

Under OMC historic district zoning Criterion A, none of the remaining early buildings possess sufficient integrity to convey their earlier significance, because of alterations, demolitions, and changes in setting. As such, an intact potential historic district zone is not present. Under Criterion B, there are other hospital properties locally (St. Joseph's/Children's Hospital of Orange County) and regionally (Rancho Los Amigo Medical Center, formerly the Los Angeles County Poor Farm, in Downey) which possess integrity and better exemplify the shared historic context (hospitals and public hospitals in the rapidly developing region). Criteria C and D do not apply to the property.

Building 10 has the greatest potential outside the historic district context for historic district zoning as an individual property, if the zoning code were to be interpreted to provide for a separate, rather than a multiple, property zone. Under criterion B, Building 10, considered as an separate property, would be one of many remaining examples of the work of architect Frederick Eley in the City and region, which better represent his body of work. The building has been heavily altered on both the exterior and interior. There is a large addition, it was connected and later detached from at least three other buildings, window openings have been infilled, altered, and modified, the exterior was clad in gunite, and the setting has been nearly entirely lost. Also under criterion B, two other buildings merit consideration separately, Buildings 27 and 53. As a tuberculosis treatment facility and Spanish Eclectic style building, Building 27 is not a rare example of its type or style. Other, better examples of the type and style remain. Building 53, which was built to serve as a nursing school, is not a particularly distinctive or rare example of its post-World War II modern style or type. All three individual buildings exhibit substantial losses of integrity, should that additional criteria be applied to a separate property. Therefore, when considered for local eligibility (using liberal application of existing zoning code), these buildings do not appear eligible for local historic district zoning.

Local Incentives and Programs- The following preservation incentives and programs are available at the local level:

- **Mills Act**- The Mills Act is state enabling legislation for a permissive program subject to approval and adoption by city and county government.[13] The Mills Act

[13] Government Code Section 50280 et. Seq.

provides local governments the flexibility to design preservation programs to accommodate specific community needs and priorities for rehabilitating entire neighborhoods, encouraging seismic safety programs, contributing to affordable housing, promoting heritage tourism, or fostering pride of ownership. The OHP maintains a current list of cities and counties which have adopted the Mills Act and copies of successful local Mills Act ordinances, resolutions, and contract agreements.

Under the Mills Act, property owners of historic buildings[14] may qualify for property tax relief if they pledge to rehabilitate and maintain the historical and architectural character of their properties for at least a ten-year period.[15] Owner-occupied single family residences and income producing commercial properties may qualify for the Mills Act program. Based on experience in the City of Los Angeles, Mills Act participants may realize a property tax saving of approximately 50 percent each year for newly improved or purchased older properties. County Assessors are required to calculate the assessed value of the property tax savings for Mills Act property on the capitalization of income method rather than on market value.

A formal agreement, generally known as a Mills Act contract or as an "historic property contract," is executed between the local government and the property owner, for a minimum ten year term. Contracts are automatically renewed each year and are transferred to new owners when the property is sold. Property owners agree to protect, preserve, and maintain the property in accordance with specific historic preservation standards and conditions identified in the contract. Periodic inspection of the property by the city or county officials ensure proper maintenance of the property. Local authorities may impose penalties for breach of contract or failure to protect the historic property. The contract is binding to all subsequent owners during the contract period.[16] In California, the Mills Act can be linked with federal tax incentives provided by the Tax Reform Act of 1986. Federal affordable housing tax credits may also be utilized with these incentives.

Relationship to Project- Although the City of Orange has adopted a Mills Act program, because the University of California is a governmental agency, it not eligible to engage in Mills Act contracts. Also, the subject property does not qualify for designation for local,

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[14] Under the Mills Act a qualified historic property is a property listed on any official federal, state, county, or city register, including National and California registers, California Historical Landmarks, State Points of Historical Interest, and locally designated.

[15] See Section 439 et. seq. of the Revenue and Taxation Code (Historic Property Restriction).

[16]

California Office of Historic Preservation.

county or state designation, therefore it would not qualify for a Mills Act contract.

- **Certified Local Government Program**- A Certified Local Government (CLG) is a local government with a historic preservation program for the community that has been certified, pursuant to Section 101(c) of the National Historic Preservation Act (NHPA). Any local government is eligible to apply for certification, with the exception of regional commissions and councils of government. Once certified, a local government must be included in the process of nominating properties to the National Register of Historic Places and is eligible to apply to the state for a share of the state's annual Historic Preservation Fund allocation.[17]

  Any local government that meets the following requirements is eligible to apply for certification. The agency must:[18]

  - enforce appropriate state and local legislation for the designation and protection of historic properties;
  - establish and maintain an adequate and qualified historic preservation review commission/board by local law;
  - maintain a system for the survey and inventory of historic properties;
  - provide for adequate public participation in the local historic preservation program, including the process of recommending properties for nomination to the National Register; and
  - satisfactorily perform the responsibilities delegated by the State.

Benefits of becoming a CLG include:[19]

  - Direct participation in the nomination of historic properties to the National Register.

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17 California Office of Historic Preservation.

18 California State Office of Historic Preservation *Comprehensive Statewide Historic Preservation Plan for California* 1997, 87- 88.

19 California State Office of Historic Preservation *Comprehensive Statewide Historic Preservation Plan for California* 1997, 87- 88.

- Delegation of responsibilities to review and comment on development projects in compliance with federal and state environmental regulations, thereby expediting review time.

- Special technical assistance and training for local preservation commission members and staff from OHP.

- Review of building rehabilitation plans for federal investment tax credits where appropriate.

Relationship to Project- The City of Orange is not currently a CLG and therefore does not have a local historic preservation program.

Historic Context- UCI Medical Center

The purpose of the following narrative account of the history of the University of California, Irvine (UCI) Medical Center site is to provide an historic context foundation to use in the evaluation of the historic significance of the hospital complex. In its current location, the hospital has variously operated as Orange County Farm & Hospital (1914-early 1930s), Orange County General Hospital (early 1930s-1966), Orange County Medical Center (1966-1976) and UCI Medical Center (1976- present). An accompanying Chronology is included for reference in Attachment 1.

CONTEXT STATEMENT

The University of California, Irvine (UCI) Medical Center (subject property) in Orange, California, has had a relatively complex history since its establishment in the late 19th century as a makeshift medical office and indigent housing in the local jail. The subject property operated as the county's public hospital from 1914 until 1976, and as the poor farm from 1914 until the early 1930s. An unrelated independent medical school in Los Angeles (a former osteopathic school) was acquired by the University of California (UC) Regents in 1976. The 32-acre subject property became UCI Medical Center as a result of the transfer from Orange County General Hospital to the Regents of the University of California. The following context statement traces the courses of these divergent groups and parallel institutions in an effort to present a balanced overview of the history of the UCI Medical Center.

Early Land Development

The earliest record of the property was in 1810, when Spanish Governor Arrellaga granted *Rancho Santiago de Santa Ana*,[1] including the subject property to Joseph Antonio Yorba and Juan Pablo Peralta.[2] It was part of the only Spanish land grant that was entirely within the (current) boundaries of Orange County, and encompassed more than 62,000 acres.[3] Prosperous local sheep rancher James Irvine received part of the Rancho Santiago de Santa Ana as a settlement in 1868, and later acquired portions of additional ranchos *San Joaquin* and *Lomas de Santiago*.[4] Two years later, the original Rancho Santiago de Santa Ana was partitioned by decree of the local district court. As a result of that transaction, 4,845 acres (including the subject

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[1] A rough translation of the name would be *Saint James of Saint Ann*.

[2] First American Title Company (FATCO) "Chain of Title" unpublished, date unknown (circa 1976) single page.

[3] Don Meadows, *Historic Place Names in Orange County* (Balboa Island: Paisano Press, Inc. 1966) 108.

[4] City of Irvine, "About Irvine: History" website www.ci.irvine.ca.us.

James Irvine died in 1886.

property) were given to Alfred Beck Chapman (1829-1915) in lieu of attorney's fees.[5] Chapman was later responsible for establishing the town of Orange (known first as Richland), with his law partner Andrew Glassell (1827-1901).[6] Glassell's brother William Glassell (1830-1879), who came west suffering from tuberculosis, laid out the community in a classic grid arranged around a distinctive circular central plaza.[7] While Chapman owned thousands of acres, the Irvine family's holdings eventually encompassed more than 110,000 acres, including most of the land between Santa Ana River and the Pacific Ocean.[8]

Real estate activity began to accelerate at the time, and in 1873, the subject property was purchased by a trio of investors, Levi and Thomas Lockhart and William C. Pendleton.[9] Later that same year, the Orange Post Office was opened.[10] Two years later, the subject property was transferred to Levi and Thomas Lockhart.[11]

The advent of railroads in southern California further spurred the growing local and regional economies. The community of Orange was rapidly expanding, and real estate was a booming business. In 1880, Southern Pacific Railroad built a depot at the corner of Flower and La Veta streets in West Orange.[12] That year, the subject property was sold two times.[13] The following

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[5] Chattel Construction Corporation (now Chattel Architecture Planning & Preservation Inc.), "Documentation of the Orange Intermediate School (Orange Unified School District Office)" January 1997, 3.

[6] Brigandi 18.

The Glassell family came from Richland plantation in Orange County, Virginia.

[7] Phil Brigandi, *Orange: The City 'Round the Plaza* (Encinitas: Heritage Media Corporation 1997) 16.

[8] City of Irvine.

[9] FATCO.

[10] Meadows 117 .

[11] FATCO.

[12] Brigandi 31.

[13] FATCO.

Subject property was transferred to L. M. Mitchell and later to M. L. Wicks.

year, land including the subject property changed hands again.[14] In 1883, the property was sold to U. L. Shaffer, who made it part of a family estate, and later transferred it to Martha M. Shaffer.[15]

The community continued its rapid growth, and by 1887, the California Southern (later Santa Fe Railway) Railroad reached Orange.[16] The following year, the City of Orange was incorporated on April 6, 1888.[17] Less than a year later, Orange County was established after seceding from Los Angeles County. At the time of its establishment, Orange County was predominantly agricultural and it was named for "the orange groves for which it is justly famous."[18] Around the same time, in late 1889, land including subject property was transferred to Martha Shaffer.[19] By 1911, the subject property was owned by a development firm, Dawn Land Company.

Osteopathic Affiliation

About the time the Orange real estate market became active, the field of osteopathic medicine was established in the Midwest by Kansas-based Civil War surgeon, Andrew T. Still (1828-1927). According to *The American Heritage Dictionary of the English Language,* the purpose of this alternative medical discipline is to "...emphasize manipulative techniques for correcting somatic abnormalities thought to cause disease and inhibit recovery." Osteopathy is defined as

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[14] FATCO.

Subject property was transferred to Alexander Weill, and later to R. F. and J. O. Lotspeitch.

[15] FATCO.

Martha Shaffer may have been a sister, wife or daughter of Mr. Shaffer.

[16] Meadows 108.

[17] Meadows 108.

[18] John S. McGroarty, *California: Its History and Romance* (Los Angeles: Grafton Publishing Co, 1911) 316.

[19] FATCO.

“[a] form of treatment based upon the scientific manipulation of the bones supplemented by other manual manipulations, with the idea of restoring, facilitating, or improving the functions of the body.”[20] The name is derived from the Greek *osteon* (bone) and *pathos* (to suffer), meaning “suffering to the bone.”[21] [22]

Four years after osteopathy was established, Pacific Sanitarium and School of Osteopathy (PSSO) was established in nearby Anaheim, California. It was the second school of its type in the nation and the first in California.[23] In 1898, PSSO relocated to Spring and Franklin streets in downtown Los Angeles.[24] Another new osteopathic medical school, College of Physicians & Surgeons (COPS) was established in Los Angeles in 1903. Shortly thereafter, COPS successfully requested privileges for staff and students at the well-established Los Angeles County Hospital (LACH), although it was not until 1917 that the first osteopathic graduate was accepted as an intern at LACH.[25]

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[20] *Webster's New Twentieth Century Dictionary of the English Language* (New York: Publishers Guild, Inc., 1943) 1184.

The following definitions are for archaic words used in this chronology:

alms house	“A house for the poor, maintained at public expense, or as in Great Britain, by private endowment.” (H. G. Emory and K. G. Brewster, eds. *The New Century Dictionary of the English Language* (New York: P. F. Collier & Son Corporation 1938) vol. I, 34)
indigent person	“...one who is destitute and helpless as to be dependent for their support upon public charity.” (Texas Constitution of 1845)
poor farm	“...a place where the destitute homeless aged, infirm, and disabled of the county could find shelter, food and solace.” (Colleen Adair Fliedner, *Centennial: Rancho Los Amigos Medical Center 1888-1988* (Downey: Rancho Los Amigos Medical Center, 1990) 17).

[21] Peta Sneddon and Paolo Coseschi, *Discovering Osteopathy* (Berkeley: Ulysses Press, 1999) np.

[22] Thomas Nelson, MD, “Historical Outline: UCI-- California College of Medicine” (unpublished chronology, circa 1990) 1.

[23] Nelson 1.

[24] Nelson 1.

[25] Nelson 2.

LACH was established in 1858 in a rented adobe. In 1887, Los Angeles County acquired a large tract of land (121 acres, in what is now Downey) for establishment of a poor farm Rancho Los Amigos. Another smaller, nearly 40-acre tract in the city was purchased in 1878 and a wooden building was erected to serve as county hospital.

Orange County Farm & Hospital

The same year osteopathy was established, in 1874, Orange County Board of Supervisors voted to allow the county jail to be used as housing for the sick and homeless.[26] Mild cases were quickly discharged and severely ill patients were sent to the better equipped Los Angeles County Hospital.[27] By 1901, Orange County's first hospital and home for indigents was established in a residence on Second Street in Santa Ana.[28] The house had only two beds, but was a far better facility for treating the sick than the makeshift jail arrangement. Three years later, Orange County Hospital (and Poor Farm)[29] opened in a two story, frame residence at Sixth and Spurgeon streets in Santa Ana.[30] Although it was known as the county hospital, the larger, six-bed facility was more commonly known as the poor house. John Weherly, MD was appointed County Physician in 1911, and nearly immediately began lobbying for a more appropriate hospital facility.[31]

[26] "Attachment A: General Information About UCI Medical Center" (unpublished, no date) np.

[27] Helen Eastman Martin, *The History of the Los Angeles County Hospital (1878-1968) and the Los Angeles County- University of Southern California Medical Center (1968-1978)* (Los Angeles: University of Southern California Press, 1979) 501.

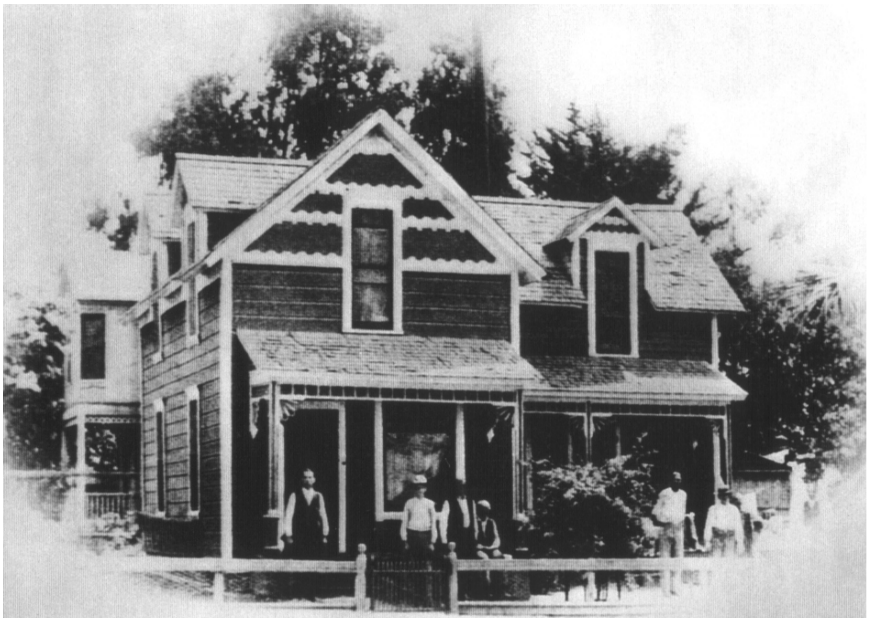
[28] Donna Davis, "To County's Sick, Destitute and Elderly, the Poor Farm Was Home" *Orange County Register*, 22 November, 1981, B-1.

[29] The name of the institution at the time was variously Orange County Farm & Hospital, Orange County Poor Farm, and Orange County Hospital. The name on the first, main building (Building 10) was "Orange County Farm" prominently displayed on the pediment. The word "Hospital" was on a secondary, lower wall. For the purposes of clarity, during this period (1914 through early 1930s) it is called Orange County Farm & Hospital in this document.

[30] Davis B-1.

The date of the new facility is variously given as 1904 and 1906 in different sources.

[31] C. D. Ball, MD, *Orange County Medical History* (Santa Ana: A. C. Flagg, 1926) 61.



Residence at Sixth & Spurgeon streets. Courtesy of UCI Library Special Collections (UCI SC).

In 1912, a successful election was held which resulted in $60,000 in bond funding for "...the purpose of purchasing grounds for a poor-farm and erecting thereon of suitable buildings for an almshouse and hospital." [32] Later that year County Board of Supervisors gave notice of intention to purchase a site for the county hospital and poor farm from the Dawn Land Company at a cost of $42,250.[33] The 72-acre tract of land in unincorporated West Orange was purchased in late 1912 for the county hospital site.[34] The site was located west of the Southern Pacific Railway, at the west end of Chapman Avenue.

Late in 1912, the first contract was awarded to build a foreman's cottage and four bungalows at the new Orange County Farm & Hospital. Soon thereafter, a 30-foot high, 6,000 gallon water

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[32] Samuel Armor, *History of Orange County, California, With Biographical Sketches* (Los Angeles: Historic Record Company) 1921, 96.

[33] Armor 96.

[34] Armor 96.

tank was erected.[35] The main hospital building (now Building 10), was designed in about 1914 by Frederick Harry Eley (1884-1974), who was "one of Orange County's most prolific and well-known early architects."[36] As Orange County's first licensed architect,[37] Eley designed more than 130 residences and commercial buildings in Orange County between 1911 and 1937. More than 40 local schools, churches and additions featured Eley's designs.[38] Although records show Eley designing only the main building, he is locally credited with planning other early hospital buildings.[39]

Eley's design for Building 10 and the original hospital grounds layout was influenced by the City Beautiful Movement. The City Beautiful was a progressive, turn of the 20th century trend in civic design toward formal grounds, symmetry in planning and Classically-inspired buildings.[40] The original Classical Revival design for the main building featured a formal central pediment with Ionic columns, which may have been intended to give the new institution a sense of permanence and immediate prestige in the rapidly developing community.

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35 Armor 96.

36 Diann Marsh *Santa Ana, An Illustrated History* (Encinitas: Heritage Publishing, 1994) np.

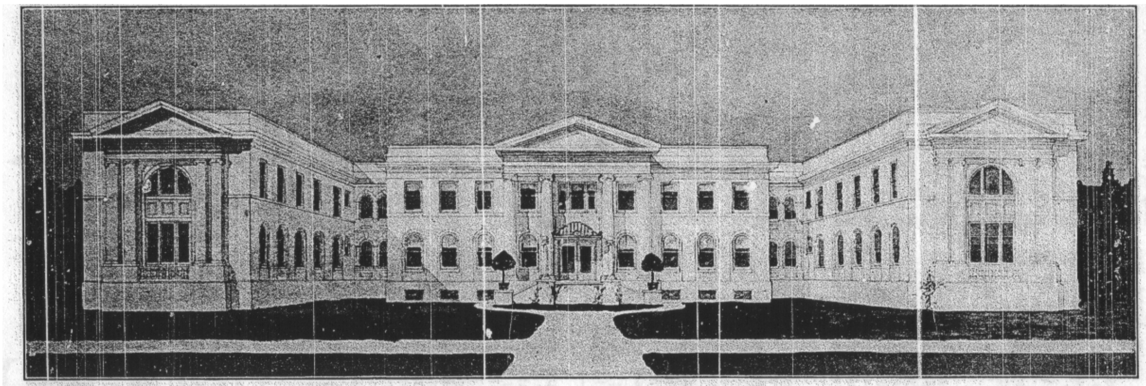
37 "Granted Certificate to Practice Architecture in California" *(Southwest) Builder & Contractor* 4 May, 1911, 9.

38 Marsh n.p.

39 It is possible that Eley designed all of the early buildings at the Orange County Hospital & Poor Farm, however no records to substantiate the claim were located. Sources include UCI Medical Center- Physical Planning & Development; Facilities Management; and Planning & Construction Services, Orange City Library, indexes of the *Orange County Register* and *Los Angeles Times,* Los Angeles Public Library Central Library, Santa Ana Library, County of Orange Facilities department (building permits), and UCI Library and Special Collections.

40 Ward Bucher, *Dictionary of Building Preservation* (New York: John Wiley & Sons Inc. 1996) 98.

The City Beautiful Movement was inspired by Daniel Burnham's "White City" at the 1893 Columbian Exposition in Chicago.



PERSPECTIVE OF NEW FIREPROOF HOSPITAL FOR ORANGE COUNTY FREDERICK H. ELEY, Architect. C McNEILL, General Contractor.

Rendering of proposed design for Building 10. Source: *Southwest Contractor & Manufacturer,* April, 4, 1914.

Chris McNeal, the general contractor who had been responsible for building County Courthouse was awarded a contract in early 1914 to construct the main hospital building (Building 10) for $45,441. A lighting and heating plant was also built that year[41] along with "three cottages, a laundry and a club house."[42] By late 1914, the main hospital building and two laboratories (Buildings 12 and 14) were completed and a special ordinance was passed. Ordinance 124 established Orange County Farm & Hospital, which was also known as the County Almshouse and the Poor Farm.[43] Orange County Farm & Hospital was operated as a conventional medical hospital and was not known to have any osteopathic doctors, treatments, or associations.

Concurrently in Los Angeles, competing osteopathic schools PSSO and COPS merged in 1914.[44] In Orange County, at the Poor Farm, as it was commonly known, orange trees were planted on 15 acres of the hospital grounds. That same year, Harry E. Zaiser, MD (1879-1956) was appointed superintendent, a position he would hold for more than 30 years.[45] Later in 1914, contractor

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[41] Armor 96.

[42] Armor 96.

[43] "The Hospital- Present and Future" (unpublished typed pages, 1954) 3.

[44] Nelson 1.

[45] "The Hospital- Present and Future" 3.

Long time Superintendent of Hospital Buildings and Grounds, Robert C. Bunch described Dr. Zaiser's role: "[he] acted as pharmacist, bookkeeper, timekeeper, paymaster, and performed all of the functions of a Social Service Worker as well as an X-ray technician. He did everything- he was a one man institution."

McNeal was awarded an additional agreement to construct sewers and sewer connections at the hospital.[46]

On September 1, 1914, the hospital was formally opened for patients with a staff including: an attending physician and superintendent of nurses, four graduate nurses and two orderlies.[47] As part of the opening, 14 indigents, described as "feeble old men" moved to the new Poor Farm.[48] By 1915, a training school for nurses was organized at the hospital and received immediate state accreditation.[49] Nursing education and services have been an integral part of the hospital throughout its existence.

Building 10, note signage on front elevation. View east, circa 1926. Courtesy of Orange County Historical Society.

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[46] Armor 96.

[47] "The Hospital- Present and Future" 3.

[48] Davis np.

[49] Gerry Boss, "From Little Acorns..." *Impulse: The Orange County Hospital* Fall 1971, Vol. VII, 11.

In 1917, the increasingly self-sufficient Poor Farm was described: the "[t]he County Farm consists of approximately seventy-two acres. There are 1,000 six-year-old Valencia orange trees on the property as well as 1,600 one-year-old Valencias." The fruit provided a large part of the Poor Farm's operating income:

> In addition to the oranges that are sold, an ample supply is always available for use of the 80 persons who live at the farm. While the Orange County Farm [& Hospital] is not a self-sustaining institution, still the cost of operation is cut down considerably by sales of fruit. In addition, the farm raises its own vegetables. Four cows supply milk for the institution.[50]

That year, more service buildings were erected, including a dining room and a kitchen.[51] By the end of the year, the Poor Farm produced potatoes, milk and butter and had six Holstein cows.[52] A cowshed was built in 1919. It was not uncommon for this type of institution to be nearly self-sufficient, others like it (including Rancho Los Amigos in Downey) included large farms and livestock operations. Another purpose of the farm operation was to teach useful agricultural skills to the poor.

By 1920, the Orange County Farm & Hospital supported 80 people and had citrus groves, vegetable gardens, Berkshire hogs, 20 Holstein dairy cows, and a bull.[53] Caught in the wave of 1920s southern California boosterism and the Poor Farm's success, post cards were issued featuring the "Orange County Farm and Hospital," authorized by County Supervisors.[54]

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[50] Armor 97.

[51] Armor 97.

[52] Davis np.

[53] Davis np.

[54] "Freeze Frame: Orange County Hospital and Poor Farm" *Metro Monitor* Spring 1986 np.

Postcard featuring Orange County Farm & Hospital. View southeast, circa 1918. Courtesy of Orange County Historical Society.

Hospital administration at the time recognized that hard work was not the cure for society's ills and in 1923, the Psychopathic Wing[55] (Building 11) was built immediately adjacent to the main building. The building shared the formal Classical Revival style of the main building. A *Los Angeles Times* article described county supervisors authorizing construction of Building 11:

> Structure for Indigent Sick— It will be of reinforced concrete, two stories high, with basement and roof garden, solarium and pergola. On the first floor will be the county physician's reception and consulting-room [*sic*], matron's quarters, three wards for insane persons, men's ward, diet kitchen, and two private wards. On the upper floor will be an operating-room [*sic*], etherizing rooms and sterilizing rooms, maternity ward, rooms for electrical treatment; one private ward and men's and women's wards, each with seven beds.[56]

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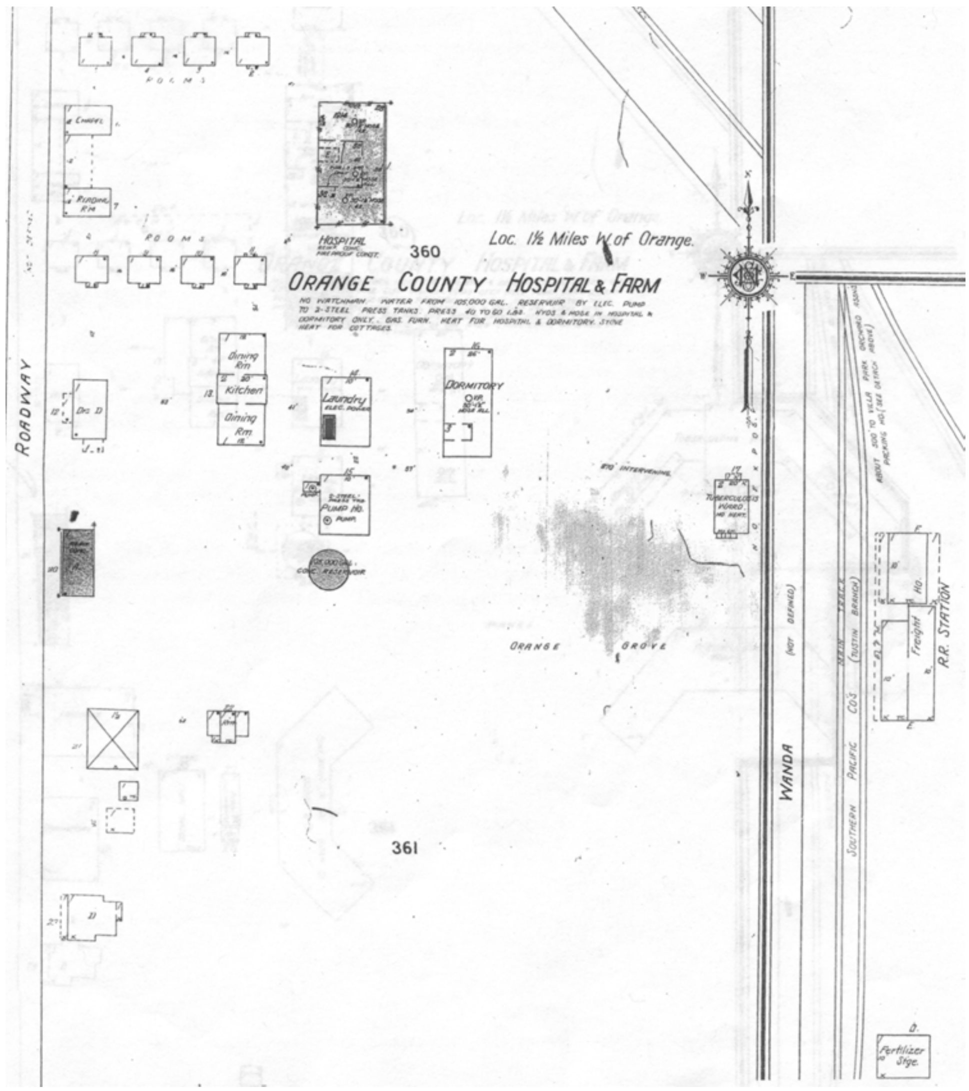
[55] Ball 61.

The building was demolished and replaced in 1975.

[56] "In Orange County: Hospital, Church, Theater, Club" *Los Angeles Times*, 23 February, 1913, VI 3.

By 1925, Orange County Farm & Hospital facilities had expanded to include 125 beds (including bassinets), 48 employees, 26 nurses in training school, 21 medical staff members, and 2 medical interns.[57] The institution continued to grow, a nurses' home, chapel and "cottages for employees and indigents" were erected.[58] The complex was configured in a rough rectangle, smaller buildings created a squared **U** form, off of the west side of the main building (Building 10).

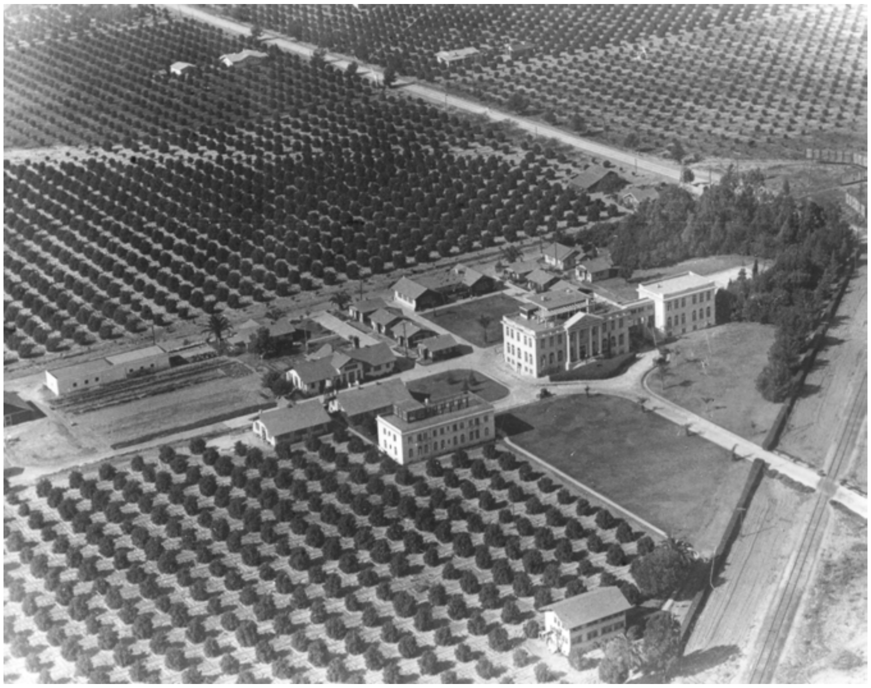


Sanborn Fire Insurance Co. map of subject property. Page 14, 1922.

[57] "The Hospital- Present and Future" 2.

[58] "The Hospital- Present and Future" 2.

The complex was located along the "State Route" (present day Interstate-5), the main road connecting Santa Ana with Los Angeles. An axial formal drive led northwest from the highway to the main building and the facility was instantly recognizable from the highway.



Aerial view of subject property, circa 1922. Courtesy of Los Angeles Public Library Photo Collection (LAPL PC).

About that time, the self-sufficient aspect of poor farm-type institutions began to change. By 1926, the hospital dairy and stock operations were abandoned, and much of the livestock was sold at auction.[59] That year the institution was described "[t]he farm includes about 70 acres, partially covered by hospital, nurses' home, chapel, cottages for the physicians, and other cottages for employees and indigents. There is an orange orchard of twenty-seven acres, valencias, and a herd of pure-bred Holsteins to furnish the dairy products." [60] Also in 1926, a large addition on the south side more than doubled the size of the main building (Building 10). The small, symmetrical, Classical Revival building was extended into a long, narrow rectangle.

[59] Tom Talbert, Chairman, Orange County Board of Supervisors, "Historical Highlights"unpublished, no date, 7.

[60] Ball 62.

The carefully arranged proportions and symmetry of the original three-bay wide building were greatly changed by the extension of the building and addition of three more bays.

Building 10 (as enlarged, on left), Building 11 (on right), circa 1926. Courtesy of FATCO.

At the turn of the 20th century, tuberculosis (TB) had overwhelmed the nation and the world.[61] Poor ventilation and overcrowding, specifically in the tenements and sweatshops of the poor, were blamed for the spread of TB to epidemic proportions in the later half of the 19th century and the first half of the 20th century. In the 1870s, TB killed approximately 15 percent of the world population and had claimed more lives by the 1940s than any other contagious disease.

The most common treatment for tuberculosis was the "sanatorium rest routine, sequestering ... patients in sprawling rural hospitals, isolated from great centers of population."[62] Therapy for early or "incipient" cases included an abundance of fresh air. Patients were encouraged to sleep with open windows, or better, outside, even in cold climates. Because the warm, dry air was thought to be therapeutic, Southern California (including Orange County) became a mecca for tuberculosis patients and their families.[63]

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[61] Pulmonary tuberculosis, also know as consumption, is a communicable disease spread by the *tubercle bacillus* bacteria.

[62] Mark Caldwell *The Last Crusade: The War on Consumption 1862-1954* (New York: Atheneum, 1988) 11.

[63] Local sanitaria built in southern California early in the 20th century included Barlow Sanatarium (established in 1902, now Barlow Respiratory Hospital), the Kaspare Cohn Hospital (also established in 1902, now

In addition to "rest therapy," the treatment of tuberculosis also included "collapse therapy," where one lung would be collapsed with an injection of nitrogen and thus allowed to rest and heal. As this and other more radical treatments and operations were preformed during the 1920s and through the 1940s, many sanitaria expanded to include operating rooms, acute units, and additional medical staff. In 1945, the first antibiotics were used as treatment for TB and recovery time was reduced from months and years at sanitaria to just a few weeks. With the discovery of drug treatment (including chemotherapy) and subsequent creation of a vaccine, by the 1950s, the number of TB cases in the United States were greatly reduced.

The TB epidemic reached Orange County; between 1920 and 1926, the disease was the cause of 770 deaths and the Orange County Farm & Hospital was "overflowing with patients." [64] A specialized TB "preventorium" or health camp opened in Trabuco Canyon in 1926.[65] The 10-acre facility was operated by the Orange County Tuberculosis Association between 1926 and 1932. At the Orange County Farm & Hospital, the Tuberculosis Ward (Building 27, later known as the Communicable Diseases Ward) was constructed in 1929. The hospital became best known as the local long-term care facility for TB sufferers and the mentally ill. According to maps of the area, by the 1950s there were two other[66] TB wards, Buildings 33 (with separate men's and women's wings and large porches) and 34.[67] Like the other TB buildings on the campus, Building 27 was planned in a modified chevron form (a main central wing with two attached wings set at angles), and executed in simplified, informal Spanish Eclectic style. The

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Cedars-Sinai Medical Center), the Jewish Consumptive Relief Association (established in 1912, now City of Hope), and the only public institution in this group, Olive View Sanatorium (now Olive View-UCLA Medical Center).

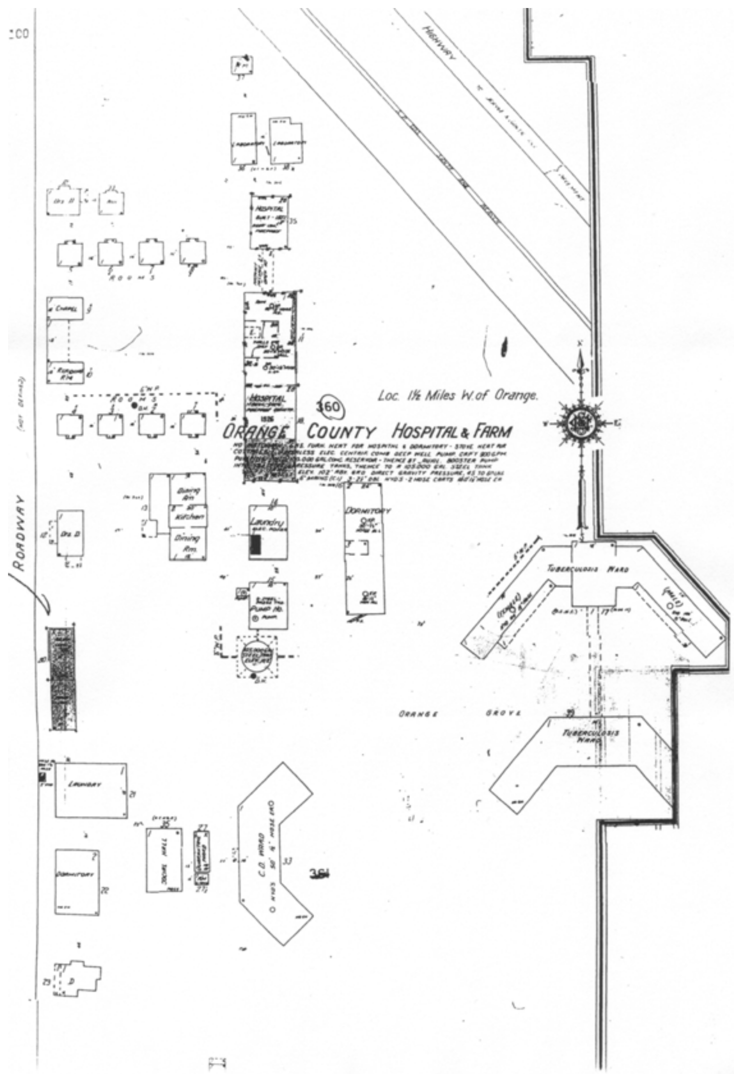
64 "Growing Pains Marked Development of Orange County Health Care" *Orange County Register* n.d. 3.

65 "Tuberculosis Left Its Mark In Orange County" *Orange County Register* 11 November, 2000, n.p.

66 Buildings 33 was also Spanish Eclectic in style, and was built in 1928 demolished sometime between 1976 and 1987. Building 34 (later known as Building 47) was also built in 1928, but was Utilitarian in style, and was demolished after 1987. The buildings may have been joined at one time, according to plans dated February 3, 1969, prepared by Rose & Fears AIA Architects (Building Plan No. 1652000).

67 Sanborn Fire Insurance Company, "Orange County Hospital & Farm" 1950, 14.

commonplace layout[68] was intended to impart as much light and fresh air as possible to the patients, because it was thought to be healthful. Spanish design elements include the thick stucco walls, the side-gabled, red tile roof, and decorative tile at the recessed entrances. Later in 1927, in an effort to thwart Santa Ana's westward expansion, the City of Orange annexed the previously unincorporated Orange County Farm & Hospital to be within its city limits.[69]



Sanborn Fire Insurance Co. map of subject property.
Page 14, 1950.

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[68] In the 1920s, the modified chevron plan was not uncommon. Examples of such building include: Main Infirmary Building at Olive View Sanatorium (Sylmar, circa 1920), The Wentworth/Ritz Carleton-Huntington Hotel (Pasadena, 1906-1913, rebuilt 1991) and Myron Hunt's Ambassador Hotel (Los Angeles, 1921). Olive View Sanatorium was recognized at the time as the premiere public facility in the region for the treatment of TB.

[69] Brigandi 94.

Orange County General Hospital

During the Depression, with the advent of New Deal social welfare programs, the hospital phased out "poor farm" operations and the name was changed to the more generic Orange County General Hospital.[70] County Board of Supervisors decided in 1931 to discontinue the dairy herd and hogs. Most were sold at auction, but the remaining livestock was butchered and used for hospital meals.[71] The 1930s also brought natural disasters: a severe earthquake occurred in March 1933, although the hospital was not seriously affected;[72] five years later, a catastrophic flood paralyzed hospital operations, trapping 150 patients in the tuberculosis ward.[73] In addition to the natural disasters, there a polio outbreak among nurses and chronic overcrowding occurred during the 1930s.

Building 10, flood of 1938. Courtesy of UCI Medical Center, Medical Media (UCI MC, MM).

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70 Brigandi 129.

71 "The Hospital- Present and Future" 2.

72 "The Hospital- Present and Future" 2.

73 Kym Salness, MD, "History of UCI Medical Center, or 'It Takes a Long Time to Turn A Battleship Around' " videotaped lecture July 1, 1988.

In the 1940s Orange County General Hospital became the subject of criticism, a Grand Jury described the hospital in the mid-1940s as "...devoid of modern standards and reasonably sanitary practices."[74] As a result of that report, between 1946 and 1949, the staff and budget doubled and an ambitious building expansion program was launched. Another possible consequence of the report was retirement of Dr. Harry E. Zaiser as superintendent in 1946, after 32 years of service to the hospital.

The 1940s brought additional changes and expansion to Orange County. The second World War necessitated the construction of new military facilities throughout southern California.[75] The U.S. Army started construction on 410 acres of land south of Santa Ana (now Costa Mesa) in 1941. This development became the Santa Ana Army Air Base (SAAAB) and eventually, nearly 150 buildings were constructed to accommodate more than 20,000 soldiers.[76] Orange County General Hospital expanded during this period as well. In 1941 the first radiation therapy equipment was installed[77] and the X-ray Department took over the former Special Dietary Kitchen, in the penthouse of the main building (Building 10).[78] Two years later, a morgue (Building 13, also known as the Sleep and Dream Lab and Psycho-Physiology Lab), and an electrical shop (Building 33) were constructed.[79] With the end of the war, SAAAB made plans to distribute 22 surplus buildings to the hospital and local schools.

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[74] Gregg Zoroya, "Growing Pains Marked Development of Orange County Health Care" *Orange County Register* nd, np.

[75] Brigandi 115.

Military bases in Orange County at the time included Los Alamitos Naval Air Station, Seal Beach Naval Ammunition Depot, El Toro Marine Corps Air Station and the Tustin Lighter-than-Air Base.

[76] Doris Walker, *Orange County, A Centennial Celebration: Sections of Orange*. (Houston, TX: Pioneer Publications, 1989) 123.

[77] Boss 12.

[78] "The Hospital- Present and Future" 9.

[79] Building 13 later became the Psychiatry Lab and Building 33 was used as a Radiology Lab.

In 1949, nine of the surplus military buildings were moved to the Orange County General Hospital site.[80] The relocated buildings were simple, stucco-clad barracks, rectangular in plan, with front facing gabled roofs. Five of the nine buildings remain, including buildings 41, 43, 44 (formerly Building 39), 46 (formerly Building 38), and 57 (formerly Building 37).[81] The barracks were remodeled for hospital use, adding 118 beds to the facility.[82] Because of pent-up demand coupled with materials shortages during the war, the late 1940s brought increased building activity at the hospital. This construction effort included the Laundry (Buildings 17 and 20, in 1948), Chlorinator (Building 76),[83] the large, covered reservoir (Building 79) and a system of covered walkways at the southeast side of the campus connecting the relocated military barracks, all in 1949. Between 1949 and 1954, more than $1,200,000 was spent on improvements to the hospital, including a new steam plant.[84] Additional developments during the 1940s included formal talks regarding consolidation of the osteopathic and traditional medical fields,[85] and use of chemotherapy discovered as another cure for TB.

The large number of military bases in the area induced exponential population and building growth as families of soldiers who had been stationed settled permanently in the county. Endless miles of citrus groves were felled to make way for post-World War II suburban residential development. The City of Orange doubled in size as a result of annexations between 1953 and

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[80] Telephone conversation with Mary Ellen Goddard, retired UCI Special Librarian and volunteer historian at Costa Mesa Historical Society, February 19, 2001.

[81] Building identification numbers have been changed from time to time. In this document every effort is made to give the current building identification number as well as previous numbers, for clairity.

Buildings 44 (formerly Building 39) is said to have been constructed in 1958, although it shares the physical characteristics of the military surplus buildings and is located in the same area of the campus. Also, the footprint of Building 44 appears on a map dated 1955, so it is presumed to be one of the relocated Army surplus buildings.

[82] "The Hospital- Present and Future" 1.

[83] The City of Orange constructed the Chlorinator on the hospital grounds.

[84] "The Hospital- Present and Future" 1.

[85] Tracy Taylor, ed. "UCI College of Medicine: A Brief History" *UCI College of Medicine Alumni Directory* and *Centennial Edition: UCI Alumni Directory* (1992 and 1996 respectively) reprint 2.

1960.[86] The population of Orange increased from approximately 7,900 in 1940, to 9,200 five years later, and compounded to more than 10,000 in 1950. By 1960, the population of Orange had more than tripled from 1940 to over 26,000.[87]

To keep pace with the growth of the community, in 1950 construction commenced to replace the immediately adjacent State Route with Interstate-5 freeway.[88] This change required reconfiguration of the gracious main driveway from the highway that delineated the main entrance and helped to define Orange County General Hospital since its inception. The driveway was aligned on axis with the central portico of the main building (Building 10) and was flanked on either side by generous lawns, with a citrus grove on the south side. Closing the main driveway meant the loss of the hospital's formal entrance and setting, forever changing the public roadside view of the facility. The last parts of the driveway were probably removed circa 1958 to make way for the construction of the "Nurses' School & Home" (Building 53). The water tank was visible from great distances, and clearly announced the hospital's presence in the low rise, agricultural community.

Orange County General Hospital, View southwest, over State Route. Note formal driveway and water tower. Courtesy of UCI MC, MM.

[86] Brigandi 122.

[87] Brigandi 136.

The current population of the city of Orange is approximately 130,000.

[88] Brigandi 126

In the 1950s, as the county evolved into well-populated suburbs and towns, Orange County General Hospital continued to expand to serve the community's needs. An Oncology building (Building 54) was constructed in 1952. By 1954, the hospital facilities included 594 beds (including bassinets), 505 employees, 85 nurses in training school, 102 medical staff members, and 17 medical interns.[89] That same year, the hospital's fully accredited professional school of nursing affiliated with Fullerton Junior College.[90] As a consequence, the distinctive nursing school building (Building 53) was built in 1958, containing a library, auditorium, classrooms, recreation area and housing for 96 nurses. It was not uncommon for hospitals to erect "architecturally impressive nurses' residences" in efforts to attract good candidates to their programs.[91] The building was designed by Wildman & Faulkner, Associated Architects; the principals were H.C. (Harold Clifford) Wildman and W.L. (William Loegler) Faulkner, AIA. The team collaborated on at least ten buildings and structures at Orange General County Hospital between 1948 and 1963. Building 53, as it is now known, was the first major building to be constructed on the campus after World War II. The building is one of the pair's most distinguished designs; it clad in Roman brick and stone, the central three-story volume is flanked by lower, two-story wings.

H.C. Wildman (1894-1964) was a locally-based building designer who specialized in institutional facilities. With W. Horace Austin, whose firm was known for designing city hall building , Wildman shared design credit for Santa Ana City Hall (1934), Placentia City Hall and Fire Station complex (circa 1934).[92] [93] Wildman also worked on designs and remodeling plans

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89 "The Hospital- Present and Future" 2.

90 "The Hospital- Present and Future" 2.

91 Diane Dodd "Commemorating Canadian Nursing" *Cultural Resource Management* Volume 24, No. 2, 2001: 31.

92 "City Council Applies for a Loan..." *Southwest Builder & Contractor* 5 January, 1934, 55. This former Santa Ana City Hall building is listed in the National Register of Historic Places.

93 "City Applies for WPA Grant..." *Southwest Builder & Contractor* 12 January, 1934, 52. The 1934 Placentia City Hall complex is currently used as a senior center.

for the Temple (1935) and Yost theaters (1947), both in Santa Ana.[94] Less is known about his partner, W.L. Faulkner,[95] although he was a member of American Institute of Architects (AIA) from 1953 until 1965.[96] Together, Wildman and Faulkner designed the Reliance Title Company Building (1949) and Civic Center Social Services Building (1955), in Santa Ana.[97] Wildman and Faulkner's architectural legacy is not particularly distinguished, their work was not published, and commissions were limited to public buildings.

Faulkner and Wildman, as a team and individually, were responsible for the designs of most of the buildings erected at the hospital between 1948 and 1963. These buildings and structures include: Laundry OB/GYN Medical Records Facility (Building 17 now 25, 1948), Hemodialysis Building (Building 24, 1949), Covered Walkways (1949), Power Plant (Building 31, 1958), Incinerator/Crematorium (Building 59, 1959), Utility Tunnel (1959), Psychiatric Building/Mental Health Building/Academic and Support (Building 2, 1959), Storage & Maintenance/Clinical Teaching Unit/OB/GYN Medical Records Facility (Building 16 now 25, 1962) and New Acute Disease Unit/Medical Center-East Main Hospital (Building 1, 1963). It is possible that the

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[94] "Remodel Theater Building..." *Southwest Builder & Contractor* 21 February, 1934, 35.

[95] Sources consulted for information on W.L. Faulkner include Avery Library, Graduate School of Architecture, Preservation & Planning, Columbia University, Orange and Los Angeles County chapters of the American Institute of Architects, California Department of Consumer Affairs California Architects Board, Society of Architectural Historians architect biographical database, Los Angeles and Orange libraries, and Whithey's *Biographical Dictionary of American Architects (Deceased).* Obtaining information on Faulkner was extremely difficult, and his application for membership to the AIA was one of the few pieces of information that was located for the purposes of this research.

William L. Faulkner's birth and death dates are either (1904-1973) or (1920-1975). Faulkner was admitted to the AIA on February 5, 1953, and he was "proposed" for membership by his partner H.C. Wildman. Both Faulkner and Faulkner were either licensed or registered to practice architecture (it is not clear which) in California. This information is derived from the architects' Applications For Membership to the AIA, certified August 15, 1944 (Wildman, Membership #2621) and February 5, 1953 (Faulkner, Membership #9103).

[96] After 1963, the practice of architecture was limited to licensed architects. The California Department of Consumer Affairs California Architects Board has no records of either Messr. Faulkner or Wildman being licensed.

[97] Telephone conversation with Anne Harder, Santa Ana Public Library, Santa Ana History Room, March 13, 2001.

The team is erroneously credited with the design of an 1971 addition to the Engineering and Finance Building, also in the Santa Ana Civic Center. Mr. Wildman could not have been involved in the project, as he had been dead for seven years by that time.

Wildman and Faulkner team designed more buildings at the site, which may have been demolished or because of the scarcity of building records, simply may not be credited.

Aerial view, circa 1955. Courtesy of UCI MC, MM.

In 1958, an occupational therapy building (Building 50), a patient care center (Building 51), and additional research lab (Building 52), and were built. Their simple rectilinear designs were modeled on the relocated barracks buildings (narrow rectangular plans with front facing gabled roofs), but the buildings were made from concrete masonry units (CMU, also called concrete blocks) and received stucco finishes later. The next year a state-of-the-art psychiatric building (Building 2) "complete with courtroom and physical therapy facilities" and a power plant (Building 31) were constructed.[98] The Psychiatric Building (Building 2) was designed by Faulkner in a simple, horizontally oriented, Contemporary style, with ribbon and individual windows.

[98] Boss 12.

Osteopathy Comes of Age

As the hospital was trying to keep pace with local development, the field of osteopathy was in a period of transition. The debate about whether osteopathy should be considered science-based medicine or a passing trend had been active throughout the century. Osteopaths derisively referred to traditional, science-based medicine as "allopathy." In 1961, amid much turmoil about osteopathy being perceived as "cultist healing," COPS Board of Trustees voted to convert to a conventional medical school. As a result, the name of the school was changed to California College of Medicine (CCM).[99] The following year, American Medical Association officially recognized CCM.[100] Later that year, state legislation permitting doctors of osteopathy to be licensed by the state Board of Medical Examiners and to use the MD title was passed.[101] CCM conferred its first medical degree in 1962.[102]

The newly categorized school continued to operate in Los Angeles as an independent medical college from 1962 until 1964, when the legislature put it under the reluctant aegis of UC Regents.[103] Concurrently, the Regents had been actively seeking another medical school in southern California to add to the university's system. CCM's transformation into a conventional medical school made it the perfect candidate for inclusion in the UC system.[104] Affiliation of

[99] Nelson 3.

[100] Nelson 3.

[101] "Response to Systemwide Request for History of MCIP Activities (1975-1979) University of California Irvine Medical Center" (unpublished, April 19, 1979) 1.

Although most licensed osteopaths opted to become MDs, many elected to remain Doctors of Osteopathy (DO).

[102] Nelson 3.

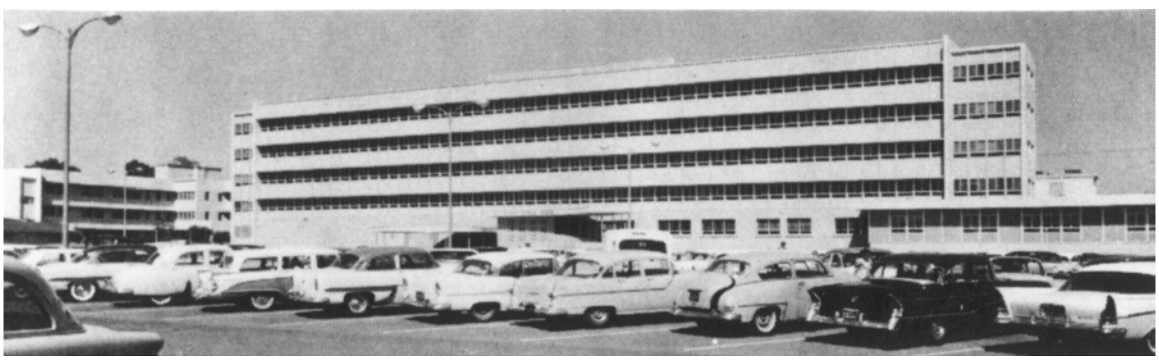
[103] Warren L. Bostick, MD, *College of Medicine: History-Academics-Politics, The Merging Professions* (no publisher) 1992, Preface III.

[104] Bostick 226.

UCI was to be the second active medical school to be acquired by the Regents. When University California,San Francisco acquired the Torland College of Medicine (an existing school of homeopathy), it became the first example of an existing medical school being absorbed into the UC system.

CCM with University of California as a medical school was made official by passage of SB-1414 in 1963.[105]

Orange County General Hospital continued to progress in the early 1960s. The population of Orange county reached one million in 1963 and many components of the old hospital campus had become obsolete.[106] In July 1963, a new Acute Disease Unit (Building 1) opened, becoming the "new" main building, adding more than 350 beds and nearly 60 bassinets to the hospital. The five-story building was designed by Faulkner & Wildman, in a simple utilitarian interpretation of the International style. At the time, it was the largest building at the hospital. In keeping with the style of the day, the horizontally oriented building had continuous ribbon windows, with horizontal "eyebrows," and a low entry pavilion. The distinctive, single story entrance pavilion was planned in an irregular **C** shape, a departure from the new building's otherwise strict rectilinear geometry.



Building 1, View east, circa 1963. Note low pavilion at center. Courtesy of FATCO.

In nearby Irvine, renowned regional architect William Pereira & Associates prepared a plan proposing a new, 53,000 acre suburban community in 1960. The concept was based on the Janss Corporation's successful joint development of the University of California, Los Angeles campus

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105 Taylor 3.

The law was simple and stated that the "Existing institution, known as the California College of Medicine, located in the City of Los Angeles, is affiliated with the University of California and is a medical department thereof."

106 "Orange County Historical Timeline"

in the late 1920s with the suburban community now known as Westwood. The Irvine Company sought to repeat the collaborative accomplishment, with the added concept of more than half of the property set aside for parkland.[107] Periera presented plans for the master planned community centered around the 1,000 acres of donated campus land to the Orange County Board of Supervisors in 1963.[108] The following year, the final plan for the southern 10,000 acres of Irvine Ranch to become a master planned community was completed. The final UCI campus was to be 1,510 acres, consisting of a central circle with six radiating axes, each with separate academic plazas[109] (loosely based on Thomas Jefferson's "academical villages" at University of Virginia). The campus was to be connected to the community by a series of roads that followed the natural contours of the land. On October 4, 1965, the first classes were held at the new University of California, Irvine campus. UCI was the ninth University of California campus to be established.[110]

Orange County Medical Center

The hospital continued to change with the times and in 1966, Orange County General Hospital changed its name to Orange County Medical Center. As part of this transition, the hospital changed its policy and began admitting private patients. In another effort to keep up with the times, a Master Plan was prepared for Orange County Medical Center by Welton Becket/Rose & Fears.[111] The Master Plan evaluated the hospital facilities and made recommendations for its orderly growth and expansion.

In an effort to provide a complete university curriculum, UCI administrators sought an existing medical school that could become part of the new school. In spring 1967, CCM Board of

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[107] Robert Winter and David Gebhard *A Guide to Architecture in Los Angeles & Southern California* (Salt Lake City: Peregrine Smith, Inc., 1977) 422.

[108] "Orange County Historical Timeline" *Orange County Register* 1999, np.

[109] Winter and Gebhard 423.

[110] "UCI's Early Days Were Marked By Innovation and Whimsey" *Orange County Register* circa 1990 (no date) np.

[111] "Master Plan for Hospital Authorized" *Los Angeles Times* 3 July, 1966, R-16.

Trustees passed a resolution that was later agreed to by the UC Board of Regents, that the Los Angeles-based medical school would be administratively responsible to the University of California and would ultimately relocate the campus to Irvine. Later that year, Orange County Medical Center became the major affiliate hospital of CCM as the training site for its residents. The school immediately began to use what the administration considered the "antiquated facilities" at Orange County Medical Center as its teaching hospital.[112]

Public health care was also being reorganized in the late 1960s, when Medicare was integrated into social security programs. Caring for the indigent senior population, which was a large part of the role of Orange County Medical Center, became more profitable as a result of new federal programs.[113] These programs permitted Medicare health-related expenditures to be charged against federal and state funds.[114]

Aerial view, June 1965. Courtesy of UCI MC, MM.

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[112] McCulloch 199.

[113] Bostick 148, 149.

[114] Bostick 153.

At the same time, conceptual plans to build a new hospital in Irvine were both vigorously supported and bitterly opposed by a divided citizenry. In 1970, a County Supervisors board issue for a 350-bed hospital on UCI campus was defeated.[115] The public debate then became whether to build the new hospital in Irvine, or to purchase and improve the existing Orange County Medical Center.[116] In late 1972, state voters approved construction of new health science facilities in Irvine and at other UC campuses. Then-Governor Jerry Brown, however felt that the subject property's proximity to underprivileged areas made it pivotal to public health care, and diverted the funding to other institutions.[117] Amid all this discussion, smaller buildings were built at Orange County Medical Center including the Vivarium (Building 60, donated by the Orange County Hospital Auxiliary, 1969) and Pathology and Radiology Laboratories (Building 48, 1971), while more ambitious plans to expand and improve facilities were put on hold. In the early 1970s, inexpensive modular buildings, for additional Administrative Offices (Building 26 and Building 58, 1972), and Pavilion 3 (Building 29, 1973) were added to the campus. In 1975, the former Psycho-Pathic Ward was demolished and another modular building for office use (Building 11) was erected. In 1975, two earlier buildings (Buildings 16 and 17) were joined and renamed the Central Services Building.

UCI Medical Center

Finally, UC purchased the hospital campus in 1976 for use as UCI Medical Center for $8,000,000.[118] The cost was based on the value of the land, buildings and structures, equipment, and supplies. By that time, the surrounding orange groves had been replaced by roads, shopping centers and other commercial buildings, and a number of county buildings had been erected nearby. During the long transfer process, the county was accused by the new owners of allowing the hospital to fall into disrepair. The official opening of UCI Medical Center was held at noon

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115 "Chronology-- UCI Clinical Activities" (unpublished typed pages, no date) 1.

116 "Chronology" 1.

117 McCulloch 200.

Then-Dean Warren Bostick later described the political movement to circumvent hospital relocation to Irvine saying that UCI would have abandoned "the poor people."

118 "UCI MC Slide Show: Program Narrative Notes" (unpublished typed script, no date) 2.

on July 1, 1976.[119] After 102 years of continuous operation, the county hospital ceased to exist, and the medical center became a teaching hospital. To this day, many still consider the facility to be the county hospital, which is said to negatively affect the hospital's budget.[120] As a result of the new ownership, William Pereira Associates prepared a two volume study of the site,[121] evaluating the existing 49 buildings (including interior design), parking, landscaping, mechanical systems and signage on the campus. The report made recommendations for building demolitions, replacements, site layout, and campus-wide improvements. In the introduction to Volume 2, Periera described the unique challenge of reconfiguring and improving the large hospital "[t]o properly renovate the UCI Medical Center is to build a Machine, while, at the same time, using it." At the time, building stock ranged from Quonset huts (Buildings 22 and 23, since demolished), to original wood framed buildings (Building 10) and "modern" types (Building 1). The campus was harshly described, "in terms of land use, the... [campus] would have to be classified a marginal disaster" and as a "...sprawling, disorientated [*sic*] environment." [122] In the years after the report was prepared, its master plan recommendations for expansion were followed in large part.

UCI quickly made plans to improve the campus and in 1978, the North Parking Structure (Building 72) was erected to ease parking problems. Many facilities were obsolete, in lieu of a protected helipad for emergency use, vehicles in the parking lot were temporarily re-routed parking lot, helicopters with critical emergency patients landed on the pavement and stretchers were rushed into the building.[123] The "new" main hospital building (Building 1) was already obsolete, lacking air conditioning, major x-ray therapy rooms, ward resident stations and a coffee

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[119] Richard Nagel, County of Orange Memorandum to Service Directors and Division Heads, 22 June, 1976, 1.

[120] Michelle Nicolosi, "UCI Medical Center, Clinics Can't Afford The Poor" *Orange County Register*, 10 September, 1996, B-1.

[121] William L. Pereira Associates *Evaluation of Existing Facilities (*Volume 1) *Master Plan* (Volume 2), September 1, 1976.

[122] Periera Volume 2, 17.

[123] Salness.

shop.[124] The new owners continued the focused campaign to improve the campus. In 1979, a new building to house appointment clinics and office space for clinical faculty (Building 29a) was erected.

In 1981, the first major new building under UCI ownership, the five-story Medical Center Tower (Building 1a), "to provide replacement space for obstetrics, diagnostic radiology, emergency services and 114 new beds" was completed.[125] Later that year, the Electrical Facility (Building 32), funded out of hospital reserves, was constructed on the site of former Building 19. The following year, the new Medical Library (Building 22a) with classrooms and department offices was added to the campus. In 1985, as part of a joint venture between UCI and AMI,[126] the Magnetic Resonance Imaging Center (Building 22b) housing nuclear magnetic resonance facilities was completed. In 1986, the Diagnostic Services Center (Building 22c) was built. Using the small campus necessitated creative solutions, and in 1988, Pavilion I (Building 30), comprised of 18 trailers (stacked two-high), and the South Parking Garage (Building 73) were added to the campus. In 1989, Pavilion II (Building 30a) was constructed.

Although these new buildings were added as land became available on a seemingly random fashion, the ultimate goal was toward a central master planned campus. By the late 1980s most clinical departments occupied either old barracks buildings, former tuberculosis wards or the old nursing school building, but the decentralized campus continued to function despite its physical limitations.

By 1991, the UCI Medical Center had become the largest employer in the City of Orange, with more than 3,000 employees. The same year, Chao Cancer Center (Building 23) was built. It remains one of four National Cancer Institute-designated comprehensive cancer centers in the state, the only such facility in Orange County. The Neuropsychiatric Center (Building 3) was

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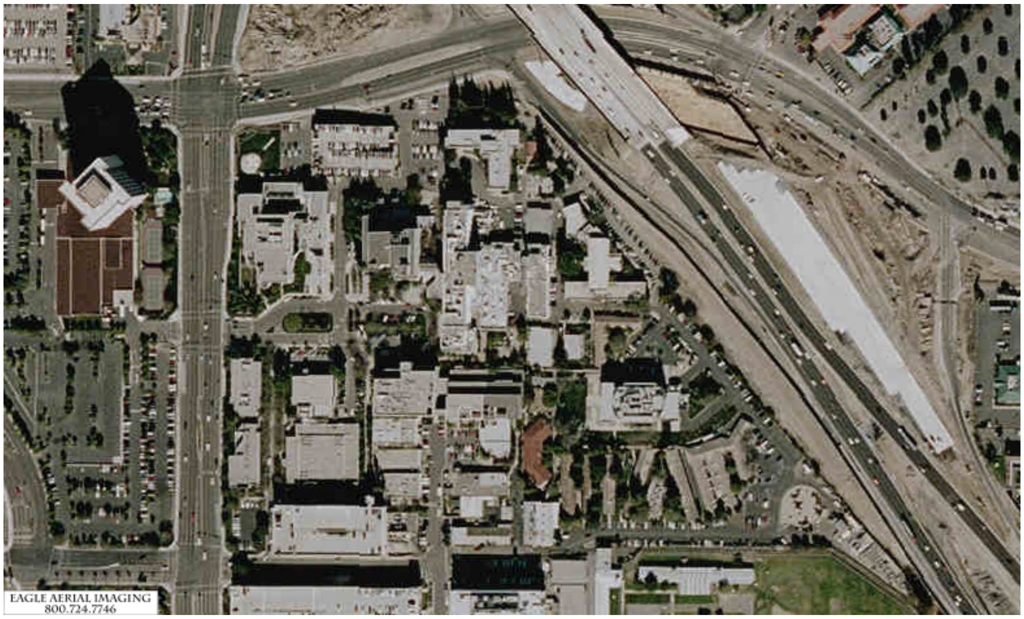
[124] Warren L. Bostick, *College of Medicine: History-Academics-Politics, The Merging Professions* (no publisher) 1992, 148.

[125] "UCI MC Slide Show" 2.

[126] Atlantic Medical Imaging

completed in 1993. Four years later, UCI Health Sciences Lab/Academic Lab Facility (Building 55) was built. By 1998, the ever-expanding population of Orange County reached 2.72 million.[127]



Current aerial, 2000. Courtesy of Eagle Aerial Imaging.

Currently, UCI Medical Center is the only university hospital in Orange County, offering full acute and general health care services. Staff includes more than 300 specialists and 50 primary care doctors. UCI Medical Center has 24-hour emergency facilities and is the only designated Level 1 Trauma Center in the county. From its inception 127 years ago as a humble agricultural county hospital in a corner of the county jail, UCI Medical Center has emerged as a regional leader in health care and training.

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[127] "Orange County Historical Timeline"

Buildings and Structures UCI Medical Center Complex
There are 56 buildings and structures currently located on the campus of the UCI Medical Center in Orange, California.

Of those buildings and structures, 34 were constructed before 1965. Of those 34, 23 are buildings and 3 are structures. Among the 23 pre-1965 buildings on the campus, 5 were relocated from the Santa Ana Army Air Base in 1949. The attached Building Information Table provides the building numbers, names, gross square feet, number of stories, years built, architect (if known), and proposed action as part of the project.

For each of the buildings and structures on the subject property, the UCI Medical Center Survey (Attachment 2) provides more detailed information on alterations and other miscellaneous notes. The fundamental building and alteration information was complied from a number of sources, including: interviews with UCI Medical Center staff, the Facilities Management Department, Physical Planning & Development, Planning & Construction Services, and departmental files, record sets of plans, stored plans, and County of Orange records.[1] No single source had complete information to compile this documentation, it was assembled with the gracious assistance of many people and their files, both on and off campus.

Attachment 3 consists of the detailed Department of Parks & Recreation (DPR) 523A Primary Record forms for each existing building or structure on the subject property built before 1965. The DPR forms contain architectural descriptions and photographs of each remaining building and structure which predates 1965.

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[1] Only 12 building permit-related records were located at the County of Orange, many were for demolitions of ancillary buildings such as garages. These available records spaned the limited period between 1956 and 1969.

UCI Medical Center
Building Information Table

Building Number	Building Name	Gross SF	Stories	Year Built	Architect	Proposed Action
Inpatient Facilities						
1	Medical Center-East (Main Hospital)	182,200	6	1962	Wildman & Faulkner	Demolish structure; replacement facility
1a. (2a)	Medical Center Tower	101,105	6	1981	Wm. L. Pereira Assoc.	No demolition; reconfigure space
3	Neuropsychiatric Center	81,358	3	1993	Ratliffe Architects	No demolition; reconfigure space
Total		354,483				
Academic/Administration/Research Facilities						
2	Academic and Support (Resident Services)	42,540	3	1959	Wildman & Faulkner	Demolish structure; relocate to new hospital facility
10	Academic Offices	27,645	1	1914	Frederick H. Eley	Demolish structure; new building
11	Department Offices	3,555	1	1975	trailer (not applicable)	Demolish structure; new building
12	Storage (vacant)	1,313	1	1914	unknown	Demolish structure; new building
13	Psychiatry Lab	852	1	1914	unknown	Demolish structure; new building
14	Storage	1,306	1	1914	unknown	Demolish structure; new building
55/0	Academic Lab Facility	60,000	4	1997	Leo A Daly	No action
22a.	Medical Library	33,643	3	1982	Leo A. Daly	No action
24	Research Lab	1,900	1	1949	Wildman & Faulkner	Demolish structure; new building
24a.	Research Lab	1,000	1	n/a	trailer (not applicable)	Demolish structure; new building
26	Administrative Offices	6,040	1	1972	trailer (not applicable)	Demolish structure; new building
41	Research Lab	3,813	1	1943	moved on site	Demolish structure; new building
43	Research Lab	4,228	1	1943	moved on site	Demolish structure; new building
46	Research Lab	4,906	1	1943	moved on site	Demolish structure; new building
48	Research Lab	3,851	1	1971	unknown	Demolish structure; new building
52	Research Lab	4,554	1	1958	unknown	Demolish structure; new building

Building Number	Building Name	Gross SF	Stories	Year Built	Architect	Proposed Action
53	Academic Offices (COM)	51,538	2	1958	Faulkner & Wildman	Demolish structure; new building
57	Research Lab	5,114	1	1943	moved on site	Demolish structure; relocate use
58	Administrative Services	2,964	1	1972	unknown	Demolish structure; new building
60	Vivarium	6,613	1	1969	unknown	No action
63	Administration Building, 200 (200 Building OB/Gyn)	5,424	n/a	1980	unknown	Not applicable; off-site
Total		267,375				
Support Facilities						
	Walkways	n/a	1	1949	Wildman & Faulkner	Demolish structure
	Tunnel	n/a	n/a	1959	W. L. Faulkner	No action
20	Material Management/Facilities, Planning & Development	10,535	1	1948	unknown	Demolish structure; new building
27	Storage	6,153	1	1929	unknown	Demolish structure; new building
31	Power Plant	9,383	1	1958	W. L. Faulkner	No action
32	Electrical Facility/Shack	3,800	1	1981	unknown	Demolish structure; new building
33	Facility Management (Research Offices and Facilities Services)	5,808	1	1943	Wildman & Faulkner	Demolish structure; new building
59	Incinerator/Crematorium	350	1	1955	W. L. Faulkner	Not applicable: no longer extant
65	Warehouse/Materials	n/a	n/a	n/a	Bastien & Associates	Not applicable: off-site
72	North Parking Structure	87,000 (318 spaces)	3	1978	Conrad Assoc.	Demolish structure; new structure
76	Chlorinator	135	1	1949	W. L. Faulkner	No action
79	Reservoir	87	1	1949	unknown	No action
0	South Parking Garage	182,200 (665 spaces)	Not stated	Not stated	unknown	No action

Building Number	Building Name	Gross SF	Stories	Year Built	Architect	Proposed Action
Total		36,251				
Ancillary Facilities						
22b.	MRI Center	6,007	1	1985	unknown	No action
22c.	Diagnostic Services Center	17,509	2	1986	unknown	No action
23	Chao Cancer Center	71,359	4	1991	Kaplan McLaughlin Diaz	No action
Total		94,875				
Ambulatory Care Facilities						
25	OB/Gyn, Med. Rec. Facility (Academic Offices, Admin. Services and storage)	36,799	2	1948	unknown	Demolish structure; new building
29	Pavilion III	36,615	1	1973	unknown	Demolish structure; relocate to new hospital facility
29a.	Pavilion III	16,416	2	1978	unknown	Demolish structure; relocate to new hospital facility
30	Pavilion I	18,525	2	1988	PBS	Demolish structure; relocate to new hospital facility
30a.	Pavilion II	18,972	2	1989	Coleman/Casky	Demolish structure; relocate to new hospital facility
44	Volunteer Services: Blood Draw Center	5,193	1	1949	moved on site	Demolish structure; new building
50	Occupational Therapy	4,672	1	1958	unknown	Demolish structure; relocate to new hospital facility
51	Outpatient Dialysis	6,172	1	1958	unknown	Demolish structure; relocate to new hospital facility
54	Physical Therapy	5,424	1	1952	W.L. Faulkner	Demolish structure; relocate to new hospital facility
Total		148,788				

THRESHOLDS FOR DETERMINING SIGNIFICANCE OF IMPACTS

<u>CEQA Guidelines</u>
According to CEQA,

> ...an historical resource is a resource listed in, or determined eligible for listing in, the California Register of Historical Resources. Historical resources included in a local register of historical resources..., or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, are presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant (PRC §21084.1).

If the proposed project created *substantial adverse changes* to historical resources, the environmental clearance for the project would require mitigation measures to reduce impacts. "Substantial adverse change in the significance of an historical resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (PRC §15064.5 (b)(1)). PRC §15064.5 (b)(2) describes *material impairment* taking place when a project:

> (A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register... ; or
>
> (B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register... or its identification in an historical resources survey... unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
>
> (C) Demolishes or materially alters those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register... as determined by a lead agency for the purposes of CEQA.

As proposed, the project would not result in the "physical demolition, destruction, relocation, or alteration" of any historical resources or adjacent setting because there are no historical resources on or nearby the subject site. Therefore, no substantial adverse change to historical resources would be caused by the project.

<u>Standards for Treatment of Historic Properties</u>
According to CEQA Guidelines:

> Generally, a project that follows the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource.[2]

As a result of this survey, there are no historical resources on the subject site, therefore these standards would not apply.

PROJECT IMPACTS

This section addresses two key questions:

(1) Are any parts of the UCI Medical Center campus historical resources, either individually or as part of a district?
(2) If any historical resources are present, would the proposed project result in significant impacts to those resources?

CEQA Guidelines Section 15064.5 defines an "historical resource" as including:

> A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources.

The first question: Are any parts of the UCI Medical Center campus historical resources, either individually or as part of a district?

<u>Relationship to Project-</u> As noted previously, as a result of this evaluation there do not appear to be any historical resources on the UCI Medical Center campus. None of the 23 pre-1965 buildings or the three (3) pre-1965 structures appear eligible for listing in the National or California registers, and none appear eligible for designation as local landmarks either individually or as part of districts.

The subject site does not fit the definition of a potential historic district because it does not : "possess... a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development."

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[2] 15604.5(b)(3).

The few remaining buildings from the Orange County Farm & Hospital have been severely altered, and their original setting has been paved and infilled with additional contemporary buildings that do not respect the arrangements of the buildings, and the carefully crafted interrelationships of the original City Beautiful-inspired plan.

The second question: If any historical resources are present, would the proposed project result in significant impacts to those resources?

Because no potential historical resources were identified, the proposed project would not result in any impacts to such resources.

CUMULATIVE IMPACTS

The proposed project would not result in any known cumulative impacts on historical resources.

MITIGATION MEASURES

Because the project is not expected to not cause impacts on any historical resources, no mitigation to reduce the effects of the project is required.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

This would not apply to this project as no historic resources would be affected by the proposed project, therefore no mitigation would be required.

ATTACHMENT 1

CHRONOLOGY

CHRONOLOGY

The following chronology is an abstract of events related to the University of California, Irvine (UCI) Medical Center property in Orange, California (hereinafter referred to as subject property). Each of the items listed below relates to the subject property. The subject property became UCI Medical Center in 1976 when the property was transferred from Orange County Hospital to Regents of the University of California.

July 1, 1810	Spanish Governor Arrellaga grants *Rancho Santiago de Santa Ana* (of which the site is part) to Joseph Antonio Yorba and Juan Pablo Peralta.[1]
1846	California is annexed to the United States.
1851	The Congressional Act of 1851 forced landowners to reapply for valid title to their ranchos.
1858	Los Angeles County (of which the subject property is part) rents an adobe for use as a hospital. Its purpose is to “care for the indigent sick” with the help of the Daughters of Charity of St. Vincent de Paul.[2]
1868	James Irvine (d. 1886), a prosperous sheep rancher receives part of the Rancho Santiago de Santa Ana in a settlement, and later acquires portions of ranchos *San Joaquin* and *Lomas de Santiago*.[3]
1887	Los Angeles County acquires 121 acres in the Los Nietos Valley (now Downey) for use as County Farm.[4] Construction begins the following year.

[1] First American Title Company (FATCO). “Chain of Title” unpublished, date unknown (circa 1976) single page.

[2] Helen Eastman Martin, *The History of the Los Angeles County Hospital (1878-1968) and the Los Angeles County- University of Southern California Medical Center (1968-1978)* (Los Angeles: University of Southern California Press, 1979) 501.

[3] City of Irvine, “About Irvine: History” website www.ci.irvine.ca.us.

[4] Chattel Architecture “Rancho Los Amigos Medical Center Chronology” no date 1.

December 1, 1870	The original Rancho Santiago de Santa Ana was partitioned by decree of the local district court and 4,845 acres (including the subject property) are given to Alfred Beck Chapman (1829-1915) in lieu of attorney's fees.[5]
June 2, 1873	Land including subject property is purchased by Levi J. Lockhart, Thomas J. Lockhart and William C. Pendleton.[6]
September 1, 1873	City of Orange post office is opened.[7]
1874	Kansas-based Civil War surgeon Andrew T. Still (1828-1927) establishes alternative medicine field of osteopathy. The name is derived from the Greek *osteon* (bone) and *pathos* (to suffer), meaning "suffering to the bone."[8] [9] *The American Heritage Dictionary of the English Language* defines osteopathy as "[a] medical therapy that emphasizes manipulative techniques for correcting somatic abnormalities thought to cause disease and inhibit recovery."
February 1, 1875	Land including subject property is transferred to Levi J. Lockhart and Thomas J. Lockhart. [10]
1878	Los Angeles County Board of Supervisors purchases a 37.72-acre parcel of land for use as a County Hospital and Poor Farm.[11] Later that year the first county-owned hospital in Los Angeles opens in a simple wooden building.[12]

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[5] Chattel Construction Corporation, "Documentation of the Orange Intermediate School (Orange Unified School District Office)" January 1997, 3.

[6] FATCO.

[7] Don Meadows, *Historic Place Names in Orange County* (Balboa Island: Paisano Press, Inc. 1966) 108.

[8] Peta Sneddon and Paolo Coseschi, *Discovering Osteopathy* (Berkeley: Ulysses Press, 1999) np.

[9] Thomas Nelson, MD, "Historical Outline: UCI --California College of Medicine" (unpublished chronology, circa 1990) 1.

[10] FATCO.

[11] Environmental Science Associates (ESA, with Mellon & Associates), *Los Angeles County+University of Southern California Medical Center Replacement Project Draft Environmental Assessment/Environmental Impact Report* September 1999, 215.

[12] Martin 501.

1878	The Irvine family's land holdings of 110,000 acres stretch 23 miles from the Santa Ana River to the Pacific Ocean.[13]
1880	Southern Pacific railroad builds a depot at the corner of Flower and La Veta streets in West Orange.[14]
October 14, 1880	Land including subject property is transferred to L. M. Mitchell.[15]
November 16, 1880	Land including subject property is transferred to M. L. Wicks.[16]
May 6, 1881	Land including subject property is transferred to Alexander Weill.[17]
November 18, 1881	Land including subject property is transferred to R. F. and J. O. Lotspeitch.
September 27, 1883	Land including subject property is transferred to U. L. Shaffer.[18]
1866	Confederate Navy Captain William Glassell (1830-1879) comes to Orange, suffering from tuberculosis. His brother Andrew Glassell (1827-1901), is Alfred Chapman's law partner.[19]
1871	Captain Glassell lays out eight city blocks surrounded by 10-acre lots for a new townsite called Richland.[20] By the end of the year, there are about 12 new residences in the area and an irrigation ditch.

[13] The City of Irvine.

[14] Phil Brigandi, *Orange: The City 'Round the Plaza* (Encinitas: Heritage Media Corporation 1997) 31.

[15] FATCO.

[16] FATCO.

[17] FATCO.

[18] FATCO.

[19] Brigandi 18.

[20] Brigandi 18.

1873	The name Richland is changed to Orange, because there was already a community called Richland, California.[21] The Glassell family came from Richland plantation in Orange County, Virginia.
August 16, 1887	The California Southern (Santa Fe) Railroad reaches Orange.[22]
April 6, 1888	The town of Orange is formally incorporated as a town by Chapman & Co.[23]
March 11, 1889	Orange County is established by seceding from Los Angeles County. The name is given "because of the orange groves for which it is justly famous."[24]
December 24, 1889	Land including subject property is transferred to Martha M. Shaffer.[25]
December 20, 1894	The Irvine Company is established.[26]
1896	Orange County Board of Supervisors allow the county jail as housing for the sick and homeless.[27] Mild cases are quickly discharged and severely ill patients are sent to Los Angeles County Hospital.
1896	Pacific Sanitarium and School of Osteopathy (PSSO) is established in Anaheim. It is the second school of its type in the nation and the first in California.[28]

[21] Brigandi 19.

[22] Meadows 108.

[23] Meadows 108.

[24] John S. McGroarty, *California: Its History and Romance* (Los Angeles: Grafton Publishing Co, 1911) 316.

[25] FATCO. Martha M. Shaffer (1871-1952?) may have come to Orange from Illinois. Her additional property holdings included the redwood shacks that constituted Santa Ana's Chinatown. The area was burned under order by the City Council in 1906 to avoid the (unfounded) threat of leprosy.

[26] Filed with the Secretary of State, Corporation number C000404.

[27] "Attachment A: General Information About UCI Medical Center" (unpublished, no date) np.

[28] Nelson 1.

1897	PSSO relocates to Spring and Franklin streets in Los Angeles.[29]
1898	PSSO moves again to 10th and Flower streets (Los Angeles).[30]
1900	Alcoholism and drug addiction are treated as mental illness.[31]
1901	Orange County's first hospital and home for indigents is established in a residence on Second Street in Santa Ana.[32] The facility has two beds.
1903-04	College of Physicians & Surgeons (COPS), a new osteopathic medical school is established. COPS successfully requests privileges for staff and students at Los Angeles County Hospital. (LACH).
1904	Orange County Hospital and Poor Farm opens in a two story, frame residence at Sixth and Spurgeon streets in Santa Ana.[33] Although known as the county hospital, the six-bed facility is more commonly known as the poor house.
1907	There are five mental hospitals in California.[34]
1908	Two members of COPS graduating class become interns at LACH.
1909	New administration building is erected at LACH.[35]
1909-1910	Official affiliation is initiated between COPS and LACH that will last until 1919.[36]

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[29] Nelson 1.

[30] Nelson 1.

[31] Chattel Architecture "Rancho" 2.

[32] Donna Davis, "To County's Sick, Destitute and Elderly, the Poor Farm Was Home" *Orange County Register*, 22 November, 1981, B-1.

[33] Davis B-1. The date of the new facility is variously given as 1904 and 1906 in different sources.

[34] Chattel Architecture "Rancho" 2.

[35] ESA 216.

[36] Martin 92.

1911	John Weherly, MD is appointed County Physician nearly immediately and begins lobbying for a more appropriate facility.[37]
December 30, 1911	Land including subject property is transferred to Dawn Land Company for $24,000.[38]
July 20, 1912	A successful election is held to vote on issuing $60,000 in bonds for "the purpose of purchasing grounds for a poor-farm and erecting thereon of suitable buildings for an almshouse and hospital." [39]
October 22, 1912	County Board of Supervisors gives notice of intention to purchase a site for the county hospital and poor farm from the Dawn Land Company at a cost of $42,250.[40]
November 19, 1912	The 72-acre tract of land, formerly part of the U. L. Shaffer estate in West Orange, is purchased for the county hospital site.[41] The site is located west of the Southern Pacific Railway, at the end of Chapman Avenue.
December 26, 1912	A contract is awarded to Anderson & Bolyard to build a foreman's cottage and four bungalows for $5,996. Horton & Eaton Company receives a contract to provide a 6,000 gallon water tank "...on a thirty-foot octagonal

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[37] C. D. Ball, MD, *Orange County Medical History* (Santa Ana: A. C. Flagg, 1926) 61.

[38] Warren L. Bostick, *College of Medicine: History-Academics-Politics, The Merging Professions* (no publisher) no date, 148.

[39] Samuel Armor, *History of Orange County, California, With Biographical Sketches* (Los Angeles: Historic Record Company) 1921, 96.

The following definitions are for archaic words used in this chronology:

alms house	"A house for the poor, maintained at public expense, or as in Great Britain, by private endowment." (H. G. Emory and K. G. Brewster, eds. *The New Century Dictionary of the English Language* (New York: P. F. Collier & Son Corporation 1938) vol. I, 34)
indigent person	"...one who is destitute and helpless as to be dependent for their support upon public charity." (Texas Constitution of 1845)
poor farm	"...a place where the destitute homeless aged, infirm, and disabled of the county could find shelter, food and solace." (Colleen Adair Fliedner, *Centennial: Rancho Los Amigos Medical Center 1888-1988* (Downey: Rancho Los Amigos Medical Center, 1990) 17).

[40] Armor 96.

[41] Armor 96.

	tower with a three-horsepower motor and a Bulldozer head pump" for $700.[42]
September 16, 1913	Chris McNeal is awarded the contract to construct the main hospital building for $45,441. McNeal had recently been responsible for the construction of the (Old) Orange County Courthouse. The contract for the lighting and heating plant is given to Munger & Munger for $5,115.[43]
November 18, 1913	The contract to build "three cottages, a laundry and a club house" is awarded to A.H. Anderson for $8,450.[44]
1913	Fourteen indigents, described as "feeble old men" move to the new Poor Farm.[45]
1914	The main hospital building (Building 10) and two laboratories (Building 12 and 14) are completed.
1914	The following installations are made at the new County Farm and Hospital:[46]

Company	Item(s)	Cost
Robertson & Packard	electrical fixtures	$ 412.
Johns-Manville Company	refrigerator and ice box	494.
Western Laundry Machinery Co.	laundry appliances	2,232.
Fairbanks-Morse	motor	62

1914	PSSO merges with College of Osteopathic Physicians and Surgeons (COPS).[47]

42 Armor 96.

43 Armor 96.

44 Armor 96.

45 Davis np.

46 Armor 96.

47 Nelson 1.

1914	Ordinance 124 is passed, establishing the Orange County Poor Farm and Hospital, also known as County Almshouse.[48]
1914	Orange trees are planted on 15 acres of the hospital grounds..
1914	Dr. Harry E. Zaiser is appointed superintendent, a position he will hold for more than 30 years.[49]
May 1914	Chris McNeal is awarded an additional contract to construct the sewers and sewer connections for $5,545.[50]
September 1, 1914	The hospital is formally opened for patients with a staff consisting of: an attending physician and superintendent of nurses, four graduate nurses and two orderlies.[51]
November 17, 1914	Fred Siefert receives contract to erect additional buildings at the county farm site for $10, 925.[52]
1915	A training school for nurses is organized at the hospital and receives immediate accreditation.[53]
January 1916	More than 13 inches of rain falls, the hospital buildings are saved using sandbags.
1917	First COPS graduate is accepted as an intern at Los Angeles County Hospital.[54]

48 "The Hospital- Present and Future" (unpublished, 1954) 3.

49 "The Hospital- Present and Future" 3.

Robert C. Bunch (long time Superintendent of Hospital Buildings and Grounds) described his role later "Dr. Zaiser acted as pharmacist, bookkeeper, timekeeper, paymaster, and performed al of the functions of a Social Service Worker as well as an X-ray technician. He did everything- he was a one man institution."

50 Armor 96.

51 "The Hospital- Present and Future" 3.

52 Armor 96.

53 Gerry Boss, "From Little Acorns..." *Impulse: The Orange County Hospital* Fall 1971, Vol. VII, 11.

54 Nelson 2.

1917	County purchasing agent F. W. Slaybaugh announces in the Santa Ana *Register* that the sale of "...5,240 pounds of lima beans, grown on the Orange County [poor] Farm property... [netted] $641.90... [which was] added to the account of the institution, and that the farm's income from all this year will total slightly more than $10,000." Slaybaugh describes the facility "[t]he County Farm consists of approximately seventy-two acres. There are 1,000 six-year-old Valencia orange trees on the property as well as 1,600 one-year-old Valencias. The income form these trees during the present year was $3,131." He continues, "In addition to the oranges that are sold, an ample supply is always available for use of the 80 persons who live at the farm. While the Orange County Farm is not a self-sustaining institution, still the cost of operation is cut down considerably by sales of fruit. In addition, the farm raises its own vegetables. Four cows supply milk for the institution."[55]
August 8, 1917	Contract is given to G.A. Barrows to construct a service building including "dining room and a kitchen, at the poor farm" for $7,652.[56]
December, 1917	The Poor Farm produces potatoes, milk and butter and has six Holstein cows.[57]
1919	COPS classes are admitted to Los Angeles County Hospital for clinical experience.[58]
September 16, 1919	Contract awarded to G.A. Barrows to build a garage for $2,935.[59]
December 2, 1919	E.W. Smith given contract to construct cowshed for 1,099.[60]

[55] Armor 97.

[56] Armor 97.

[57] Davis np.

[58] Nelson 2.

[59] Armor 98.

[60] Armor 98.

1920	The Poor Farm sustains 80 people and has citrus groves, vegetable gardens, Berkshire hogs, a bull and 20 Holstein dairy cows.[61]
1921	Griffin Avenue site across from Los Angeles County Hospital is purchased, and a building is moved to the property for use by COPS.
1921	The success of the Orange County Farm & Hospital is so great that County Supervisors authorize the printing of post cards showing the facility.[62]
1923	Building 11, also called the "...psychopathic wing [is] added to the institution..."[63]
February 23, 1923	*The Los Angeles Times* features an article "In Orange County: Hospital, Church, Theater, Club"

> County Supervisors Authorize Structure for Indigent Sick—
> It will be of reinforced concrete, two stories high, with basement and roof garden, solarium and pergola. On the first floor will be the county physician's reception and consulting-room [*sic*], matron's quarters, three wards for insane persons, men's ward, diet kitchen, and two private wards. On the upper floor will be an operating-room [*sic*], etherizing rooms and sterilizing rooms, maternity ward, rooms for electrical treatment; one private ward and men's and women's wards, each with seven beds.[64]

1924	The first Communicable Diseases Building is erected at LACH.[65]
1925	Orange County Hospital facilities include: 125 beds (including bassinets), 48 employees, 26 nurses in training school, 21 medical staff members, and 2 medical interns.[66]

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[61] Davis np.

[62] "Freeze Frame: Orange County Hospital and Poor Farm" *Metro Monitor* Spring 1986 np.

[63] Ball 61. The building was demolished and replaced in 1975.

[64] "In Orange County: Hospital, Church, Theater, Club" *Los Angeles Times*, 23 February, 1913, VI 3.

[65] ESA 216.

[66] "The Hospital- Present and Future" 2.

1926	Nurses' home, chapel and cottages for employees and indigents are erected.[67]
1926	The hospital dairy and stock operations are abandoned, the livestock is sold at auction.[68]
1926	Orange County Hospital is described:

> The farm includes about 70 acres, partially covered by hospital, nurses' home, chapel, cottages for the physicians, and other cottages for employees and indigents. There is an orange orchard of twenty-seven acres, valencias, and a herd of pure-bred Holsteins to furnish the dairy products.[69]

1928	COPS is the oldest continuously operating medical school in Los Angeles.[70]
1929	Building 27, known as the Tuberculosis Ward, and later the Communicable Diseases Ward, is constructed.
1929	In an effort to thwart Santa Ana's westward expansion, the City of Orange annexes to include Orange County Hospital and Poor Farm.[71]
1930s	With the advent of New Deal social welfare programs, the Hospital phases out "poor farm" component and the name is changed to Orange County General Hospital.[72]

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67 "The Hospital- Present and Future" 2.

68 Tom Talbert, Chairman, Orange County Board of Supervisors, "Historical Highlights" unpublished, no date, 7.

69 Ball 62.

70 Nelson 2. Although USC was founded in the late 1800s, its medical school closed for a decade (between 1918 and 1928).

71 Brigandi 94.

72 Brigandi 129

1931	County Board of Supervisors elects to discontinue the dairy herd and hogs. Most are sold at auction, but the remaining livestock is butchered and consumed at the institution.[73]
March 1933	The Los Angeles metropolitan area is stricken by a severe earthquake, although Orange County General Hospital is not seriously affected.[74]
1933	State of the art high-rise hospital tower is completed at LACH (Los Angeles General Hospital).[75]
March 5, 1938	A catastrophic flood occurs, paralyzing hospital operations and trapping 150 patients in the tuberculosis ward.[76]
1940	Formal effort toward consolidation of medical and osteopathic fields begins.[77]
1941	The first radiation therapy equipment is installed.[78] The X-ray Department occupies the former Special Dietary Kitchen, in the penthouse of Building 10.[79]
1942	As part of the war effort, Santa Ana Army Air Base (SAAB) is established in present-day Costa Mesa, roughly between Harbor and Newport boulevards, Baker and Wilson streets.[80]
1943	The Sleep and Dream Lab (Building 13), also known as the Psycho-Physiology Lab, is constructed. It later becomes the Psychiatry Lab.

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73 "The Hospital- Present and Future" 2.

74 "The Hospital- Present and Future" 2.

75 ESA 216.

76 Kym Salness, MD, "History of UCI Medical Center, or 'It Takes a Long Time to Turn A Battleship Around' " videotaped lecture July 1, 1988.

77 Tracy Taylor, ed. "UCI College of Medicine: A Brief History" *UCI College of Medicine Alumni Directory* and *Centennial Edition: UCI Alumni Directory* (1992 and 1996 respectively) reprint 2.

78 Boss 12.

79 "The Hospital- Present and Future" 9.

80 Edrick J. Miller, *SAAB Story* (Santa Ana: Tri-Level Lithographers, Inc., 1981) 189.

1943	The Electrical Shop (Building 33) is constructed. It is also used as a Radiology Lab.
1946	After 32 years of service to the hospital, Dr. Harry E. Zaiser retires as superintendent.[81]
1946	SAAB closes.[82]
1947	SAAB allocates 22 surplus buildings to the hospital and local schools. Nine of the buildings are to be moved to the site.[83]
1948	Laundry (Building 20 and Building 17) buildings are constructed.
1949	The nine World War II military barracks from SAAB are relocated to the hospital campus and remodeled, adding 118 beds to the hospital.[84] Some of the barracks are also designated for specific uses such as: pediatrics (Building 43), surgery research (Building 46), hemodialysis (Building 24), inservice education (Building 41) and a research lab for anesthesiology (Building 57).
1949	The City of Orange builds a chlorinator (Building 76) on the medical campus site.
1949	A reservoir (Building 79) is added to the site.
1949	A system of covered walkways connecting the buildings is added to the southeast side of the campus.
1949-1954	More than $1,200,000 is spent on improvements, including a new steam plant.[85]

[81] "The Hospital- Present and Future" 1. Harry Edgar Zaiser, MD (1879-1956)was born in Iowa and died at the age of 76 in Orange, California.

[82] Miller 189.

[83] Telephone conversation with Mary Ellen Goddard, retired UCI Special Librarian and volunteer historian at Costa Mesa Historical Society, February 19, 2001.

[84] "The Hospital- Present and Future" 1.

[85] "The Hospital- Present and Future" 1.

1950	Construction begins on the adjacent Interstate-5 freeway.[86]
1954	Hospital facilities include: 594 beds (including bassinets), 505 employees, 85 nurses in training school, 102 medical staff members, and 17 medical interns.[87]
1958	A nursing school building (Building 53) is erected, containing a library, auditorium, classrooms, recreation area and housing for 96 nurses.
1954	The fully accredited professional school of nursing is affiliated with Fullerton Junior College.[88]
1955	A crematorium (Building 59) is added to the campus.
1956	An addition to the now demolished Shop Building (Building 48) is made on the south side.[89]
1957	An oncology building (Building 54) and "an additional covered walk" are constructed. Building 54 is later used for Geriatrics and Physical Therapy.[90]
1957	During the fall, the UC Regents "voted their intent to start a new campus in the general area east and south of Los Angeles."[91]
1958	Another research lab (Building 52), a volunteer center (Building 44), a patient care center (Building 51) and an occupational therapy building (Building 50) are constructed on the campus. According to building permit records, some or all of the four may have been designed by W. L. Faulkner.[92]

[86] Brigandi 126

[87] "The Hospital- Present and Future" 2.

[88] "The Hospital- Present and Future" 2.

[89] "Application for Variance Permit" number V2423, April 12, 1956.

[90] "Application for Conditional Permit" number C754, February 4, 1957.

[91] Samuel Clyde McCulloch *Instant University: The History of the University of California, Irvine 1957-93* (San Diego: Continental Graphics, 1994 ?) ix.

[92] "Application For Building Permit" no permit number, final inspection April 18, 1958.

1958	A power plant (Building 31) designed by W. L. Faulkner is added to the campus.[93] The one-story building cost $5,000 to build.
1959	University of California successfully requests 1,000 acres for a new campus from The Irvine Company.
1959	A new psychiatric building (Building 2) "complete with courtroom and physical therapy facilities" is constructed.[94]
1959	A subterranean Utility Tunnel and "Incinerator and Appurtenances" (Building 59), both designed by W. L. Faulkner are completed. The tunnel cost $65,000.[95] to build, and the incinerator $50,000.[96]
1960	The UC Regents accept land from the Irvine Foundation to be used as campus for the newly-established UCI.[97]
1961	Amid much turmoil about whether osteopathy is medicine or "cultist healing," COPS Board of Trustees votes to convert to a conventional medical school, and the name is changed to California College of Medicine (CCM).[98]
1961	The Power Plant (Building 31) is modified.[99]
February 15, 1962	American Medical Association officially recognizes CCM.

[93] "Application For Building Permit" no permit number, final inspection January 29, 1958.

[94] Boss 12.

[95] "Application For Building Permit" no permit number, final inspection January 20, 1959.

[96] "Application For Building Permit" no permit number, final inspection August 4, 1959.

[97] Bostick 209.

[98] Nelson 3.

[99] "Application For Building Permit" no permit number, final inspection February 21, 1961.

1962	State legislation is passed permitting doctors of osteopathy to be licensed by the state Board of Medical Examiners and to use the MD title.[100] CCM confers its first medical degree.[101]
1962	A Storage & Maintenance/Clinical Teaching Unit (Building 16) is added to the campus.
1963	Passage of SB-1414 designates the affiliation of CCM with University of California as a medical department.[102] The now-independent medical school remains on the Los Angeles campus until 1964.
1963	Hospital name is changed to Orange County General Hospital.
1963	Architect William Periera presents plans for a master planned community centered around a newly-established university to the Orange County Board of Supervisors.[103]
1963	The population of Orange county reaches 1 million.[104]
July 21, 1963	A new Acute Disease Unit (Building 1) opens, serving as an acute care facility with 360 beds and 57 bassinets.
1964	The final plan for the southern 10,000 acres of Irvine Ranch to become a master planned community is completed.
January 1, 1964	CCM officially becomes part of the University of California system.[105]
1965	Building 20 "offices for hospital" is completed. Warehouse (Building 46) and Garage (Building 21) are demolished.[106]

[100] "Response to Systemwide Request for History of MCIP Activities (1975-1979) University of California Irvine Medical Center" (unpublished, April 19, 1979) 1.

[101] Nelson 3.

[102] Taylor 3.

[103] "Orange County Historical Timeline" *Orange County Register* 1999, np.

[104] "Orange County Historical Timeline"

[105] McCulloch 92.

[106] Building Permit cards, permit numbers 21841, 21842 and 21843, final inspection July 20, 1965.

1965	Permits are issued to demolish a two story office and a warehouse near the main hospital building.[107]
October 4, 1965	First classes are held at the new University of California at Irvine. UCI is the ninth University of California campus.[108]
1966	Orange County General Hospital begins to admit private patients and the name is changed to Orange County Medical Center.
1966	A Master Plan is prepared for Orange County Medical Center by Welton Becket/Rose & Fears.[109]
April 5, 1967	CCM Board of Trustees pass resolution (later agreed to by University of California Board of Regents) that the medical school is administratively responsible to the University of California and to relocate the campus to Irvine.[110]
1967	Orange County Medical Center becomes the major affiliate hospital of CCM as training site of its residents.
1968	Los Angeles General Hospital becomes Los Angeles County/University of Southern California (LAC+USC) Medical Center.[111]
1968	Orange County Board of Supervisors approves affiliation between the Orange County Medical Center and UCI. As part of the agreement, the University rented 40,000 square feet in the former nursing school building and former tuberculosis wards.[112]

[107] Orange County Hospital "Application(s) for Building Permit(s)" permit numbers B12303 and B12306, July 20, 1965.

[108] "UCI's Early Days Were Marked By Innovation and Whimsey" *Orange County Register* circa 1990 (no date) np.

[109] "Master Plan for Hospital Authorized" *Los Angeles Times* 3 July, 1966, R-16.

[110] McCulloch 101.

[111] ESA 217.

[112] Bostick 148.

1969	A Vivarium (Building 60) is donated by the Orange County Hospital Auxiliary.[113]
1970	Board issue for a planned 350-bed hospital on UCI campus is defeated.[114]
1971	Pathology and Radiology Laboratories (Building 48) are constructed.
1973	Public debate regarding whether to build a new hospital in Irvine, or purchase and improve Orange County Medical Center begins.[115]
1972	Additional Administrative Offices (Building 26 and Building 58) are added to the campus.
1973	Pavilion 3 (Building 29) is constructed.
1975	Department Offices (Building 11) are constructed on the site of the former Psycho-Pathic Ward.
1975	Buildings 16 and 17 are joined and renamed the Central Services Building.
1976	Regents of the University of California purchase the hospital campus for use as UCI Medical Center for $8,000,000.[116] The price was based on the value of the land, buildings and structures, equipment, and supplies.
July 1, 1976	Official opening of the UCI Medical Center is held at noon.[117]
September 1, 1976	William Pereira Associates completes a two volume study of the site *Evaluation of Existing Facilities, UCIMC, Renovation Master Plan.* The report evaluates the existing 49 buildings on the campus and makes recommendations for demolitions, replacements and campus-wide improvements. The building stock ranged from Quonset huts (Buildings 22 and 23), to original wood framed buildings (Building 10) and "modern" types (Building 1).

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[113] Building Permit card, permit number 48225, final inspection February 3, 1969.

[114] "Chronology-- UCI Clinical Activities" (unpublished, no date) 1.

[115] "Chronology" 1.

[116] "UCIMC Slide Show: Program Narrative Notes" unpublished script, no date, 2.

[117] Richard Nagel, County of Orange Memorandum to Service Directors and Division Heads, 22 June, 1976, 1.

1978	The North Parking Structure (Building 72) is added to the campus.
1979	A new facility is built to house appointment clinics and to provide office space for clinical faculty (Building 29a).
April 23, 1981	Building 1a, Medical Center Tower "to provide replacement space for obstetrics, diagnostic radiology, emergency services and 114 new beds" is completed at a cost of $14,000,000.[118]
1981	An Electrical Facility (Building 32), funded out of the Hospital Reserves, is constructed on the site of Building 19.
1982	A medical library (Building 22a) is added to the campus.
1985	In a joint venture between UCI and AMI, a Magnetic Resonance Imaging Center (Building 22b) is constructed.
1986	A Diagnostic Services Center (Building 22c) is built.
1988	Pavilion I (Building 30), comprised of 18 trailers, and the South Parking Garage (Building 73) are added to the campus.
1989	Pavilion II (Building 30a) is constructed.
1991	UCI Medical Center is the largest employer in Orange, with more than 3,000 employees.
1991	Chao Cancer Center (Building 23) is added to the campus.
1993	Building 3, Neuropsychiatric Center is completed.
1997	The UCI Health Sciences Lab/Academic Lab Facility (Building 55) is constructed.
1998	Orange County population is 2.72 million.[119]
1999	An information booth is constructed at the entrance to the Medical Center.

[118] "UCIMC Slide Show" 2.

[119] "Orange County Historical Timeline"

ATTACHMENT 2

SURVEY

Use category Inpatient Facilities

Building number 01

Former name(s) New Acute Disease Unit

Building name Medical Center-East (Main Hospital)

Square feet 182,200 **Stories** 6

Year built 1963

Alterations

Architect H. C. Wildman & W. L. Faulkner

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes Dedicated July 21, 1963, 360 bed addition; funded by a 1956 $5,605,000 bond issue; connected in 1981 to Bldg 1a, entrance demolished

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Use category Academic/Administration/Research Facilities

Building number 02

Former name(s) Psychiatric Building (1957), Mental Health Building (1968)

Building name Academic and Support (Resident Services)

Square feet 42,540 **Stories** 3

Year built 1959

Alterations c. 1979- original guard shack removed; 1984 (or '87)- gift shop & elevator tower added to front elevation; 1988- gazebo added; 1990- new driveway

Architect W. L. Faulkner, AIA

Contractor Unknown

Initial action Demolish

Subsequent action Relocate use

Notes interior completely altered
catalog # 99

Use category Inpatient Facilities
Building number 03
Former name(s)

Building name Neuropsychiatric Center
Square feet 81,358 **Stories** 3
Year built 1993
Alterations

Architect Ratliffe Architects (Berkeley)
Contractor Unknown
Initial action No demolition
Subsequent action Reconfigure space
Notes

Use category Academic/Administration/Research Facilities
Building number 10
Former name(s) Orange County Farm & Hospital main building

Building name Academic Offices
Square feet 27,645 **Stories** 2
Year built 1914
Alterations 1926- south end addition; 1952- stair demolished, elevator installed on ext; 1962- basemnt built out & entr. reconfig'd; 1963- corridr conn to #1 (basemnt +1st flr); 1966- lab & x-ray ctr added; 1967- north elevation, ramp & stairwell added, doors/windows infilled & gunited; all windows repl. w/metal frames, transoms/arches infilled, connect. to #30 demolished and all walls gunited; 1970- "improvements"

Architect Frederick H. Eley (1914) , M. Eugene Durfee (1926)
Contractor Chris W. McNeal
Initial action Demolish
Subsequent action New building
Notes was connected at south end to Building 30; now connected at east side to Building 1; interior no longer intact
952- cat # 843 (Dwr. 25); 1967- cat # 1278

Use category Academic/Administration/Research Facilities

Building number 11

Former name(s)

Building name Department Offices

Square feet 3,555 **Stories** 1

Year built 1975

Alterations

Architect Not applicable

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes built on site of eariler Building 11, Psycho-Pathic Ward (built 1922) which was connected on the 2nd floor to Building 10

Use category Academic/Administration/Research Facilities

Building number 12

Former name(s) Intern Dormitory (1955), Laboratory (1950); Micro-Biology (1979)

Building name Storage (vacant)

Square feet 1,313 **Stories** 1

Year built 1914

Alterations no date(s)- windows infilled on east side, front door boarded over

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes interior has coved ceilings, but many rooms re-clad in accoustic tile (ceiling, walls, etc.), used for storage since 1996

Use category Academic/Administration/Research Facilities

Building number 13

Former name(s) Morgue (1955) ;Sleep and Dream Lab; Psycho-Physiology Lab

Building name Psychiatry Lab

Square feet 852 **Stories** 1

Year built 1943

Alterations 1969- doors and windows altered, roof replaced with Spanish tile; no dates- shed roofed addition on south side, glazing replaced with obscure patterened glass, windows on east side infilled w/ stucco and doors

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes (catalog # 1098), used for storage since 1996

Use category Academic/Administration/Research Facilities

Building number 14

Former name(s) Laboratory (1950); Bacteriology (1975)

Building name Storage

Square feet 1,306 **Stories** 1

Year built 1914

Alterations date(s) unknown: 3-part windows modified, additions to east (cold room) and north (autoclave) sides

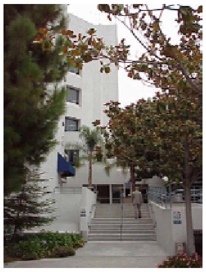
Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes used for storage since 1996



Use category Inpatient Facilities

Building number 1a (2a)

Former name(s)

Building name Medical Center Tower

Square feet 101,105 **Stories** 6

Year built 1981, dedicated April 23, 1981

Alterations

Architect William L. Pereira Associates

Contractor Unknown

Initial action No demolition

Subsequent action Reconfigure space

Notes built to provide replacement space for obstetrics, diagnostic radiology, emergency services and 114 new beds

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Use category Support Facilities

Building number 20

Former name(s) Dormitory (1955); Laundry

Building name Material Management /Facilities,Planning & Development

Square feet 10,535 **Stories** 1

Year built 1948

Alterations 1955- washroom addition; 1977 and 1987- remodeled; 1977- Butler-type storage addition

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes

Use category Academic/Administration/Research Facilities

Building number 22a.

Former name(s)

Building name Medical Library

Square feet 33,643 **Stories** 3

Year built 1982

Alterations

Architect Leo A. Daly

Contractor Unknown

Initial action No action

Subsequent action

Notes opened April 1, 1982

Use category Ancillary Facilities

Building number 22b.

Former name(s)

Building name MRI (Magnetic Resonance Imaging) Center

Square feet 6,007 **Stories** 1

Year built 1985

Alterations

Architect Unknown

Contractor Unknown

Initial action No action

Subsequent action

Notes joint venture between UCI and AMI, a private firm

Use category	Ancillary Facilities
Building number	22c.
Former name(s)	
Building name	Diagnostic Services Center
Square feet	17,509
Stories	2
Year built	1986
Alterations	
Architect	Unknown
Contractor	Unknown
Initial action	No action
Subsequent action	
Notes	

Use category	Ancillary Facilities
Building number	23
Former name(s)	
Building name	Chao Cancer Center
Square feet	71,359
Stories	4
Year built	1991
Alterations	
Architect	Kaplan McLaughlin Diaz
Contractor	Unknown
Initial action	No action
Subsequent action	
Notes	

Use category Academic/Administration/Research Facilities

Building number 24

Former name(s) Hemodialysis

Building name Research Lab

Square feet 1,900 **Stories** 1

Year built 1949 (may have been moved after 1955)

Alterations

Architect H. C. Wildman & W. L. Faulkner

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes

Use category Academic/Administration/Research Facilities

Building number 24a.

Former name(s)

Building name Research Lab

Square feet 1,000 **Stories** 1

Year built 1949 (circa 1980s)

Alterations

Architect Not applicable

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes New trailer probably replaced 1949 building

Use category	Ambulatory Care Facilities
Building number	25
Former name(s)	Central Services Building
Building name	OB/GYN, Med. Rec. Facility (Academic Offices, Admin.
Square feet	36,799
Stories	2
Year built	1948
Alterations	1955- large addition on south side;1975- remodeled
Architect	Unknown
Contractor	Unknown
Initial action	Demolish
Subsequent action	New building
Notes	Two buildings joined in 1975: #16 Storage & Maintenance/ Clinical Teaching Unit, built 1962 (W. L. Faulkner, architect), #17 Laundry, built 1948 (W. L. Faulkner)

Use category	Academic/Administration/Research Facilities
Building number	26
Former name(s)	
Building name	Administrative Offices
Square feet	6,040
Stories	1
Year built	1972
Alterations	
Architect	Not applicable
Contractor	Unknown
Initial action	Demolish
Subsequent action	New building
Notes	

Use category Support Facilities

Building number 27

Former name(s) TB (Tuberculosis) Ward (1949); CD (Communicable Disease) Ward (1950)

Building name Storage

Square feet 6,153 **Stories** 1

Year built 1929

Alterations 1950- remodeled; date unknown- added ramps on west side (reoriented entrance), overpainted transoms, stairs added south and north elevations

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes eventually used as pediatric TB ward

Use category Ambulatory Care Facilities

Building number 29

Former name(s)

Building name Pavilion III

Square feet 36,615 **Stories** 1

Year built 1973

Alterations

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action Relocate use

Notes

Use category	Ambulatory Care Facilities
Building number	29a.
Former name(s)	
Building name	Pavilion III
Square feet	16,416
Stories	2
Year built	1979
Alterations	
Architect	Unknown
Contractor	Unknown
Initial action	Demolish
Subsequent action	Relocate use
Notes	built to house appointment clinics and to provide office space for clinical faculty

---

Use category	Ambulatory Care Facilities
Building number	30
Former name(s)	
Building name	Pavilion I
Square feet	18,525
Stories	2
Year built	1988
Alterations	
Architect	PBS (now Mobil Modular)
Contractor	Unknown
Initial action	Demolish
Subsequent action	Relocate use
Notes	18 trailers comprise this building

Use category	Ambulatory Care Facilities		
Building number	30a.		
Former name(s)			
Building name	Pavilion II		
Square feet	18,972	**Stories**	2
Year built	1989		
Alterations			
Architect	Coleman/Casky		
Contractor	Unknown		
Initial action	Demolish		
Subsequent action	Relocate use		
Notes			

Use category	Support Facilities		
Building number	31		
Former name(s)			
Building name	Power Plant		
Square feet	9,383	**Stories**	1
Year built	1959 (1958 per permit)		
Alterations	1991- steam generator addition (30 feet added) on east side		
Architect	W. L. Faulkner, AIA		
Contractor	O. R. Robertson		
Initial action	No action		
Subsequent action			
Notes	building permit (no number) finaled January 29, 1958		

Use category	Support Facilities
Building number	32
Former name(s)	
Building name	Electrical Facility/Shack
Square feet	3,800
Stories	1
Year built	1981
Alterations	
Architect	Unknown
Contractor	Unknown
Initial action	Demolish
Subsequent action	New building
Notes	Building 19 demolished for this facility, funded out of Hospital Reserves

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Use category	Support Facilities
Building number	33
Former name(s)	Maintenance Shop (1955); Radiology Lab; Electrical Shops
Building name	Facility Management (Reasearch Offices and Facility Services)
Square feet	5,808
Stories	1
Year built	1943
Alterations	
Architect	H. C. Wildman & W. L. Faulkner
Contractor	Unknown
Initial action	Demolish
Subsequent action	New building
Notes	gable roofed portion called "The Barn," barn may have been relocated sometime after 1955 (Building 24)

Use category Academic/Administration/Research Facilities

Building number 41

Former name(s) Geriatrics (female) (1955); Inservice Education (1962)

Building name Research Lab

Square feet 3,813 **Stories** 1

Year built 1943

Alterations 1949- roof and windows replaced; 1969- doors replaced, windows reconfigured

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes relocated to site in 1949 from Santa Ana Army Air Base (catalog # 1098)

Use category Academic/Administration/Research Facilities

Building number 43

Former name(s) Pediatrics

Building name Research Lab

Square feet 4,228 **Stories** 1

Year built 1943

Alterations 1949- roof and windows replaced; 1962- remodeled;1993- "renovated"

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes relocated to site in 1949 from Santa Ana Army Air Base

Use category Ambulatory Care Facilities

Building number 44 (formerly Building 39)

Former name(s) OB (1955)

Building name Volunteer Services: Blood Draw Center

Square feet 5,193 **Stories** 1

Year built circa 1943 (1958)

Alterations 1962- remodeled; recently- enclosed side door, new vinyl windows (east side)

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes relocated in 1949 from Santa Ana Army Air Base; identical building footprint appears on 1955 site map

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Use category Academic/Administration/Research Facilities

Building number 46 (formerly Building 8)

Former name(s) TB female (1955); Surgery Research (1996)

Building name Research Lab

Square feet 4,906 **Stories** 1

Year built 1943

Alterations 1949- roof and windows replaced

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes relocated to site in 1949 from Santa Ana Army Air Base

Use category

Building number 48 (formerly Building 35)

Former name(s) Pathology and Radiology Laboratories

Building name Research Lab

Square feet 3,851 **Stories** 1

Year built 1971

Alterations

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes (catalog # 1098)

Use category Ambulatory Care Facilities

Building number 50

Former name(s)

Building name Occupational Therapy

Square feet 4,672 **Stories** 1

Year built 1958

Alterations exterior was stuccoed after 1976

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action Relocate use

Notes cinder block construction

Use category Ambulatory Care Facilities
Building number 51
Former name(s) Patient Care (Rehabilitation)

Building name Outpatient Dialysis
Square feet 6,172 **Stories** 1
Year built 1958
Alterations exterior was stuccoed since 1976

Architect Unknown
Contractor Unknown
Initial action Demolish
Subsequent action Relocate use
Notes cinder block construction

Use category Academic/Administration/Research Facilities
Building number 52
Former name(s)

Building name Research Lab
Square feet 4,554 **Stories** 1
Year built 1958
Alterations exterior was stuccoed since 1976

Architect Unknown
Contractor Unknown
Initial action Demolish
Subsequent action New building
Notes cinder block construction

Use category Academic/Administration/Research Facilities

Building number 53

Former name(s) "A Nurses School & Home;" Nursing Dorm

Building name Academic Offices (COM)

Square feet 51,538 **Stories** 2

Year built 1958

Alterations 1982- library moved, space remodeled; 1995- Auditorium remodeled; 2001- second floor pedestrian access removed, (window and brick replaced to match existibng), Lobby enclosed, large paired doors removed, rooms added, remaining classroom remodeled

Architect H. C. Wildman & W. L. Faulkner

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes built to serve as nursing school; former names: College of Medicine (1968); Department Office (1972); Research Lab (1973)

Use category Ambulatory Care Facilities

Building number 54 (formerly #25)

Former name(s) Oncology (1962); Geriatrics (1955-1964)

Building name Physical Therapy

Square feet 5,424 **Stories** 1

Year built 1957 (1952)

Alterations 1964- addition and remodel

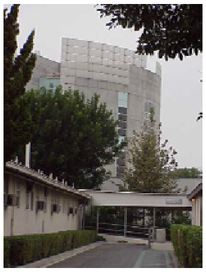
Architect W. L. Faulkner

Contractor Unknown

Initial action Demolish

Subsequent action Relocate use

Notes building permit (#97372) final inspection April 18, 1957; (Conditional) Use Permit #C-754



Use category	
Building number	55/0
Former name(s)	
Building name	UCI Health Sciences Lab/Academic Lab Facility
Square feet	60,000
Stories	4
Year built	1997
Alterations	
Architect	Leo A. Daly
Contractor	Unknown
Initial action	No action
Subsequent action	
Notes	

Use category	Academic/Administration/Research Facilities
Building number	57 (formerly Building 37)
Former name(s)	TB (male (1955); Research Lab for Anesthesiology
Building name	Research Lab
Square feet	5,114
Stories	1
Year built	1943
Alterations	
Architect	Unknown
Contractor	Unknown
Initial action	Demolish
Subsequent action	Relocate use
Notes	Relocated in 1949 from Santa Ana Army Air Base

Use category Academic/Administration/Research Facilities

Building number 58

Former name(s)

Building name Administrative Services (Academic Offices and Administrative

Square feet 2,964 **Stories** 1

Year built 1972

Alterations

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes

Use category Support Facilities

Building number 59

Former name(s) "Incinerator and appurtenances" per permit

Building name Incinerator/Crematorium

Square feet 350 **Stories** 1

Year built 1959

Alterations 1983- add container, dumper and compactor ; circa 1991- demolished

Architect W. L. Faulkner, AIA

Contractor

Initial action No action

Subsequent action

Notes demolished circa 1991-1996, per Larry Knight, lead custodian, was next to Paint Shed (interview 1/8/01)

Use category Academic/Administration/Research Facilities

Building number 60

Former name(s)

Building name Vivarium

Square feet 6,613 **Stories** 1

Year built 1969

Alterations 1977 and 1987- remodeled; 1992- "upgraded"

Architect Unknown

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes donated by Orange County Hospital Auxiliary, 1961 (catalog # 1098); building permit # 48225

Use category Academic/Administration/Research Facilities

Building number 63

Former name(s) North County Annex (1997)

Building name Administration Building, 200 (200 Building OB/GYN)

Square feet 5,424 **Stories** 8

Year built 1980

Alterations

Architect Daniel Dworsky & Associates

Contractor Unknown

Initial action No action

Subsequent action

Notes Off site, not in campus

Use category Support Facilities

Building number 65

Former name(s) Warehouse/Materials

Building name

Square feet 0 **Stories** NA

Year built NA

Alterations

Architect Bastien & Associates

Contractor Unknown

Initial action

Subsequent action

Notes Off site- 2040 State College Blvd.

Use category Support Facilities

Building number 72

Former name(s)

Building name North Parking Structure

Square feet 87,000 **Stories** 3

Year built 1978

Alterations

Architect Conrad Associates

Contractor Unknown

Initial action Demolish

Subsequent action New building

Notes

Use category Support Facilities

Building number 73

Former name(s)

Building name South Parking Garage

Square feet 216,733 **Stories** 6

Year built 1988

Alterations

Architect Wayne Banks & Associates, Inc.

Contractor Unknown

Initial action No action

Subsequent action

Notes

Use category Support Facilities

Building number 76

Former name(s)

Building name Chlorinator

Square feet 135 **Stories** 1

Year built 1949

Alterations 1969- chlorinator vault

Architect W. L. Faulkner

Contractor Unknown

Initial action No action

Subsequent action

Notes Not part of UCI Med Center campus, owned by City of Orange Water Department

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Use category	Support Facilities
Building number	79
Former name(s)	
Building name	Reservoir
Square feet	87
Stories	1
Year built	1949
Alterations	1962- improved
Architect	Unknown
Contractor	Unknown
Initial action	No action
Subsequent action	
Notes	

Use category	Support Facilities
Building number	n/a
Former name(s)	subsurface tunnel
Building name	Utility Tunnel
Square feet	0
Stories	
Year built	1959
Alterations	1963- additional "leg" built to serve Building 1A
Architect	W. L. Faulkner
Contractor	Gallegos Corporation
Initial action	No action
Subsequent action	
Notes	hatch access at northwest corner of County Facility Road and former Placentia Avenue, approximately 6'-6" high by 6' wide, building permit finaled 1/20/59, cost $65,000

Use category Support Facilities

Building number NA

Former name(s)

Building name Information Booth (at entrance)

Square feet

Stories 1

Year built 1999

Alterations

Architect UCI Med Center Facilities

Contractor Unknown

Initial action

Subsequent action

Notes

Use category Support Facilities

Building number NA

Former name(s) "Covered Ways"

Building name Walkways

Square feet

Stories NA

Year built 1949

Alterations additional "covered walk" added circa 1957 (Conditional Permit #C-754)

Architect H. C. Wildman & W. L. Faulkner

Contractor Unknown

Initial action Demolish

Subsequent action

Notes Utilities carried beneath roof: steam, gas, soft water, telephone & fiberoptics

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ATTACHMENT 3

DPR 523A FORMS

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** 1 **Resource Name or #:** (Assigned by recorder) *Medical Center-East (Main Hospital)*

P1. Other Identifier: *Building 1, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T ; R ; 1/4 of 1/4 of Sec ;**

c. Address: *101 The City Drive South* City Zip

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 1 is a long rectangular five story building. The building is three bays wide, a very wide central bay features continuous, ribbon windows protected by louvered metal awnings. The short side bays are lower and only four bays wide. As originally constructed, a low, C-shaped, free form pavilion at the center served as the formal entrance. The building was connected at the center with Building 1A in 1981, a raised, shared central entrance now bisects the connection.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 1 (View toward east). Photo No: 1-1,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1963

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of Caliornia, Irvine Medical Center Environmental Impact Report

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code ____ Reviewer ____ Date ____

Page 1 of

Resource Name or #: (Assigned by recorder) *Academic Offices*

P1. Other Identifier: *Building 10, UCI Medical Center*

P2. Location: ☐ Not for Publication ☒ Unrestricted **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad Date T ; R ; 1/4 of 1/4 of Sec ;

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; mE/ mN

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 10 is two-stories high, six bays wide, and is configured in an elongated, rectangular plan. The building is finished in a heavy gunite cladding. Executed in the Classical Revival style, a formerly central entrance bay includes a formal entrance. The entrance to the large building is in the second of the six bays (south-to-north). The entry bay has a classical portico with four Ionic columns on a raised porch. The shallow portico features a triangular pediment and smooth column shafts. The central door has a rectangular classical surround, and is flanked by narrow, round headed windows. There is a central three-part window above, and rectangular windows at the sides. The regular fenestration is expressed in three window-wide bays. The first floor windows have round headed, arched, infilled transoms, and one-over-one, narrow casement windows. A simple stringcourse separates the first and second floors. The second floor windows are simple rectangular openings, and casement windows (consistent with the others) have infilled rectangular transoms. A classically inspired continuous band of stone ballusters follows the roofline. There is a partially engaged basement and various rooftop additions. The building is located toward the center of the hospital campus. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #) *Building 10 (View toward northwest). Photo No: 1-10,*

P6. Date Constructed/Age and Sources: ☐ Prehistoric ☒ Historic ☐ Both

1914

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Resource Name or #: (Assigned by recorder) *Academic and Support (Resident Services)*

P1. Other Identifier: *Building 2, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

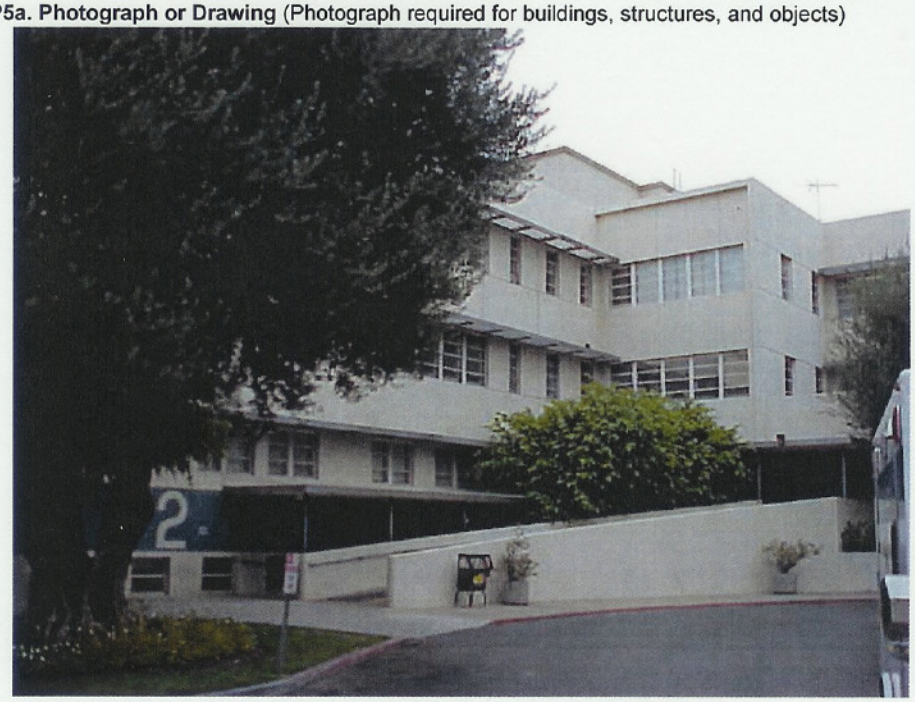
P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 2 is three stories high and is configured in an irregular L. The simple contemporary building is board-formed concrete with continuous ribbon windows shaded by angled metal louvers. The building has a long pedestrian ramp on the east side leading to the plain storefront entrance. A central elevator penthouse punctuates the flat, parapeted roof.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)



P5b. Description of Photo: (View, date, accession #)
Building 2 (View toward northeast). Photo No: 1-2

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1959

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** **Resource Name or #:** (Assigned by recorder) *Storage (vacant)*

P1. Other Identifier: *Building 12, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 12 is a small, single story building. It is configured in a rectangular plan and has a flat roof. The building is obscured by foliage, but its principal feature is a central door. The wide door is three lights wide and five lights high. A projecting, flat pediment protects the central door, supported on shaped, decorative knee braces. The building is located on the north side of the hospital campus next to Building 14. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 12 (View toward northwest). Photo No: 1-12,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1914

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** **Resource Name or #:** (Assigned by recorder) *Psychiatry Laboratory*

P1. Other Identifier: *Building 13, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 13 is a small, single story building. Configured in a rectangular U plan, it has a side- facing, gabled roof, with a shed extension. The building is clad in stucco and has few openings. The building is located on the north side of the hospital campus. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 13 (View toward north). Photo No: 1-13,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1943

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith,
Chattle Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** **Resource Name or #:** (Assigned by recorder) *Storage*

P1. Other Identifier: *Building 14, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 14 is a small, single story building. Rectangular in plan, it has a symmetrical front elevation and is clad in stucco. The building is three bays wide with a cental entrance. Four steps protected by a pipe-rail lead to the entrance. The setback, raised entry features a flat pediment, supported on decorative knee braces. On either side of the entrance, three-part windows feature wide, fixed lights, flanked by narrow, one-over-one sashes. The composition is balanced by narrow horizontal "eyebrows," set high above the side windows. The simple facade is clad in stucco and has a parapeted, flat roofline. The building is located on the north side of the hospital campus next to Building 12. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 14 (View toward northwest). Photo No: 1-14,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1914

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code ____ Reviewer ____ Date ____

Page 1 of 1 **Resource Name or #:** (Assigned by recorder) *Material Management /Facilities,Planning*

P1. Other Identifier: *Building 20, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 20 is one high-bay story in height and is three bays wide. The building is configured in a rectangular plan. The exterior is concrete and has a flat roofline at the parapet. The central front door features a simple, flat canopy. The side window bays have paired, three light, awning windows. There is a Butler-type addition on the south side. The building is located toward the south end of the hospital campus. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 20 (View toward south). Photo No: 1-20,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1948

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of Califronia, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** 1 **Resource Name or #:** (Assigned by recorder) *Research Laboratory*

P1. Other Identifier: *Building 24, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 24 is single story in height and is configured in a long, narrow rectangle. The front-facing, gabled roof includes simple, overhanging eaves. It is finished in smooth stucco. A pair of double doors set on the north end wall serve as the simple entrance. There is a plain, four-sided, louvered cupola at the roof ridge. The building is clad in stucco and has a half-round louver at the apex of the gable. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 24 (View toward northwest). Photo No: 1-24,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1949

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation,Inc.
13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code ____ Reviewer ____ Date ____

Resource Name or #: (Assigned by recorder) *OB/GYN, Med. Rec. Facility (Academic*

P1. Other Identifier: *Building 25, UCI Medical Center*

P2. Location: ☐ Not for Publication ☒ Unrestricted **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; mE/ mN

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 25 is two stories in height and is configured in a large, irregular L plan. The building is reinforced concrete with few openings, however at the south elevation there is a contemporary, curtain wall addition. The west (main) elevation is asymmetrical and industrial in character. A central, single story loading dock occupies the center bay. The loading area is protected by a simple, horizontal canopy. The two story side bays have 3 sets of narrow windows on each floor. The concrete walls are lightly scored. The building has a flat parapet and is located toward the south end of the hospital campus. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #) *Building 25 (View toward northwest). Photo No: 1-25,*

P6. Date Constructed/Age and Sources: ☐ Prehistoric ☒ Historic ☐ Both

1948

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Resource Name or #: (Assigned by recorder) *Storage*

P1. Other Identifier: *Building 27, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 27 is one story in height and forms wide chevron with a flat center in plan. The building is Spanish Eclectic in style, those distinctive features include: its "Santa Barbara"- finished thick stucco walls, Spanish tiled roof, overhanging eaves with carved roof brackets, decorative ceramic tile at the main entrance, and small oculus window. The building composition is perfectly symmetrical. The raised, recessed entrance is located inside the elbow of the building and thick, stucco clad walls serve as railings to the few stairs. Behind a segmental arch, decorative blue Mexican tile wainscoting line the walls of the recessed entry vestibule. Above the entry, a tiny round window which punctuates the composition. Tall, vertical, three-part windows flank the entrance and are deeply recessed, in keeping with the style. The simple windows are repeated on all elevations, and the transoms on all windows are overpainted. The red tiled roof forms a continuous, side facing, medium pitched gable. The building is located toward the south end of the hospital campus. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 27 (View toward west). Photo No: 1-27,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1929

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments
☐ NONE ☐ Location Map ☐ Sketch Map
☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record
☐ District Record ☐ Linear Feature Record ☐ Milling Station Record
☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record
☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

 Resource Name or #: (Assigned by recorder) *Power Plant*

P1. Other Identifier: *Building 31, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 31 is a single story in height and is configured in an irregular square plan. The building is entirely utilitarian, and is clad in metal. It has a front facing, medium pitched, gabled roof, interrupted by various utilitarian vertical penetrations. The fenestration is random, and consists of a variety of different types of multi-light windows. Some of the windows are awning-types and others are fixed. There are pedestrian standard height doors on three sides, and some large sliding doors appear to be fixed in place. The building is located at the south end of the hospital campus. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 31 (View toward southeast). Photo No: 1-31,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1959

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Enviromental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code ____ **Reviewer** ____ **Date**

Page 1 **of** **Resource Name or #:** (Assigned by recorder) *Facility Management (Research Offices an*

P1. Other Identifier: *Building 33, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 33 is a single story in height and is configured in a narrow, rectangular plan. The building is utilitarian, and is finished in stucco. On the east side, it has a front facing, medium pitched, gabled roof, and the west end has a flat roof with overhanging eaves. The fenestration is random, and consists of a variety of different types of multi-light windows. The west end has few openings. The entrance is set off-center on the north side. The building is located at the south end of the hospital campus. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 33 (View toward northeast). Photo No: 1-33,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1943

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** **Resource Name or #:** (Assigned by recorder) *Research Laboratory*

P1. Other Identifier: *Building 41, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 41 is a single story in height and is configured in a narrow rectangular plan. The building is clad in smooth stucco. It has a front-facing, gabled roof, with plain, open eaves. The austere entrance is set at the north end. The simple door has an offset, partial length light. There is no other fenestration on the north elevation. The building is connected at the north door to the covered hospital pedestrian walkway system and is located at the center of campus.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 41 (View toward south). Photo No: 1-41,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1943

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code ____ **Reviewer** ____ **Date** ____

Resource Name or #: (Assigned by recorder) *Research Laboratory*

P1. Other Identifier: *Building 43, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 43 is a single story in height and is configured in a narrow rectangular plan. Clad in smooth stucco, it has a front-facing, gabled roof, with plain, open eaves. The austere entrance is set at the north end. The central main simple door is balanced by large windows with wall- mounted air conditioners set in the tops. The building is connected at the north door to the hospital pedestrian walkway system. It is located at the south end of the hospital campus, in a grouping of similar buildings. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 43 (View toward southeast). Photo No: 1-43,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1943

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments
☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

Page 1 of 1 **Resource Name or #:** (Assigned by recorder) *Volunteer Services: Blood Draw Center*

P1. Other Identifier: *Building 44, UCI Medical Center*

P2. Location: ☐ Not for Publication ☒ Unrestricted **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; mE/ mN

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 44 is a single story in height, and is configured in a long, irregular L plan. The front- facing, gabled roof includes simple, overhanging eaves. It is finished in smooth stucco. A wide door set on the northern end wall serves as the simple entrance. The door has a small glazed light, set off-center. The building is connected on the north end to the covered walkway. It is located at the south end of the hospital campus, in a grouping of similar buildings. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 44 (View toward south). Photo No: 1-44,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1958

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code ____ **Reviewer** ____ **Date** ____

 Resource Name or #: (Assigned by recorder) *Research Laboratory*

P1. Other Identifier: *Building 46, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 46 is a single story in height and is narrow rectangular in plan. The building is clad is stucco and has a front facing, gabled roof with overhanging eaves. The deeply inset entry is located at the north end and is connected to the covered walkways. The simple windows are six- over-six light, sash type. The building is set at a nearly 45 degree angle to the other buildings in the campus. It is located at the south end of the hospital campus, in a grouping of similar buildings. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 46 (View toward southwest). Photo No: 1-46,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1943

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Resource Name or #: (Assigned by recorder) *Occupational Therapy*

P1. Other Identifier: *Building 50, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

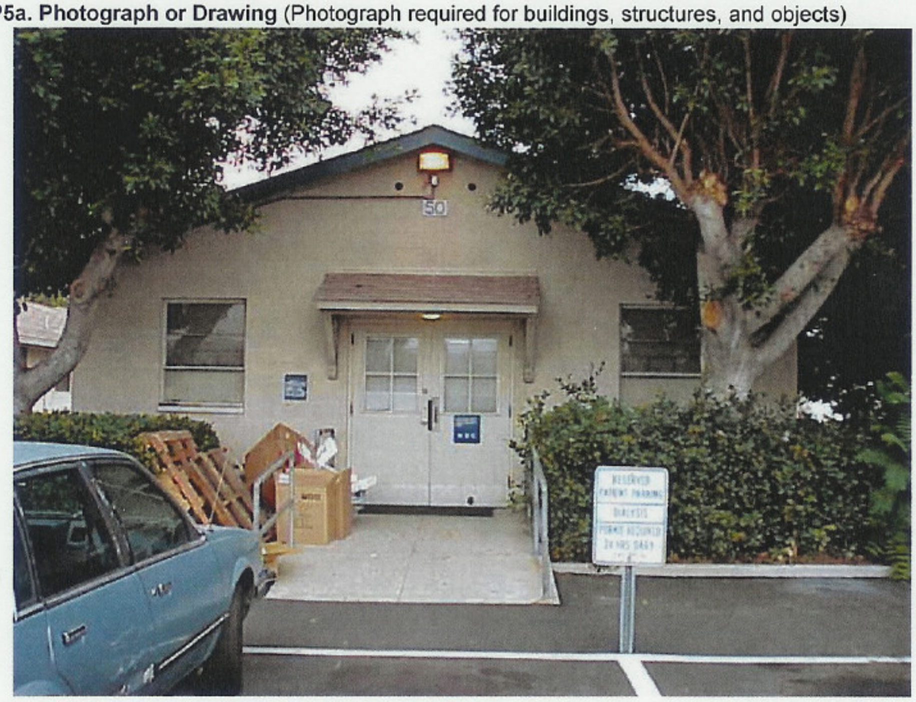
P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Buildings 50, 51 and 52 are interconnected on the north end by a common spine. The buildings form an irregular E plan, with buildings 50, 51 and 52 forming the extensions (west-to-east). Each of the wings or projections have front-facing gabled roofs (which intersect at the common spine), with sightly overhanging eaves. The south facing, symmetrical end wall elevations each have: central double doors are protected by raked pediments, supported on simple knee braces; balanced bay small, multi-light, sash windows. It is located at the south end of the hospital campus, in a grouping of similar buildings. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)



P5b. Description of Photo: (View, date, accession #)
Building 50 (View toward northwest). Photo No: 1-50,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments
☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code ____ Reviewer ____ Date ____

Resource Name or #: (Assigned by recorder) *Outpatient Dialysis*

P1. Other Identifier: *Building 51, UCI Medical Center*

P2. Location: ☐ Not for Publication ☒ Unrestricted **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Buildings 50, 51 and 52 are interconnected on the north end by a common spine. The buildings form an irregular E plan, with buildings 50, 51 and 52 forming the extensions (west-to-east). Each of the wings or projections have front-facing gabled roofs (which intersect at the common spine), with sightly overhanging eaves. The south facing, symmetrical end wall elevations each have: central double doors are protected by raked pediments, supported on simple knee braces; balanced bay small, multi-light, sash windows. It is located at the south end of the hospital campus, in a grouping of similar buildings. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 51 (View toward north). Photo No: 1-51,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1958

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code
Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** 1 **Resource Name or #:** (Assigned by recorder) *Research Laboratory*

P1. Other Identifier: *Building 52, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

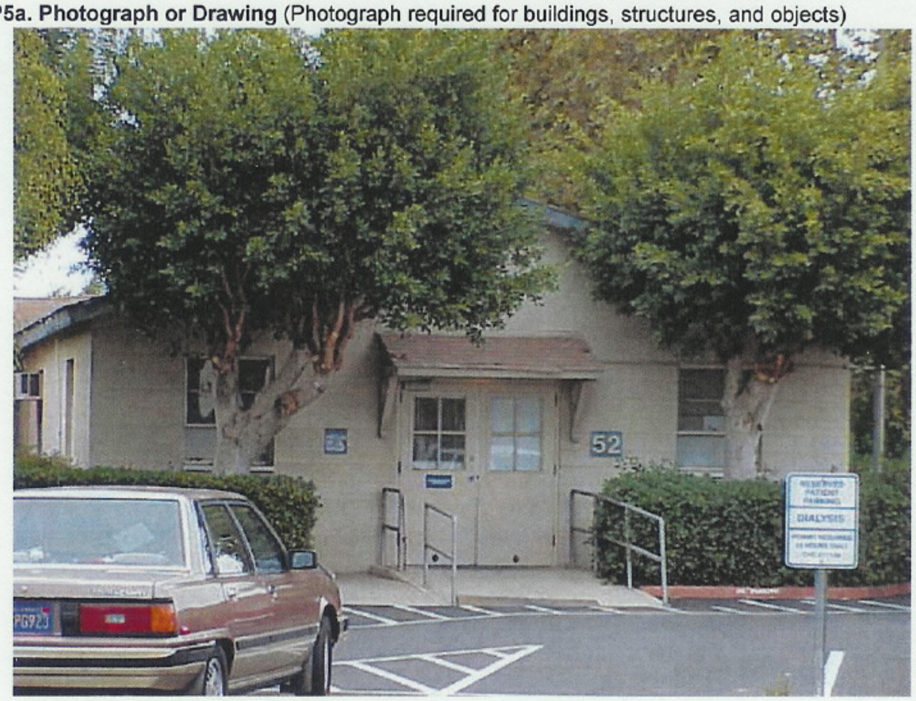
Building 52 is a single story in height, and is configured in a long, narrow rectangle. The front- facing, gabled roof includes simple, overhanging eaves. It is finished in smooth stucco. A pair of double doors set on the south end wall serves as the simple entrance. The doors feature two-over-two, ordinary glazed lights. Above the entrance, a sloped pediment is supported on plain knee braces. On either side of the entrance, two small windows are set far apart. The building is clad in stucco. It is cated at the south end of the hospital campus, in a grouping of similar buildings.

Buildings 50, 51 and 52 are interconnected on the north end by a common spine. The buildings form an irregular E plan, with buildings 50, 51 and 52 forming the extensions (west-to-east). Each of the wings or projections have front-facing gabled roofs (which intersect at the common spine), with sightly overhanging eaves. The south facing, symmetrical end wall elevations each have: central double doors that are protected by raked pediments, supported on simple knee braces; balanced bay small, multi-light, sash windows. It is located at the south end of the hospital campus, in a grouping of similar buildings. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)



P5b. Description of Photo: (View, date, accession #)
Building 52 (View toward north). Photo No: 1-52,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1958

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Presrevation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Resource Name or #: (Assigned by recorder) *Academic Offices (COM)*

P1. Other Identifier: *Building 53, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; mE/ mN

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 53 is three stories high and is configured in a square U plan. The main entrance is on the longest central "leg", set at
he center. The building is clad in brick and stone, with ribbon windows set in slim, concrete bands. The main entrance features
a single story, projecting, flat roofed portico. The windows are protected by narrow, projecting flat decorative bands. The
building is symmetrical, balanced by auditorium and classroom wings. The building is located on the east side of the hospital
campus. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #) *Building 53 (View toward northeast). Photo No: 1-53,*

P6. Date Constructed/Age and Sources: ☐ Prehistoric ☒ Historic ☐ Both

1958

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Resource Name or #: (Assigned by recorder) *Physical Therapy*

P1. Other Identifier: *Building 54, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 54 is a single story in height, and is configured in an irregular L plan. The front-facing, intersecting gabled roof includes simple, overhanging eaves. It is finished in smooth stucco. A pair of simple doors with a raked pediment on an end wall serves as the entrance. Above the door, a half-round louver punctuates the symmetrical composition. Four light casement windows line the longer elevations of the building. The building is located on the east side of the hospital campus. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 54 (View toward south). Photo No: 1-54,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1952

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of Californa, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code ______ Reviewer ______ Date ______

Resource Name or #: (Assigned by recorder) *Research Laboratory*

P1. Other Identifier: *Building 57, UCI Medical Center*

P2. Location: ☐ Not for Publication ☒ Unrestricted **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; mE/ mN

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 57 is a single story in height, and is configured in a long, narrow rectangle. The front-facing, gabled roof includes simple, overhanging eaves. It is finished in smooth stucco. Entrances are located on the north and south elevations. The side elevations include six-over-six, sash windows, many of which have wall mounted air conditioners. It is located at the south end of the hospital campus, in a grouping of similar buildings. For alterations, please refer to the attached UCI Medical Center Building Survey.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #) *Building 57 (View toward south). Photo No: 1-57,*

P6. Date Constructed/Age and Sources: ☐ Prehistoric ☒ Historic ☐ Both

1943

P7. Owner and Address

UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)

Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)

Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** 1 **Resource Name or #:** (Assigned by recorder) *Chlorinator*

P1. Other Identifier: *Building 76, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

This Chlorinator consists of a group of water treatment equipment, set on a two level slab, enclosed by a simple chain link fence.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 76 (View toward north). Photo No: 1-76,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1949

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 81423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** 1 **Resource Name or #:** (Assigned by recorder) *Reservoir*

P1. Other Identifier: *Building 79, UCI Medical Center*

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**

c. Address: *101 The City Drive South* City *Orange* Zip *92868*

d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**

e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

Building 79 is actually a subterranean reservoir structure. The reservoir is nearly round, with steps leading to the southwest side. The reservoir structure is only a few feet above grade, and is paved in concrete. It is located at the south end of the campus in a parking and vehicle circulation area.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
Building 79 (View toward southeast). Photo No: 1-79,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1949

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Resource Name or #: (Assigned by recorder) *Walkways*

P1. Other Identifier:

P2. Location: ☐ **Not for Publication** ☒ **Unrestricted** **a. County** *Orange County*
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
b. USGS 7.5' Quad **Date** **T** **; R** **;** **1/4 of** **1/4 of Sec** **;**
c. Address: *101 The City Drive South* City *Orange* Zip *92868*
d. UTM: (Give more than one for large and/linear resources) ; **mE/** **mN**
e. Other Locational Data (Enter Parcel #, legal description, directions to resource, elevation, etc., as appropriate)

Parcel No.

P3. Description (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The covered walkways are a series of interconnected structures that form a large, irregular T between smaller buildings on the southeast side of the hospital campus. The walkway structures serve as a continuous protected pathway between buildings 27 and 43 (north/south), and buildings 43, 41, 44, 46, 48, 57, 50, 51 and 52 (east-to-west). The walkways are a single story in height, have no vertical walls and are characterized by the low, continuous front-facing, gabled roof. The long roof is supported on welded, round metal posts, held together by a pair of parallel, horizontal handrails. Both the handrails and the posts are painted metal. The pedestrian surface is smooth finished concrete (sidewalk). Beneath the roof, utilities are carried in grouped chases. The walkways have been repaired and altered over the years to suit the needs of the hospital.

P3b. Resource Attributes: (List attributes and codes)

P4. Resources Present ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, accession #)
(View toward west). Photo No: 1-100,

P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both

1949

P7. Owner and Address
UC Regents
Office of Secretary of Registrar
111 Franklin Street, 12th Floor
Oakland, CA 94607

P8. Recorded by: (Name, affiliation, and address)
Francesca G. Smith
Chattel Architecture, Planning & Preservation, Inc., 13322 1/2 Valleyheart Drive South, Sherman Oaks, CA 91423

P9. Date Recorded: *3/1/2001*

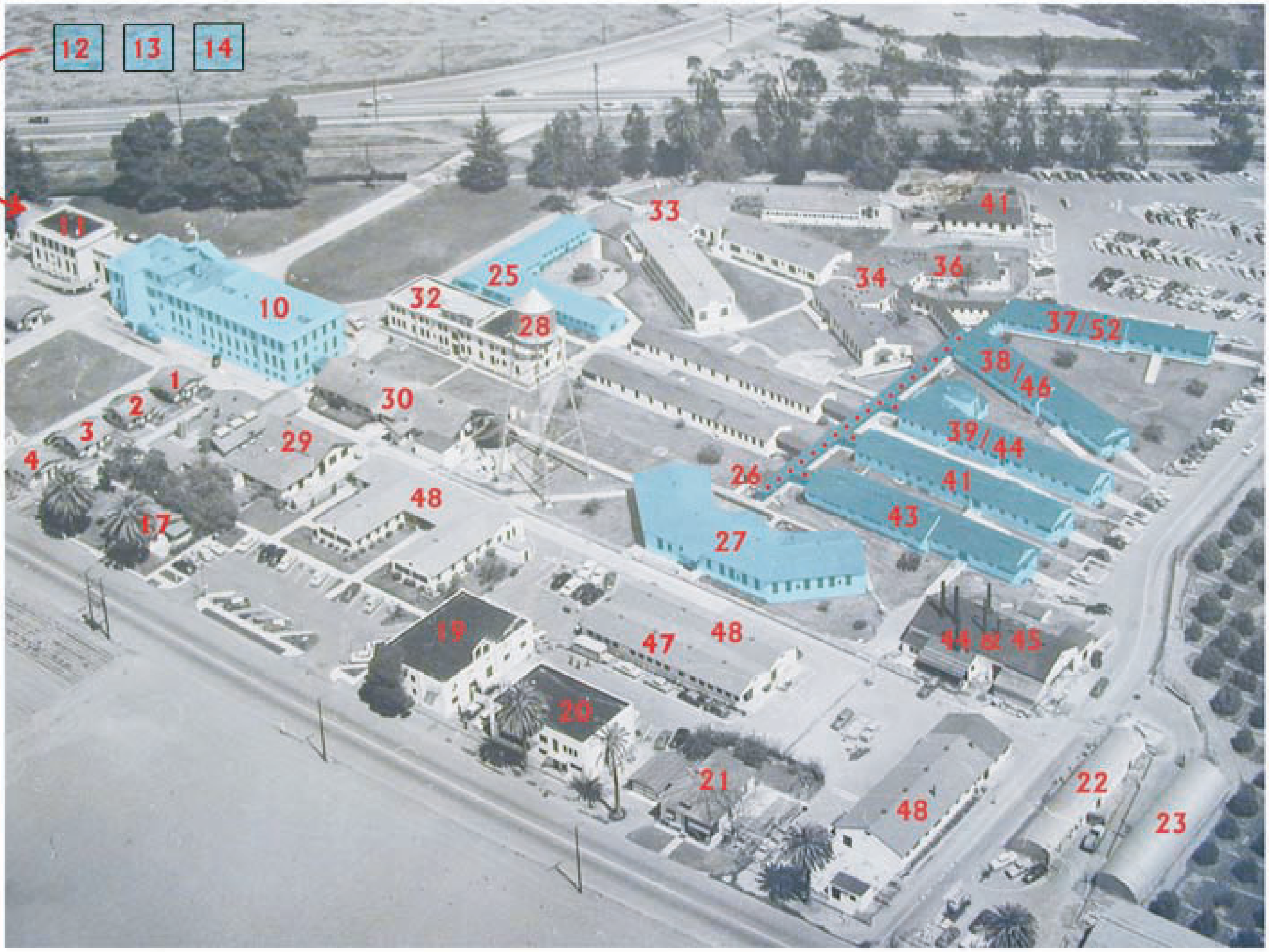
P10. Survey Type: (Describe)
Intensive, University of California, Irvine Medical Center Environmental Impact Report (draft)

P11. Report Citation: (Cite survey report and other sources, or enter "none")

Attachments ☐ NONE ☐ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other: (List)

ATTACHMENT 5

ANNOTATED 1955 AERIAL AND MAPS



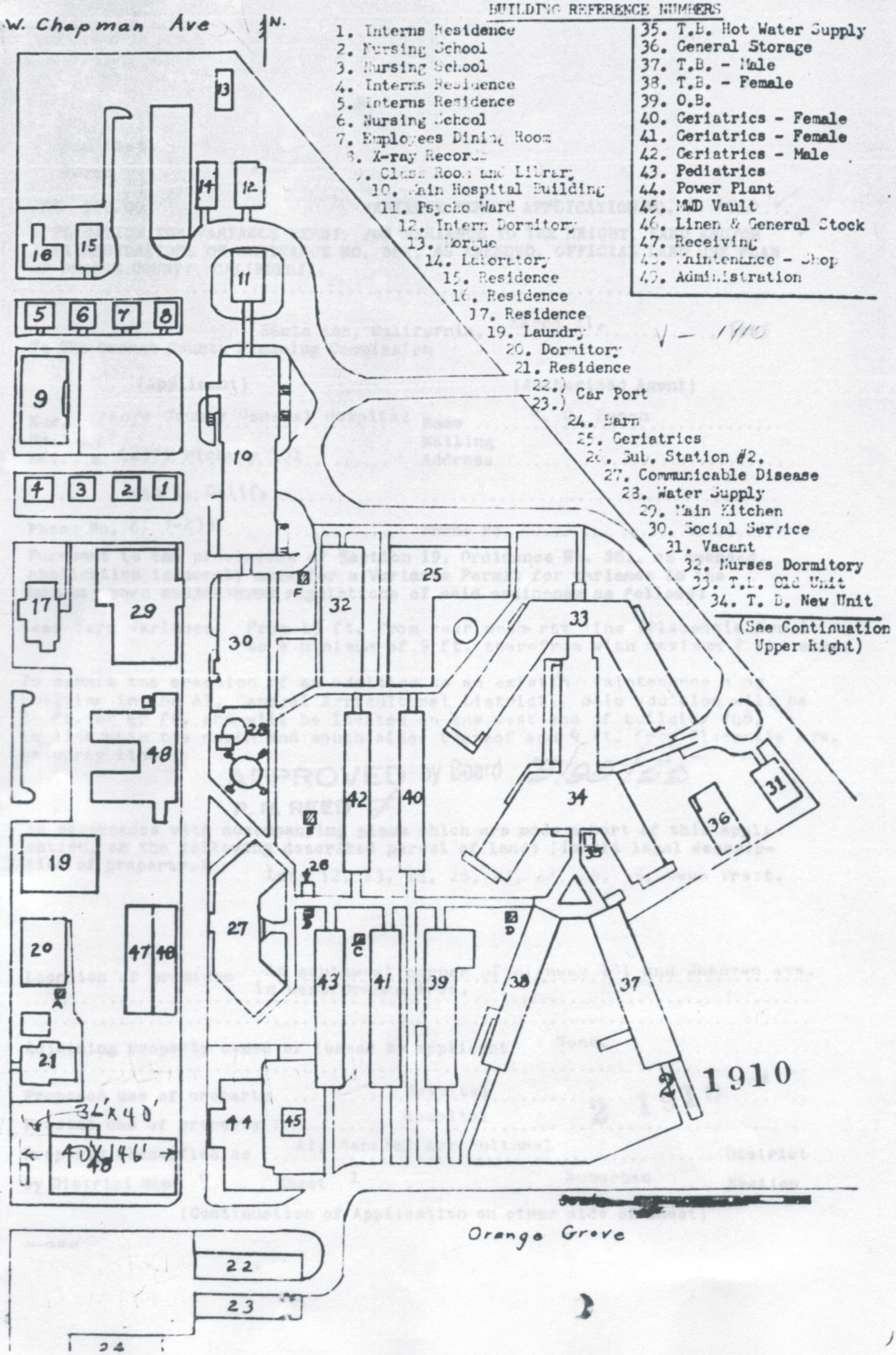
ANNOTATED 1955 AERIAL

Existing building/structure

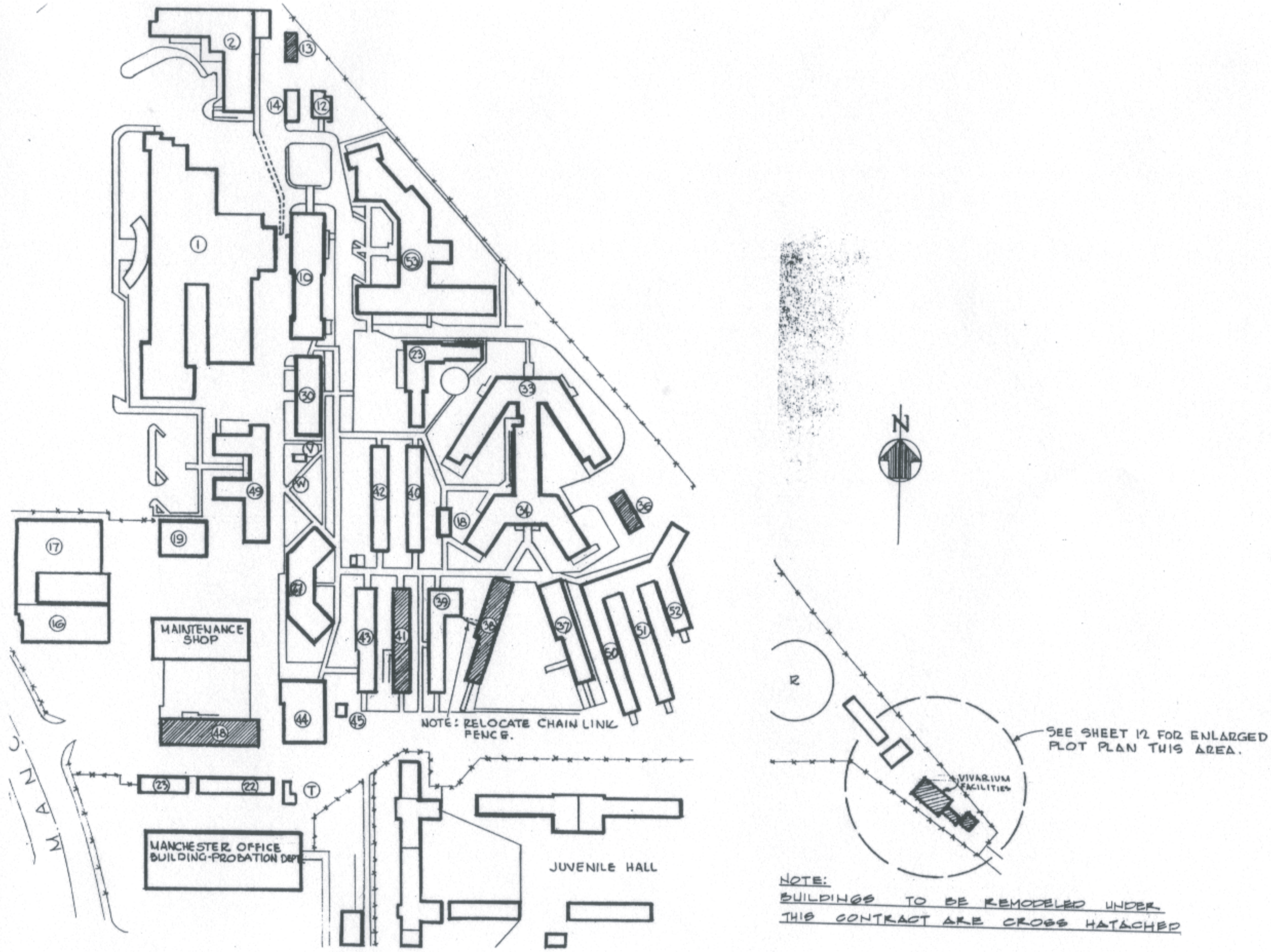
Building number (current/former)

Covered ways

SUBJECT SITE
1955


W. Chapman Ave
N.
BUILDING REFERENCE NUMBERS
1. Interns Residence
2. Nursing School
3. Nursing School
4. Interns Residence
5. Interns Residence
6. Nursing School
7. Employees Dining Room
8. X-ray Records
9. Class Room and Library
10. Main Hospital Building
11. Psycho Ward
12. Intern Dormitory
13. Morgue
14. Laboratory
15. Residence
16. Residence
17. Residence
19. Laundry
20. Dormitory
21. Residence
22.) Car Port
23.)
24. Barn
25. Geriatrics
26. Sub. Station #2.
27. Communicable Disease
28. Water Supply
29. Main Kitchen
30. Social Service
31. Vacant
32. Nurses Dormitory
33. T.B. Old Unit
34. T. B. New Unit
(See Continuation Upper Right)
35. T.B. Hot Water Supply
36. General Storage
37. T.B. - Male
38. T.B. - Female
39. O.B.
40. Geriatrics - Female
41. Geriatrics - Female
42. Geriatrics - Male
43. Pediatrics
44. Power Plant
45. MWD Vault
46. Linen & General Stock
47. Receiving
48. Maintenance - Shop
49. Administration
Placentia Ave
Orange Grove
32'x40'
40'x46'
1910

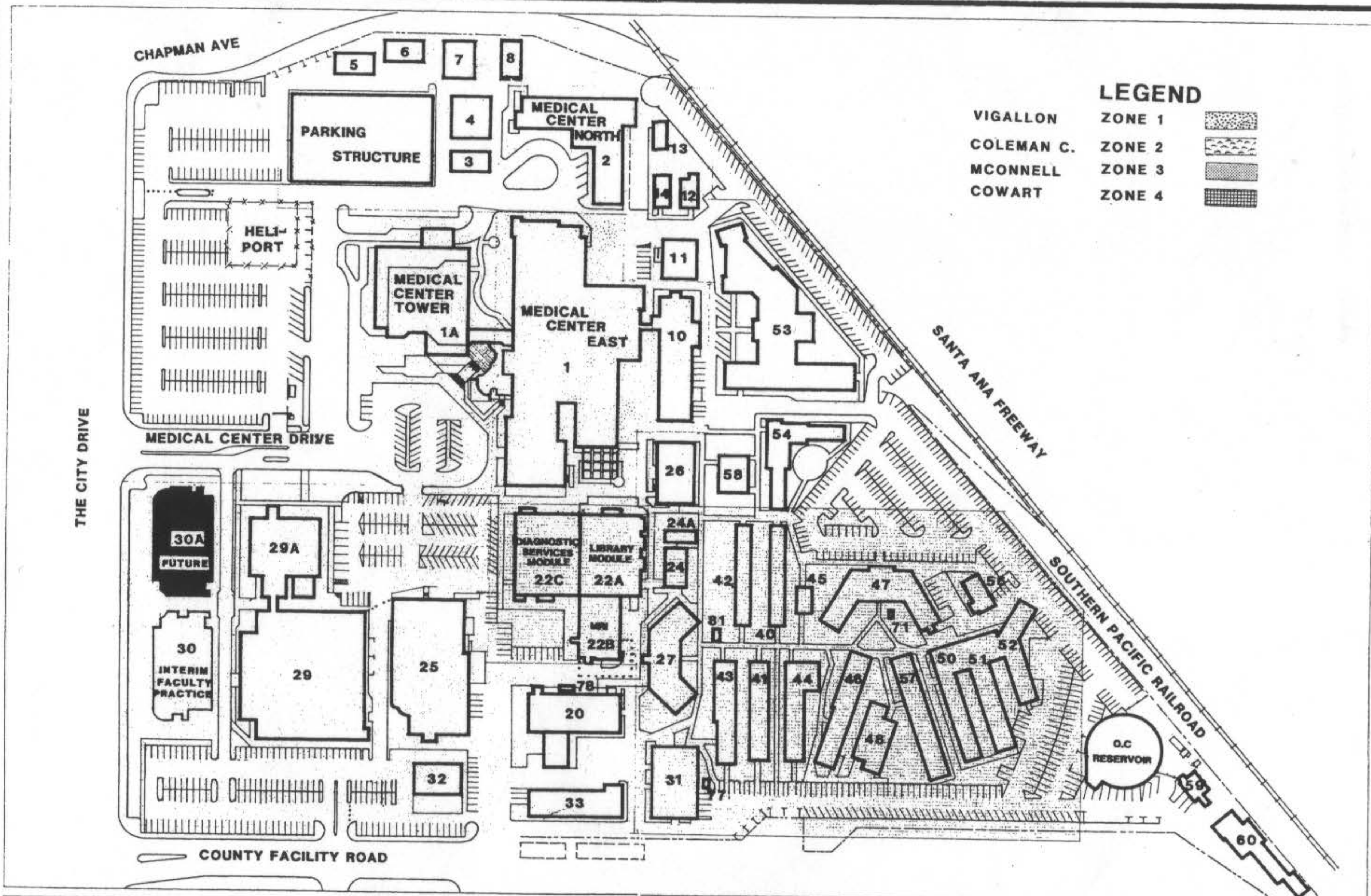
SUBJECT SITE
1969



SITE PLAN

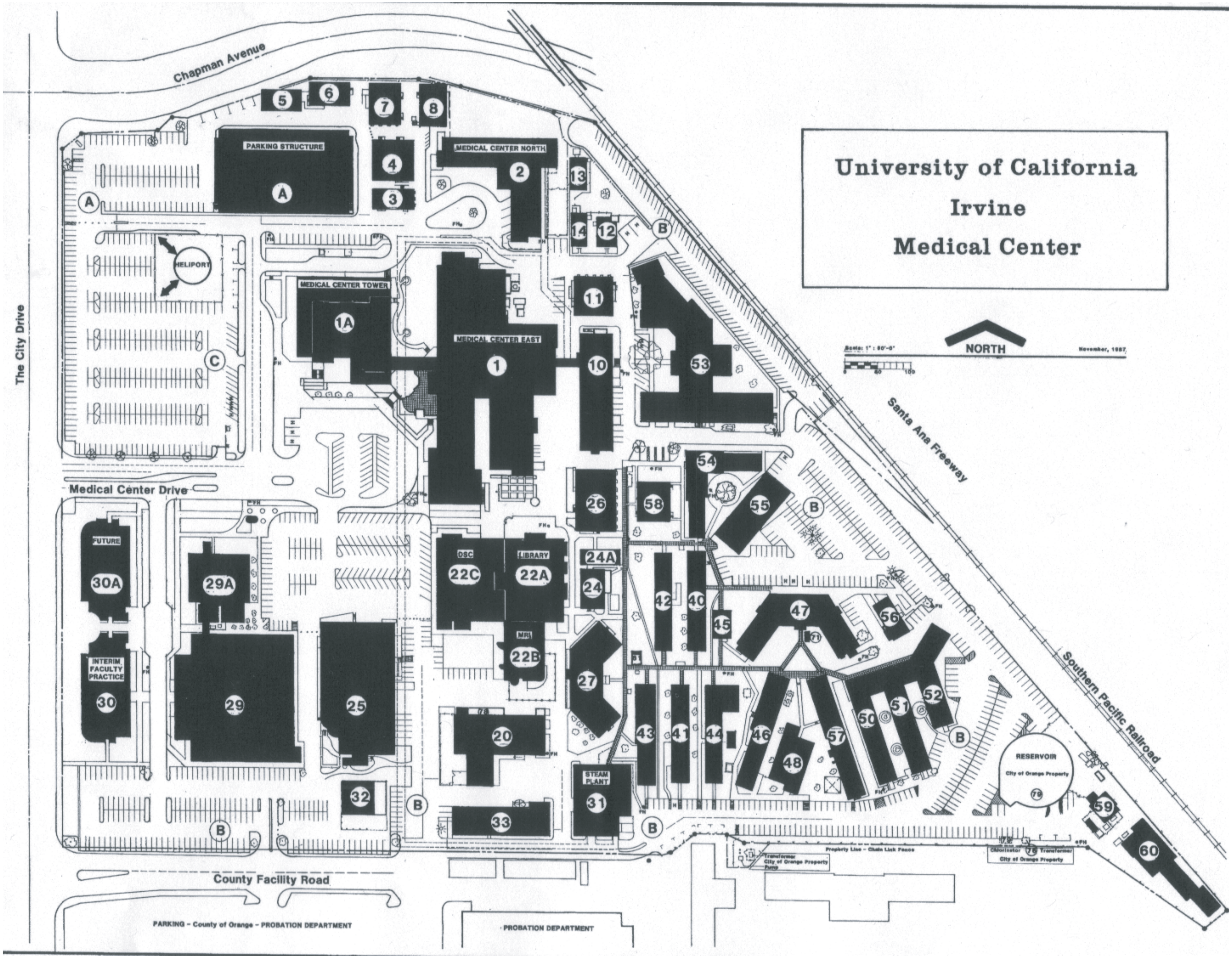
NO SCALE

SUBJECT SITE
1981



UCI MEDICAL CENTER REDUCED BUILDING PLAN OFFICE OF PHYSICAL PLANNING	TITLE **SITE PLAN**	PROJECT NO. DRAWN: Bill Haddock CHECKED: Jerry Wetsch APPROVED: Gordon Cummings	SITE KEY UCIMC	SCALE 50 0 50 100 DATE 6/81 REVISION 10/87 REVISION	SHEET 1 OF

SUBJECT SITE
1987


University of California
Irvine
Medical Center
NORTH
November, 1997
Santa Ana Freeway
Southern Pacific Railroad
Chapman Avenue
The City Drive
Medical Center Drive
County Facility Road
PARKING STRUCTURE
HELIPORT
MEDICAL CENTER NORTH
MEDICAL CENTER TOWER
MEDICAL CENTER EAST
DSC
LIBRARY
MRI
STEAM PLANT
FUTURE
INTERIM FACULTY PRACTICE
RESERVOIR
City of Orange Property
Property Line - Chain Link Fence
PARKING - County of Orange - PROBATION DEPARTMENT
PROBATION DEPARTMENT
1
1A
2
3
4
5
6
7
8
10
11
12
13
14
20
22A
22B
22C
24
24A
25
26
27
29
29A
30
30A
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58
59
60
A
B
C

APPENDIX D

GEOTECHNICAL STUDY

GEOTECHNICAL DATA REPORT AND GEOLOGIC-SEISMIC STUDY

for

UNIVERSITY OF CALIFORNIA, IRVINE, MEDICAL CENTER
REPLACEMENT HOSPITAL

ORANGE, CALIFORNIA

Prepared for:

THE UNIVERSITY OF CALIFORNIA, IRVINE
Irvine, California

By:

GEOBASE, INC.
23362 Peralta Drive, Unit 6
Laguna Hills, California
(949) 588-3744

November 2000
Project No. P.165.82.00

GEOBASE, INC.

TABLE OF CONTENTS

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LIST OF APPENDICES

I. INTRODUCTION

The University of California, Irvine (UCI), Design and Construction Services is planning the construction of the replacement hospital at the University of California, Irvine Medical Center (UCIMC), in the City of Orange, California. The site location is shown on the Location Map, Figure A-1, Appendix A.

For the field investigation, we were provided with a Site Plan, on which the site boundaries of the proposed replacement hospital are shown (Attachment A, RFP dated August 28, 2000). The field investigation was directed toward this Site Plan which is reproduced herein as Site Plan, Figure A-2, Appendix A.

This geotechnical data report and geologic-seismic study describes the site investigation and summarizes the results of both field and laboratory testing, and presents the results of the geologic-seismic study, as required by Title 24 of the California Code of Regulations, and guidelines prepared by the California Division of Mines and Geology (CDMG) and the California Office of Statewide Health and Planning Department (OSHPD). Recommendations for suitable site development and foundation design will be provided in a separate engineering report.

II. SITE INVESTIGATION

2.1 Site and Project Description

2.1.1 *Site Description*

The proposed site of the UCIMC-replacement hospital is located at the northern end of the UCIMC Complex and is approximately 144,000 square feet (3.3 acres) in plan area. It is bounded by Chapman Avenue to the north, Buildings 13, 14 and the Satna Ana Freeway (I5) to the east, Main Hospital and Tower (Buildings 1 and 1A) and the Neuropsychiatric Center (Building 3) to the south, and a helicopter pad and the City Drive to the west. The site is generally near level with elevations varying from 132.0 to 136.0.

The site is currently occupied by the North Parking Structure (a three [3] and four [4] storey building) and the Administration Building (three [3] storeys above grade and one [1] storey below grade), and asphaltic concrete roadways and paved parking areas. A landscape lawn area with mature trees and air-conditioning units was observed between the Administration Building and Chapman Avenue. A landscaped area with walkway was also noted between Buildings 1 and 1A. It is understood that the North Parking Structure and the Administration Building will be demolished.

Existing utilities, consisting of underground gas, water, electric, sewer, storm drain and various other utility lines are located within the proposed site area. In addition, a fiberoptic and jet-fuel line are located at the northern boundary of the site.

2.1.2 *Project Description*

UCI plans to demolish the forty (40) year old main hospital and construct a new, more earthquake resistant replacement hospital. Preliminary/conceptual plans of the replacement hospital are not available at the time of writing this report; however, based on discussions with UCI personnel, the proposed replacement hospital is likely to consist of a five (5) storey building structure with a full basement to a depth of approximately fifteen (15) feet below existing ground surface.

2.2 Field Program

The field investigation was carried out between October 9 and 20, 2000 and consisted of advancing forty-one (41) borings using truck-mounted CME-75 and CME-85 drill rigs fitted with hollow stem augers, and three (3) Cone Penetration Tests (CPT) at the site. These are summarized below:

- Thirty-seven (37) borings to a depth of sixty-one and one-half (61.5) feet.
- Three (3) borings to a depth of one hundred and one (101) feet.
- One (1) boring to a depth of one hundred and fifty (150) feet.
- Three (3) CPT's to depths of seventy-two (72) to seventy-six (76) feet. Seismic cone penetration testing were also performed to determine the shear wave velocities of the subsoils.

The approximate locations of the borings and CPT's are shown on the Site and Boring Locations Plan, Figure A-3, Appendix A. The borings and CPT's were located in the field utilizing cloth tap and elevations were estimated from the Survey Sheet prepared by Analytical Topo Maps, Inc. dated July 01, 1995. Therefore, the boring and CPT locations and elevations should be considered accurate only to the degree implied by the methods used.

The Log of Borings together with an Explanation of Terms and Symbols Used are given in Appendix B, Figures B-1 thru B-42, inclusive. The CPT data are also presented in Appendix B.

In addition, the Log of Borings from previous site investigations by others were available and are included in Appendix B. These borings are:

- five (5) rotary bucket auger borings (B-1 thru B-5) to depths of forty (40) to fifty (50) feet, drilled by Earth Research Associates, Inc. for the Building 1 Addition (Building 1A) in May 1977 (reference 14);
- one (1) rotary wash boring to a depth of 183 feet (RW-1), drilled by Earth Research Associates, Inc. for the Building 1 Addition (Building 1A) in September 1977 (reference 15). Uphole seismic wave survey within the boring was also performed;
- three (3) rotary wash borings (boring numbers 1 thru 3) to depths of thirty-one (31) to forty-one (41) feet, drilled by Earth Research Associates, Inc. for the Parking Structure, in August 1977 (reference 16); and,
- eight (8) bucket-auger borings (B-1 thru B-8) to depths of forty (40) to sixty (60) feet, drilled by Earth

Research Associates, Inc. for the Psychiatric Inpatient Facility (currently known as Building 3, Neuropsychiatric Center), in July 1987 (reference 17).

The locations of these borings are also shown on Figure A-2, Appendix A.

Field testing consisted of the Standard Penetration Test (SPT) in addition to CPT. The SPT test involves failure of the soil around the tip of a split spoon sampler for a condition of constant energy transmittal. The split spoon, two (2) inches outside diameter and one and three-eights (1 3/8) inches inside diameter, is driven eighteen (18) inches and the number of blows required to drive the sampler the last foot is recorded as the "N" value or SPT blow count. The driving energy is provided by a 140 pound weight dropping thirty (30) inches.

Organic vapor measurements were carried out on selected soil samples utilizing a photo ionization device (PID-OVM. Model 580B). The results are presented on the Log of Boring, Figures B-2 thru B-42, Appendix B.

Sampling consisted of:

- Collection of disturbed samples retrieved from the auger at selected locations;
- Collection of samples from the split spoon sampler; and,
- Collection of relatively undisturbed soil samples at selected locations using a California Modified Sampler. The soil samples were retained in a series of brass rings, each having an inside diameter of 2.41 inches and a height of one (1) inch. These ring samples were placed in close-fitting, moisture-tight containers for shipment to the laboratory.

2.3 Laboratory Testing

The samples obtained during the field program were returned to the laboratory for visual examination and testing. The soils were classified in accordance with ASTM D2487 and D2488.

The laboratory testing program consisted of the following:

- Laboratory determination of water (moisture) content of soil, rock and soil-aggregate mixtures (ASTM D 2216) and dry density;
- Liquid limit, plastic limit and plasticity index of soils (ASTM D 4318);
- Particle size analysis of soils (ASTM D 422);
- Direct shear test of soils (ASTM D 3080);
- Consolidation testing of soils (ASTM D 2435);

- Expansion potential of soils (UBC 29-2/ASTM D 4829);
- Resistance R-Value of subgrade soils (CAL. 317A); and,
- Corrosivity series tests.

The laboratory test results are presented on the Log of Borings, Figure B-2 thru B-42, inclusive, Appendix B, where applicable, and in Appendix C.

III. GEOLOGICAL SETTING

3.1 Regional Geology

UCIMC is located in the south-central portion of the greater Los Angeles Basin. This alluviated lowland is bound by the Transverse Ranges and the Peninsular Ranges on the north and east, respectively. The Santa Ana Mountains and the San Joaquin Hills form its southeastern limit, whereas submarine ridges and basins of the continental borderland mark its western limit. During Miocene time this depositional basin included much of the area which is now vertically uplifted along its borders as well as extending northwestward to merge with the Ventura basin (Yerkes, 1965).

The Los Angeles sedimentary basin is a transform plate boundary basin which formed due to crustal rifting (pull-apart) or crustal sagging as a result of extensional tectonics. Although the basin is relatively young and short lived by geologic standards (Miocene through Pleistocene), it displays a complex structural and deformational history. Sediments deposited during its evolution represent a single major sedimentary cycle. Subsidence, to a large extent, was achieved by movement along northwest-trending faults which divide the basin into major blocks. Basin inception in early Miocene was characterized by faulting, folding and volcanism occurring contemporaneously with subsidence and basin infilling. Pre-basinal rocks range in age from late Cretaceous through Oligocene, and were deposited in a sedimentary cycle unrelated to the Los Angeles basin. Primary deposits of the inception stage of the Los Angeles basin were basal transgressive conglomerates and breccias, with interbeded volcanics and marine sediments. Principal subsidence and deposition occurred from late Miocene through early Pleistocene. A sequence of deep water turbidite sands with lithified interbeded shales to shallow neritic and lagoonal deposits that accumulated during this stage reflect gradual shallowing of the basin with time. Marine deposition was terminated in late Pleistocene time and basin disruption resulted not only in reactivation, but on change of direction of movement along intrabasinal faults (Yerkes, 1965).

Northwest-trending faults divide the basin into four (4) crustal blocks, each reflecting a different history of deformation and sedimentation. These blocks are informally designated the southwestern, northwestern, central and northeastern blocks. Main faults involved in this division are: the Newport-Inglewood fault zone separating the central from the southwestern block; the Whittier fault zone separating the central from the northwestern block; finally, the east-west trending Santa Monica fault zone separates the northwestern from all other blocks. Movement along these structural faults is still an integral part of basinal deformation and subsidence (Yerkes, 1965). Present day evidences of the major faulting that accompanied the subsidence of the basin include the continued fault displacements and associated earthquakes mainly along the basin margins.

This physiographic basin is a relatively small, roughly rectangular, northwest-trending Cenozoic sedimentary basin. Approximate dimensions measure thirty (30) miles in width by forty-five (45) miles in length with a maximum sediment accumulation of nearly four and one-half (4.5) miles.

3.2 Site Geology

The proposed replacement hospital site is located approximately eleven and one-half (11.5) miles to the northeast of the coastline and 0.25 mile to the west of the Santa Ana River channel. The site is located within the Santa Ana River flood plain. The El Modeno Hills, the westernmost portion of the Santa Ana Mountains, lie approximately five (5) miles to the northeast and are the closest uplands to the site. Topographically, the site lies at an approximate elevation of 135 feet above mean sea level on a nearly flat surface that grades down to the southwest at roughly fifteen (15) feet per mile. Drainage in the site area is presently controlled by storm run-off sewers and street drainage.

In the site area, the sedimentary section of the Los Angeles basin is probably in excess of 10,000 feet thick with the upper 1,500 feet consisting of poorly consolidated alluvial debris transported and deposited by the Santa Ana River. The Orange County groundwater basin is developed in these alluvial materials, which vary in thickness in accordance to their location. The deeper section for the Orange County groundwater basin (2,000 feet) occurs approximately ten (10) miles to the southwest of the proposed site. The alluvial sediments at the proposed site may be overlying upper Pleistocene rocks of the Los Angeles basin.

Based on the current investigation and the previous borings drilled by Earth Research Associates, Inc. (references 14, 15, 16 and 17), the soils at the proposed replacement hospital site are comprised of Holocene age unconsolidated alluvium consisting of sands, silty sands, sandy clays, sandy silts, and clays. Bedrock was not encountered within the 183 feet depth of exploration.

A geologic map of the site region is included as Figure A-4, Geologic Map and a geologic Section, A-A', across the site is shown on Figure A-5, Appendix A. The relationship of the site to local geologic features are shown on Location Map and Local Geology, Figure A-1, Appendix A.

IV. SUBSURFACE CONDITIONS

4.1 Subsoil Conditions

During the current investigation, an asphaltic concrete pavement section consisting of approximately two and one-half (2.5) to seven (7) inches of asphaltic concrete overlying three (3) to seven (7) inches of aggregate base was encountered at all boring locations, except borings B-29, B-30 and B-32 which were located in landscape lawn areas. In addition, the asphaltic concrete at boring B-39 location was not underlain by aggregate base.

The generalized stratigraphic profile consists of two and one-half (2.5) to eight (8) feet of fill soils (silty sands and clays) overlying interbeded native sands and silty sands. A layer of clays and sandy silts was encountered at approximately fifteen (15), thirty (30) and fifty-five (55) to sixty (60) feet below existing grade. The clay and sandy silt layers at approximately fifteen (15) and thirty (30) feet appear to be discontinuous (i.e. not encountered at some boring locations). At boring B-2, B-14, B-35 and B-44 locations, the native sandy soils between approximately seventy (70) to one hundred (100) feet below existing grade contained considerable amounts of gravels and occasional cobbles.

Based on SPT results at the boring locations, the upper fifteen (15) feet of native sandy soils are generally inferred to be in a medium dense state with occasional loose pockets. Below fifteen (15) feet, the sands and silty sands are considered to be in a dense to very dense state, and the native clays and sandy silts are inferred to have a very stiff to hard consistency.

Based on laboratory test results, the silts or low plastic clays have liquid limits ranging from twenty-two (22) to thirty-seven (37) percent, plasticity indices ranging from one (1) to fifteen (15) percent and natural moisture contents ranging from fifteen (15) to thirty-one (31) percent. The upper five (5) feet of the on-site sandy soils have a "very low" to "low" expansion potential (Expansion Indices = 0 to 17) and the clays at fifteen (15) to twenty (20) feet have a "low" to "medium" expansion potential (Expansion Indices = 21 to 75).

The results of the organic vapor measurement on the soil samples at the boring locations show a reading of zero (0) PPM to 260 PPM (parts per million).

The results of the shear wave velocities measurements at CPT-1, CPT-2 and CPT-3 locations are shown in Appendix B. The shear wave velocities in the upper seventy (70) feet vary from 172 to 327 meters per second (562 to 1070 feet per second). The average shear wave velocity in the upper seventy (70) feet is estimated to be approximately 250 meters per second (820 feet per second). At boring RW-1, previously drilled by Earth Research Associates, Inc. (reference 15), a shear wave velocity of 580 feet per second was measured in the upper forty (40) feet; 2500 feet per second between forty (40) and ninety (90) feet; and, 1550 feet per second between ninety (90) and 175 feet.

4.2 Groundwater

4.2.1 *Regional Groundwater Conditions*

The site is located at the center of the Orange County groundwater basin. The aquifers comprising the Orange County groundwater basin extend over 2,000 feet deep and form a complex series of interconnected sand and gravel deposits. In the coastal and central portions of the basin, these deposits are more separated by extensive lower-permeability clay and silt deposits, known as aquitards. In the inland area of the basin (Forebay), generally northeast of Interstate 5 (near the replacement hospital site), the clay and silt deposits become thinner and more discontinuous, allowing groundwater to flow more easily between shallow and deeper aquifers (OCWD, 2000). Therefore, extensive recharge of the aquifers, by direct percolation, is performed by the Orange County Water District (OCWD) in the Forebay portion along the Santa Ana River in the Anaheim and City of Orange area.

4.2.2 *Site Groundwater Conditions*

Shallower aquifers (from ground surface to an approximate depth of 300 feet) exist above the principal aquifer (below approximate depths of 300 feet). Most of the groundwater production in Orange County occurs from the principal aquifer. Production from the shallow aquifer system is typically about five (5) percent of total basin production, consisting of mainly small-system industrial and agricultural uses. Deeper aquifers exist below the principal aquifer system; however, these zones are too deep to economically construct production wells.

OCWD's groundwater level profiles generally following the Santa Ana River, from Costa Mesa to the Anaheim-Orange Forebay area indicate that for 1969 and 1983 years the basin was considered full and near full, respectively. For both of these years, the water level difference between the coastal and Forebay endpoints is approximately 170 feet. In 1997, with increased production and an accumulated overdraft, the water level difference for these same endpoints increased to approximately 260 feet. In addition, the magnitude of seasonal water level fluctuations has approximately doubled from pre-1990 to present.

During the current investigation, groundwater was observed at borings B-2, B-14, B-35 and B-44 locations. Groundwater was not encountered in all remaining borings to the maximum depths of sixty-one and one-half (61.5) feet. The depths to groundwater at the boring locations are shown in Table I; however, groundwater conditions may be altered by geologic conditions between borings, by seasonal and meteorological variations and by construction activities.

TABLE I
GROUNDWATER LEVEL AT COMPLETION OF DRILLING

Boring Number	Depth to Groundwater Below Existing Grade (feet)	Elevation of Groundwater* (feet)
B-2	80.0	54.0
B-14	80.0	55.0
B-35	80.0	54.0
B-44	77.5	54.5

Note:

* – Based on elevation of existing grade estimated from Survey Sheet prepared by Analytical Topo Maps, Inc., dated 1995.

Groundwater was not encountered at the five (5) borings to depths of forty (40) and sixty (60) feet drilled by Earth Research Associates, Inc. in May 1977 (reference 14) and two (2) sixty (60) foot borings drilled by Earth Research Associates, Inc. in July 1987 for the adjacent UCIMC Psychiatric Inpatient Facility (reference 17).

Due to the proximity of the Santa Ana River channel, minor groundwater may accumulate on the alluvium after periods of excessive runoff. Locally, the river channel slopes are concrete lined but the channel floor is soft bottomed and is considered an effective recharge area for the upper aquifers when water is present in the channel. The clayey sands, clays and silts that form the stratigraphy of the subsurface of the site may form temporary perched groundwater conditions above the eighty (80) foot depth; however, it is considered very unlikely that the perched groundwater would rise above fifty (50) foot depth.

V. SEISMOLOGICAL CONDITIONS

5.1 Faulting

Numerous faults in southern California are categorized as active, potentially active, and inactive. An active fault is defined by the State of California as a "sufficiently active and well defined fault" that has exhibited surface displacement within the Holocene time (approximately the last 11,000 years). A potentially active fault is defined by the State as a fault with a history of movement within Pleistocene time (between 11,000 and 1.6 million years ago). Active and potentially active faults are capable of producing potentially damaging seismic shaking at the site. In addition, the International Conference of Building Officials (IBO) has classified active faults as A, B or C. Such classification depends on the criteria specified in the 1997 Uniform Building Code Table 16-U (considering mainly moment magnitude and slip rate; IBO, 1998).

No known active faults have been identified projecting towards or through the proposed replacement hospital site. Therefore, the site has not been placed in an Alquist - Priolo Earthquake Fault Zone as designated by the California Division of Mines and Geology (Hart and Bryant, 1997). A California Fault Map showing the site location is given as Figure A-6, Appendix A

It is anticipated that the project site will periodically experience ground accelerations as a result of small to moderate magnitude earthquakes. Other active faults without surface expression (blind faults) are also capable of generating earthquakes. Furthermore, other potentially active seismic sources may also be locally present and are not currently zoned nor identified.

The nearest fault to the site is the Whittier Fault. Other faults that may affect the site include: Newport-Inglewood Fault; Chino-Central Avenue Fault Zone; Elsinore Fault; San Jose Fault; and Palos Verde Fault. These six (6) faults are discussed in the following subsections.

Several active blind thrust faults are located at depth beneath the Los Angeles basin. These blind thrust faults are generally low angle and terminate within folds or other faults, and do not break the surface. These faults are not considered a hazard with regard to surface rupture but are capable of generating earthquakes with potential strong ground motions that may affect the site. These blind thrust faults include the Elysian Park thrust and the Compton-Los Alamitos thrust, and are discussed in subsection 5.1.2.

5.1.1 *Faults*

5.1.1.1 Whittier Fault Zone

The Whittier fault zone, a northeast-dipping reverse-right oblique-slip fault that projects northwestward into the east margin of the Los Angeles basin, may intersect the Elsinore fault zone near the Santa Ana River. Northwest of Horseshoe bend (Santa Ana River), the trace of the Whittier fault zone separates strata of the Puente formation exposed on the north side from younger strata of the Puente and Fernando formations on the south side (Durham and Yerkes, 1964). In addition, this fault zone apparently cuts Holocene deposits as far north as Brea Canyon (Ziony and Jones, 1989). The Whittier fault zone is approximately forty (40) km long and is located approximately sixteen (16) km to the northeast of the site. After the Elysian Park thrust, the Compton thrust and the Newport-Inglewood, this fault zone could have the greatest influence on the project site should it produce a major earthquake.

This fault has been assigned a M6.8 with a slip rate of two and one-half (2.5) mm per year. In addition, the IBO considers the Whittier fault zone to be a Fault B (IBO, 1998).

5.1.1.2 Newport-Inglewood Fault Zone (Los Angeles Basin and Offshore Segments)

The Newport-Inglewood fault zone, composed of discontinuous faults and folds that presumably overlie a through-going right-lateral strike-slip fault in the basement rock, trends southeastward from near Santa Monica, across the Los Angeles basin, to Newport Beach. Faults having similar trends and projections occur offshore of San Clemente and in San Diego (The Rose Canyon and La Nacion fault zones). Altogether, these various faults constitute a system more than 240 km long that extends into Baja California, Mexico. A near-shore segment of the Newport-Inglewood fault zone was the probable source of the M6.3 1933 Long Beach Earthquake, a right-lateral strike-slip event that may have produced secondary surface faulting northeast of Newport (Ziony and Jones, 1989). This particular event was known as the destructive Long Beach earthquake and caused considerable damage and loss of life. The surface trace of the Los Angeles basin segment of this fault is discontinuous; however, the fault zone can easily be noted there by the existence of a chain of low hills extending from Culver City to Signal Hill (Petersen, et al, 1996).

Faults with possible Holocene offsets occur along the entire Newport-Inglewood fault zone. At the north end of the zone, these faults dip steeply westward and probably have normal-right-oblique slip. Fault segments further south are near vertical or dip steeply eastward and are dominantly right-lateral strike-slip faults (Ziony and Jones, 1989).

The Newport -Inglewood fault zone forms the southwestern boundary of all but the shallow aquifers in the Orange County groundwater basin (OCWD, 2000). The Los Angeles basin segment of the Newport-Inglewood fault zone is located approximately seventeen (17) km to the southwest of the proposed site.

This fault has been assigned a M6.9 with a slip rate of one (1.0) mm per year (Petersen, et al, 1996). In addition, the IBO considers the Newport Inglewood fault zone to be a Fault B (IBO, 1998).

5.1.1.3 Chino - Central Avenue Fault Zone

The late Quaternary Chino -Central Avenue fault zone is a southwest-dipping reverse-right-oblique-slip fault that branches from the active Elsinore fault zone. This fault zone is located approximately nineteen (19) km to the northeast of the site, and extends for approximately twenty-eight (28) km, approximately eighteen (18) of which have been mapped northwest of Prado Dam (Ziony and Jones, 1989; Jennings, 1975; Fife, et. al., 1976; and Hart and Bryant, 1999). In regards to its age, Webber (1977) states that deflected drainages and apparent offsets of older alluvium and paleosols along the fault zone suggest a relatively young feature.

A continuation of the Chino fault zone is the Central Avenue fault zone. This fault produces a groundwater barrier on the southwestern portion of the Chino groundwater basin. The northwest-trending strike-slip Central Avenue fault segment is concealed by the overlying alluvial fill of the Chino basin. In addition, the agricultural usage and urban development of the area has obliterated any surface or near-surface evidence of fault rupture along this fault zone (Fife, et al., 1976). The total length of the fault segment is approximately eleven (11) kilometers. A Late Quaternary age movement has also been inferred for this segment by Jennings (1994).

The Chino-Central Avenue fault zone has been assigned a M6.7 with a slip rate of 1 mm/year (Petersen, et al, 1996). In addition, the IBO considers the Chino-Central Avenue fault zone to be a Fault B (IBO, 1998).

5.1.1.4 Elsinore Fault Zone

The Elsinore fault zone forms the northeast boundary of the Santa Ana Mountains and extends nearly 200 km from Corona to the Mexican border. Individual segments within the Los Angeles region are three (3) to twenty (20) km long and display reverse right oblique, right-lateral strike-slip, and normal-right-oblique-slip late Quaternary or Holocene offsets. The Glen Ivy fault segment is the probable source for the May 15, 1910 earthquake with an estimated magnitude M6.0 (Ziony and Jones, 1989).

This fault is located approximately twenty-four (24) km to the northeast of the site. The southeastern extension of the Elsinore fault zone, the Laguna Salada fault, ruptured in 1892 in a magnitude M7 earthquake, but the main trace of the Elsinore fault zone has only seen one historical event greater than magnitude M5.2 (the earthquake of 1910) near Temescal Valley, which produced no known surface rupture and did little damage. At its northern end, the Elsinore fault zone splays into two segments, the Chino-Central Avenue and the Whittier fault zones. At its southern end, the Elsinore fault is cut by the Yuha Wells fault from what amounts to its southern continuation, the Laguna Salada fault (Petersen, et al, 1996).

Several of the fault strands which make up the Elsinore fault zone possess their own names. Northwest of Lake Elsinore are the Glen Ivy North and Glen Ivy South faults. Heading southeast from Lake Elsinore, the two (2) parallel fault strands are the Wildomar fault (the more easterly) and the Willard fault.

This fault has been assigned a M6.8 with a slip rate of five (5) mm/year (Petersen, et al, 1996). In addition, the IBO considers the Elsinore fault zone to be a Fault B (IBO, 1998).

5.1.1.5 San Jose Fault Zone

The San Jose fault zone is approximately 18 km long and consists of a left-lateral strike-slip movement, with a minor reverse component, and dips steeply to the north. A late Quaternary age movement has been concluded for this fault zone. Therefore, it has not been designated as being part of the Alquist-Priolo Earthquake Fault Zoning Act (Hart and Bryant, 1999). The San José fault zone is located approximately twenty-eight (28) kilometers to the northeast of the site. The last significant earthquake (M5.4) along this fault zone occurred in February 28, 1990.

This fault has been assigned a M6.5 with a slip rate of five (0.5) mm per year (Petersen, et al, 1996). In addition, the IBO considers the San José fault zone to be a Fault B (IBO, 1998).

5.1.1.6 Palos Verde Fault Zone

The Palos Verde fault zone extends at least eighty (80) km southeastward from Santa Monica Bay. It may join the Colorado Bank fault zone, which continues southward offshore of San Diego. Onshore, the zone is represented by a southwest-dipping fault with inferred reverse-right-oblique displacement that has elevated the Palos Verde Hills. Elements of the zone in Santa Monica and San Pedro bays, in contrast, probably are dominantly right-lateral strike-slip faults. Holocene faulting has been documented for a broad zone of faults that cross the San Pedro shelf (offshore segment). Late Quaternary movement along the onshore segment has been reported (Petersen, et al, 1996).

This fault has been assigned a M7.1 with a slip rate of one-half (3.0) mm per year (Petersen, et al, 1996). In addition, the IBO considers the Palos Verde fault zone to be a Fault B (IBO, 1998).

5.1.2 *Blind Thrusts*

5.1.2.1 Elysian Park Thrust

The most significant blind thrust fault to the site is the northeast-trending Elysian Park Thrust. The closest boundary of the projection to the ground surface of this fault is located approximately seven (7) kilometers (km) to the northwest of the site. The approximate length of the Elysian thrust is thirty-four (34) km (Petersen, et. al., 1996). The Elysian Park thrust is considered by the IBO to be a Fault B (IBO, 1998). This fault has been assigned a M6.7 with a slip rate of one and one-half (1.5) mm per year (Petersen, et al, 1996).

5.1.2.2 Compton Thrust

The second closest significant blind thrust fault to the site is the northeast-trending Compton thrust. The Compton thrust is approximately thirty-nine (39) km long and the closest boundary of the projection to the ground surface of this fault is located approximately eight (8) km to the northwest of the site. According to the IBO, the Compton thrust is considered to be a Fault B (IBO, 1998). This fault has been assigned a M6.8 with a slip rate of one and one-half (1.5) mm per year (Petersen, et. al., 1996).

5.2 Historical Earthquakes

A computer search (Blake 2000) for all earthquakes within a 100 mile radius of the replacement hospital site, with magnitudes of M4.0 to M9.0, that occurred between 1800 and 2000, was made for this project. The results of this search are presented in Appendix D. Historical earthquake epicentral locations are shown on Figure A-7, Appendix A.

5.3 Earthquake Site Accelerations -- Technical Approach

Earthquake accelerations are affected by such factors as: source to site distance; earthquake magnitude; fault type; directivity; travel path; site soil conditions; fault geometry; and, fault rupture characteristics. Most ground motion attenuation relationships typically account for: source to site distance; earthquake magnitude; fault type;

and, site soil conditions. Therefore, for critical structures, the variability that results from the factors not accounted for in the attenuation relationship is implicitly considered by specifying the standard deviation.

The median plus one (1) standard deviation, i.e. eighty-fourth (84) percentile, was utilized for determining historical ground motions.

5.4 Historical Ground Motions

Three (3) CDMG-SMIP Strong Motion Stations are located near the replacement hospital site. These Stations are Featherly Park Station, University of California, Irvine, (UCI) Station, and Huntington Beach LKSt Station. These stations are located approximately ten (10), ten (10) and eleven (11) miles, respectively, from the replacement hospital site.

Based on the Geologic Map of Orange County, California (Morton and Miller 1981), both the UCI Station and Huntington Beach LKSt Station are located on marine terrace deposits, and Featherly Park Station is on alluvium, similar to the subsoils at the replacement hospital site. For this reason, the recorded ground acceleration from Featherly Park Station were used in the comparisons presented in the following paragraph.

Recorded ground accelerations for two (2) recent earthquakes are presented as Figures A-8 and A-9, inclusive, Appendix A. Analytical techniques using attenuation relationships by Boore, et.al. (1997)--Site Class C, Campbell and Bozorgnia (1997, revised) for alluvium and Sadigh, et.al. (1997) for deep soils were used for the station site. The analyses results are presented on Table II.

TABLE II
SITE GROUND ACCELERATIONS
RIVERSIDE - FEATHERLY PARK STATION

	Whittier 10/01/87	Northridge 01/17/94
Distance to Epicenter (miles)	25	53
Measured Accelerations	0.078g	0.100g
	0.042g	0.020g
	0.079g	0.100g
*Computed peak horizontal ground accelerations from measurements	0.11g	0.10g
Computed peak horizontal ground accelerations:		
-- Boore et.al. (1997)--Site Class C	0.12g	0.10g
-- Campbell & Bozorgnia (1997, revised)--alluvium	0.09g	0.06g
-- Sadigh et. al (1997)--deep soil	0.11g	0.07g

* See subsection 5.4

From Figures A-8 and A-9, inclusive, Appendix A, it can be observed that horizontal accelerations can occur simultaneously in the two (2) perpendicular horizontal directions. Therefore, peak horizontal ground accelerations for the station site measurements were computed by taking the square root of the sum of the squares in both horizontal directions. Table II shows that Boore, et.al. (1997) attenuation relationship for estimates of peak horizontal ground accelerations compares well with accelerations obtained from measurements. This attenuation relationship was used for estimating peak horizontal ground accelerations from historical earthquakes at the replacement hospital site.

Attenuation relationship for a type "C" site classification discussed in Boore,et.al. (1997) was used in the above mentioned analyses based on the shear wave velocities measured during the current CPT explorations and previous uphole seismic wave survey by Earth Research Associates, Inc. These shear wave velocities were supplemented by and consistent with SPT blow counts obtained from the current investigation i.e. 50>N>15, for the upper one hundred feet. The shear wave velocity measurements are presented in Appendix B, attached.

Historic earthquakes from 1800 to 2000 within a 100 mile radius of the site and exceeding a Magnitude of M6.0 on the Richter Scale are tabulated on Table III.

This table also shows distance of earthquake epicenters relative to the site. A seismic recurrence curve based on historical earthquakes from 1800 to 2000 is provided as Figure A-10, Appendix A. As can be noted from Table III, the peak horizontal ground accelerations experienced at the project site was 0.24g in 1933 and 0.20g in 1858.

5.5 Earthquake Effects

5.5.1 *Site Accelerations - Probabilistic*

The probabilistic seismic risk analysis is based on the premise that moderate to large earthquakes occur on mappable Quaternary faults and that the occurrence rate of earthquakes on each fault is proportional to the Quaternary fault-slip-rate. This analysis assumes that earthquakes are distributed uniformly and therefore does not consider when the last earthquake occurred on the fault. The length of rupture of the fault as a function of earthquake magnitude is accounted for, and ground motion estimates at a site are made using the magnitude of the earthquake and the closest distance from the site to the rupture zone. The probabilistic risk analysis has explicitly taken into account uncertainties associated with:

- The earthquake magnitude;
- The rupture length given magnitude;
- The location of the rupture zone on the fault;
- The maximum possible magnitude of earthquakes; and,
- The acceleration at the site given magnitude of earthquake and distance from the rupture zone to the site.

TABLE III
HISTORIC EARTHQUAKES -- 1800 to 2000
(exceeding six [6] on the Richter Scale of Magnitude within a one hundred [100] mile radius of the project site)

DATE (mm/dd/yr)	RICHTER MAGNITUDE (M)	APPROXIMATE DISTANCE SITE TO EPICENTER (miles)	SITE ACCELERATION (g)
11/22/1800	6.5	64	0.08
12/08/1812	7.0	42	0.14
09/24/1827	7.0	65	0.10
11/27/1852	7.0	87	0.08
07/11/1855	6.3	25	0.14
12/16/1858	7.0	27	0.20
12/19/1880	6.0	40	0.08
09/05/1883	6.0	98	0.04
02/09/1890	6.3	95	0.05
04/04/1893	6.0	54	0.07
07/30/1894	6.0	39	0.09
07/22/1899	6.5	42	0.11
12/25/1899	6.4	51	0.09
09/20/1907	6.0	53	0.07
05/15/1910	6.0	29	0.11
10/23/1916	6.0	96	0.04
04/21/1918	6.8	51	0.11
07/23/1923	6.25	39	0.10
03/11/1933*	6.3	13	0.24
03/25/1937	6.0	97	0.04
12/04/1948	6.5	87	0.06
02/09/1971	6.4	52	0.09
04/23/1992	6.1	91	0.05
06/28/1992**	7.6	88	0.11
06/28/1992	6.7	67	0.08
01/17/1994***	6.7	47	0.11

NOTE :
* --Long Beach Earthquake
** --Landers Earthquake
*** –Northridge Earthquake

Probabilistic risk analyses were performed using the computer program FRISKSP, 2000 Edition, by Blake. The fault data base was obtained from the California Division of Mines and Geology (CDMG) data base. FRISKSP models earthquake sources and computes site-specific probabilities of exceedence of given acceleration levels or pseudo-relative velocity levels for each earthquake source. The cumulative effects from all modeled earthquake sources are tabulated and graphically plotted.

The program offers a choice of attenuation relationships proposed by various researchers to evaluate the attenuation of earthquake energy with distance from the source. For this study the attenuation proposed by Boore, et.al. (1997), Campbell and Bozorgnia (1997, revised) and Sadigh, et.al. (1997) were used. Calculated peak ground accelerations using these three (3) attenuation relationships were performed for two (2) probabilities of exceedence/return periods. A ten (10) percent chance of exceedence in fifty (50) years or return period of 475 years, and a ten (10) percent chance of exceedence in 100 years or a return period of 949 years were evaluated.

Table IV presents a summary of peak ground accelerations for the replacement hospital site.

TABLE IV
SUMMARY OF PEAK GROUND ACCELERATIONS

Attenuation Relationship	Peak Ground Accelerations (g)	
	475 years*	949 years**
Boore, et.al. (1997) --class C	0.33	0.40
Campbell and Bozorgnia (1997, revised)--alluvium	0.35	0.41
Sadigh (1997)--soil	0.35	0.42

* Ten (10) percent in fifty (50) years
** Ten (10) percent in one hundred (100) years

For design purposes, an estimated peak ground acceleration of 0.42 g for the Upper Bound Earthquake (UBE), having a ten percent probability of exceedance during a 100-year of period, should be used.

Seismic response spectra for the ground accelerations for the return period of 949 years tabulated above are provided as Figures A-13 thru A-16, inclusive, Appendix A. The seismic response of a structure or element is dependent upon its strength, damping characteristics, and the stress-strain relationship for the structure considered. The response spectrum is defined as a graphical relationship of maximum response of a single-degree-of-freedom elastic system with damping to dynamic motion or forces. The most usual measures of response are maximum displacement, D, which is a measure of the strain in the spring element of the system, maximum pseudo relative velocity, V, which is a measure of the energy absorption in the spring of the system, and maximum pseudo acceleration, A, which is a measure of the maximum force in the spring of the system.

It is suggested that the design spectrum for vertical response be considered equal to two-thirds (2/3) that for horizontal response. It is reasonable to combine the effects of the several components of motion in a probabilistic manner, by taking the maximum stress, deflection, or other specific response as the square root of the sums of the squares of the corresponding response to the individual components of motion.

5.5.2 *Tsunami/Seiche, Inundation and Flooding*

The site is far and high enough from the coast or large inland body of water to preclude damage from a tsunami or seiche wave.

According to the City of Orange Safety Element (1989), the site is located within a potential innundation area for a dam failure. If the Prado Dam, in Corona, Riverside County, was to be breached due to seismic or non-seismic activity, extensive flooding along the Santa Ana River could result and could inundate the site; however, ongoing efforts by the U.S. Army Corps of Engineers are being conducted to improve the Prado facility and reduce the risk of dam failure to a very low level (City of Orange Safety Element, 1989).

The replacement hospital site is located in an area protected from the one hundred (100) year flood by levee, dike, or other structures subject to possible failure or overtopping during larger floods (Zone X) as defined by the Federal Emergency Management Agency (reference 20). The location of the replacement hospital site is shown on the official FEMA flood map which is presented as Figure A-14, Appendix A.

5.5.3 *Liquefaction*

Liquefaction occurs when the pore pressures generated within a soil mass equals the overburden pressure. This results in a loss of strength and the soil may then possess a certain degree of mobility.

Factors considered to evaluate liquefaction potential include groundwater conditions, soil type, particle size distribution, earthquake magnitude and acceleration, and soil density obtained through the Standard Penetration Test (SPT). Soils subject to liquefaction comprise saturated fine grained sands to coarse silts. Coarser-grained soils are considered free-draining and therefore dissipate excess pore pressures, while fine-grained soils possess undrained shear strength.

Because of the depth to the water table, and density and type of the soils as observed at the boring locations, the possibility of liquefaction of the underlying soils is considered very low.

According to the City of Orange Safety Element (1989), the site is not located within an area identified as liquefiable. Furthermore, based on the Seismic Hazard Zones Maps, Anaheim Quadrangle prepared by the California Division of Mines and Geology (reference 8), the site is not located in a designated area where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required (see Figure A-15, Appendix A).

5.5.4 *Seismically Induced Settlement*

Settlement calculations conducted using the Tokimatsu and Seed (1987) method resulted in settlement estimates in the order of one quarter (1/4) to two (2) inches. In these calculations, the recommendation of the National Center for Earthquake Engineering Research (NCEER, 1997) Workshop were taken into consideration. The aforementioned settlement estimates include the contribution of the upper fifteen (15) feet of the subsoils which will be removed in basement areas. Computations of seismically induced settlement for best-case and worst-case conditions are presented in Appendix D.

5.5.5 *Surface Rupture*

The likelihood of direct surface fault rupture at the site is considered very low based on the presently known tectonic framework. Cracking due to shaking from distant events is not considered a significant hazard, although it is a possibility at any site.

5.5.6 *Landsliding*

The site lies far enough from the nearest significant upland slopes to preclude the hazards of induced landsliding. According to the City of Orange Safety Element (1989), the site is not located within an area identified as having a potential for slope instability.

5.6 Static Force Procedure

For seismic design by 1995 California Building Code and 1994 UBC static force procedure, the hospital site coefficient is Type S_2 (S-factor = 1.2). This procedure does not take into account the higher seismic exposure of sites located near active faults relative to other sites within Seismic Zone 4.

For seismic design in accordance with 1997 UBC , which includes "near source" factors for sites located close to active faults, additional site parameters are required. The hospital site is located within 9.8 miles (15.7 kilometers) of the Elsinore-Whittier fault, which is considered Type B seismic source based on 1997 UBC. The near source factors are $N_a = 1.0$ and $N_V = 1.0$.

Based on in-situ soil densities, measured shear wave velocities and SPT test results from current field investigations and previous investigations by others, Appendix B, the project site is judged to be Type S_D ($15<N<50$ or V_s=180-360m/s)

The seismic design response spectrum based on UBC 1997 is provided as Figure A-16, Appendix A.

5.7 Conclusions

Based on the available geologic data, there are no known or mapped active or potentially active faults that if projected would trend toward or through the site. The proposed site for the replacement hospital does not lie in any special studies fault zones such as the Alquist-Priolo Fault Zone. As a result, the potential for surface rupture at the site is considered low. The site could experience strong ground motion during an earthquake; however, this hazard is common in Southern California and the adverse effects of ground motion can be mitigated if the building structures are designed and constructed in accordance with the current building codes.

In addition, the possibility of liquefaction is considered very low because of the depth to groundwater and the dense character of the underlying native soils. Seismically inducted settlement is estimated in the order of one quarter (1/4) to two (2) inches. The site is located within the flood plain of the Santa Ana River; however, based on the FEMA flood map and the City of Orange Safety Element (1989), the risk of inundation by flood waters at the site is considered very low. The potential for other geologic hazards such as subsidence, induced landsliding, tsunamis and seiche affecting the site is considered low.

VI. SITE DEVELOPMENT AND FOUNDATION RECOMMENDATIONS

Recommendations for suitable site development (grading, subgrade preparation and fill placement/compaction) and for foundation design (footings, piles, floor slabs, etc.) will be provided in a separate engineering report.

VII. LIMITATIONS

This investigation was performed in accordance with generally accepted geotechnical engineering principles and practices. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

This report is intended for use with regard to the specific project discussed herein and any changes in the design or location of the proposed new structure, however slight, should be brought to our attention so that we may determine how they may affect our conclusions. This report does not relate any findings, conclusions, or recommendations about the potential for hazardous materials existing at the site. The conclusions and recommendations contained in this report are based on the data relating only to the specific project and location discussed herein.

The analyses and recommendations submitted in this report are based upon the observations noted during drilling of the borings, interpretation of laboratory test results and geological evidence. This report does not reflect any variations which may occur between the borings and which may be encountered during construction. If conditions observed during construction are at variance with preliminary findings, we should be notified so that we may modify our conclusions and recommendations, or provide alternate recommendations, if necessary.

This report is subject to review by the appropriate regulating agencies.

Respectfully submitted
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REFERENCES

1. Barrows, A.G., 1974, A Review of the Geology and Earthquake History of the Newport B Inglewood Structural Zone, Southern California: California Division of Mines and Geology, Special Report 114.

2. Blake, T. F., 2000 "FRISKSP", a computer program for the Probabilistic Estimation of Seismic Hazard, using faults as earthquake source.

3. Boore, D.M., Joyner, W.B., and Fumal, T.E., 1993 "Estimation of Response Spectra and Peak Accelerations from Western North American Earthquakes: An Interim Report", U.S. Geological Survey, Open-File Report 93-509, page 15.

4. Boore, D.M., Joyner, W.B., and Fumal, T.E., 1997 "Equations for Estimating Horizontal Response Spectra and Peak Accelerations from Western North American Earthquakes: A Summary of Recent Work", Seismological Research Letters, Volume 68, Number 1, pages 128-153.

5. Bryant, W.A., 1988, Recently Active Traces of the Newport-Inglewood Fault Zone, Los Angeles and Orange Counties, California: California Division of Mines and Geology, Open File Report 88-14.

6. California Division of Mines and Geology, 1997, Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Report SP 117.

7 California Division of Mines and Geology, 2000, Web Page: http://www.consrv.ca.gov/dmg/shezp/maps/m_anah.htm

8. California Division of Mines and Geology, 1998 Seismic Hazard Zones Maps, Anaheim Quadrangle

9. Campbell, K.W. and Bozorgnia, Y., 1994 "Near-Source Attenuation of Peak Horizontal Acceleration from Worldwide Accelerograms Recorded from 1957 to 1993", Proceedings, Fifth U.S. National Conference on Earthquake Engineering, Volume III, Earthquake Engineering Research Institute, pages 283 to 292.

10. Campbell, K.W., "Empirical Prediction of Near-Source Ground Motion From Large Earthquakes", Proceedings, International Workshop on Earthquake Hazard and Large Dams in the Himalaya, sponsored by the Indian National Trust for Art and Cultural Heritage (INTACH), New Delhi, India, January 15 and 16, 1993.

11. Campbell, K.W., 1997 "Empirical Near-Source Attenuation Relationships of Horizontal and Vertical Components of Peak Ground Accelerations, Peak Ground Velocity, and Pseudo-Absolute Acceleration Response Spectra", Seismological Research Letters, Volume 68, Number 1, pages 154 - 179.

12. Cleveland, G.B., 1976, Geology of the Northeast Part of the Palos Verde Hills, Los Angeles County, California: California Division of Mines and Geology, Map Sheet 27.

13 Durham, D.L., and Yerkes, R.F., 1964, Geology and Oil Resources of the Eastern Puente Hills Area, Southern California, U.S. Geological Survey Professional Paper 420-B, 62 Pages.

REFERENCES

14. Earth Research Associates, Inc., May 13, 1977, Foundation Engineering, Engineering Geologic and Seismicity Investigation of Proposed Building 1 Addition, University of California, Irvine Medical Center.

15. Earth Research Associates, Inc., September 1977, Characteristic Site Period Building 1 Addition University of California, Irvine, Medical Center.

16. Earth Research Associates, Inc., August 30, 1977, Foundation Engineering Investigation, Proposed Parking Structure, University of California, Irvine Medical Center.

17. Earth Research Associates, Inc. July 1987, Foundation Engineering, Engineering Geologic and Seismicity Investigation, Proposed UCIMC Psychiatric Inpatient Facility (Project No.994460).

18. Fife, D.L. Rodgers, D.A., Chapman, R.H., Chase, G.W., and Sprotte, E.C., 1976, Geologic Hazards in Southwestern San Bernardino County, California: California Division of Mines and Geology, Special Report 113.

19. Fischer, P.J., Patterson, R.H., Darrow, A.C., Rudat, J.H., and Simila, G., 1987, The Palos Verde Fault Zone, Onshore and Offshore: in Fischer P.J., 1987, Geology of the Palos Verde Peninsula and San Pedro Bay, Society of Economic Paleontologists and Mineralogists and American Association of Petroleum Geologists, Book 55, pp. 91-133.

20. Federal Emergency Management Agency, 1997, revised to reflect LOMR dated June 14, 2000, Flood Insurance Rate Map, Orange County California and incorporated Area.

21. Hart, Earl W., and Bryant, William A., Revised 1997, Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps: State of California, Department of Conservation, Division of Mines and Geology. 38 Pages (Updated 2000 version reviewed on October 21, 2000 at CDMG=s web page: http://www.consrv.ca.gov/dmg/rghm/a-p/mapidx/4d.htm).

22. International Conference of Building Officials (IBO), 1988, Maps of Known Active Fault Near-Source Zones in California and Adjacent Portion of Nevada to be Used with the 1997 Uniform Building Code.

23. Jennings, Charles W., 1994, Fault Activity Map of California and Adjacent Areas with Location and Ages of Recent Volcanic Eruptions: California Geologic Data Map Series, Map No. 6. California Division of Mines and Geology.

24. Lamar, D.L., 1973, Microseismicity of the Whittier Fault, California: in South Coast Geological Society, Guidebook to the Tertiary Geology of the Eastern Orange and Los Angeles Counties, California, pp. 61-65.

25. Lamar, D.L., 1970, Geology of the Elysian Park B Reppeto Hills Area, Los Angeles County, California: California Division of Mines and Geology, Special Report 101.

REFERENCES

26. Maulchin, L., 1995, California Seismic Hazard Map 1995, Based on Maximum Credible Earthquakes (MCE): Department of Transportation, State of California.

27. Maulchin, L. and Jones, A. L., 1992, Peak Acceleration from Maximum Credible Earthquakes in California (Rock and Stiff-Soil Sites): California Division of Mines and Geology Open File Report 92-1.

28. Morton, P.K. and Miller, R.V., 1981, Geologic Map of Orange County California, Showing Mines and Mineral Deposits, Scale 1:48,000: California Division of Mines and Geology.

29. Orange, City of, 1989, "Safety Element of the City of Orange General Plan".

30. Orange, County of, 1999, "Safety Element of the Orange County General Plan".

31. Orange County Water District, 1999-2000 Water Plan, Master Plan Report.

32. Petersen, M.D., Bryant, W.A., Cramer, C.H., Cao, T., Reichle, M.S., Frankel, A.D., Lienkaemper, J.J., McCroy, P.A., and Schwartz, D.P., 1996, Probabilistic Seismic Hazard Assessment for the State of California, California Division of Mines and Geology, Open File Report 96-08.

33. Peterson, M, Beeby, D., and Bryant, W., Cao, C., Cramer, C., Davis, J., Reiche, M., Saucedo, G., Tan, S., Taylor, G., Toppozada, T., Treiman, J., and Wills, C., 1999, Seismic Shaking Hazard Maps of California, California Division of Mines and Geology, Map Sheet MS048.

34. Sadigh, K., Chang, C-Y., Makdisi, F., and Egan, J., 1989 "Attenuation Relationships for Horizontal Peak Ground Accelerations and Response Spectral Acceleration for Rock Sites (abstract)", Seismological Research Letters, Volume 60, page 19.

35. Sadigh, K., Chang, C-Y., Egan, J.A., Makdisi, F., and Youngs, R.R., 1997 "Attenuation Relations for Shallow Crustal Earthquakes Based on California Strong Motion Data", Seismological Research Letters, Volume 68, Number 1, pages 180-189.

36. Seed, H.B. and Idriss, I.M., 1982, "Ground Motions and Soil Liquefaction During Earthquakes", Monograph, Earthquake Engineering Research Institute, Berkeley, California.

37. Shaw, J.H. and Suppe, J., 1996, Earthquake Hazards of Active Blind Thrust Faults Under the Central Los Angeles Basin, California, Journal of Geophysical Research, Vol.101, No. B4, pp.8623-8642.

38. South Coast Geological Society, 1973, Guidebook to the Tertiary Geology of the Eastern Orange and Los Angeles Counties, California.

39. Tinsley, J.C., et al., 1965, "Evaluating Liquefaction Potential", U.S. Geological Survey, Professional Paper, 1360.

40. Tokimatsu, K., and Seed, H.B., 1987 "Evaluation of Settlements in Sands due to Earthquake Shaking", J. Geotechnical Engineering Division, ASCE, Vol. 113, No. 8, pp. 861-878.

REFERENCES

41. Toppozada, T.R., Real, C.R., and Parke, D.L., 1981, Preparation of Isoseismal Maps and Summaries of Reported Effects for Pre-1900 California Earthquakes, California Division of Mines and Geology, Open File Report OFR 081-11.

42. Toppozada, T.R., and Parke, D.L., 1982, Areas Damaged by California Earthquakes, 1900 B 1949, California Division of Mines and Geology, Open File Report OFR 082-17.

43. Web Page for the Environmental Systems Research Institute (ESRI) and the Federal Emergency Management Agency (FEMA), Project Impact B Hazard Information and Awareness, http://www.scecdc.org/lafault.html, reviewed on October 21, 2000.

44. Web Page for the U.S. Geological Survey Pasadena Office Earthquake Information (http://www.scecdc.org/lafault.html), reviewed on October 21, 2000.

45. Webber, F.H., 1977, Seismic Hazard Related to Geologic Factors, Elsinore and Chino Fault Zones, Northwestern Riverside County, California: California Division of Mines and Geology, Open B File Report 77-4, 96 Pages.

46. William L.Pereira Associates, May 1978, Building 1 A, UCIMC, As-Built Foundation Plans.

47. Yerkes, R.F., 1957, Volcanic Rocks of the El Modeno Area, Orange County, California: United States Geological Survey, Professional Paper 274-L.

48 Yerkes, R.F., McCulloh, T.H., Schoellhamer, J.E., and Vedder, J.G., 1965, Geology of the Los Angeles Basin California B An Introduction: United States Geological Survey, Professional Paper 420-A.

49. Youd, T.L. and Idriss, I.M. (editors) 1997, Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils.

50. Ziony, Joseph I. And Yerkes, R. F., 1985, Evaluating Earthquake and Surface-Faulting Potential, *in* Ziony, Joseph I., editor, Evaluating Earthquake Hazards in the Los Angeles Region B An Earth-Science Perspective: U.S. Geological Survey Professional Paper 1360. Pages 43-91.

51. Ziony, Joseph I., and Jones, Lucile M., 1989, Map Showing Late Quaternary Faults and 1978-84 Seismicity of the Los Angeles Region, California, To Accompany Map MF-1964: Department of the Interior, U.S. Geological Survey. 22 Pages.

APPENDIX E

NOISE STUDY

Noise Assessment For:

University of California Irvine Medical Center Long Range Development Plan

City of Orange

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August 3, 2001
Report#00-173

Table Of Contents

1.0 EXISTING SETTING

1.1 Project Description

The University of California Irvine (UCI) Medical Center is located on the east side of The City Drive between Chapman Avenue and Dawn Way in the City of Orange as shown in Exhibit 1. The center currently consists of 910.4 thousand square feet of building space, 391 hospital beds and 1,590 parking spaces in two parking garages and surface parking in several areas. A site plan showing the existing buildings is presented in Exhibit 2. Nearby land uses are also indicated on this exhibit.

Noise sensitive receptors in the immediate vicinity of the project include the Orange County Juvenal Hall located immediately south of the eastern portion of the project and the Doubletree Hotel located west of the northern portion of the project across The City Drive. These uses are essentially residential and will be considered as such for this analysis.

The Long Range Development Plan (LRDP) provides a "general plan" to guide the physical development of the UCI Medical Center. The LRDP proposes an intensification of the development of the UCI Medical Center to 1,902,049 square feet of building space, 527 hospital beds and 4,202 on site parking spaces in three parking structures and three limited surface parking areas. A site plan showing the circulation and location of parking facilities under the LRDP is presented in Exhibit 3. The specific configuration of buildings on the site has not yet been determined.

This report will analyze the potential noise impacts associated with the LRDP. The impacts of noise generated by project traffic are evaluated. Traffic noise impacts on the project site are identified. Traffic volume information used in this report to project traffic noise levels was provided by Austin-Foust ("University of California Irvine Medical Center Long Range Development Plan Traffic Analysis" March, 2001). Noise impacts from project site activity on nearby uses are also discussed.

1.2 Background Information on Noise

1.2.1 Noise Criteria Background

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; and 20 dB higher four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud).

Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of the "A-weighted decibel," abbreviated dBA. Exhibit 4 provides examples of various noises and their typical A-weighted noise level.

Sound levels decrease as a function of distance from the source as a result of wave divergence, atmospheric absorption and ground attenuation. As the sound wave form travels away from the source, the sound energy is dispersed over a greater area, thereby dispersing the sound power of the wave. Atmospheric absorption also influences the levels that are received by the observer. The greater the distance traveled, the greater the influence and the resultant fluctuations. The degree of absorption is a function of the frequency of the sound as well as the humidity and temperature of the air. Turbulence and gradients of wind, temperature and humidity also play a significant role in determining the degree of attenuation. Intervening topography can also have a substantial effect on the effective perceived noise levels.

Noise has been defined as unwanted sound and it is known to have several adverse effects on people. From these known effects of noise, criteria have been established to help protect the public health and safety and prevent disruption of certain human activities. This criteria is based on such known impacts of noise on people as hearing loss, speech interference, sleep interference, physiological responses and annoyance. Each of these potential noise impacts on people are briefly discussed in the following narratives:

> **HEARING LOSS** is not a concern in community noise situations of this type. The potential for noise induced hearing loss is more commonly associated with occupational noise exposures in heavy industry or very noisy work environments. Noise levels in neighborhoods, even in very noisy airport environs, are not sufficiently loud to cause hearing loss.
>
> **SPEECH INTERFERENCE** is one of the primary concerns in environmental noise problems. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level.
>
> **SLEEP INTERFERENCE** is a major noise concern for traffic noise. Sleep disturbance studies have identified interior noise levels that have the potential to cause sleep disturbance. Note that sleep disturbance does not necessarily mean awakening from sleep, but can refer to altering the pattern and stages of sleep.
>
> **PHYSIOLOGICAL RESPONSES** are those measurable effects of noise on people that are realized as changes in pulse rate, blood pressure, etc. While such effects can be induced and observed, the extent is not known to which these physiological responses cause harm or are sign of harm.
>
> **ANNOYANCE** is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability.

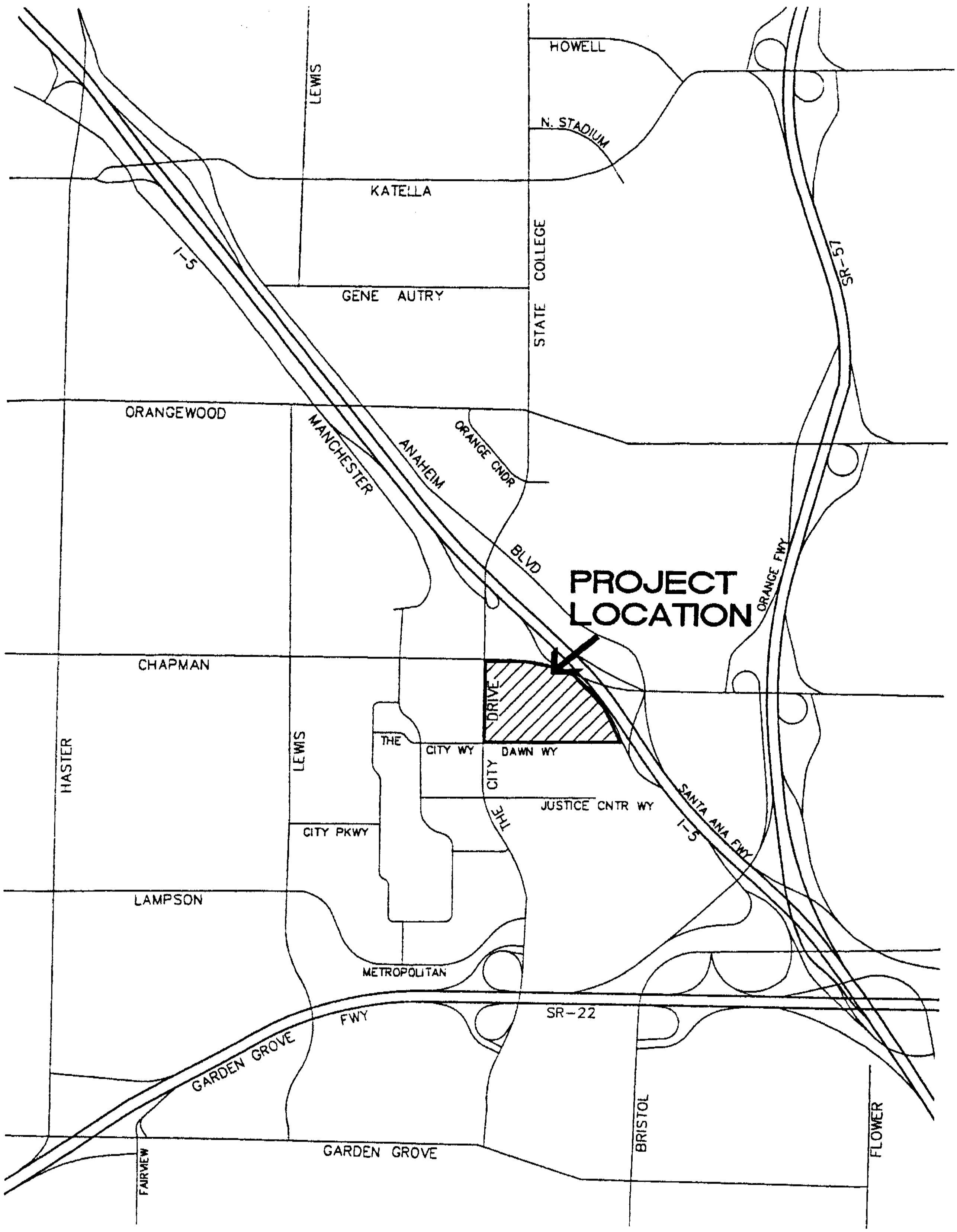


Exhibit 1
Vicinity Map

Mestre Greve Associates

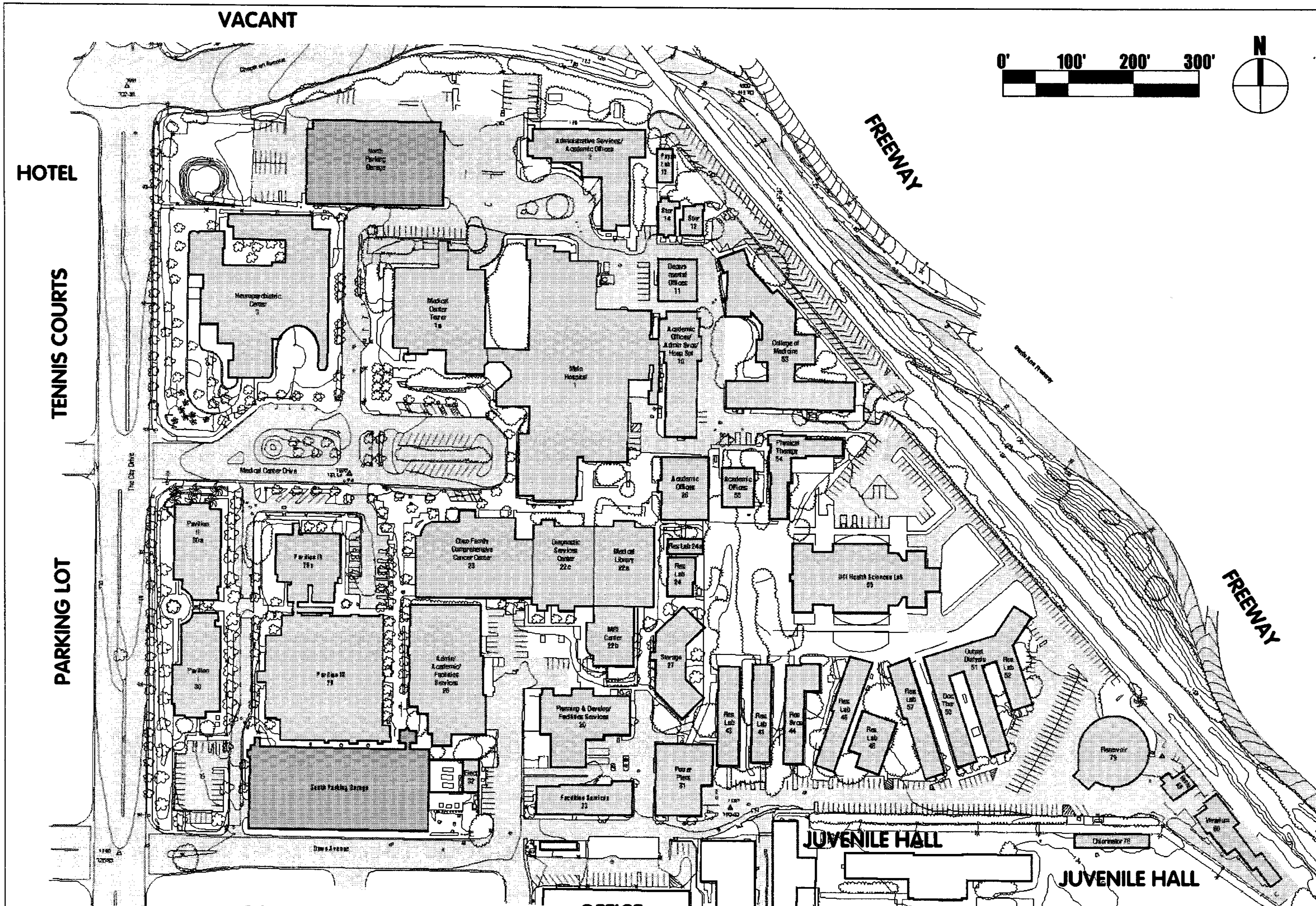


Exhibit 2
Existing Site Plan & Local Land Uses

Mestre Greve Associates

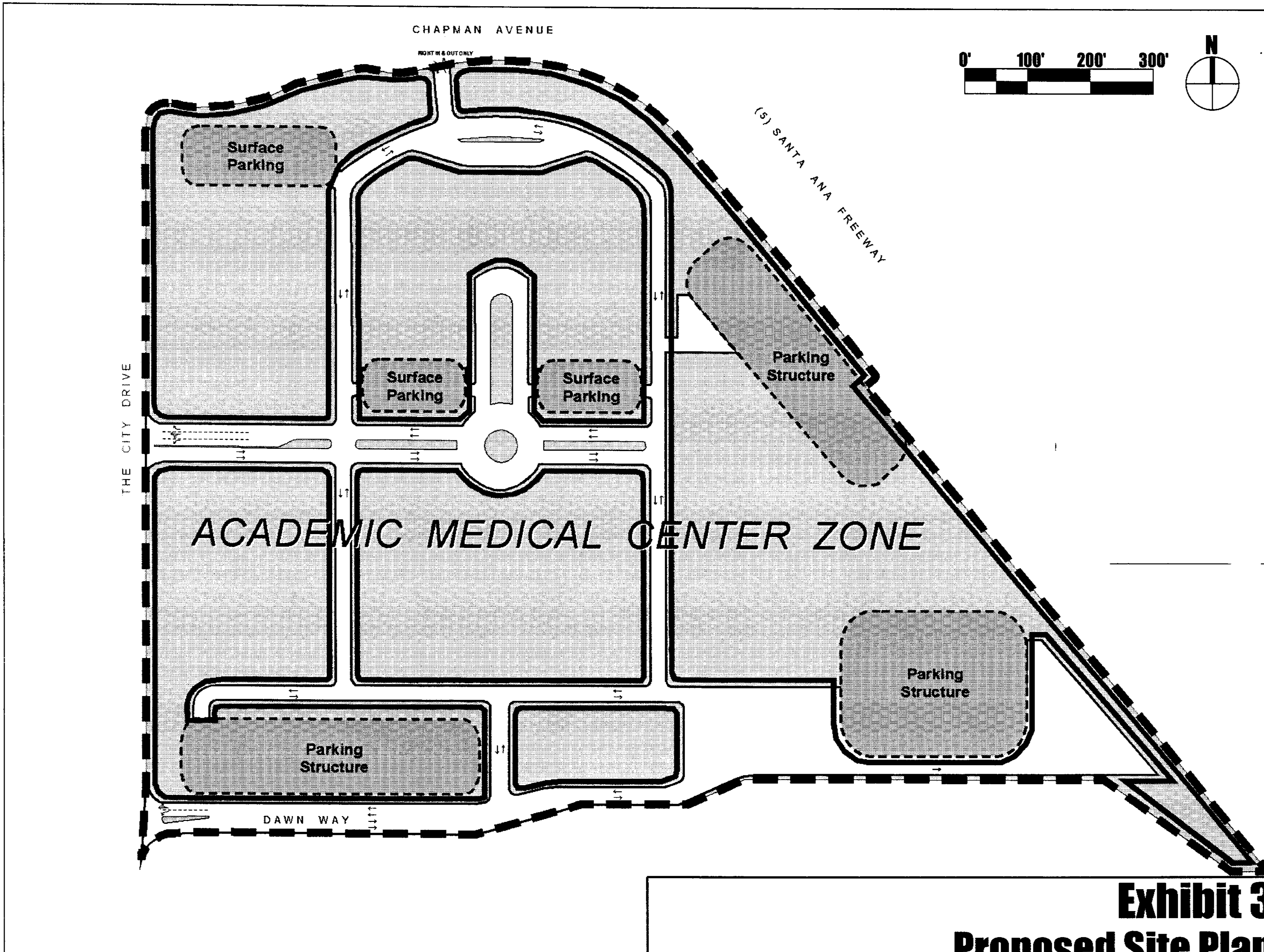


Exhibit 3
Proposed Site Plan

Mestre Greve Associates

SOUND LEVELS AND LOUDNESS OF ILLUSTRATIVE NOISES IN INDOOR AND OUTDOOR ENVIRONMENTS

Numbers in Parentheses are the A-Scale Weighted Sound Levels for that Noise Event

dB(A)	OVER-ALL LEVEL Sound Pressure Level Reference: 0.0002 Microbars	COMMUNITY (Outdoor)	HOME OR INDUSTRY	LOUDNESS Human Judgement of Different Sound Levels
130		Military Jet Aircraft Take-Off With After-burner From Aircraft Carrier @ 50 Ft. (130)	Oxygen Torch (121)	120 dB(A) 32 Times as Loud
120 110	UNCOMFORTABLY LOUD	Turbo-Fan Aircraft @ Take Off Power @ 200 Ft. (110)	Riveting Machine (110) Rock-N-Roll Band (108-114)	110 dB(A) 16 Times as Loud
100		Jet Flyover @ 1000 Ft. (103) Boeing 707. DC-8 @ 6080 Ft. Before Landing (106) Bell J-2A Helicopter @ 100 Ft. (100)		100 dB(A) 8 Times as Loud
90	VERY LOUD	Power Mower (96) Boeing 737, DC-9 @ 6080 Ft. Before Landing (97) Motorcycle @25 Ft. (90)	Newspaper Press (97)	90 dB(A) 4 Times as Loud
80		Car Wash @ 20 Ft. (89) Prop. Airplane Flyover @ 1000 Ft. (88) Diesel Truck, 40 MPH @ 50 Ft. (84) Diesel Train, 45 MPH @ 100 Ft. (83)	Food Blender (88) Milling Machine (85) Garbage Disposal (80)	80 dB(A) 2 Times as Loud
70	MODERATELY LOUD	High Urban Ambient Sound (80) Passenger Car, 65 MPH @ 25 Ft. (77) Freeway @ 50 Ft. From Pavement Edge, 10:00 AM (76 +or- 6)	Living Room Music (76) TV-Audio, Vacuum Cleaner	70 dB(A)
60		Air Conditioning Unit @ 100 Ft. (60)	Cash Register @ 10 Ft. (65-70) Electric Typewriter @ 10 Ft. (64) Dishwasher (Rinse) @ 10 Ft. (60) Conversation (60)	60 dB(A) 1/2 as Loud
50	QUIET	Large Transformers @ 100 Ft. (50)		50 dB(A) 1/4 as Loud
40		Bird Calls (44) Lower Limit Urban Ambient Sound (40)		40 dB(A) 1/8 as Loud
20	JUST AUDIBLE	Desert at Night (dB[A] Scale Interrupted)		
10	THRESHOLD OF HEARING			

SOURCE: Reproduced from Melville C. Branch and R. Dale Beland, "Outdoor Noise in the Metropolitan Environment," Published by the City of Los Angeles, 1970, p.2.

EXHIBIT 4

TYPICAL A-WEIGHTED NOISE LEVELS

1.2.2 Noise Assessment Metrics

The description, analysis and reporting of community noise levels around communities is made difficult by the complexity of human response to noise and the myriad of noise metrics that have been developed for describing noise impacts. Each of these metrics attempts to quantify noise levels with respect to community response. Most of the metrics use the A-Weighted noise level to quantify noise impacts on humans. A-Weighting is a frequency weighting that accounts for human sensitivity to different frequencies.

Noise metrics can be divided into two categories: single event and cumulative. Single-event metrics describe the noise levels from an individual event such as an aircraft fly over or perhaps a heavy equipment pass-by. Cumulative metrics average the total noise over a specific time period, which is typically 1 or 24-hours for community noise problems. For this type of analysis, cumulative noise metrics will be used.

Several rating scales have been developed for measurement of community noise. These account for: (1) the parameters of noise that have been shown to contribute to the effects of noise on man, (2) the variety of noises found in the environment, (3) the variations in noise levels that occur as a person moves through the environment, and (4) the variations associated with the time of day. They are designed to account for the known health effects of noise on people described previously. Based on these effects, the observation has been made that the potential for a noise to impact people is dependent on the total acoustical energy content of the noise. A number of noise scales have been developed to account for this observation. Two of the predominate noise scales are the: Equivalent Noise Level (LEQ) and the Community Noise Equivalent Level (CNEL). These scales are described in the following paragraphs.

> **LEQ** is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. LEQ is the "energy" average noise level during the time period of the sample. LEQ can be measured for any time period, but is typically measured for 1 hour. This 1-hour noise level can also be referred to as the Hourly Noise Level (HNL). It is the energy sum of all the events and background noise levels that occur during that time period.
>
> **CNEL**, Community Noise Equivalent Level, is the predominant rating scale now in use in California for land use compatibility assessment. The CNEL scale represents a time weighted 24-hour average noise level based on the A-weighted decibel. Time weighted refers to the fact that noise that occurs during certain sensitive time periods is penalized for occurring at these times. The evening time period (7 p.m. to 10 p.m.) penalizes noises by 5 dBA, while nighttime (10 p.m. to 7 a.m.) noises are penalized by 10 dBA. These time periods and penalties were selected to reflect people's increased sensitivity to noise during these time periods. A CNEL noise level may be reported as a "CNEL of 60 dBA," "60 dBA CNEL," or simply "60 CNEL." Typical noise levels in terms of the CNEL scale for different types of communities are presented in Exhibit 5.
>
> **Ldn**, the day-night scale is similar to the CNEL scale except that evening noises are not penalized. It is a measure of the overall noise experienced during an entire day. The time-weighted refers to the fact that noise that occurs during certain sensitive time periods is

penalized for occurring at these times. In the Ldn scale, those noise levels that occur during the night (10 pm to 7 am) are penalized by 10 dB. This penalty was selected to attempt to account for increased human sensitivity to noise during the quieter period of a day, where home and sleep is the most probable activity.

L(%) is a statistical method of describing noise which accounts for variance in noise levels throughout a given measurement period. L(%) is a way of expressing the noise level exceeded for a percentage of time in a given measurement period. For example since 5 minutes is 25% of 20 minutes, L(25) is the noise level that is equal to or exceeded for five minutes in a twenty minute measurement period. It is L(%) that is used for most noise ordinance standards. For example most daytime city, state and county noise ordinances use an ordinance standard of 55 dBA for 30 minutes per hour or an L(50) level of 55 dBA. In other words the noise ordinance states that no noise level should exceed 55 dBA for more that fifty percent of a given period.

1.3 Noise Criteria

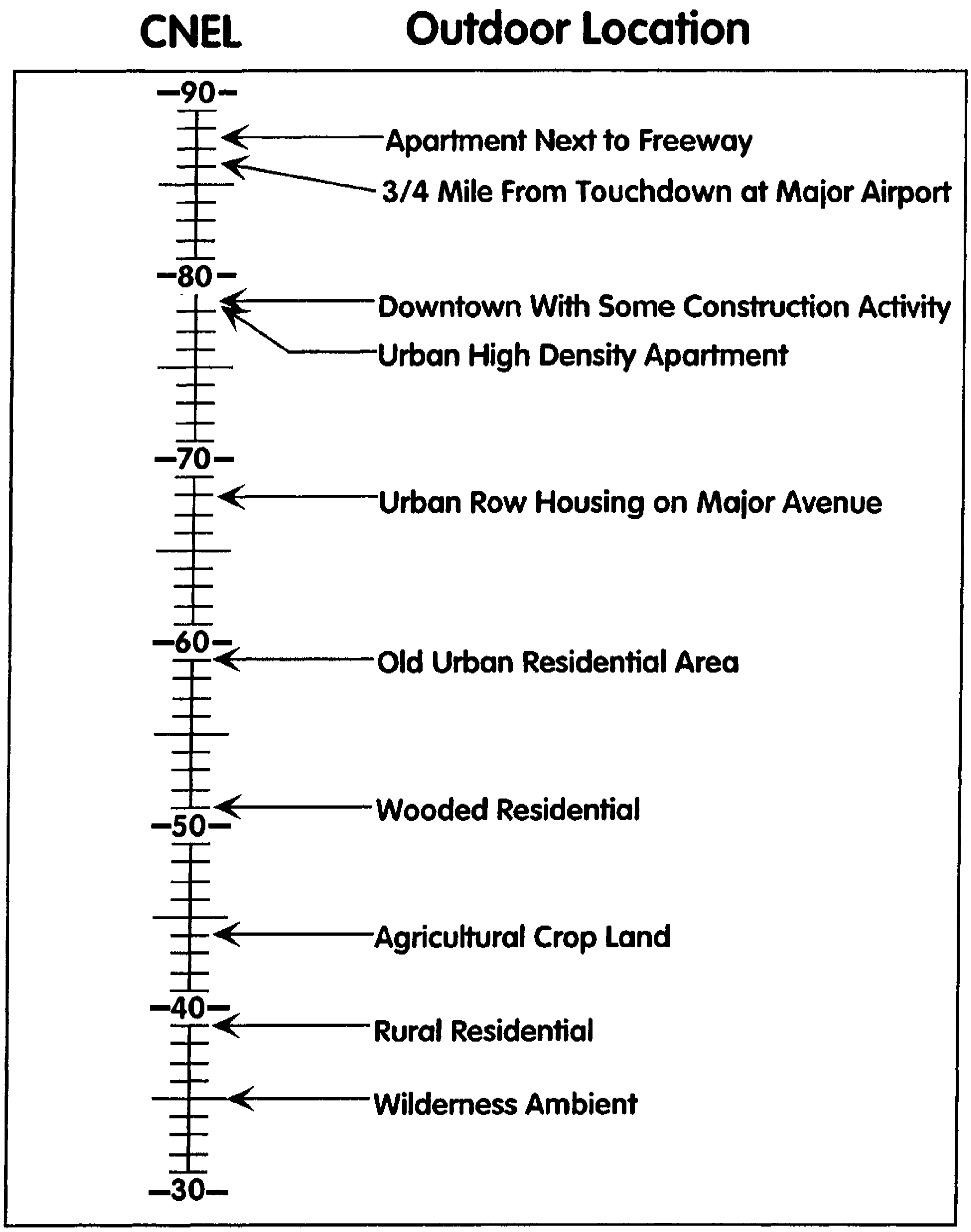
1.3.1 City of Orange Noise Element

The City of Orange specifies outdoor and indoor noise limits for various land uses impacted by transportation noise sources. The noise limits specified in the City's Noise Element are in terms of the Community Noise Equivalent Level (CNEL). The standard states that for residential land use, the exterior noise exposure level shall not exceed 65 CNEL and the interior noise exposure level shall not exceed 45 CNEL.

1.3.2 City of Orange Noise Ordinance

Chapter 8.24 of the City of Orange Municipal Code defines the City's Noise Ordinance that establishes exterior and interior noise standards that protect residential zoned areas. Table 1 presents City's Noise Ordinance standards. The Noise Ordinance is designed to control unnecessary, excessive and annoying sounds from sources on private property by setting limits that cannot be exceeded at adjacent properties. The noise ordinance requirements cannot be applied to mobile noise sources such as heavy trucks when traveling on public roadways. Federal and State laws preempt control of the mobile noise sources on public roads. However, the noise ordinance does apply to vehicles on private property

The Noise Ordinance specifies dBA noise levels that cannot be exceeded at residential areas for a specified period of time. The time limits are listed in the first column of Table 1. Column 2 lists the equivalent noise metric in terms of "percent noise level" or L%. The percent noise level describes the noise level that is exceeded during a certain percentage of the measurement period. For example, the L50 noise level is the level exceeded 50% of the measurement period or thirty minutes in an hour. Columns 3 and 4 list the daytime and nighttime noise levels for the specified metric that cannot be exceeded under the noise ordinance. Greater noise levels are permitted during the day (7 a.m. to 10 p.m.) as compared to nighttime (10 p.m. to 7 a.m.).



Source: U.S. Environmental Protection Agency, "Impact Characterization of Noise Including Implications of Identifying and Achieving Levels of Cumulative Noise Exposure," EPA Report NTID 73.4, 1973.

Exhibit 5
Typical Outdoor Noise Levels

Mestre Greve Associates

Table 1
City of Orange Noise Ordinance Standards

		Noise Level Not To Be Exceeded Residential Zone	
Maximum Time of Exposure	**Noise Metric**	**7 a.m. to 10 p.m. (daytime)**	**10 p.m. to 7 a.m. (nighttime)**
EXTERIOR NOISE STANDARDS			
30 Minutes/Hour	L50	55 dBA	50 dBA
15 Minutes/Hour	L25	60 dBA	55 dBA
5 Minutes/Hour	L8.3	65 dBA	60 dBA
1 Minute/Hour	L1.7	70 dBA	65 dBA
Any period of time	Lmax	75 dBA	70 dBA
INTERIOR NOISE STANDARDS			
5 Minutes/Hour	L8.3	55 dBA	45 dBA
1 Minute/Hour	L1.7	60 dBA	50 dBA
Any period of time	Lmax	65 dBA	55 dBA

The Noise Ordinance states that the daytime noise level for a noise source measured at an outdoor area of a residential property cannot exceed 75 dBA ever, 70 dBA for more than 1 minute of any hour, 65 dBA for more than 5 minutes of any hour, 60 dBA for more than 15 minutes of any hour, or 55 dBA for more than 30 minutes of any hour. Nighttime noise level limits are reduced by 5 dB to reflect the increased sensitivity to noise occurring during this time period. The noise ordinance also states that the noise level for a source measured at an indoor area of a residential property cannot exceed 65 dBA ever, 60 dBA for more than 1 minute of any hour, and 55 dBA for more than 5 minutes of any hour. The nighttime interior noise level limits are reduced by 10 dB. In the event that the ambient noise level exceeds any of the noise limit categories, the cumulative period applicable to that category shall be increased to reflect the ambient noise level.

For daytime noise the outdoor standard is more stringent than the interior standard. This is because a typical residence achieves 12 dB of noise reduction with windows open. That is, the interior noise levels will be at least 12 dB lower than the exterior noise levels. The noise ordinance requires the levels to only be 10 dB lower. This is not so for nighttime noise levels depending on the characteristics of the noise source either the interior or exterior noise standards may be the most stringent.

1.4 Existing Noise Measurements

To determine the existing noise environment in the vicinity of the proposed project site, ambient noise measurements were made on July 31, 2001 between 3:00 p.m. and 430 p.m. at two locations. The locations of the noise measurement sites are shown in Exhibit 1.

The measurements were made with a Brüel & Kjær Modular Precision Sound Level Meter, Type 2236. The systems were calibrated before and after each measurement series with calibration traceable to the National Institute of Standards and Technology. Sustained wind speeds during the time of measurements were light (0 to 5 miles per hour) with gusts up to 10 mph.

Fifteen-minute measurements were made at each of the measurement sites. Site 1 was located near the northeastern boundary of the project site along I-5. I-5 is elevated approximately 10 feet above the Medical Center elevation and there is a 10-foot high sound wall located along the freeway. This wall significantly reduces freeway traffic noise levels. Traffic noise from the freeway and vehicles in the parking lot are the primary sources of noise at Site 1. Site 2 was located along the southern boundary of the Medical Center near the Orange County Juvenal Hall. Noise from vehicles in the parking lot, mechanical equipment from Juvenal Hall and traffic noise from I-5 were the primary sources of noise.

The measurement results are presented in terms of the equivalent noise levels (Leq), maximum noise levels, minimum noise levels and percentile noise levels (L%). The L50 percentile level for example, represents the noise levels exceeded 50 percent of the time, and usually represent the average ambient noise level. The L90 noise levels represent the background noise levels that are exceeded 90 percent of the time.

Table 2
Existing Noise Measurements

Site	Leq	Lmax	L10	L50	L90	Lmin
1	60	65	61	59	58	56
2	58	69	59	57	55	54

As stated above the primary source of noise in the vicinity of the project is traffic on I-5 with traffic on Chapman and The City Drive generating significant amounts of noise along these roadways. The measured noise levels are representative of what would be expected in the vicinity of these types of roadways. The noise levels from I-5 are much lower than what would be expected if sound walls were not present. The sound wall significantly reduces noise levels from I-5. Other sources of noise in the area primarily consist of vehicles in parking lots and the associated activity. In some areas mechanical equipment generates audible noise.

1.5 Existing Roadway Noise Levels

An estimate of highway noise levels in terms of CNEL was computed for the roadways affected by project traffic. The Highway Noise Model published by the Federal Highway Administration ("FHWA Highway Traffic Noise Prediction Model," FHWA-RD-77-108, December, 1978) was utilized. The CALVENO noise emission curves developed by Caltrans were used with the FHWA model. These curves better model the California vehicle mix. The FHWA Model uses traffic volume, vehicle mix, vehicle speed, and roadway geometry to compute the "equivalent noise level." A computer code has been written which computes equivalent noise levels for each of the time periods used in the calculation of CNEL. Weighting these noise levels and summing them results in the CNEL for the traffic projections used. CNEL contours are found by iterating over many distances until the distances to the 60, 65, and 70 CNEL contours are found.

The distances to the existing 60, 65 and 70 CNEL contours for the roadways in the vicinity of the proposed project site are given in Table 3. These represent the distance from the centerline of the road to the contour value shown. The CNEL at 100 feet from the roadway centerline is also presented. The values given in Table 3 represent existing noise levels and do not take into account the effect of any existing noise barriers or topography that may affect ambient noise levels.

Table 3
Modeled Existing Roadway Traffic Noise Levels

Roadway Segment	CNEL @ 100'	Distance To CNEL Contour from Centerline of Roadway (feet) 70 CNEL	65 CNEL	60 CNEL
Haster				
Katella to Orangewood	62.4	RW	67	144
Orangewood to Chapman	64.0	40	86	184
Chapman to Lampson	61.9	RW	62	134
Lampson to Garden Grove	63.5	37	79	171
Garden Grove to SR-22 Ramp	64.3	41	89	192
Fairview				
South of Garden Grove	66.6	59	127	274
Lewis				
Orangewood to Chapman	59.8	RW	45	97
Chapman to City Pkwy.	62.2	RW	65	141
City Pkwy. to Lampson	62.2	RW	65	141
Lampson to SR-22	61.9	RW	62	134
SR-22 to Garden Grove	61.6	RW	59	127
Manchester				
South of Orangewood	50.8	RW	RW	RW
North of Chapman	49.3	RW	RW	RW
South of Chapman	55.5	RW	RW	50
City Boulevard				
North of The Block	56.0	RW	RW	54
Anaheim Boulevard				
Orangewood to The City Dr.	50.8	RW	RW	RW
State College				
Howell to Katella	65.2	48	104	223
Katella to Gene Autry	65.5	50	109	234
Gene Autry to Orangewood	65.4	49	106	229
Orangewood to I-5 Ramps	65.2	48	104	223
I-5 Ramps to I-5 Ramps	65.5	50	109	234
I-5 Ramps to Chapman	65.8	53	113	244

RW-Contour Falls Within Roadway Right-of-Way

Table 3 (Continued)
Modeled Existing Roadway Traffic Noise Levels

Roadway Segment	CNEL @ 100'	Distance To CNEL Contour from Centerline of Roadway (feet) 70 CNEL	65 CNEL	60 CNEL
The City Drive				
Chapman to Dawn Way	64.3	RW	89	192
Dawn Way to Justice Cntr. Wy.	64.0	RW	85	184
Justice Cntr. Wy. to Entertnmnt. Ave.	64.1	RW	87	188
Entertainment Ave. to The Block	64.4	RW	91	196
The Block to SR-22 Ramps	65.3	48	104	224
SR-22 Ramps to SR-22 Ramps	65.3	48	104	224
SR-22 Ramps to Garden Grove	63.0	RW	73	158
Rampart				
Orangewood to Chapman	58.5	RW	37	80
Katella				
Lewis to State College	65.5	50	109	234
State College to Howell	65.8	53	113	244
Howell to SR-57 Ramps	67.5	68	146	315
SR-57 Ramps to SR-57 Ramps	66.9	62	134	288
East of SR-57 Ramps	66.2	56	120	259
Gene Autry				
Lewis to State College	50.8	RW	RW	RW
Orangewood				
Haster to Lewis	63.3	RW	77	166
Lewis to State College	63.1	RW	74	160
State College to Rampart	64.9	46	99	213
Rampart to SR-57 Ramps	64.9	46	99	213
SR-57 Ramps to SR-57 Ramps	65.2	48	104	223
East of SR-57 Ramps	65.7	51	111	239
Chapman				
Haster to Lewis	65.2	48	104	223
Lewis to Manchester	65.7	51	111	239
Manchester to The City Dr.	66.2	56	120	259
The City Dr. to I-5 Ramps	66.2	56	120	259
I-5 Ramps to Rampart	66.1	55	118	254
Rampart to I-5 Ramp	66.6	59	127	274
I-5 Ramp to SR-57 Ramps	65.2	48	104	223
SR-57 Ramps to SR-57 Ramps	65.2	48	104	223
East of SR-57 Ramps	65.4	49	106	229

RW-Contour Falls Within Roadway Right-of-Way

Table 3 (Continued)
Modeled Existing Roadway Traffic Noise Levels

Roadway Segment	CNEL @ 100'	Distance To CNEL Contour from Centerline of Roadway (feet) 70 CNEL	65 CNEL	60 CNEL
The City Parkway				
East of Lewis	56.3	RW	RW	57
Lampson				
Haster to Lewis	60.8	RW	52	112
Lewis to City Blvd.	56.6	RW	RW	59
City Blvd. to The City Dr.	58.5	RW	37	80
Garden Grove				
West of Haster	65.8	53	113	244
Haster to SR-22	66.6	59	127	274
SR-22 to Lewis	64.7	45	96	207
Lewis to The City Dr.	64.6	43	94	202
The City Dr. to Bristol	64.7	45	96	207
SR-22				
West of Garden Grove	79.4	423	910	1,961
Garden Grove to The City Dr.	79.6	437	942	2,030
The City Dr. to I-5/SR-57	79.8	449	968	2,085
East of I-5/SR-57	78.7	378	814	1,754
I-5				
North of State College	79.6	438	944	2,035
State College to SR-22/SR-57	80.0	463	998	2,150
South of SR-22/SR-57	79.0	401	863	1,859
SR-57				
North of Katella	80.2	480	1,034	2,229
Katella to Orangewood	80.1	468	1,009	2,175
Orangewood to Chapman	80.0	465	1,002	2,159
Chapman to I-5/SR-57	79.8	448	965	2,080

RW-Contour Falls Within Roadway Right-of-Way

Table 3 shows that there are significant noise levels generated by many roadways in the project vicinity and especially the three freeways. Note that the noise levels and distances to contours presented above do not take into account any noise barriers or topography. Typically a 5 to 6 foot wall exists along the major roadways where there are adjacent residential land uses. Typically these walls also mitigate traffic noise levels to below 65 CNEL.

2.0 POTENTIAL NOISE IMPACTS

Potential noise impacts are commonly divided into two groups; temporary and long term. Temporary impacts are usually associated with noise generated by construction activities. Long-term impacts are further divided into impacts on surrounding land uses generated by the proposed project and those impacts that occur at the proposed project site.

2.1 Noise Impact Criteria

Off-site impacts from on-site activities, temporary and long-term, are measured against the City of Orange Noise Ordinance presented previously. Construction activities, parking lot activity, mechanical equipment and any loading dock activity must comply with the Noise Ordinance.

Long-term off-site impacts from traffic noise are measured against two criteria. Both criteria must be met for a significant impact to be identified. First, project traffic must cause a significant noise level increase on a roadway segment adjacent to a noise sensitive land use. Second the resulting future with project noise level must exceed the criteria level for the noise sensitive land use. In this case the criteria level is 65 CNEL for residential land uses.

In community noise assessment, changes in noise levels greater than 3 dB are often identified as significant, while changes less than 1 dB will not be discernible to local residents. In the range of 1 to 3 dB, residents who are very sensitive to noise may perceive a slight change. Typically 3 dB is used as a significant noise increase threshold. Note that there is no scientific evidence available to support the use of 3 dB as the significance threshold. In laboratory testing situations, humans are able to detect noise level changes of slightly less than 1 dB. In a community noise situation, however, noise exposures are over a long time period, and changes in noise levels occur over years, rather than the immediate comparison made in a laboratory situation. Therefore, the level at which changes in community noise levels become discernible is likely to be some value greater than 1 dB, and 3 dB appears to be appropriate for most people.

The City of Orange has not established noise standards for medical center uses. Typically, the interior noise standard for patient rooms is the same as for residential uses, 45 CNEL. A standard of 50 CNEL is typically applied to private offices and examination rooms and a standard of 55 CNEL is typically applied to general office, circulation, reception and lobby areas. The residential outdoor 65 CNEL standard would typically be applied to outdoor areas were persons would be expected to linger for significant periods. This does on include parking lots or paths between buildings, but would include such uses as balconies, terraces, outdoor dining areas, park, and playground areas. These standards will be used to assess the compatibility of the project with its noise exposure.

2.2 Short-Term Impacts

2.2.1 Construction Noise

Construction noise represents a short-term impact on ambient noise levels. The primary source of construction noise is heavy equipment. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers and portable generators can reach high levels. Demolition and site preparation (grading) will generate the highest levels of noise during construction. The project proposes the demolition of a significant number of existing buildings. Exhibit 6 shows the buildings that are to be demolished for the project. The exhibit also indicates the buildings that will be demolished as a part of Phase 1 of the project. Several buildings near the northeast corner of the Medical Center including the existing hospital building and a parking structure will be demolished to allow the construction of a new hospital building. Note that these buildings will be demolished in phases to allow for the continued operation of the hospital during demolition and construction. Nine buildings in the southeast corner of the Medical Center will be demolished as a part of Phase 1 to make way for a parking structure.

Worst-case examples of construction noise at 50 feet are presented in Exhibit 7. The peak noise level for most of the heavy equipment that will be used during the demolition and construction is 70 to 95 dBA at a distance of 50 feet. At 200 feet, the peak construction noise levels range from 58 to 83 dBA. At 400 feet the peak noise levels range from 52 to 77 dBA. Note that these noise levels are based upon worst-case conditions. Typically, noise levels near the site will be less. Noise measurements made by Mestre Greve Associates for other projects show that the noise levels generated by commonly used grading equipment (i.e. loaders, graders and trucks) generate noise levels that typically do not exceed the middle of the range shown in Exhibit 7.

Juvenile Hall located directly south of the Medical Center and the hotel located to the west across The City Drive are considered equivalent to residential uses in terms of noise sensitivity. Demolition and construction of the Phase 1 parking structure will occur from directly adjacent to Juvenile Hall to approximately 300 feet away. The majority of the activity will occur more than 100 feet from the Juvenile Hall property line. Activities occurring directly adjacent to the Juvenile Hall will generate significant noise levels at the facility. The majority of the activity will generate noise levels below 90 dBA with average noise levels in the 75 to 80 dBA range during periods of peak activities. Indoor noise levels will be approximately 12 dB lower for rooms with open windows and 20 dB lower for rooms with closed windows.

The hotel located to the west across The City Drive is more than 300 feet from the nearest demolition and construction. At this distance peak noise levels will reach as high as 80 dBA with average noise levels 65 to 70 dBA range. The windows at the hotel are fixed and, therefore, interior noise levels will be at least 20 dB lower than these levels.

These noise impacts represent a short-term noise impact. The durations for demolition and construction activities for Phase 1 have not been determined, but the greatest noise generating activities may occur over several months. The timing for the remaining development (full LRDP implementation) of the project is would occur over a period of several years.

Construction and demolition activities will generate significant noise levels at the Juvenile Hall adjacent to the project. The City of Orange has adopted a Noise Ordinance that excludes control of noise generated by construction activities during the hours between 8:00 a.m. and 7:00 p.m on weekdays and Saturdays. Construction noise occurring during these hours is not considered significant. Construction outside of these hours or on federal holidays or Sundays is required to comply with the noise ordinance. It is expected that all construction will occur during the hours excluded from the Noise Ordinance Limits and, therefore, no noise impacts will occur.

As noted above, demolition of the existing hospital building and the construction of the new hospital will be phased to allow continued operation of the hospital. Further, demolition and construction of other facilities on the site will occur while other adjacent or nearby facilities remain in operation. Construction and demolition have the potential for creating significant levels of noise especially for persons in close proximity of the activities. Analysis of the potential noise impacts of the Medical Center demolition and construction activities on the Medical Center uses is not required for this analysis since these impacts are both created and incurred by the Medical Center. It is up to the Medical Center to determine how the facility is operated and the most appropriate methods to deal with the noise created by construction and demolition activities to minimize the disturbance of its patrons and employees.

2.3 Long Term Off-Site Impacts

This section examines noise impacts from the proposed project on the land uses in the vicinity of the project. Specifically traffic noise increases due to the project are examined as well as noise generated by on site activities.

2.3.1 Traffic Noise

Table 4 presents the changes in traffic noise levels on roadways in the vicinity of the project. The first column lists the roadway segments. The second column shows the future (2020) increase over existing noise levels along these roadways. That is, how much higher than existing conditions the noise levels will be in the year 2020 with the project. The third column shows the project's contribution to this increase. This number can be considered to be how much lower the future noise level would be without the proposed project. Note, that some roadways show a slight decrease in noise levels with the proposed project (i.e. a negative number). This is due to the traffic projections indicating a slightly lower traffic volume on these roadways with the project.

The noise level increases were calculated using traffic volume data presented in the previously referenced traffic study prepared for the project. The traffic volumes used are presented in the appendix. Increases greater than 3 dB are indicated in bold text.

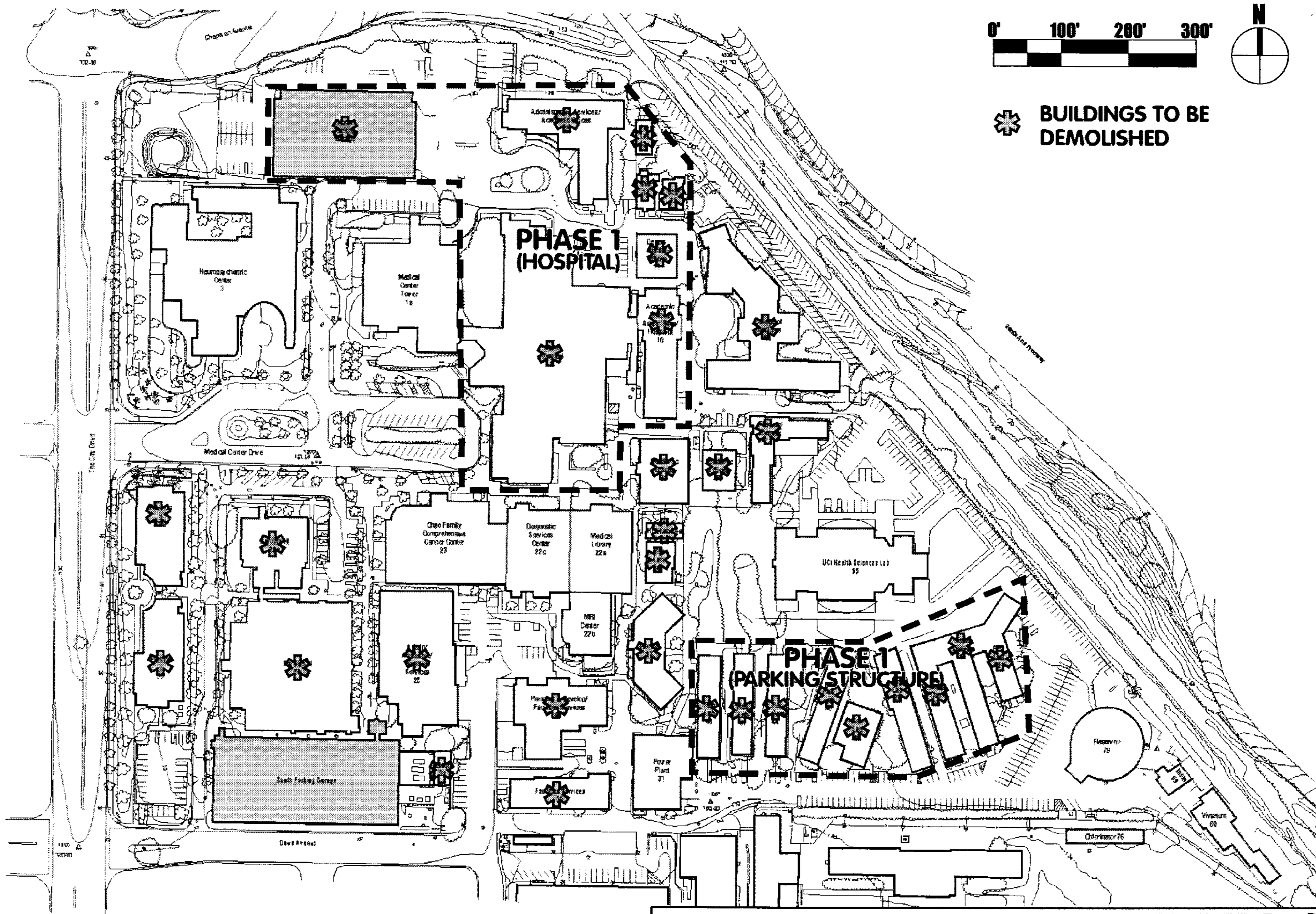
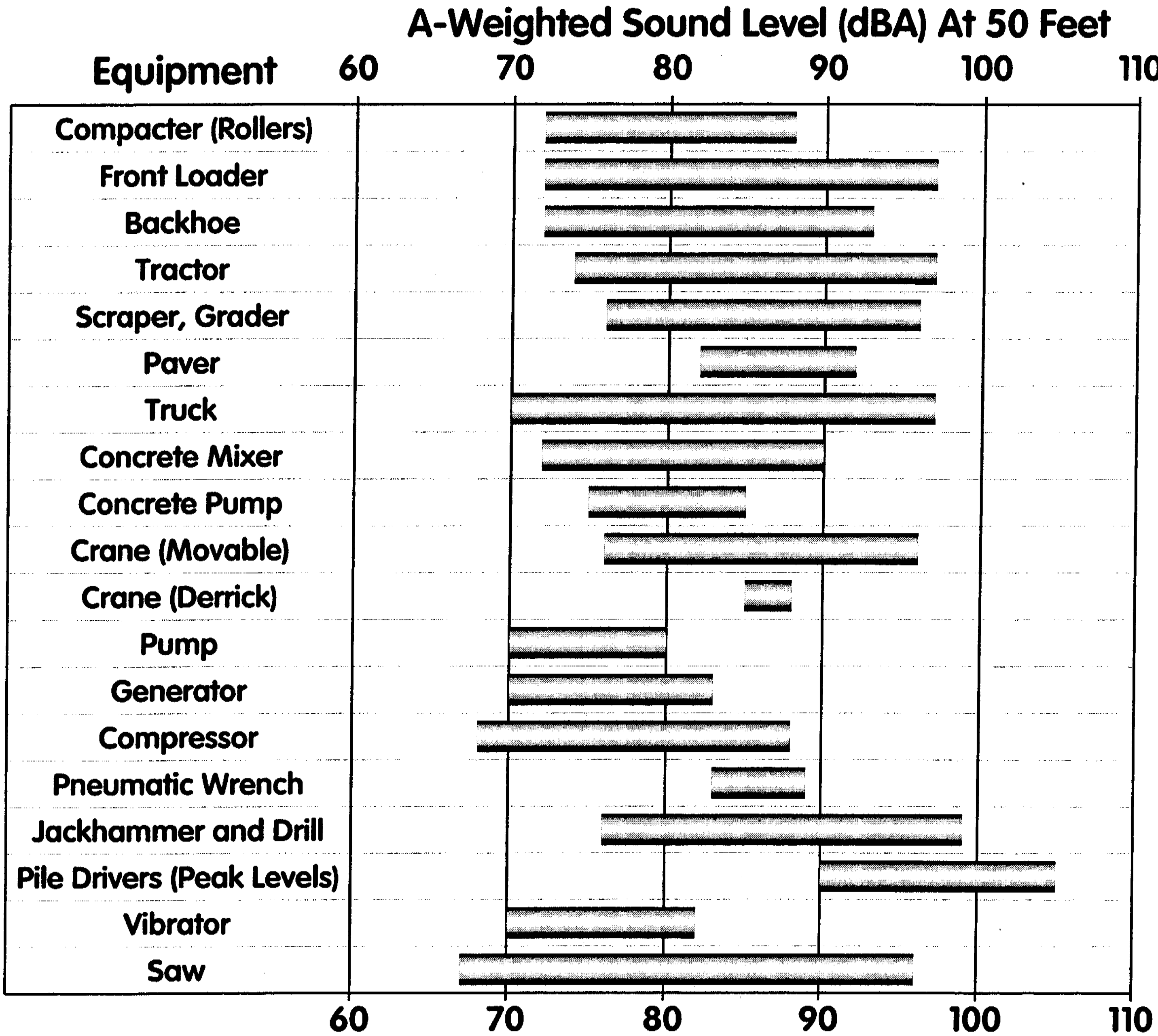


Exhibit 6
Building To Be Demolished

Mestre Greve Associates



Source: "Handbook of Noise Control," by Cyril Harris, 1979

Exhibit 7
Construction Equipment Noise Levels

Mestre Greve Associates

Table 4
Traffic Noise Level Changes With Project

Roadway Segment	Cumulative Increase Over Existing CNEL	Increase Due to Project
Haster		
Katella to Orangewood	0.8	0.0
Orangewood to Chapman	0.8	-0.2
Chapman to Lampson	0.7	0.2
Lampson to Garden Grove	0.0	0.0
Garden Grove to SR-22 Ramp	0.4	0.0
Fairview		
South of Garden Grove	0.5	0.0
Lewis		
Orangewood to Chapman	1.4	0.0
Chapman to City Pkwy.	0.8	0.0
City Pkwy. to Lampson	1.1	0.0
Lampson to SR-22	0.6	0.0
SR-22 to Garden Grove	0.7	0.0
Manchester		
South of Orangewood	0.0	0.0
North of Chapman	**3.0**	0.0
South of Chapman	1.0	0.5
City Boulevard		
North of The Block	2.2	-0.3
Anaheim Boulevard		
Orangewood to The City Dr.	**6.0**	0.0
State College		
Howell to Katella	1.5	0.0
Katella to Gene Autry	2.5	0.0
Gene Autry to Orangewood	**3.6**	0.1
Orangewood to I-5 Ramps	**3.2**	0.1
I-5 Ramps to I-5 Ramps	2.4	0.3
I-5 Ramps to Chapman	1.5	0.2
The City Drive		
Chapman to Dawn Way	2.0	0.4
Dawn Way to Justice Cntr. Wy.	1.8	0.3
Justice Cntr. Wy. to Entertnmnt. Ave.	1.5	0.2
Entertainment Ave. to The Block	1.3	0.2
The Block to SR-22 Ramps	0.4	0.2
SR-22 Ramps to SR-22 Ramps	0.4	0.2
SR-22 Ramps to Garden Grove	1.0	0.0

-- Roadway traffic volume not reported in traffic study.

Table 4 (Continued)
Traffic Noise Level Changes With Project

Roadway Segment	Cumulative Increase Over Existing CNEL	Increase Due to Project
Rampart		
Orangewood to Chapman	**3.7**	0.0
Katella		
Lewis to State College	1.2	0.0
State College to Howell	1.2	-0.1
Howell to SR-57 Ramps	1.5	0.0
SR-57 Ramps to SR-57 Ramps	1.4	0.0
East of SR-57 Ramps	1.3	0.0
Gene Autry		
Lewis to State College	**7.8**	0.0
Orangewood		
Haster to Lewis	1.6	0.0
Lewis to State College	2.7	0.0
State College to Rampart	2.1	0.1
Rampart to SR-57 Ramps	2.0	0.1
SR-57 Ramps to SR-57 Ramps	1.7	0.0
East of SR-57 Ramps	1.3	0.0
Chapman		
Haster to Lewis	0.6	0.1
Lewis to Manchester	0.1	0.1
Manchester to The City Dr.	0.2	0.1
The City Dr. to I-5 Ramps	0.4	0.0
I-5 Ramps to Rampart	0.6	0.2
Rampart to I-5 Ramp	-0.4	0.1
I-5 Ramp to SR-57 Ramps	1.0	0.1
SR-57 Ramps to SR-57 Ramps	1.1	0.1
East of SR-57 Ramps	1.1	0.1
The City Parkway		
East of Lewis	1.5	0.0
Lampson		
Haster to Lewis	2.0	0.3
Lewis to City Blvd.	2.3	0.0
City Blvd. to The City Dr.	2.6	0.0

-- Roadway traffic volume not reported in traffic study.

Table 4 (Continued)
Traffic Noise Level Changes With Project

Roadway Segment	Cumulative Increase Over Existing CNEL	Increase Due to Project
Garden Grove		
West of Haster	1.1	0.0
Haster to SR-22	0.5	0.0
SR-22 to Lewis	1.2	0.1
Lewis to The City Dr.	1.1	0.1
The City Dr. to Bristol	0.9	0.1
SR-22		
West of Garden Grove	--	--
Garden Grove to The City Dr.	0.8	0.0
The City Dr. to I-5/SR-57	-0.2	0.0
East of I-5/SR-57	--	--
I-5		
North of State College	0.9	0.0
State College to SR-22/SR-57	1.2	0.1
South of SR-22/SR-57	--	--
SR-57		
North of Katella	--	--
Katella to Orangewood	0.9	0.0
Orangewood to Chapman	0.8	0.0
Chapman to I-5/SR-57	0.8	0.0

-- Roadway traffic volume not reported in traffic study.

The third column of Table 4 shows that the traffic noise levels along most roadways in the vicinity of the project will not be affected by the project. The maximum traffic noise level increase due to the project is 0.5 dB on Manchester south of Chapman. There are no residential uses along this segment of roadway. The greatest increase due to the project on a roadway segment with adjacent residential uses is 0.3 dB on Lampson between Haster and Lewis. This increase well below the 3 dB criteria and is not significant.

The second column of Table 4 shows that six roadway segments will experience cumulative noise increases greater than 3 dB. However, only two of these segments have adjacent residential uses. The project does not contribute to the increases along these segments. These increases are solely due to other development in the area. Along Manchester north of Chapman noise levels are projected to increase 3.0 dB over existing levels. However, the future noise contours presented in Table 5 below show that the 65 CNEL contour is not projected to extend beyond the roadway right-of-way. Therefore, future noise levels at these homes will be less than the 65 CNEL standard.

Along Rampart between Orangewood and Chapman, noise levels are projected to increase 3.7 dB over existing levels. There is a mobile home park located on the west side of the roadway. A sound wall located between the park and the roadway. With this wall, the noise levels at the mobile home park are just at the 65 CNEL threshold. Again, note that the project does not contribute to the increase along this segment of road. The noise level increase is exclusively due to other growth in the area.

The distances to the future build out (post 2020) 60, 65 and 70 CNEL contours with the proposed project for the all of the roadways in the vicinity of the proposed project site are presented below in Table 5. These represent the distance from the centerline of the road to the contour value shown. The CNEL at 100 feet from the roadway centerline is also presented. The contours do not take into account the effect of any noise barriers or topography that may affect ambient noise levels. The traffic data used to calculate these noise levels is presented in the appendix.

Table 5
Modeled Existing Roadway Traffic Noise Levels

		Distance To CNEL Contour from Centerline of Roadway (feet)		
Roadway Segment	**CNEL @ 100'**	**70 CNEL**	**65 CNEL**	**60 CNEL**
Haster				
Katella to Orangewood	63.1	RW	75	162
Orangewood to Chapman	64.7	45	96	207
Chapman to Lampson	62.6	RW	69	148
Lampson to Garden Grove	63.5	37	79	171
Garden Grove to SR-22 Ramp	64.7	44	95	205
Fairview				
South of Garden Grove	67.1	64	138	297
Lewis				
Orangewood to Chapman	61.2	RW	56	120
Chapman to City Pkwy.	63.1	RW	74	160
City Pkwy. to Lampson	63.3	RW	77	166
Lampson to SR-22	62.5	RW	68	147
SR-22 to Garden Grove	62.2	RW	65	141
Manchester				
South of Orangewood	50.8	RW	RW	RW
North of Chapman	52.4	RW	RW	31
South of Chapman	56.4	RW	RW	58
City Boulevard				
North of The Block	58.2	RW	35	76
Anaheim Boulevard				
Orangewood to The City Dr.	56.8	RW	RW	61

RW-Contour Falls Within Roadway Right-of-Way
-- Roadway traffic volume not reported in traffic study.

Table 5 (Continued)
Modeled Existing Roadway Traffic Noise Levels

Roadway Segment	CNEL @ 100'	Distance To CNEL Contour from Centerline of Roadway (feet) 70 CNEL	65 CNEL	60 CNEL
State College				
Howell to Katella	66.8	61	131	283
Katella to Gene Autry	68.0	74	159	342
Gene Autry to Orangewood	69.0	85	184	396
Orangewood to I-5 Ramps	68.5	79	170	367
I-5 Ramps to I-5 Ramps	67.9	73	157	337
I-5 Ramps to Chapman	67.3	66	142	306
The City Drive				
Chapman to Dawn Way	66.2	56	121	261
Dawn Way to Justice Cntr. Wy.	65.8	52	113	243
Justice Cntr. Wy. to Entrtnmnt. Ave.	65.6	51	109	235
Entertainment Ave. to The Block	65.7	52	111	239
The Block to SR-22 Ramps	65.7	52	111	239
SR-22 Ramps to SR-22 Ramps	65.7	52	111	239
SR-22 Ramps to Garden Grove	64.0	RW	85	184
Rampart				
Orangewood to Chapman	62.2	RW	65	141
Katella				
Lewis to State College	66.8	61	131	283
State College to Howell	67.0	63	136	293
Howell to SR-57 Ramps	69.0	85	184	396
SR-57 Ramps to SR-57 Ramps	68.3	77	167	359
East of SR-57 Ramps	67.5	68	146	315
Gene Autry				
Lewis to State College	58.5	RW	37	80
Orangewood				
Haster to Lewis	64.9	46	99	213
Lewis to State College	65.8	53	113	244
State College to Rampart	67.0	63	136	293
Rampart to SR-57 Ramps	66.9	62	134	288
SR-57 Ramps to SR-57 Ramps	66.9	62	134	288
East of SR-57 Ramps	67.0	63	136	293

RW-Contour Falls Within Roadway Right-of-Way
-- Roadway traffic volume not reported in traffic study.

Table 5 (Continued)
Modeled Existing Roadway Traffic Noise Levels

Roadway Segment	CNEL @ 100'	Distance To CNEL Contour from Centerline of Roadway (feet) 70 CNEL	65 CNEL	60 CNEL
Chapman				
Haster to Lewis	65.8	53	113	244
Lewis to Manchester	65.8	53	113	244
Manchester to The City Dr.	66.4	58	125	269
The City Dr. to I-5 Ramps	66.6	59	127	274
I-5 Ramps to Rampart	66.7	60	129	279
Rampart to I-5 Ramp	66.2	56	120	259
I-5 Ramp to SR-57 Ramps	66.2	56	120	259
SR-57 Ramps to SR-57 Ramps	66.3	57	123	264
East of SR-57 Ramps	66.4	58	125	269
The City Parkway				
East of Lewis	57.8	RW	33	71
Lampson				
Haster to Lewis	62.8	RW	71	154
Lewis to City Blvd.	58.9	RW	39	85
City Blvd. to The City Dr.	61.1	RW	55	119
Garden Grove				
West of Haster	66.9	62	134	288
Haster to SR-22	67.1	64	138	297
SR-22 to Lewis	65.9	54	116	249
Lewis to The City Dr.	65.7	51	111	239
The City Dr. to Bristol	65.7	51	111	239
SR-22				
West of Garden Grove	--	--	--	--
Garden Grove to The City Dr.	80.4	494	1,065	2,295
The City Dr. to I-5/SR-57	79.6	439	946	2,037
East of I-5/SR-57	--	--	--	--
I-5				
North of State College	80.5	503	1,084	2,336
State College to SR-22/SR-57	81.1	554	1,193	2,570
South of SR-22/SR-57	--	--	--	--
SR-57				
North of Katella	--	--	--	--
Katella to Orangewood	80.9	535	1,153	2,483
Orangewood to Chapman	80.8	524	1,129	2,432
Chapman to I-5/SR-57	80.5	503	1,084	2,335

RW-Contour Falls Within Roadway Right-of-Way
-- Roadway traffic volume not reported in traffic study.

2.3.2 On-Site Activities

As discussed above, the nearest residential equivalent land uses are the County of Orange Juvenile Hall located along the eastern portion of the southern boundary of the Medical Center and the hotel located to the east of the project site across The City Drive.

Other than the parking lots and structures, the locations of specific activities that may generate substantial noise levels have not been defined. However, all activities in the Medical Center will be limit noise levels so that they do not exceed the City of Orange Noise Ordinance standards at Juvenile Hall or the Hotel located across The City Drive. The method for ensuring this is discussed in Section 3.2.2.

Potential noise sources that could result in exceedences of the Noise Ordinance include HVAC systems, gas handling systems, other mechanical equipment, vehicles (especially large trucks), and loading docks. We are not aware of any noise sources typically associated with a Medical Center that would not be able to meet the Noise Ordinance standards with implementation of site design, operational restrictions, noise barriers or other reasonable noise reduction measures. Because of this a significant noise impact is not expected to occur due to on site activities.

The proposed surface parking lot at the southwest corner of The City Drive and Chapman Avenue is nearest to the Hotel across The City Drive. This area is currently occupied by a helistop. The helistop would not be relocated as a part of the project.

Parking Lots & Structures

Traffic associated with parking lots and structures is not of sufficient volume to exceed community noise standards that are based on a time averaged scale such as the CNEL scale or the longer time periods of the Noise Ordinance such as the L50. However, the instantaneous maximum sound levels generated by car door slamming, engine start-up, and car pass-bys can be annoying to nearby residents. Tire squeal may also be a problem depending on the type of parking surface. Estimates of the maximum noise levels associated with some parking lot activities are presented in Table 6. These levels are based on measurements conducted by Mestre Greve Associates. The noise levels presented are for a distance of 50 feet from the source, and are the maximum noise level generated. A range is given to reflect the variability of noise generated by various automobile types and driving styles.

Table 6
MAXIMUM NOISE LEVELS GENERATED BY PARKING LOTS

Event	Lmax (dBA @ 50')
Door Slam	60 to 70
Car Alarm Activation	65 to 70
Engine Start-up	60 to 70
Car pass-by	55 to 70

The hotel located to the west of the project across The City Drive is more than 200 feet from the proposed parking lot. At this distance maximum parking lot generated noise levels will be 64 dBA. This is well below the Nighttime Outdoor Lmax Noise Ordinance Limit of 70 dBA. Indoor noise levels will be at least 20 dB lower. The resulting 44 dBA interior noise level is well below the 55 dBA Lmax Interior Nighttime Noise Ordinance Limit. The hotel will not be significantly impacted by noise generated by Medical Center parking lot activities.

The parking structure to be located near the southeast corner of the Medical Center will be located 40 feet from the Juvenile Hall property line. At this distance maximum noise levels from the activities in the parking structure could be as high as 72 dBA at the Juvenile Hall. This level is just above the 70 dBA Nighttime Outdoor Noise Ordinance Limit. The nearest structure at the Juvenile Hall will be located approximately 80 feet from the parking structure. With open windows, the Juvenile Hall building provides 12 dB of outdoor-to-indoor noise reduction. This results in maximum indoor noise level from the parking lot being 54 dBA. This is lower than the 55 dBA Lmax Interior Nighttime Noise Ordinance Limit. Closed windows reduce this noise level by at least an additional 8 dBA resulting in a maximum noise level of 46 dBA, well below the Noise Ordinance Limit.

The outdoor noise levels at Juvenile Hall generated by the parking structure is projected to exceed the Nighttime Outdoor Noise Ordinance Limits. However, there is no outdoor activity at the Juvenile Hall during the nighttime hours as defined by the Noise Ordinance (10:00 p.m. to 7:00 a.m.). The noise level is projected to be below the Daytime Noise Ordinance Limits when there is outdoor activity at Juvenile Hall. Further, the noise generated by the parking structure is not projected to exceed the Indoor Noise Ordinance Limits. Therefore, the parking structure will not result in a significant noise impact on Juvenile Hall.

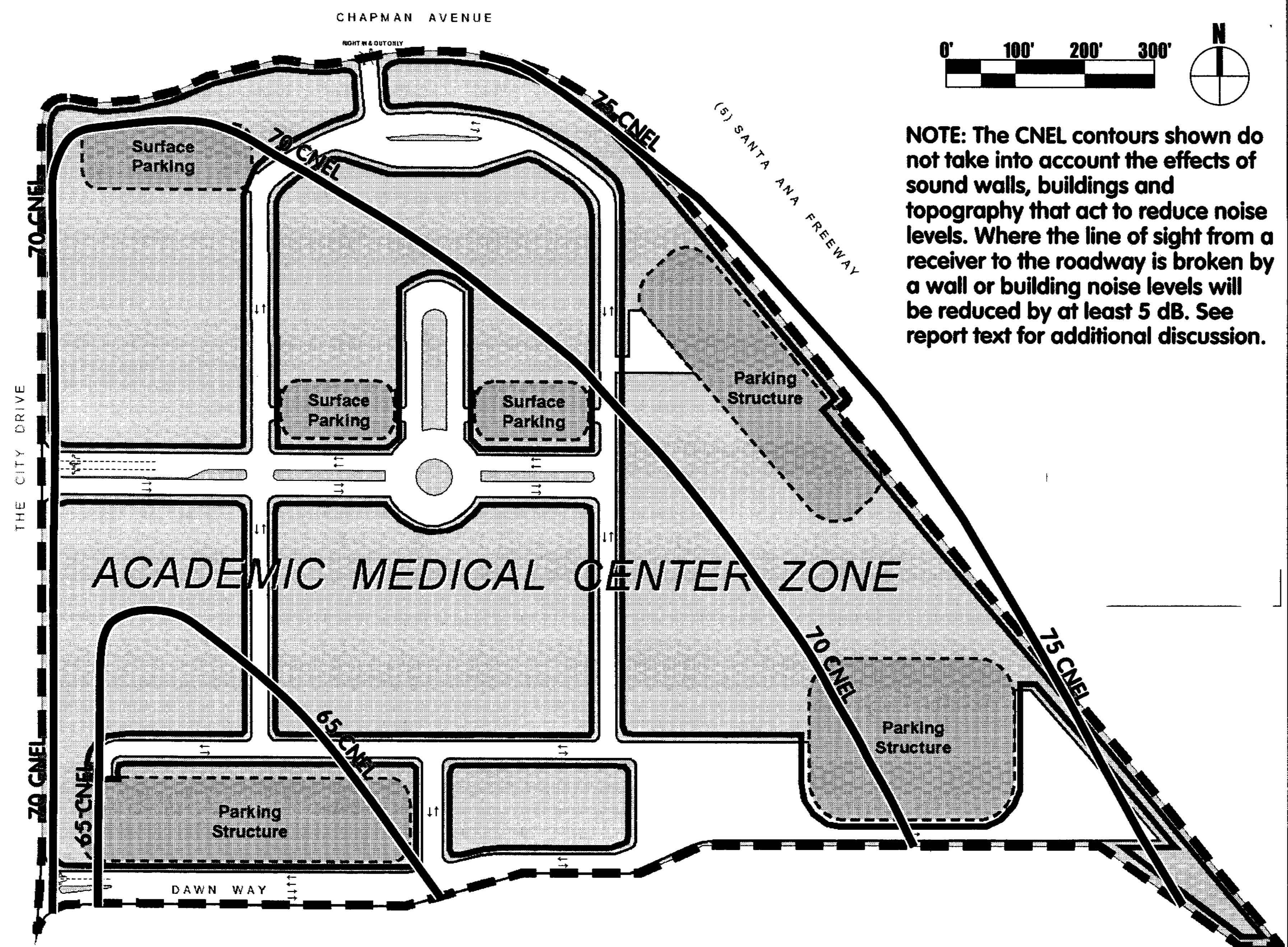
2.4 Long Term On-Site Impacts

2.4.1 Traffic Noise

Table 5 presented the distances to the future 60, 65 and 70 CNEL contours with the proposed project for the roadways impacting the project site. These represent the distance from the centerline of the road to the contour value shown. These contours are presented graphically in Exhibit 8. The contours do not take into account the effect of any noise barriers or topography that may affect ambient noise levels.

Structures, either sound walls or buildings, reduce noise levels where they break the line-of-sight between an observer and the noise source. The greater the structure breaks the line-of-sight, the greater the noise reduction. The ground level along the freeway is much lower than indicated on Exhibit 8 due to the sound wall located along the freeway. Based on the noise measurements, the highest noise levels at ground level are likely well below 65 CNEL along the freeway. However, the noise levels at buildings with levels that overlook the sound wall along the freeway will be similar to those presented in the exhibit.

The upper floors of a building located along the freeway could be exposed to noise levels as high as 75 CNEL. These buildings would be required to achieve up to 30 dB of outdoor-to-indoor noise reduction to comply with the 45 CNEL noise standard for hospital rooms. Up to 25 dB of noise reduction would be required to achieve the 50 CNEL standard for private offices and exam



NOTE: The CNEL contours shown do not take into account the effects of sound walls, buildings and topography that act to reduce noise levels. Where the line of sight from a receiver to the roadway is broken by a wall or building noise levels will be reduced by at least 5 dB. See report text for additional discussion.

Exhibit 8
Traffic Noise CNEL Contours

Mestre Greve Associates

rooms and 20 dB would be required to achieve the 55 CNEL standard for general offices, reception areas and lobbies.

Typical construction achieves at least 20 dB of outdoor-to-indoor noise reduction. This assumes that adequate mechanical ventilation is provided to allow windows and doors to remain closed which is typical for commercial construction. Achieving 25 dB of outdoor-to-indoor noise reduction may require thicker windows or other measures. Achieving 30 dB of outdoor-to-indoor noise reduction will likely require significant acoustical upgrades from standard construction practices. While significant measures may be required to achieve 30 dB of outdoor-to-indoor noise reduction it will not be unreasonable to meet the 45 CNEL interior noise standard under the worst case noise conditions.

It would be very difficult and possibly impossible to meet the 65 CNEL outdoor noise standard for any outdoor balcony or terrace areas on upper floors that face the freeway and look over the existing sound wall along the freeway. Locating these areas on the side of the building opposite the freeway would be acceptable. We would recommend that no outdoor areas of frequent use be located above the second floor of buildings along the freeway

Because there are no barriers along the City Drive and Chapman Avenue, noise levels in front of buildings are accurately represented in Exhibit 7. Noise levels behind buildings along these roadways will be much lower than indicated in the exhibit. Noise levels between buildings would be somewhat lower than shown depending on how much of the roadway is directly visible from any location.

Along The City Drive and Chapman Avenue buildings will be exposed to maximum noise levels of 70 CNEL. Indoor areas subject to the 45 CNEL indoor standard would need to achieve at most 25 dB of outdoor-to-indoor noise reduction. Areas subject to the 50 CNEL would need to achieve 20 dB of reduction and areas subject to the 55 CNEL standard would need to achieve 15 dB of reduction. Moderate building upgrades may be required to achieve the 45 CNEL standard. The 50 and 55 CNEL standards would not require any upgrades from typical construction to achieve the required noise reduction.

Outdoor areas subject to the 65 CNEL standard located along The City Drive and Chapman Avenue would likely be able to achieve the standard with sound walls. Depending on topography a maximum wall height of 7 feet would be expected.

Through site design, acoustical upgrades to building structures and noise barriers the indoor and outdoor noise standards will be achievable for the project. Measures required to ensure that these standards are achieved are discussed in the following Section 3.3.1.

3.0 MITIGATION MEASURES

3.1 Short-Term Impacts

In order to not result in a significant noise impact, demolition and construction activities will need to comply with the City of Orange Noise Ordinance. The City of Orange has adopted a Noise Ordinance that excludes control of construction activities during the hours between 8:00

a.m. and 7:00 p.m on weekdays and Saturdays. All noise generating construction activities will be limited to these hours. Construction outside of these hours or on federal holidays or Sundays will be required to comply with the Noise Ordinance Limits.

3.2 Long Term Off-Site Impacts

3.2.1 Traffic Noise

The proposed project will not result in noise increases greater than 3 dBA near a sensitive receptor. Therefore, there is no significant long term off site traffic noise impact due to the project.

3.2.2 On-Site Activities

On-site activities cannot generate noise levels in excess of the City of Orange Noise Ordinance at the Juvenile Hall located south of the project or the Hotel located to the west of the project. During the development of the specific projects activities potentially generating substantial amounts of noise such as HVAC systems, gas handling systems, other mechanical equipment, vehicles and especially trucks, and loading docks should be reviewed for their compliance with the Noise Ordinance. A detailed noise study should be prepared for activities found to potentially exceed the Noise Ordinance. These studies should be prepared by a qualified acoustical consultant and describe the noise levels generated by the use and show any measured required for compliance with the City's Noise Ordinance Standards.

If the existing heliport is relocated, an analysis of the noise impacts from this relocation will be required. A qualified acoustical consultant with previous heliport noise analysis experience should complete this analysis. Any noise impacts resulting from the relocation should be identified and mitigation to reduce or eliminate the impacts specified.

3.3 Long Term On-Site Impacts

3.3.1 Traffic Noise

As specific projects are developed, a qualified acoustical consultant to determine the noise reduction required by the buildings should review the site plans. Detailed noise studies should be prepared for any building areas requiring more than 20 dB of outdoor-to-indoor noise attenuation. These assessments should be prepared by a qualified acoustical consultant and demonstrate through detailed calculation the noise reduction provided by the building and any measures required to meet the applicable indoor standard.

Outdoor areas subject to the 65 CNEL noise standard should be reviewed during design by a qualified acoustical consultant to determine if the 65 CNEL standard will not be exceeded or can be met with sound barriers or other mitigation. Outdoor areas where noise barriers cannot provide enough reduction to achieve the 65 CNEL standard should be relocated. Areas that will require sound barriers should have detailed noise studies prepared by a qualified acoustical consultant to show the location and height of the noise barrier required to meet the 65 CNEL standard.

4.0 UNAVOIDABLE NOISE IMPACTS

There are no unavoidable noise impacts associated with the project.

APPENDIX

Table A-1-Traffic Volumes
Table A-2 Traffic Mixes

Table A-1
University of California Irvine Long Range Development Plan
Average Daily Traffic Volumes (1,000's)

Roadway Segment			Speed (mph)	Mix	Existing	2020 No Project	2020 w/ Project
Haster							
Katella	to	Orangewood	35	1	20	24	24
Orangewood	to	Chapman	40	1	21	26	25
Chapman	to	Lampson	35	1	18	20	21
Lampson	to	Garden Grove	35	1	26	26	26
Garden Grove	to	SR-22 Ramp	35	1	31	34	34
Fairview							
South	of	Garden Grove	40	1	38	43	43
Lewis							
Orangewood	to	Chapman	40	1	8	11	11
Chapman	to	City Pkwy.	40	1	14	17	17
City Pkwy.	to	Lampson	40	1	14	18	18
Lampson	to	SR-22	40	1	13	15	15
SR-22	to	Garden Grove	40	1	12	14	14
Manchester							
South	of	Orangewood	40	1	1	1	1
North	of	Chapman	35	1	1	2	2
South	of	Chapman	25	1	8	9	10
City Boulevard							
North	of	The Block	25	1	9	16	15
Anaheim Boulevard							
Orangewood	to	The City Dr.	40	1	1	4	4
State College							
Howell	to	Katella	40	1	28	40	40
Katella	to	Gene Autry	40	1	30	53	53
Gene Autry	to	Orangewood	40	1	29	65	66
Orangewood	to	I-5 Ramps	40	1	28	57	59
I-5 Ramps	to	I-5 Ramps	40	1	30	48	52
I-5 Ramps	to	Chapman	40	1	32	43	45

Table A-1 (Continued)
University of California Irvine Long Range Development Plan
Average Daily Traffic Volumes (1,000's)

Roadway Segment			Speed (mph)	Mix	Existing	2020 No Project	2020 w/ Project
The City Drive							
Chapman	to	Dawn Way	35	1	31	45	49
Dawn Way	to	Justice Cntr. Wy.	35	1	29	41	44
Justice Cntr. Wy.	to	Entrtnmnt. Ave.	35	1	30	40	42
Entrtnmnt. Ave.	to	The Block	35	1	32	41	43
The Block	to	SR-22 Ramps	35	1	39	41	43
SR-22 Ramps	to	SR-22 Ramps	35	1	39	41	43
SR-22 Ramps	to	Garden Grove	35	1	23	29	29
Rampart							
Orangewood	to	Chapman	40	1	6	14	14
Katella							
Lewis	to	State College	40	1	30	40	40
State College	to	Howell	40	1	32	43	42
Howell	to	SR-57 Ramps	40	1	47	66	66
SR-57 Ramps	to	SR-57 Ramps	40	1	41	57	57
East	of	SR-57 Ramps	40	1	35	47	47
Gene Autry							
Lewis	to	State College	40	1	1	6	6
Orangewood							
Haster	to	Lewis	40	1	18	26	26
Lewis	to	State College	40	1	17	32	32
State College	to	Rampart	40	1	26	41	42
Rampart	to	SR-57 Ramps	40	1	26	40	41
SR-57 Ramps	to	SR-57 Ramps	40	1	28	41	41
East	of	SR-57 Ramps	40	1	31	42	42
Chapman							
Haster	to	Lewis	40	1	28	31	32
Lewis	to	Manchester	40	1	31	31	32
Manchester	to	The City Dr.	40	1	35	36	37
The City Dr.	to	I-5 Ramps	40	1	35	38	38
I-5 Ramps	to	Rampart	40	1	34	37	39
Rampart	to	I-5 Ramp	40	1	38	34	35
I-5 Ramp	to	SR-57 Ramps	40	1	28	34	35
SR-57 Ramps	to	SR-57 Ramps	40	1	28	35	36
East	of	SR-57 Ramps	40	1	29	36	37

Table A-1 (Continued)
University of California Irvine Long Range Development Plan
Average Daily Traffic Volumes (1,000's)

Roadway Segment			Speed (mph)	Mix	Existing	2020 No Project	2020 w/ Project
The City Parkway							
East	of	Lewis	35	1	5	7	7
Lampson							
Haster	to	Lewis	40	1	10	15	16
Lewis	to	City Blvd.	30	1	7	12	12
City Blvd.	to	The City Dr.	30	1	11	20	20
Garden Grove							
West	of	Haster	40	1	32	41	41
Haster	to	SR-22	40	1	38	43	43
SR-22	to	Lewis	40	1	25	32	33
Lewis	to	The City Dr.	40	1	24	30	31
The City Dr.	to	Bristol	40	1	25	30	31
SR-22							
West	of	Garden Grove	65	2	188	--	--
Garden Grove	to	The City Dr.	65	2	198	236	238
The City Dr.	to	I-5/SR-57	65	2	206	198	199
East	of	I-5/SR-57	65	2	159	--	--
I-5							
North	of	State College	65	3	174	213	214
State College	to	SR-22/SR-57	65	3	189	244	247
South	of	SR-22/SR-57	65	3	152	--	--
SR-57							
North	of	Katella	65	4	193	--	--
Katella	to	Orangewood	65	4	186	226	227
Orangewood	to	Chapman	65	4	184	219	220
Chapman	to	I-5/SR-57	65	4	174	207	207

Table A-2
Day/Evening/Night Traffic Distributions

1. Arterial Roadways

	Day	Eve	Night
Auto	75.51%	12.57%	9.34%
MT	1.56%	0.09%	0.19%
HT	0.64%	0.02%	0.08%

2. SR-22

	Day	Eve	Night
Auto	74.49%	11.46%	9.55%
MT	2.38%	0.37%	0.31%
HT	1.13%	0.17%	0.15%

3. I-5

	Day	Eve	Night
Auto	72.54%	11.16%	9.30%
MT	2.90%	0.45%	0.37%
HT	2.56%	0.39%	0.33%

3. SR-57

	Day	Eve	Night
Auto	72.07%	11.09%	9.24%
MT	2.95%	0.45%	0.38%
HT	2.98%	0.46%	0.38%

APPENDIX F

TRAFFIC STUDY

UNIVERSITY OF CALIFORNIA IRVINE MEDICAL CENTER

Long-Range Development Plan Traffic Analysis

September 2002

AUSTIN-FOUST ASSOCIATES, INC.

UNIVERSITY OF CALIFORNIA IRVINE MEDICAL CENTER
Long-Range Development Plan Traffic Analysis

Prepared by:

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September 5, 2002

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Chapter 1.0
INTRODUCTION

This report presents the results of a traffic analysis performed for the University of California Irvine Medical Center in the City of Orange. The report has been prepared in support of the proposed Long-Range Development Plan (LRDP).

INTRODUCTION

The University of California Irvine (UCI) Medical Center is located on the east side of The City Drive between Chapman Avenue and Dawn Way in the City of Orange as shown in Figure 1-1. The existing facility consists of 391 hospital beds, 167,633 square feet of medical office space, and 368,036 square feet of research and administrative office space. The medical center is spread out in a campus-like setting over 32 acres. Parking is provided on-site and at two off-site parking lots.

The proposed expansion of UCI Medical Center consists of a Phase 1 expansion to 445 hospital beds (increase of 54 beds), and a long-range plan for 527 hospital beds (increase of 82 beds beyond Phase 1), 380,837 square feet of medical office space (increase of 213,204 square feet), and 566,360 square feet of research and administrative office space (increase of 235,280 square feet). This analysis addresses the traffic impacts of the Phase 1 and long-range expansion plans on the surrounding circulation system, and identifies mitigation measures for those traffic impacts.

ANALYSIS SCOPE

The analysis utilizes the West Orange Circulation Study (WOCS)Traffic Model to distribute and assign future project traffic to the circulation system. The WOCS Traffic Model is a sub-regional traffic model that has been developed to provide volume projections for various time frames for the study area (Reference 1). The proposed project has been included in the land use database for the model and the project impacts identified accordingly.

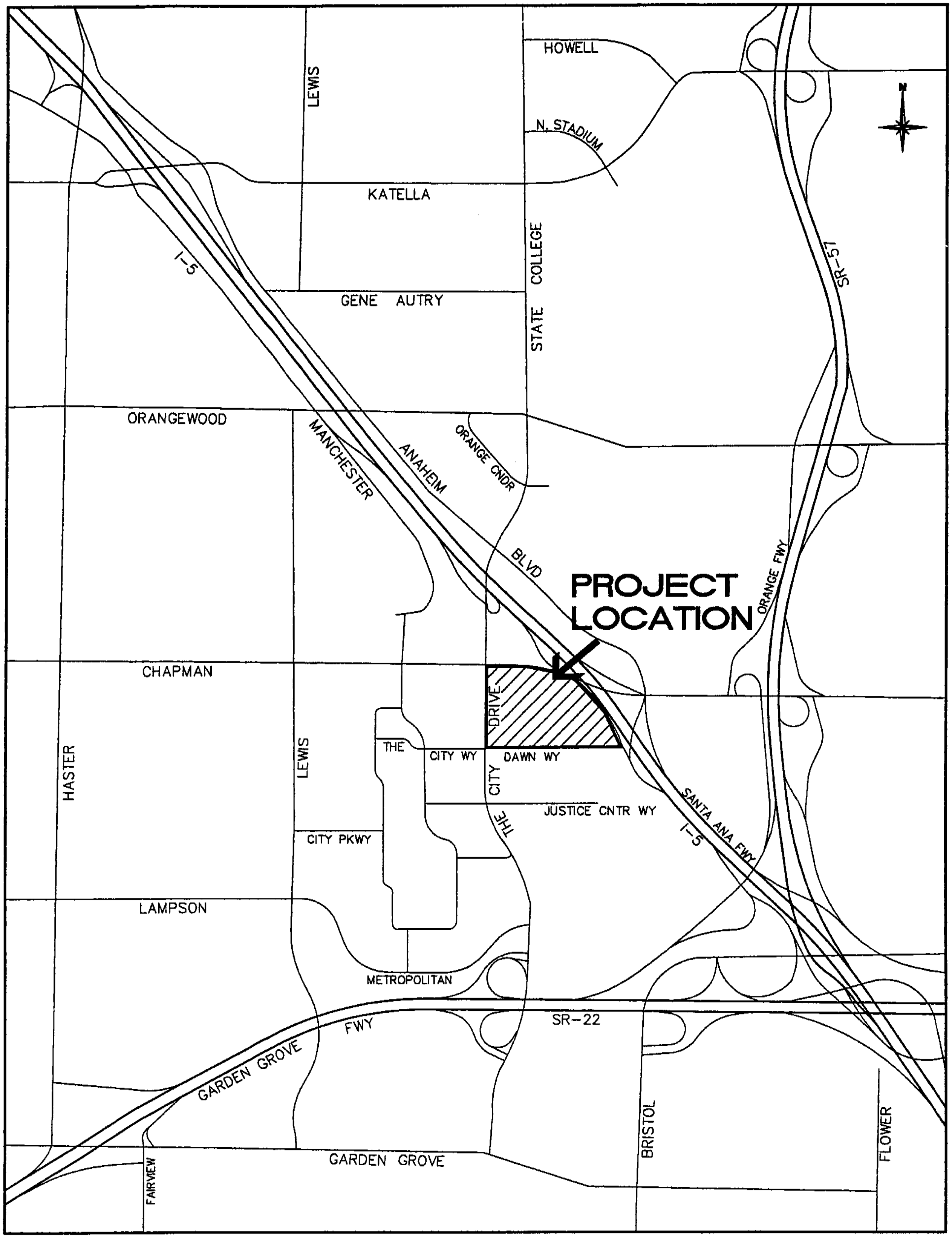


Figure 1-1

PROJECT LOCATION

The Phase 1 expansion is analyzed under short-range conditions. The year 2010 version of the WOCS Traffic Model is utilized for this short-range Phase 1 analysis. Buildout of the LRDP is analyzed utilizing the year 2020 version of the WOCS Traffic Model. Improvements necessary as a result of the proposed project plus other projects in the area are identified as part of an overall transportation improvement plan for the area.

Parking requirements for the Phase 1 and long-range expansion plans are analyzed based on estimated peak parking demands. Peak parking rates for each use within the Center are determined and are applied to the proposed expansion.

The traffic analysis material presented here is set out as follows:

Chapter 2.0 - Project Description
Chapter 3.0 - Transportation Setting
Chapter 4.0 - Short-Range Impact Analysis
Chapter 5.0 - Long-Range Impact Analysis
Chapter 6.0 - Parking Analysis
Chapter 7.0 - Transportation Improvement Program

The transportation improvement program in Chapter 7.0 includes responsibilities of the project.

DEFINITIONS

Certain terms used throughout this report are defined below to clarify their intended meaning:

ADT	Average Daily Traffic. Generally used to measure the total two-directional traffic volumes passing a given point on a roadway.
DU	Dwelling Unit. Used in quantifying residential land use.
ICU	Intersection Capacity Utilization. A measure of the volume to capacity ratio for an intersection. Typically used to determine the peak hour level of service for a given set of intersection volumes.

LOS	Level of Service. A scale used to evaluate circulation system performance based on intersection ICU values or volume/capacity ratios of arterial segments.
Peak Hour	This refers to the hour during the AM peak period (typically 7 AM - 9 AM) or the PM peak period (typically 3 PM - 6 PM) in which the greatest number of vehicle trips are generated by a given land use or are traveling on a given roadway.
Tripend	A trip generation measure which represents the total trips entering and leaving a location.
TSF	Thousand Square Feet. Used in quantifying non-residential land uses, and refers to building floor area.
V/C	Volume to Capacity Ratio. This is typically used to describe the percentage of capacity utilized by existing or projected traffic on a segment of an arterial or intersection.
VPD	Vehicles Per Day. Similar to ADT, but more typically applied to trip generation (i.e., the amount of traffic generated by a given amount of land use).
VPH	Vehicles Per Hour. Used for roadway volumes (counts or forecasts) and trip generation estimates. Measures the number of vehicles in a one hour period, typically the AM or PM peak hour.

REFERENCES

1. "West Orange Circulation Study, Traffic Model Description and Database", Austin-Foust Associates, Inc., January 2001.

Chapter 2.0
PROJECT DESCRIPTION

This chapter summarizes the Phase 1 and long-range project description and presents the traffic characteristics of the proposed expansion plans.

PROJECT DESCRIPTION

Phase 1 of the proposed expansion consists of an increase of 54 hospital beds to a total of 445 beds and a decrease of 36,950 square feet of research and administrative office space. Phase 1 includes demolition of an existing parking structure on-site to make way for the replacement hospital. These parking spaces will not be replaced on-site until the long-range expansion. Several options are being investigated to provide the necessary parking off-site. These options include leasing 452 spaces on the Caltrans property on the northeast corner of The City Drive and Chapman Avenue, leasing 200 spaces at State College Warehouse on State College Boulevard in Anaheim, leasing 200 spaces on Equity Partners property on the northeast corner of Manchester Avenue and Chapman Avenue, and leasing 418 spaces from Edison Field in Anaheim and providing shuttle service. These off-site parking lots are intended for faculty and staff.

Buildout of the Long-Range Development Plan (LRDP) consists of 527 hospital beds, an increase of 213,200 square feet of medical office space to a total of 380,800 square feet, and an increase of 198,300 square feet of research and administrative office space to a total of 566,400 square feet. Table 2-1 summarizes the expansion plans and Figure 2-1 illustrates the conceptual site plan.

TRIP GENERATION METHODOLOGY

Trip generation rates for hospitals and medical office uses are available from the Institute of Transportation Engineers. These trip rates are based on field studies conducted throughout the county over the past several years. However, since the proposed project consists of expansion of an existing facility, it was determined that the most accurate estimate of future trip generation would be based on

Table 2-1

PROJECT SUMMARY

SERVICE	EXISTING	PHASE 1 PROJECT	LONG-RANGE PROJECT
I. INPATIENT	391 Beds (374.70 TSF)	445 Beds (680.46 TSF)	527 Beds (955.46 TSF)
II. OTHER FACILITIES			
Ambulatory Care	167.63 TSF	167.63 TSF	380.84 TSF
Academic/Research	264.20 TSF	234.18 TSF	405.49 TSF
Administrative	56.44 TSF	49.32 TSF	93.00 TSF
Services	47.39 TSF	47.58 TSF	67.87 TSF
III. TOTAL	910.36 TSF	1,179.17 TSF	1,902.66 TSF

TSF - thousand square feet of floor area

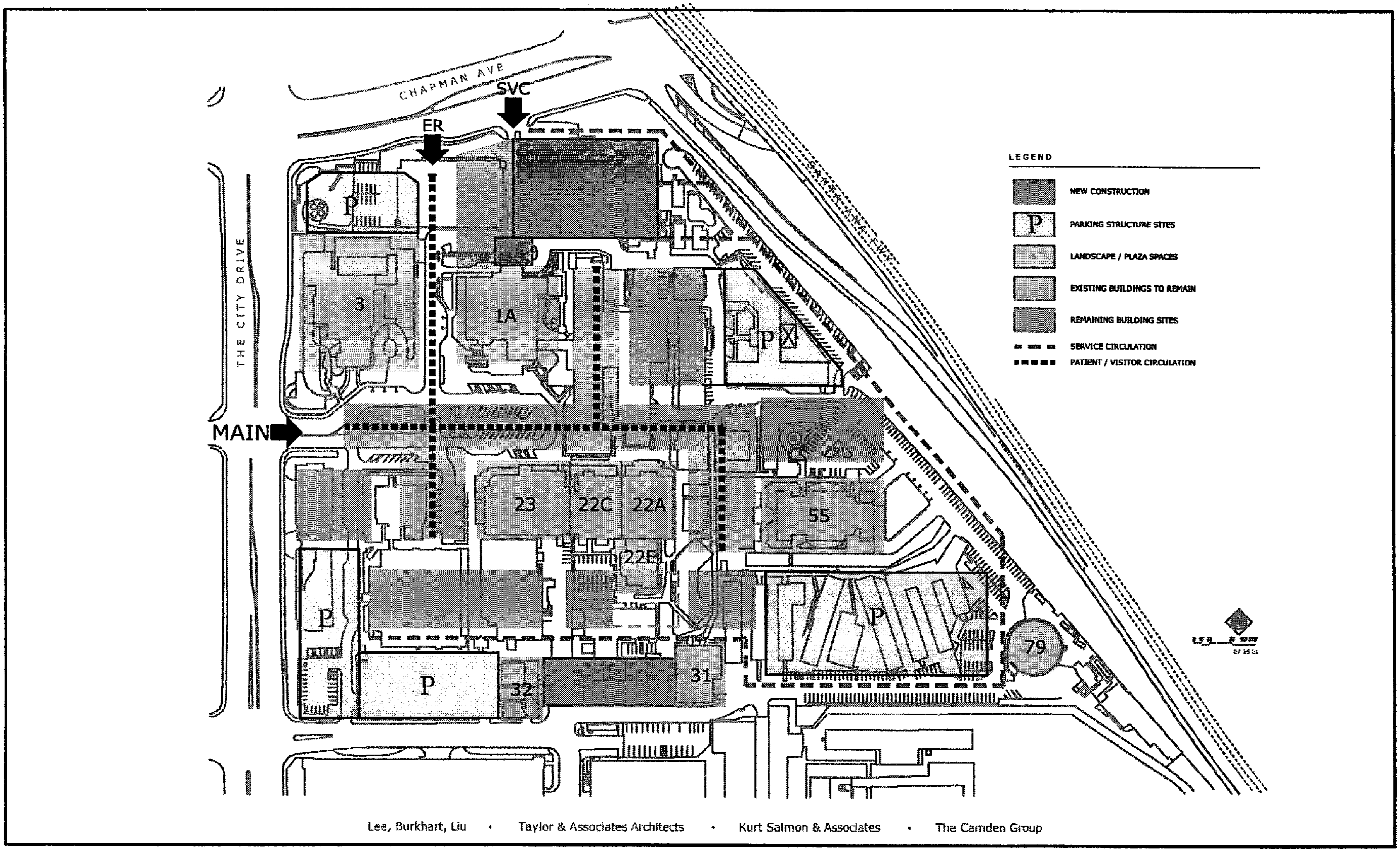


Figure 2-1

PROPOSED SITE MASTER PLAN

the existing trip generation of the facility. In this way the specific trip making characteristics of the Orange County area and of the UCI Medical Center Facility would be accounted for. A special study was carried out to estimate trip generation for the UCI Medical Center. This involved the use of data from the existing facility and research information from comparable uses elsewhere.

To identify current traffic characteristics, existing vehicular traffic exiting and entering the site, and pedestrian traffic oriented toward off-site parking areas entering and exiting the site was counted in August 1999. Since some access points are shared by other uses (the adjacent county facility) the vehicular counts were adjusted to discount non-medical center traffic. Pedestrian counts were converted to equivalent vehicular counts by utilizing an average vehicle occupancy of 1.2 persons per vehicle.

Based on the count data, the existing UCI Medical Center was found to be generating approximately 13,800 trips daily, of which 1,320 trips occur during the AM peak hour and 1,030 trips occur during the PM peak hour.

The second part of the trip generation analysis involved separating this into the different use components within the Medical Center. To accomplish this, the Institute of Transportation Engineers (ITE) standard trip rates for hospital, medical office, and general office uses were utilized. The proportions of the total generation for each land use within the medical center were applied to the actual existing trip generation to obtain applicable trip rates for each land use within the existing medical center. This process is summarized in Table 2-2.

To estimate trip generation for the proposed expansions, the derived trip rates were applied to the proposed expansion square footages. The results are summarized in Table 2-3. As can be seen, Phase 1 generates a total of 14,130 trips daily (an increase of 330 trips), of which 1,330 trips occur during the AM peak hour and 1,040 trips occur during the PM peak hour. Phase 1 expansion represents virtually no change in the existing trip generation.

Table 2-2

UCI MEDICAL CENTER TRIP GENERATION SUMMARY

SERVICE	UNITS		AM PEAK HOUR IN	AM PEAK HOUR OUT	AM PEAK HOUR TOTAL	PM PEAK HOUR IN	PM PEAK HOUR OUT	PM PEAK HOUR TOTAL	ADT
ITE 6th Edition Trip Rates									
Hospital		Beds	.77	.30	1.07	.41	.81	1.22	11.77
Medical Office		TSF	1.94	.49	2.43	.99	2.67	3.66	36.13
General Office		TSF	1.37	.19	1.56	.25	1.24	1.49	11.01
Trip Generation									
Inpatient	391	Beds	301	117	418	160	317	477	4,602
Ambulatory Care	167.63	TSF	325	82	407	166	448	614	6,057
Academic/Research	264.20	TSF	362	50	412	66	328	394	2,909
Administrative	56.44	TSF	77	11	88	14	70	84	621
Services	47.39	TSF	65	9	74	12	59	71	522
TOTAL			1,130	269	1,399	418	1,222	1,640	14,711
Proportion of Trips									
Inpatient		Beds			.30			.29	.31
Ambulatory Care		TSF			.29			.38	.41
Academic/Research		TSF			.30			.24	.20
Administrative		TSF			.06			.05	.04
Services		TSF			.05			.04	.04
TOTAL					1.00			1.00	1.00
ESTIMATED TRIP GENERATION BY FUNCTION									
Inpatient	391	Beds	324	65	388	61	238	299	4,278
Ambulatory Care	167.63	TSF	322	64	387	80	312	391	5,658
Academic/Research	264.20	TSF	326	65	391	50	197	247	2,760
Administrative	56.44	TSF	70	14	84	11	41	52	552
Services	47.39	TSF	59	12	70	8	33	41	552
TOTAL			1,100	220	1,320	210	820	1,030	13,800
TRIP RATES BY FUNCTION									
Inpatient		Beds	.85	.17	1.02	.16	.62	.78	11.20
Ambulatory Care		TSF	1.92	.38	2.31	.48	1.86	2.33	33.75
Academic/Research		TSF	1.23	.25	1.48	.19	.74	.94	10.45
Administrative		TSF	1.23	.25	1.48	.19	.73	.91	9.78
Services		TSF	1.23	.25	1.48	.18	.69	.87	11.65

TSF - thousand square feet of floor area

Table 2-3

PROPOSED PROJECT TRIP GENERATION SUMMARY

SERVICE	UNITS	---AM PEAK HOUR--- IN	OUT	TOTAL	---PM PEAK HOUR--- IN	OUT	TOTAL	ADT
EXISTING								
Inpatient	391 Beds	324	65	388	61	238	299	4,278
Ambulatory Care	167.63 TSF	322	64	387	80	312	391	5,658
Academic/Research	264.20 TSF	326	65	391	50	197	247	2,760
Administrative	56.44 TSF	70	14	84	11	41	52	552
Services	47.39 TSF	59	12	70	8	33	41	552
TOTAL		1,100	220	1,320	210	820	1,030	13,800
PHASE 1								
Inpatient	445 Beds	378	76	454	71	276	347	4,984
Ambulatory Care	167.63 TSF	322	64	386	80	312	392	5,658
Academic/Research	234.18 TSF	288	58	346	44	173	217	2,447
Administrative	49.32 TSF	60	12	72	9	36	45	482
Services	47.58 TSF	58	12	70	8	33	41	554
TOTAL		1,106	222	1,328	212	830	1,042	14,125
Increase Over Existing		6	2	8	2	10	12	325
LRDP								
Inpatient	527 Beds	448	90	538	84	327	411	5,902
Ambulatory Care	380.84 TSF	732	146	878	181	708	889	12,854
Academic/Research	405.49 TSF	499	101	600	77	300	377	4,237
Administrative	93.00 TSF	114	23	137	18	68	86	910
Services	67.87 TSF	83	17	100	12	47	59	791
TOTAL		1,876	377	2,253	372	1,450	1,822	24,694
Increase Over Existing		776	157	933	162	630	792	10,894

TSF - thousand square feet of floor area

The LRDP will generate a total of 24,700 trips daily, of which 2,250 trips occur during the AM peak hour and 1,820 trips occur during the PM peak hour. This long-range expansion will increase traffic from the site by 10,900 trips daily, of which 930 trips will occur during the AM peak hour and 790 trips will occur during the PM peak hour. This represents an increase of 79 percent in daily trips.

TRIP DISTRIBUTION

Distribution of project-generated trips was obtained from the WOCS Traffic Model. The Phase 1 project distribution from the 2010 version of the WOCS Traffic Model is shown in Figure 2-2. Approximately 61 percent of Phase 1 traffic is oriented toward the freeways and 39 percent remains on the arterial roadways.

The LRDP project distribution was obtained from the 2020 version of the WOCS Traffic Model. The LRDP project distribution is illustrated in Figure 2-3.

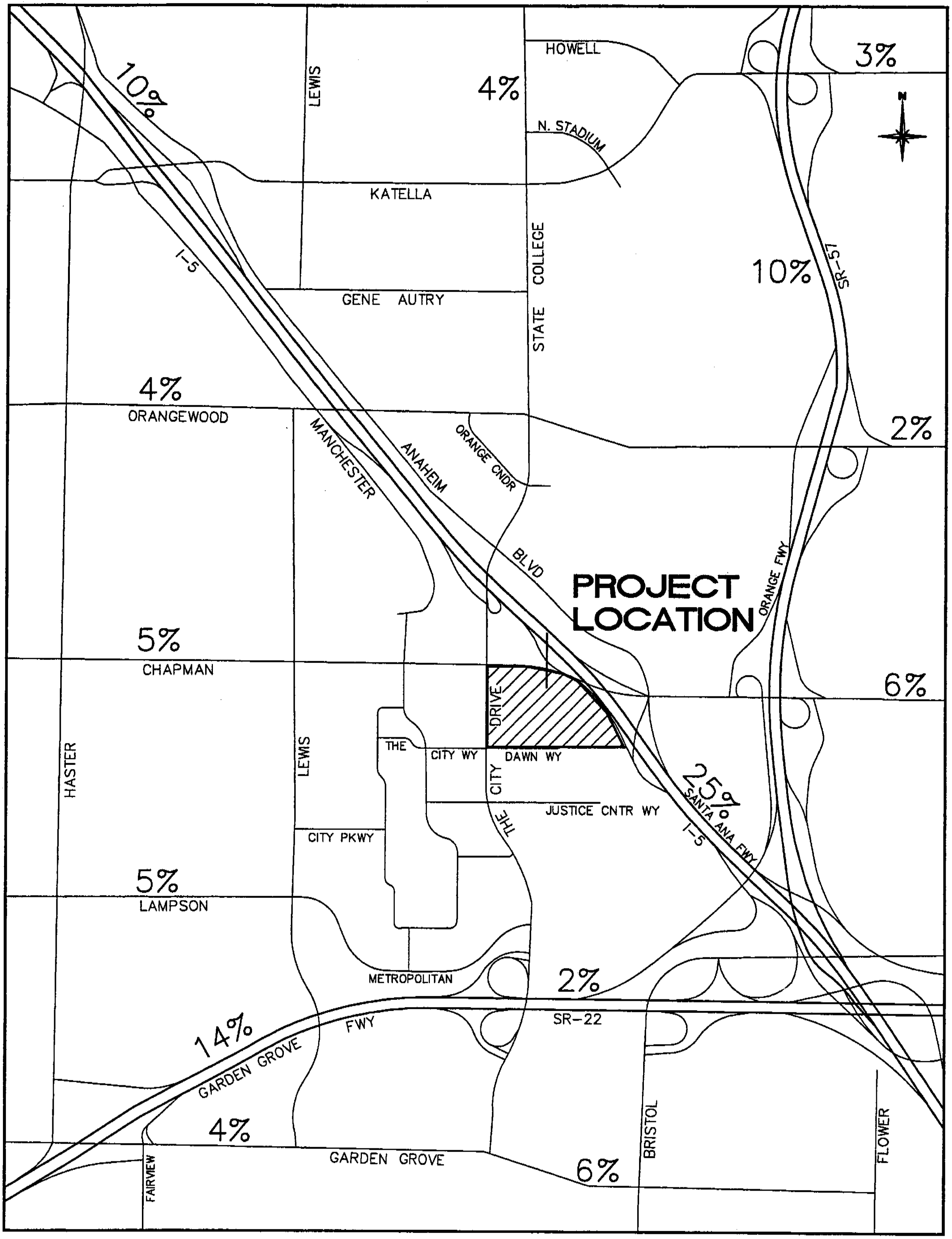


Figure 2-2

SHORT-RANGE PROJECT DISTRIBUTION

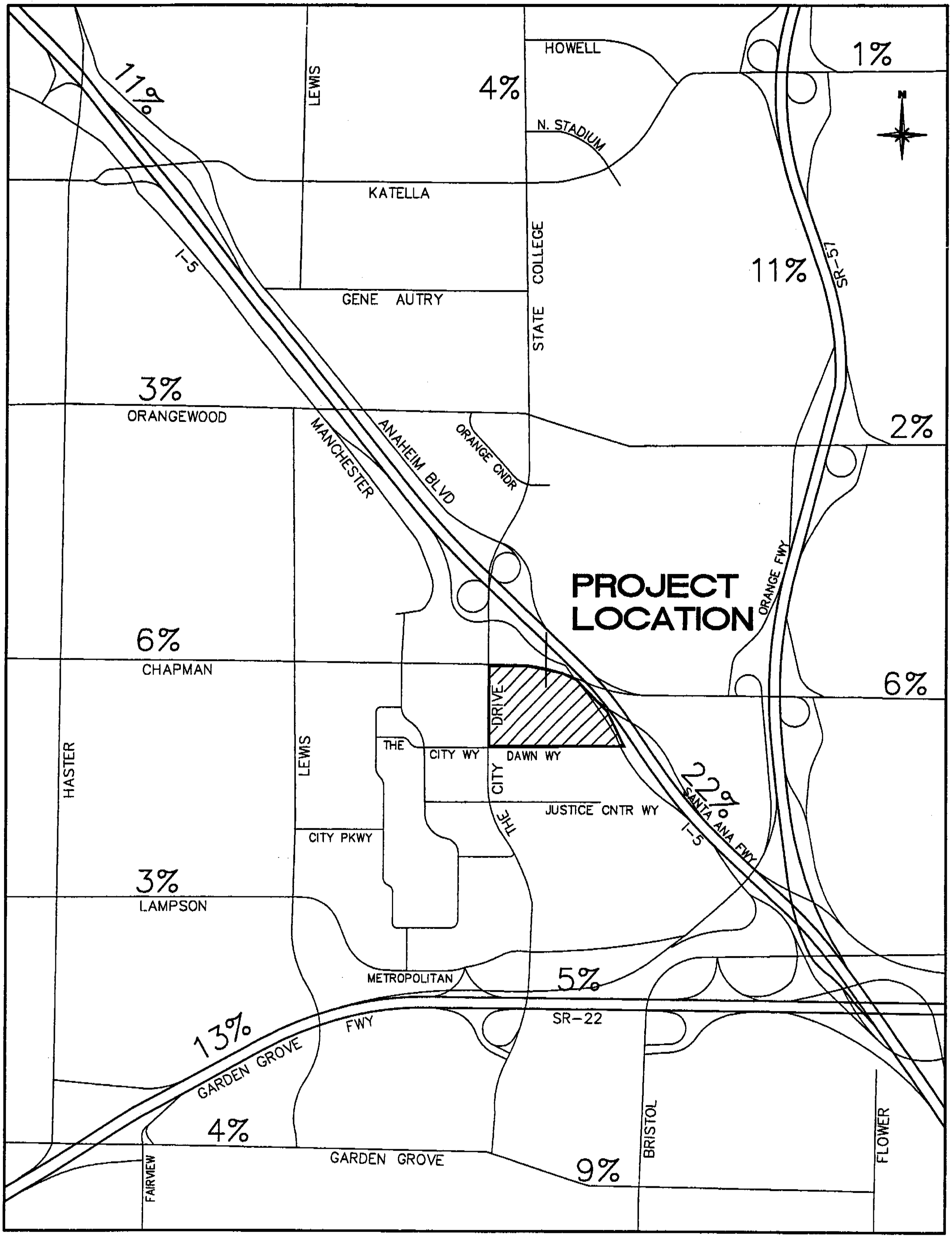


Figure 2-3

LONG-RANGE PROJECT DISTRIBUTION

Chapter 3.0
TRANSPORTATION SETTING

This chapter describes the transportation setting for the project. The existing, 2010, and 2020 circulation systems are discussed and existing volumes and levels of service are presented.

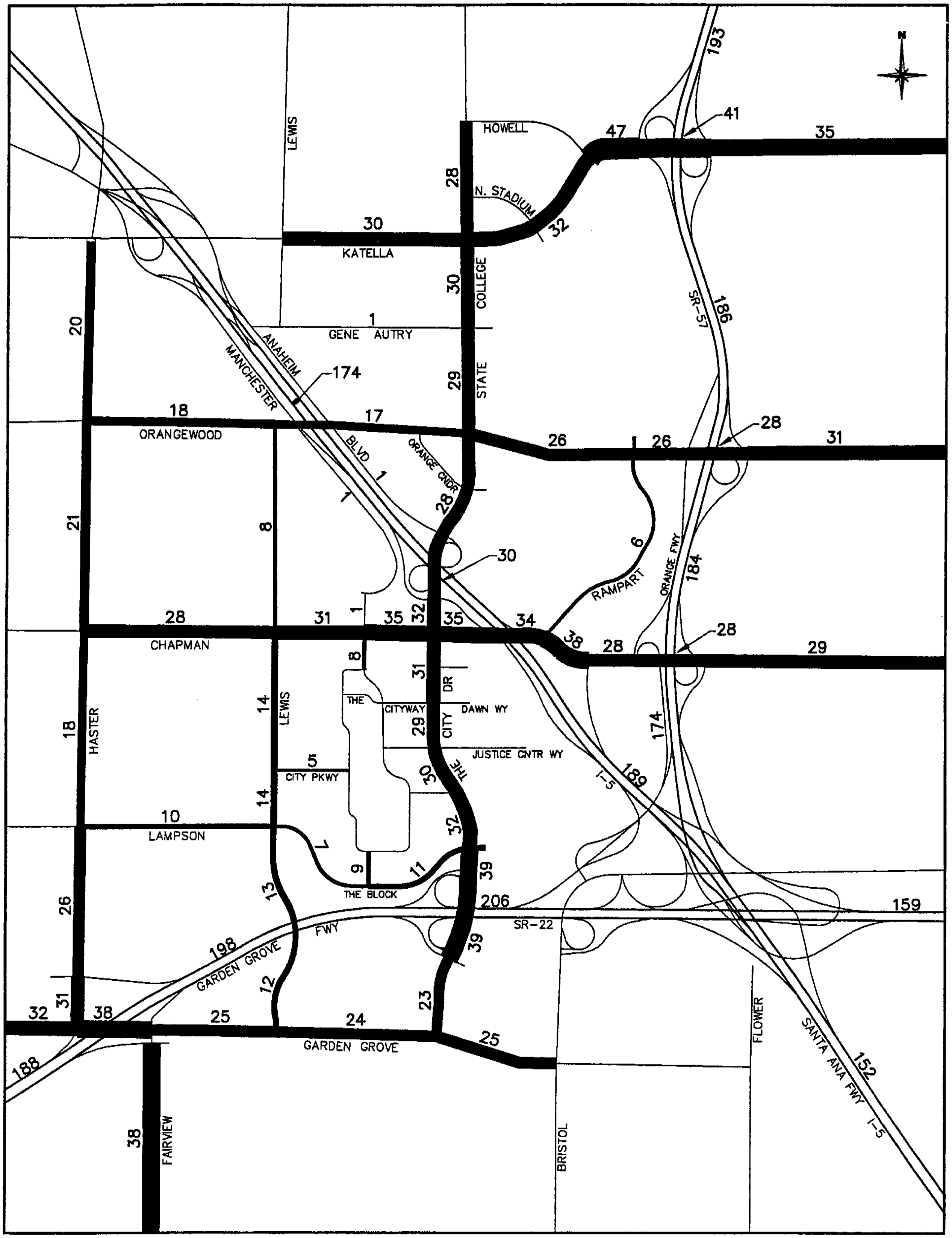
SURROUNDING HIGHWAY NETWORK

The project site is located in the area bounded by Chapman Avenue, The City Drive, Dawn Way, and the Santa Ana Freeway (I-5). The City Drive is an eight-lane north-south arterial south of I-5 Freeway. North of I-5, The City Drive becomes State College Boulevard which runs parallel to the Orange Freeway (SR-57) Freeway through the City of Anaheim. Access to the vicinity is also provided by Chapman Avenue. Chapman Avenue runs east-west through the study area and provides access to the SR-57 and I-5 Freeways.

Regional access to the project vicinity is provided by the Garden Grove Freeway (SR-22) approximately ½ mile south of the project site, the SR-57 Freeway approximately ½ mile east of the project site, and the I-5 Freeway immediately north of the project site. The City Drive provides access to the I-5 and SR-22 Freeways, and Chapman Avenue provides access to the SR-57 Freeway. The City of Orange currently has underway a redesign of The City Drive/SR-22 interchange and will move the westbound on/off-ramps to Metropolitan Drive/The Block Drive and realign Metropolitan Drive/The Block Drive at The City Drive.

EXISTING CONDITIONS

Existing conditions represent year 2000 traffic counts and land uses. Figure 3-1 shows existing average daily traffic (ADT) volumes on the study area circulation system. Traffic volume data was counted for a set of intersections in the study area which is shown in Figure 3-2. Existing intersections capacity utilization (ICU) values were calculated from these peak hour intersection counts and existing



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10 20 30 ADT Volumes

Figure 3-1

EXISTING ADT VOLUMES (000's)

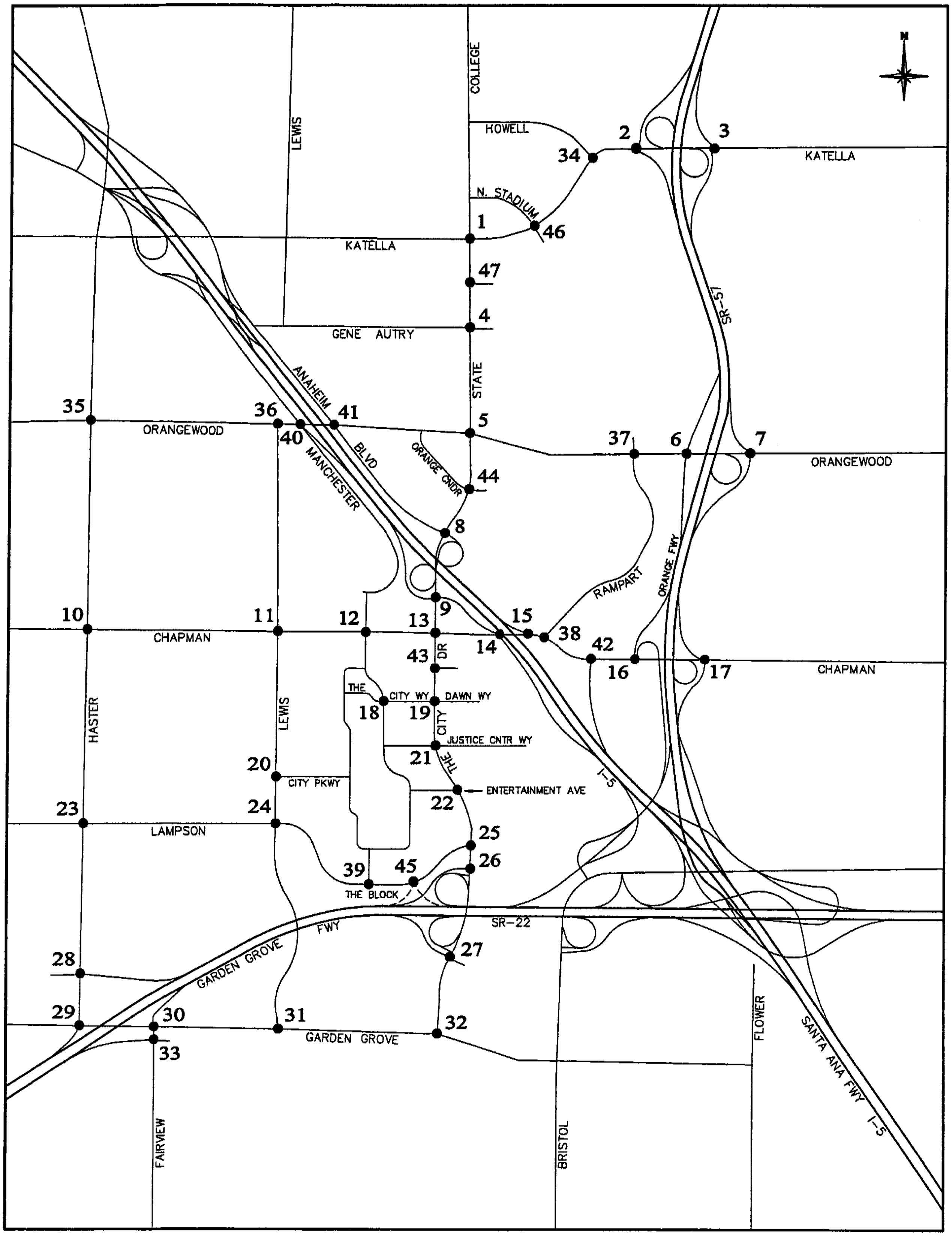


Figure 3-2

WOCS INTERSECTION LOCATIONS

lane configurations and are summarized in Table 3-1 (actual ICU calculation sheets are included in Appendix A). The ICU values are a means of representing peak hour volume to capacity ratios at signalized intersections, with a value of .90 representing the upper threshold for level of service (LOS) "D". The study intersections are currently operating at LOS "D" or better during the AM and PM peak hour, with the exceptions of Lewis Street and Garden Grove Boulevard and I-5 northbound off-ramp and Chapman Avenue during the PM peak hour.

SHORT-RANGE CONDITIONS

The short-range (year 2010) analysis is based on the estimated growth over the next 10 years. Background traffic conditions include ambient growth in through trips and development of known projects in the area. The basis for the through trip growth is OCP-96 land use projections. Cumulative projects in the area consist of development the Anaheim Sportstown project on the Edison Field property bounded by Katella Avenue, State College Boulevard, Orangewood Avenue, and the SR-57 Freeway, expansion of The Block at Orange on the west side of The City Drive in Orange, and development of the Equity Partners (formerly Spieker Properties) office building developments in Orange (locations illustrated in Figure 3-3). These cumulative projects combine to add a total of 33,000 daily trips to the study area without the proposed project.

Highway improvements under short-range conditions include completion of the I-5 Freeway project and Phase 1 of The City Drive/SR-22 project. Figure 3-4 shows circulation system changes assumed for year 2010 conditions. A summary of the 2010 land uses assumed in the WOCS Traffic Model is included in Appendix B. Table 3-2 summarizes the year 2010 ICU values assuming the circulation changes discussed here. As this table indicates, eight study intersections will operate at an unacceptable level of service (LOS "E" or "F").

LONG-RANGE CONDITIONS

The year 2020 analysis is considered full buildout of the area. It assumes the projected long-range land uses in the study area and year 2020 demographic data in the surrounding County area. Through trip growth is based on OCP-96 long-range land use projections. Major cumulative projects

Table 3-1

EXISTING ICU SUMMARY

INTERSECTION	AM	PM
1. State College Blvd & Katella	.60	.72
2. SR-57 SB Ramps & Katella Ave	.48	.56
3. SR-57 NB Ramps & Katella Ave	.40	.56
4. State College Blvd & Gene Autry	.44	.50
5. State College Blvd & Orangewood	.49	.76
6. SR-57 SB Ramps & Orangewood	.56	.81
7. SR-57 NB Ramps & Orangewood	.52	.54
8. The City Dr & I-5 NB Ramps	.25	.33
9. The City Dr & I-5 SB Ramps	.39	.36
10. Haster St & Chapman Ave	.70	.89
11. Lewis St & Chapman Ave	.72	.75
12. Manchester Ave & Chapman Ave	.52	.55
13. The City Dr & Chapman Ave	.69	.69
14. I-5 SB Ramp on-Ramp & Chapman	.35	.41
15. I-5 NB on-Ramp & Chapman Ave	.56	.70
16. SR-57 SB Ramps & Chapman Ave	.53	.67
17. SR-57 NB Ramps & Chapman Ave	.37	.44
18. City Blvd East & The City Way	.16	.29
19. The City Dr & The City Way	.66	.58
20. Lewis St & City Pkwy West	.36	.46
21. The City Dr & Justice Center	.43	.37
22. The City Dr & Entertainment	.30	.38
23. Haster St & Lampson Ave	.79	.72
24. Lewis St & Lampson Ave/The Block	.61	.59
25. The City Dr & The Block	.39	.52
26. The City Dr & SR-22 WB Ramps	.60	.58
27. The City Dr & SR-22 EB Ramps	.67	.72
28. Haster St & SR-22 WB off-Ramp	.51	.49
29. Haster St & Garden Grove Blvd	.72	.85
30. Fairview St & Garden Grove Blvd	.79	.81
31. Lewis St & Garden Grove Blvd	.75	.93*
32. The City Dr & Garden Grove Blvd	.71	.83
33. Fairview St & SR-22 EB off-Ramp	.62	.70
34. Howell & Katella	.52	.71
35. Haster & Orangewood	.60	.79
36. Lewis & Orangewood	.57	.46
37. Rampart & Orangewood	.50	.59
38. Rampart & Chapman	.56	.69
39. City Blvd & The Block	.31	.45
42. I-5 NB Off-Ramp & Chapman	.79	.93*

(Continued)

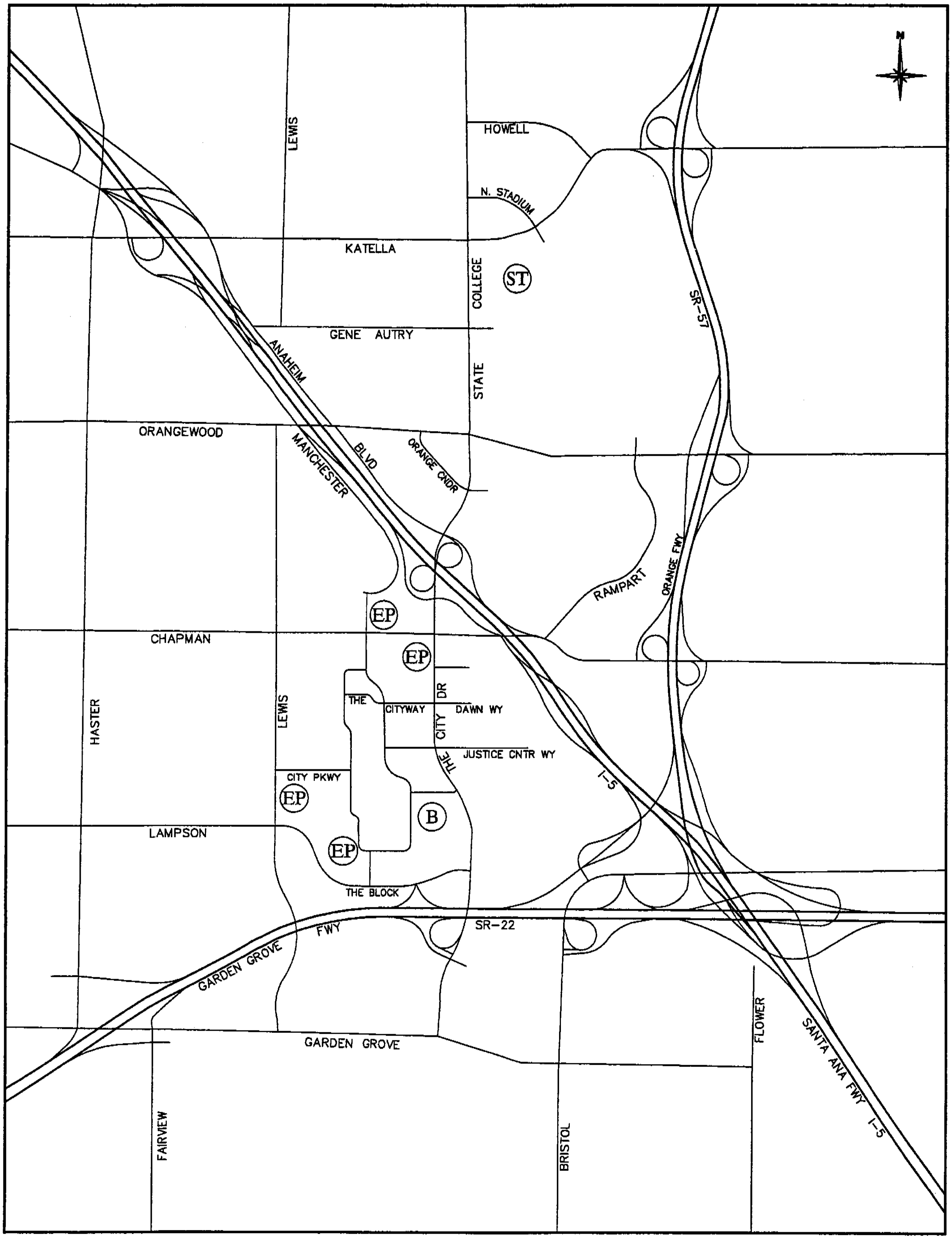
Table 3-1 (cont)
EXISTING ICU SUMMARY

INTERSECTION	AM	PM
43. The City Dr & Medical Center	.47	.46
44. The City Dr & Orange Cndr	.29	.34
46. N. Stadium & Katella	.34	.50
47. State College & Entrance	.37	.42

* Exceeds LOS "D"

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F

Notes:
Intersections 40 and 41 are omitted from the existing conditions table due to construction to widen I-5 freeway.
Intersection 45 is a future intersection and is omitted from the existing conditions table.



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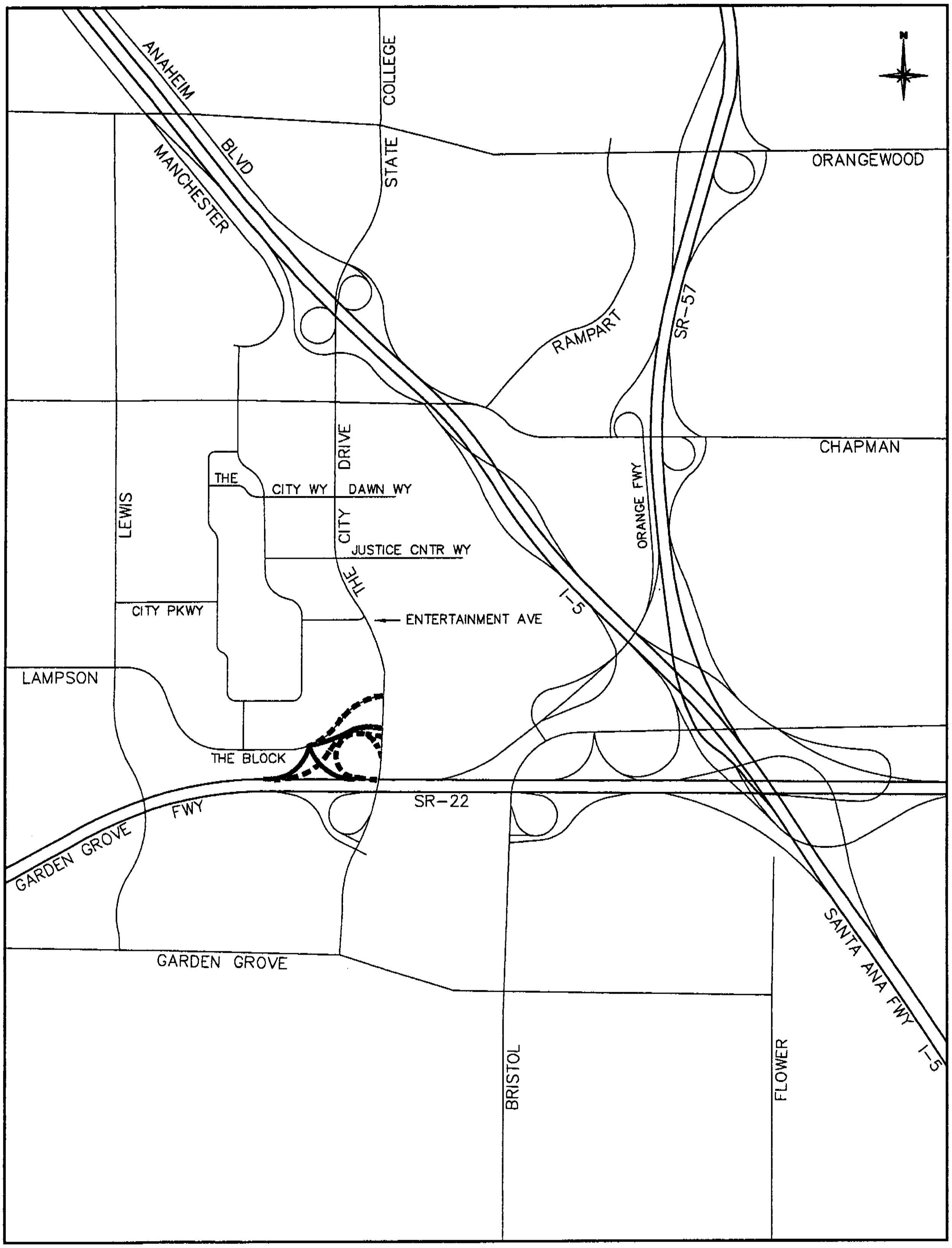
EP Equity Partners

B The Block at Orange

ST Sportstown

Figure 3-3

SHORT-RANGE
CUMULATIVE PROJECT LOCATIONS



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Deleted by 2010

Figure 3-4

SR-22 CONNECTION CHANGES
ASSUMED FOR 2010

Table 3-2

2010 ICU SUMMARY

INTERSECTION	2010 NO-PROJECT AM	2010 NO-PROJECT PM
1. State College Blvd & Katella	.71	.91*
2. SR-57 SB Ramps & Katella Ave	.53	.69
3. SR-57 NB Ramps & Katella Ave	.39	.75
4. State College Blvd & Gene Autry	.56	.71
5. State College Blvd & Orangewood	.57	.95*
6. SR-57 SB Ramps & Orangewood	.68	.92*
7. SR-57 NB Ramps & Orangewood	.59	.62
8. The City Dr & I-5 NB Ramps	.49	.51
9. The City Dr & I-5 SB Ramps	.49	.41
10. Haster St & Chapman Ave	.78	1.03*
11. Lewis St & Chapman Ave	.78	.92*
12. Manchester Ave & Chapman Ave	.60	.56
13. The City Dr & Chapman Ave	.82	.76
14. I-5 SB Ramp on-Ramp & Chapman	.49	.49
15. I-5 NB on-Ramp & Chapman Ave	.34	.53
16. SR-57 SB Ramps & Chapman Ave	.59	.74
17. SR-57 NB Ramps & Chapman Ave	.41	.49
18. City Blvd East & The City Way	.16	.31
19. The City Dr & The City Way	.73	.68
20. Lewis St & City Pkwy West	.46	.56
21. The City Dr & Justice Center	.49	.43
22. The City Dr & Entertainment	.33	.39
23. Haster St & Lampson Ave	.85	.79
24. Lewis St & Lampson Ave/The Block	.78	.75
25. The City Dr & The Block	.17	.14
27. The City Dr & SR-22 EB Ramps	.75	.86
28. Haster St & SR-22 WB off-Ramp	.53	.52
29. Haster St & Garden Grove Blvd	.76	.92*
30. Fairview St & Garden Grove Blvd	.81	.85
31. Lewis St & Garden Grove Blvd	.83	1.03*
32. The City Dr & Garden Grove Blvd	.86	1.00*
33. Fairview St & SR-22 EB off-Ramp	.73	.77
34. Howell & Katella	.56	.84
35. Haster & Orangewood	.67	.89
36. Lewis & Orangewood	.68	.61
37. Rampart & Orangewood	.56	.70
38. Rampart & Chapman	.36	.54
39. City Blvd & The Block	.50	.74
40. Manchester & Orangewood	.42	.47
41. Anaheim Blvd & Orangewood	.38	.55

(Continued)

Table 3-2 (cont)
2010 ICU SUMMARY

INTERSECTION	2010 NO-PROJECT AM	2010 NO-PROJECT PM
43. The City Dr & Medical Center	.64	.64
44. The City Dr & Orange Cndr	.40	.47
45. SR-22 WB Ramps & The Block	.43	.48
46. N. Stadium & Katella	.39	.57
47. State College & Entrance	.44	.69

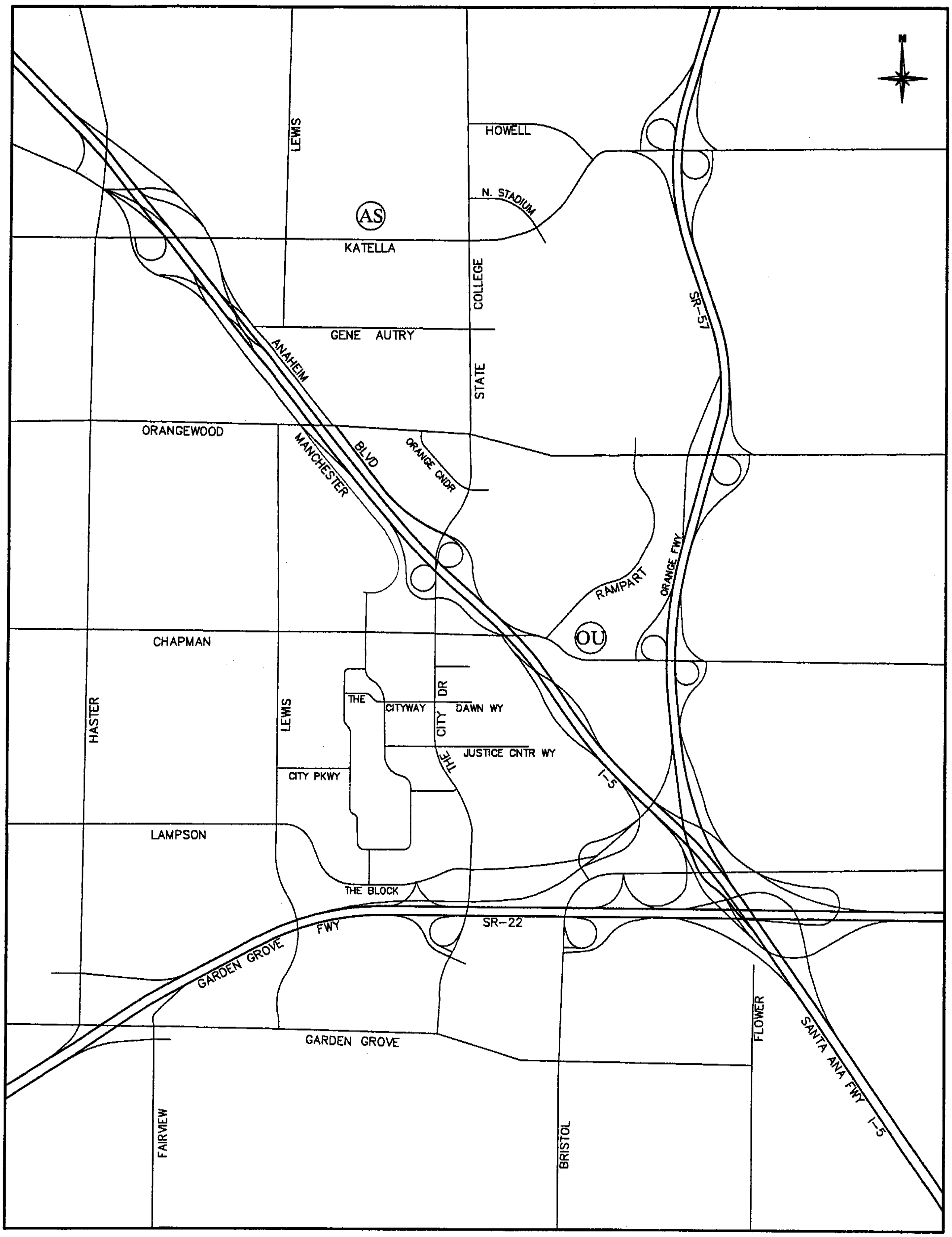
* Exceeds LOS "D"

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F

Note:
Intersections 26 and 42 have been omitted from the table due to the reconfiguration of freeway ramps.

include development of the Orange Uptown area with mixed office/commercial uses and buildout of the Anaheim Stadium Area Master Land Use Plan in Anaheim(as shown in Figure 3-5). The increase in daily trips over the short-range conditions as a result of cumulative projects is 130,500 daily trips without the proposed project. It thereby provides a long-range cumulative setting for analysis of project impacts.

The highway network for this time frame assumes completion of the SR-22 project, with the direct southbound SR-57 to westbound SR-22 separation and the direct ramp to Metropolitan Drive/The Block Drive. Figure 3-6 shows these improvements. Local intersection improvements are also planned for this area and these are discussed in Chapter 7.0.



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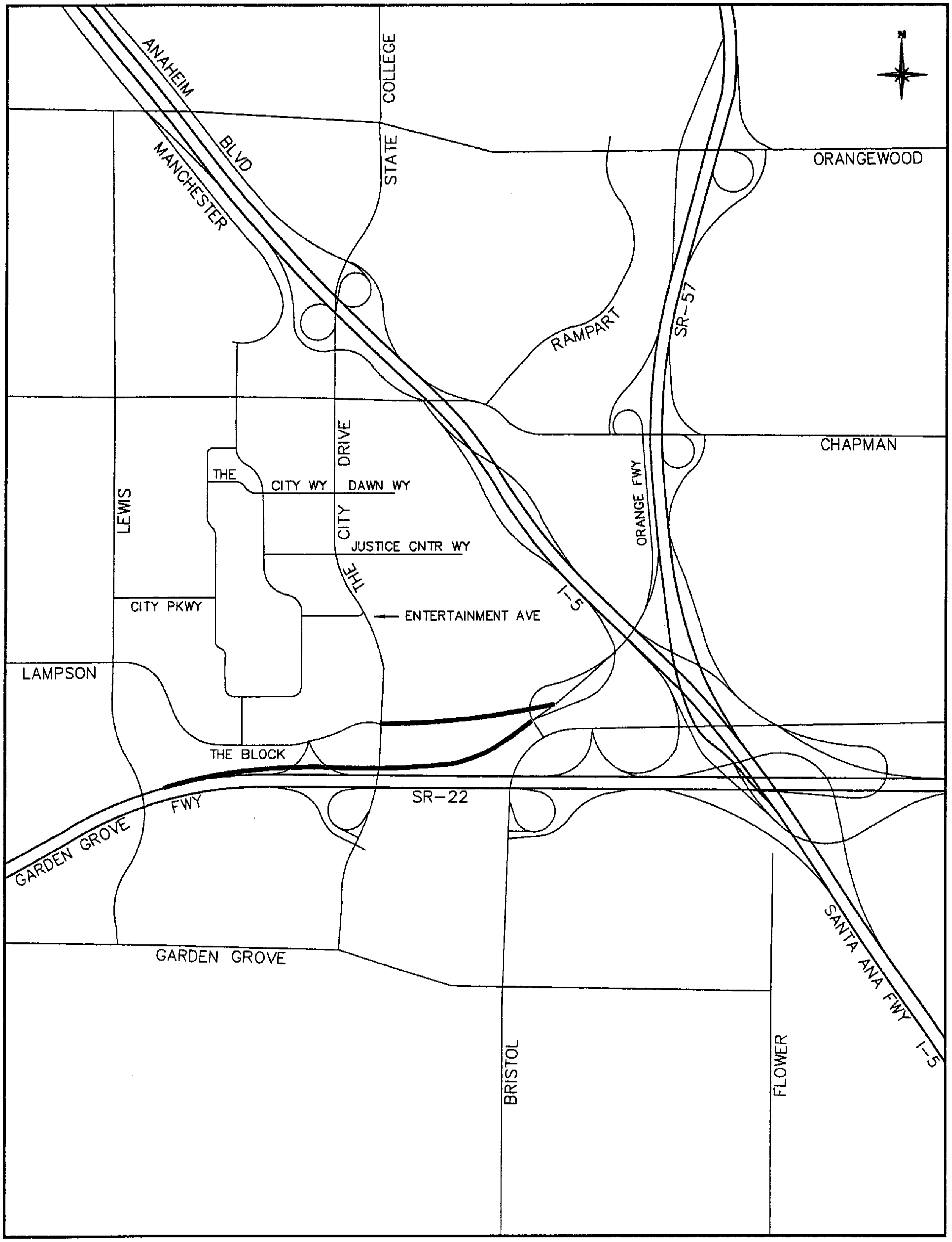
AS Anaheim Stadium Area MLUP

OU Orange Uptown

Figure 3-5

LONG-RANGE
CUMULATIVE PROJECT LOCATIONS



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Added by 2020

Figure 3-6

SR-22 CONNECTION CHANGES ASSUMED FOR 2020

Chapter 4.0
SHORT-RANGE IMPACT ANALYSIS

This chapter describes the potential impacts of Phase 1 of the proposed project upon the 2010 arterial network. Traffic generated by Phase 1 of the proposed project is distributed over the arterial network and the resulting capacity impacts assessed.

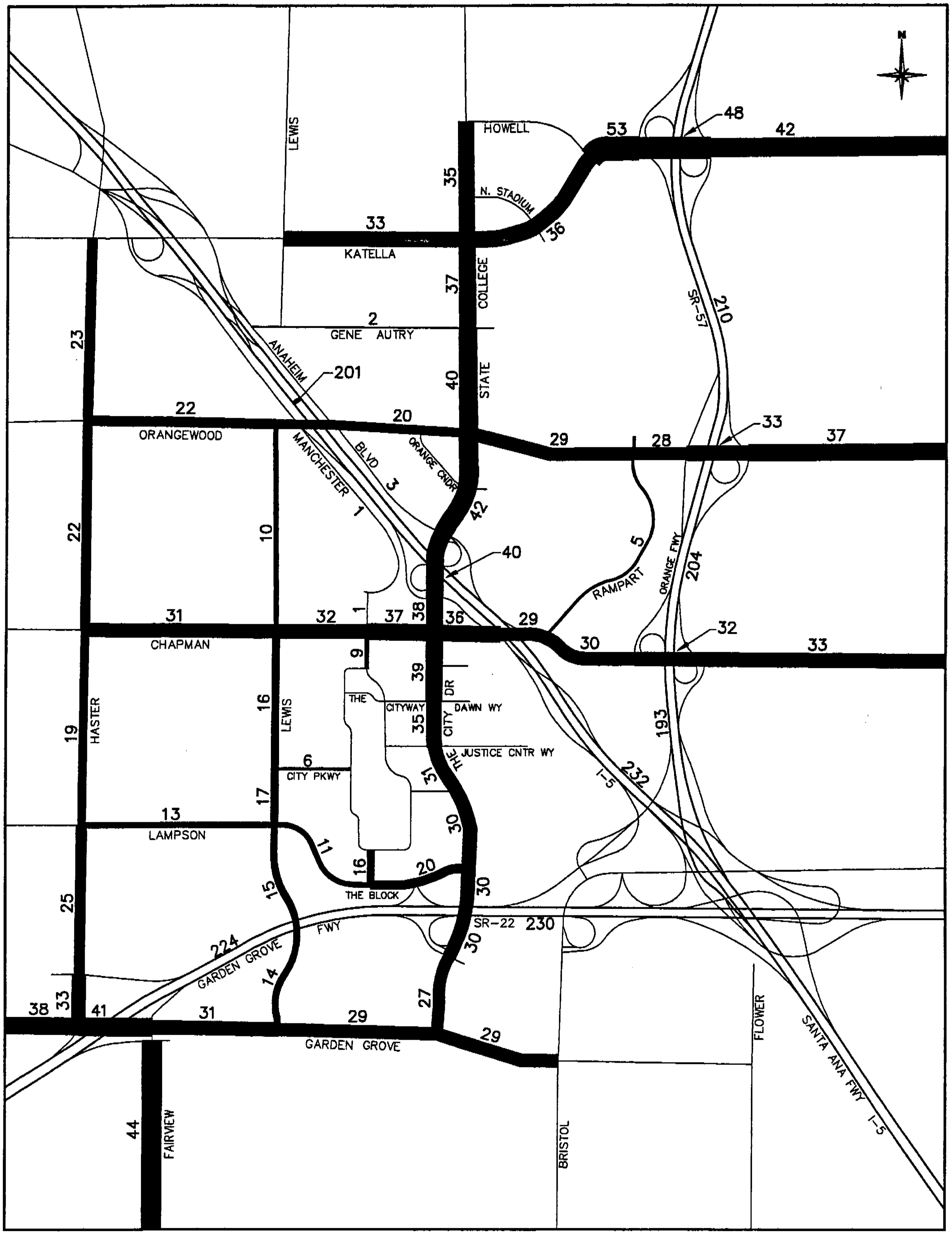
SHORT-RANGE PROJECT IMPACT

Phase 1 expansion consists of an increase of 54 hospital beds to a total of 445 beds and a reduction of 36,950 square feet of Academic/Research, Administrative and Services office space, and is analyzed under year 2010 conditions. Year 2010 background volumes include ambient growth in thru-trips in the study area, plus growth in land use as discussed in the previous chapter.

The proposed expansion under short-range conditions will generate virtually no additional peak hour trips and 325 trips daily as discussed in Chapter 2. All parking is assumed to be provided on-site, with the off-site parking currently occurring transferred to on-site. Figure 4-1 illustrates 2010 ADT volumes in the study area. The project will have no measurable impact on the link volumes in the study area.

OFF-SITE PARKING ALTERNATIVES

To allow for construction of the new hospital, the existing North Parking Structure and 100 surface parking spaces on-site will be demolished. While some replacement parking spaces will be provided on-site at the Medical Center, there will be a net loss of on-site parking spaces at the completion of Phase 1. As a part of Phase 1, additional faculty and staff parking will be provided off campus. Several off campus parking areas have been identified as feasible potential replacement parking locations. The location of these potential off campus parking sites are summarized in the following table:



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10 20 30 — ADT Volumes

Figure 4-1

2010 WITH PROJECT ADT VOLUMES (000's)

OFF CAMPUS REPLACEMENT PARKING LOCATIONS		
SITE	LOCATION	PARKING SPACES
1. Caltrans Lot	Northeast corner of Chapman Avenue & The City Drive City of Orange	452
2. State College Warehouse	2040 State College Boulevard, City of Anaheim	200
3. Equity Partners Lot	Corner of Chapman Ave & Manchester Ave, City of Orange	200
4. Edison Field	State College Boulevard, City of Anaheim	418

The proposed Phase 1 expansion produces no significant increase in the trip generation; however, the relocation of some parking off-site will result in a redistribution of the traffic to those off-site parking spaces from the Medical Center. Only these intersections in the immediate vicinity of the Medical Center and the off-site parking lot will be affected.

Caltrans Lot Impact Analysis

The potential use of the Caltrans parking lot on the northeast corner of The City Drive and Chapman Avenue was analyzed for impacts to study intersections. The 2010-no-project and 2010-with-project ICU values assuming future circulation changes and intersection lane configurations for the intersections in the immediate area of the project site are summarized in Table 4-1. As this table indicates, all five intersections in the immediate vicinity will operate at an acceptable level of service (LOS "D" or better). A significant project impact is defined as an increase greater than .01 in the ICU value at an intersection which reaches LOS "E" or "F". The Phase 1 expansion has no significant impacts on the study locations under short-range conditions. Mitigation measures are therefore not required if the Caltrans lot is utilized for off-site parking.

State College Warehouse/Equity Partners Lot

A combination of off-site parking at the State College Warehouse lot and Equity Partners lot has been analyzed. Off-site parking for UCI Medical Center is currently being provided on the Equity Partners property on the corner of Manchester Avenue and Chapman Avenue. A shuttle service will be available from the State College Warehouse lot.

Table 4-1

2010 ICU SUMMARY

INTERSECTION	2010 NO-PROJECT AM	2010 NO-PROJECT PM	2010 WITH PROJECT AM	2010 WITH PROJECT PM	PROJECT CONTRIBUTION AM	PROJECT CONTRIBUTION PM
9. The City Dr & I-5 SB Ramps	.49	.41	.49	.42	--	.01
13. The City Dr & Chapman Ave	.82	.76	.80	.74	-.02	-.02
14. I-5 SB Ramp on-Ramp & Chapman	.49	.49	.47	.48	-.02	-.01
19. The City Dr & The City Way	.73	.68	.69	.66	-.04	-.02
43. The City Dr & Medical Center	.64	.64	.63	.59	-.01	-.05

* Exceeds LOS "D"

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F

Table 4-2 summarizes the impacts of providing off-site parking at the State College Warehouse lot and Equity Partners lot at the study intersections in the vicinity of the off-site parking lots. As this summary indicates, the location of 200 parking spaces in the State College Warehouse lot and 200 spaces in the Equity Partners lot will have no significant impact on the study locations under short-range conditions.

Edison Field Lot

The potential use of 418 parking spaces at the Edison Field parking lot has been analyzed. The results of the impact analysis is summarized in the above-referenced Table 4-2. As this table shows, the location of over 400 parking spaces at Edison Field will have no significant impact on the study intersections in the vicinity of the off-site parking lot under short-range conditions.

Table 4-2

ALTERNATIVE OFF-SITE PARKING ICU SUMMARY

INTERSECTION	2010 NO-PROJECT AM	PM	2010 WITH PROJECT AM	PM	PROJECT CONTRIBUTION AM	PM
State College Warehouse/Equity Partners Lots						
4. State College & Gene Autry	.56	.71	.56	.71	--	--
5. State College Blvd & Orangewood	.57	.95*	.58	.95*	.01	--
8. The City Dr & I-5 NB Ramps	.49	.51	.51	.52	.02	.01
9. The City Dr & I-5 SB Ramps	.49	.41	.48	.41	-.01	--
12. Manchester Ave & Chapman Ave	.60	.56	.60	.56	--	--
13. The City Dr & Chapman Ave	.82	.76	.80	.75	-.02	-.01
19. The City Dr & The City Way	.73	.68	.72	.66	-.01	-.02
43. The City Dr & Medical Center	.64	.64	.64	.61	--	-.03
44. The City Dr & Orange Cndr	.40	.47	.40	.48	--	.01
Edison Field Lot						
4. State College & Gene Autry	.56	.71	.56	.75	--	.04
5. State College Blvd & Orangewood	.57	.95*	.61	.96*	.04	.01
8. The City Dr & I-5 NB Ramps	.49	.51	.51	.52	.02	.01
9. The City Dr & I-5 SB Ramps	.49	.41	.48	.42	-.01	.01
13. The City Dr & Chapman Ave	.82	.76	.79	.74	-.03	-.02
19. The City Dr & The City Way	.73	.68	.69	.66	-.04	-.02
43. The City Dr & Medical Center	.64	.64	.63	.59	-.01	-.05
44. The City Dr & Orange Cndr	.40	.47	.40	.48	--	.01

* Exceeds LOS "D"

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F

Chapter 5.0
LONG-RANGE IMPACT ANALYSIS

This chapter describes the potential impacts of the proposed project upon the 2020 arterial network. Capacity impacts as a result of the project are assessed.

LONG-RANGE PROJECT IMPACTS

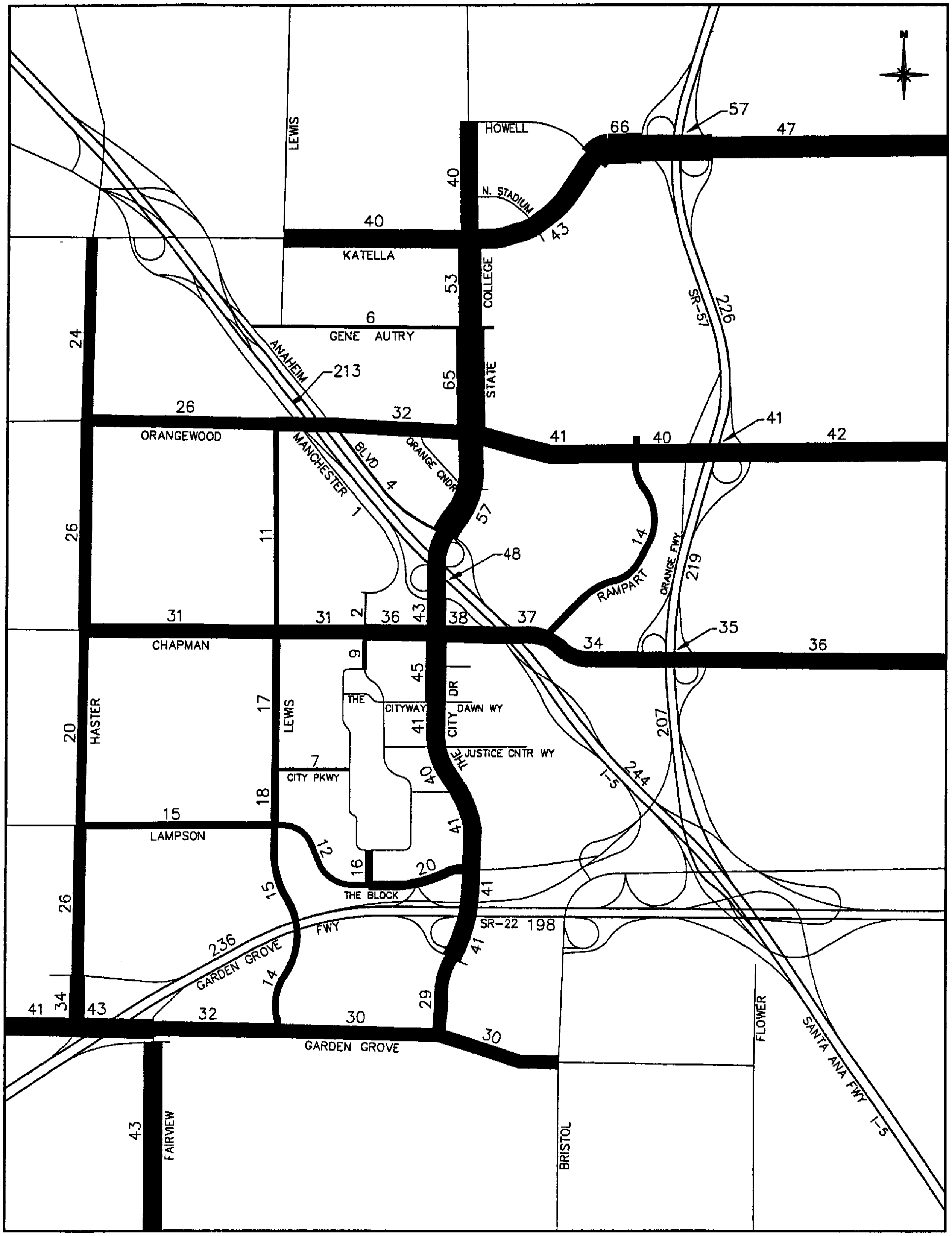
The long-range expansion is analyzed under 2020 conditions. As discussed previously, the long-range expansion consists of an increase of 136 hospital beds, 213,000 square feet of medical office space, and 198,300 square feet of administrative and research office space. All parking will be provided on-site. The proposed expansion will generate 930 additional AM peak hour trips, 790 additional PM peak hour trips, and 10,900 additional daily trips.

The 2020 version of the WOCS Traffic Model was utilized to produce no-project and with-project volumes. Figure 5-1 illustrates 2020 no-project ADT volumes and Figure 5-2 illustrates 2020 with-project ADT volumes. The 2020 no-project and with-project ICU values assuming 2020 circulation improvements and lane configurations are summarized in Table 5-1.

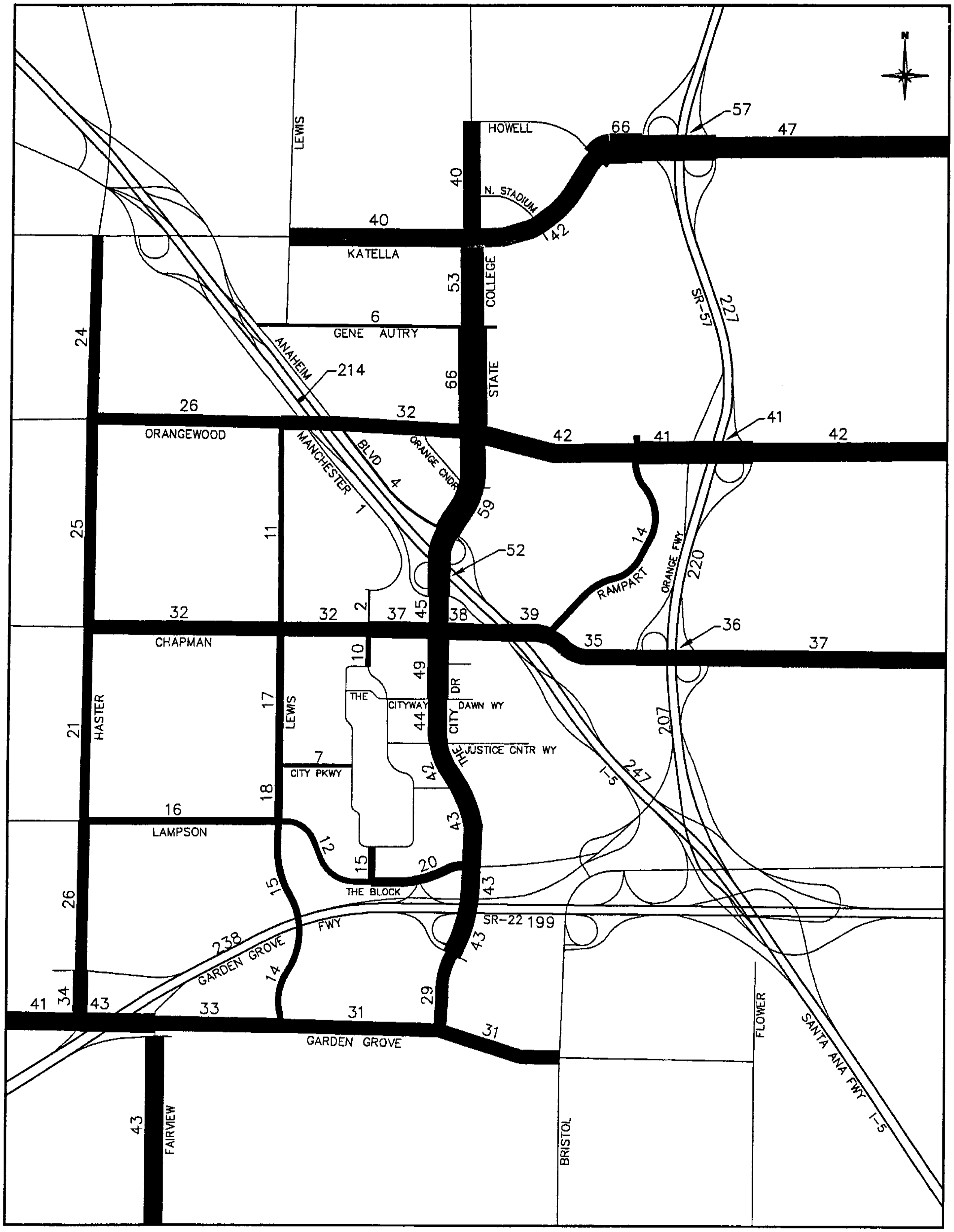
The desired threshold for intersection performance in the study area is for ICU values to not exceed .90 (i.e., level of service "D" or better). A project impact is defined as the project contribution to the ICU greater than .01 and the with-project ICU exceeding .90. As the ICU table indicates, the proposed expansion will have a significant impact on seven intersections in the study area, five of which operate at an unacceptable level of service under 2020 no-project conditions and two of which are caused by the project.

OFF-SITE PARKING STRUCTURE

A potential location for an off-site parking structure has been identified on the southwest corner of Manchester Bouelvard/The City Way and Chapman Avenue. This parking structure would consist



Legend	Figure 5-1
10 20 30 ADT Volumes	2020 NO-PROJECT ADT VOLUMES (000's)



Legend

10 20 30

ADT Volumes

Figure 5-2

2020 WITH-PROJECT ADT VOLUMES (000's)

Table 5-1

2020 ICU SUMMARY

INTERSECTION	2020 NO-PROJECT AM	2020 NO-PROJECT PM	2020 WITH PROJECT AM	2020 WITH PROJECT PM	PROJECT CONTRIBUTION AM	PROJECT CONTRIBUTION PM
1. State College Blvd & Katella	.94*	1.16*	.95*	1.16*	.01	–
2. SR-57 SB Ramps & Katella Ave	.84	.80	.85	.81	.01	.01
3. SR-57 NB Ramps & Katella Ave	.59	.94*	.59	.94*	–	–
4. State College Blvd & Gene Autry	1.18*	1.31*	1.19*	1.31*	.01	–
5. State College Blvd & Orangewood	.98*	1.27*	.99*	1.27*	.01	–
6. SR-57 SB Ramps & Orangewood	.77	1.28*	.78	1.28*	.01	–
7. SR-57 NB Ramps & Orangewood	.68	.78	.68	.78	–	–
8. The City Dr & I-5 NB Ramps	.81	.60	.81	.61	–	.01
9. The City Dr & I-5 SB Ramps	.50	.58	.51	.59	.01	.01
10. Haster St & Chapman Ave	.80	1.12*	.83	1.13*	.03	.01
11. Lewis St & Chapman Ave	.75	.94*	.76	.96*	–	.02 C
12. Manchester Ave & Chapman Ave	.64	.55	.66	.56	.02	.01
13. The City Dr & Chapman Ave	.71	.89	.84	1.01*	.03	.12 P
14. I-5 SB Ramp on-Ramp & Chapman	.53	.65	.53	.69	.05	.04
15. I-5 NB on-Ramp & Chapman Ave	.39	.71	.41	.71	.02	–
16. SR-57 SB Ramps & Chapman Ave	.63	.78	.65	.78	.02	–
17. SR-57 NB Ramps & Chapman Ave	.47	.57	.47	.58	–	.01
18. City Blvd East & The City Way	.21	.31	.22	.31	.01	–
19. The City Dr & The City Way	.83	.76	1.04*	.87	.21 P	.11
20. Lewis St & City Pkwy West	.48	.61	.48	.62	–	.01
21. The City Dr & Justice Center	.61	.52	.67	.56	.06	.04
22. The City Dr & Entertainment	.49	.47	.53	.50	.04	.03
23. Haster St & Lampson Ave	.93*	.85	.95*	.86	.02 C	–
24. Lewis St & Lampson Ave/The Block	.86	.87	.86	.88	–	.01
25. The City Dr & The Block	.49	.51	.53	.54	.04	.03
27. The City Dr & SR-22 EB Ramps	.80	1.00*	.84	1.03*	.04	.03 C
28. Haster St & SR-22 WB off-Ramps	.51	.57	.51	.57	–	–
29. Haster St & Garden Grove Blvd	.77	.99*	.77	.99*	–	–
30. Fairview St & Garden Grove Blvd	.87	.93*	.87	.93*	–	–
31. Lewis St & Garden Grove Blvd	.87	1.08*	.87	1.08*	–	–
32. The City Dr & Garden Grove Blvd	.62	1.06*	.64	1.08*	.02	.02 C
33. Fairview St & SR-22 EB off-Ramps	.83	.78	.83	.78	–	–
34. Howell & Katella	.78	1.22*	.78	1.22*	–	–
35. Haster & Orangewood	.81	1.02*	.83	1.02*	.02	–
36. Lewis & Orangewood	.94*	.68	.94*	.68	–	–
37. Rampart & Orangewood	1.03*	1.25*	1.03*	1.25*	–	–
38. Rampart & Chapman	.71	.90	.75	.90	.04	–
39. City Blvd & The Block	.51	.84	.51	.85	–	.01
40. Manchester & Orangewood	.71	.61	.71	.61	–	–
41. Anaheim Blvd & Orangewood	.60	.81	.60	.81	–	–

(Continued)

Table 5-1 (cont)
2020 ICU SUMMARY

INTERSECTION	2020 NO-PROJECT AM	2020 NO-PROJECT PM	2020 WITH PROJECT AM	2020 WITH PROJECT PM	PROJECT CONTRIBUTION AM	PROJECT CONTRIBUTION PM
43. The City Dr & Medical Center	.61	.67	.83	.73	.22	.06
44. The City Dr & Orange Cndr	.75	1.07*	.76	1.09*	.01	.02 C
45. SR-22 WB Ramps & The Block	.46	.51	.46	.55	–	.04
46. N. Stadium & Katella	.50	.82	.51	.82	.01	–
47. State College & Entrance	.67	.99*	.68	.99*	.01	–

* Exceeds LOS "D"

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F

Notes:
Intersections 26 and 42 have been omitted from the table due to the reconfiguration of freeway ramps.

Project Impacts:

P Project causes deficiency
C Project contributes to deficiency

of 1,600 new spaces and would be utilized by Medical Center faculty and staff rather than patients, visitors, doctors or nurses. The peak hour traffic associated with 1,600 spaces was redistributed to the off-site parking structure. Table 5-2 summarizes the ICU values as a result of the off-site parking structure.

As this table shows, the off-site parking structure will result in lower ICU values at the intersections of The City Drive and The City Way/Dawn Way and The City Drive and Medical Center Way. The off-site parking structure will increase the ICU values at the intersections of Manchester Boulevard and Chapman Avenue and City Boulevard East and The City Way; however, at the intersection of The City Drive and Chapman Avenue, the ICU value will decrease in the AM peak hour and increase in the PM peak hour to an unacceptable level of service.

MITIGATION MEASURES

As discussed above, the proposed medical center expansion will have a significant impact on seven study intersections which are projected to operate at LOS "E" or "F" under 2020 conditions. The project will be responsible for its fair share of the cost of improvements at the locations which operate at an unacceptable level of service under 2020 conditions. Intersection improvements are being identified as part of the WOCS model work being conducted for the study area and these are discussed in Chapter 7.0 together with the project's fair share.

Table 5-2

OFF SITE PARKING STRUCTURE ICU SUMMARY

INTERSECTION	2020 WITH PROJECT AM	PM	2020 WITH PROJECT OFF-SITE PARKING AM	PM
12. Manchester & Chapman	.66	.56	.79	.65
13. The City Dr & Chapman	.84	1.01*	.73	1.05*
18. City Blvd East & City Way	.22	.31	.38	.44
19. The City Dr & City Way/Dawn	1.04*	.87	.83	.81
43. The City Dr & Medical Center	.83	.73	.61	.66

* Exceeds LOS "D"

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F

Chapter 6.0
PARKING ANALYSIS

This chapter discusses UCI Medical Center parking. Existing parking characteristics are described, and then the proposed expansion parking needs are discussed.

EXISTING PARKING DEMAND

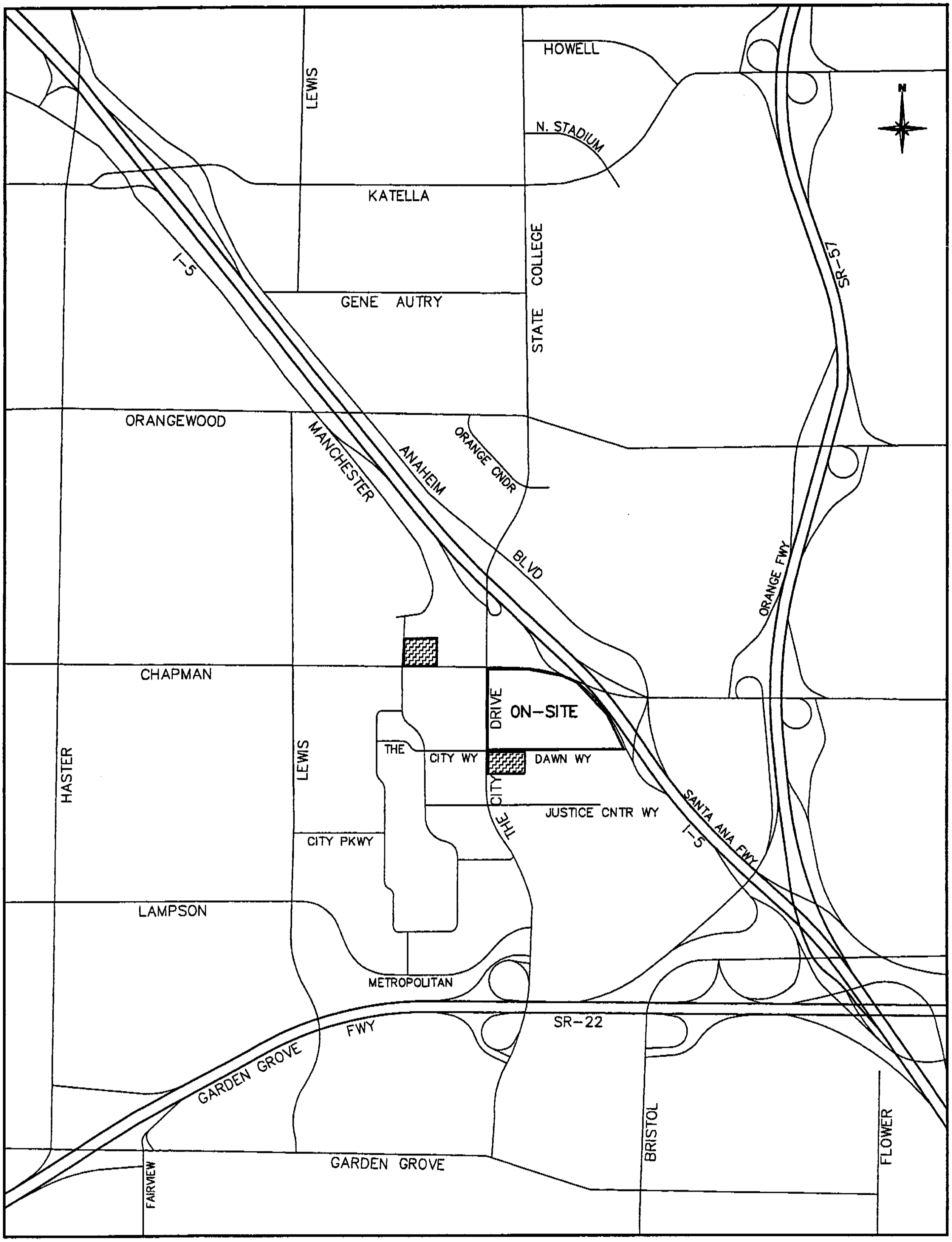
Parking for the UCI Medical Center is provided by several parking lots on-site and leased parking lots off-site as shown in Figure 6-1. A total of 1,590 spaces are available on-site, and a total of 733 spaces are available in satellite lots off-site for a total of 2,465 spaces.

Parking was counted in August 1999 at the existing facility (both on-site and off-site) to determine the existing parking demand. The peak parking demand currently occurs at 10:00 AM. During the peak hour, 1,260 parked vehicles were observed on-site, and 740 parked vehicles were observed at the satellite lots off-site for a total of 2,000 parked vehicles.

The parking demand was separated according to the various uses/functions within the Medical Center using similar procedures to those used to derive trip generation. The results are summarized in Table 6-1.

PARKING DEMAND FOR THE PROPOSED PROJECT

Parking for the proposed expansion is summarized in Table 6-2. During the peak parking demand (10:00 AM), the proposed Phase 1 expansion demand will be 2,015 vehicles. To provide a 15 percent buffer of unoccupied spaces, 2,370 parking spaces are required. Parking will be provided for 2,134 vehicles on-site under Phase 1 expansion. An additional 236 spaces are required to provide a 15 percent buffer. Parking for up to 452 spaces will be provided in off campus parking lots. Four feasible off-site lots have been identified as discussed in Chapter 4.0. This will result in more than a 15 percent buffer of unoccupied spaces.



Legend

On-Site Parking (1,590 spaces)

Off-Site Parking (875 spaces)

Figure 6-1

EXISTING ON-SITE AND OFF-SITE PARKING LOCATIONS

Table 6-1

EXISTING PARKING SUMMARY

SERVICE	AMOUNT	PROPORTION OF AM TRIPS	PEAK PARKING DEMAND (10:00 AM)	PARKING RATE
Inpatient	391 Beds	0.30	600	1.57/Bed
Ambulatory Care	167.63 TSF	0.29	580	3.46/TSF
Academic/Research	264.20 TSF	0.30	600	2.27/TSF
Administrative	56.44 TSF	0.06	120	2.13/TSF
Services	47.39 TSF	0.05	100	2.11/TSF
TOTAL			2,000	

TSF - thousand square feet of floor area

Table 6-2

PROJECT PARKING SUMMARY

SERVICE	AMOUNT	PEAK PARKING DEMAND (10:00 AM)	PARKING REQUIRED (85%)
PHASE 1 EXPANSION PROJECT			
Inpatient	445 Beds	699	
Ambulatory Care	167.63 TSF	580	
Academic/Research	234.18 TSF	531	
Administrative	49.32 TSF	105	
Services	47.58 TSF	100	
TOTAL		2,015	2,370
LONG-RANGE EXPANSION PROJECT			
Inpatient	527 Beds	827	
Ambulatory Care	380.84 TSF	1,318	
Academic/Research	405.49 TSF	920	
Administrative	93.00 TSF	198	
Services	67.87 TSF	143	
TOTAL		3,406	4,010

TSF - thousand square feet of floor area

In addition to the medical center parking, parking for construction workers' vehicles during the construction of Phase 1 expansion will need to be provided. It is estimated that 100 spaces will be required for construction workers during construction of Phase 1.

During the peak parking demand, the long-range expansion is estimated to require 4,010 spaces to provide a 15 percent parking buffer. The proposed long-range expansion will provide a total of 4,202 spaces on-site.

Chapter 7.0
TRANSPORTATION IMPROVEMENT PROGRAM

This chapter discusses long-range intersection improvements and identifies the project's fair share of the cost of these improvements.

YEAR 2020 INTERSECTION IMPROVEMENTS

Long-range project impacts will be mitigated through participation in the City's fair-share program for the West Orange Circulation Study (WOCS) area. The WOCS long-range improvement program identifies intersection improvements at deficient locations within the City in the study area which will result in acceptable levels of service. The proposed project will be responsible for paying its fair share of the cost of the long-range improvements in the WOCS area.

Long-range intersection improvements have been identified for nine intersections in the City of Orange. These improvements are summarized in Table 7-1 and will result in LOS "D" or better. The year 2020 ICU values assuming the intersection improvements identified here are summarized in Table 7-2. As this table shows, the intersections will operate at an acceptable level of service with the identified improvements, and the 1,600-space off-site parking structure will result in no additional significant impacts.

Although the intersection of The City Drive and Medical Center Way will operate at LOS "D" during the AM peak hour based on the ICU analysis, the substantial amount of southbound left-turn vehicles and the close proximity to Chapman Avenue will require installation of dual southbound left-turn lanes. During the AM peak hour, 470 southbound left-turn vehicles are projected to enter the UCI Medical Center at Medical Center Way. To provide sufficient stacking for these vehicles, dual southbound left-turn lanes are required.

Table 7-1

SUMMARY OF LONG-RANGE IMPROVEMENTS

LOCATION	IMPROVEMENT	ESTIMATED COST ($000)
10. Haster St & Chapman Ave	Add 2nd EB left-turn lane (or 2nd NB left-turn lane) Add 3rd EB through lane Convert WB right-turn lane to 3rd through/right-turn lane, including defacto right-turn lane	$2,573
11. Lewis St & Chapman Ave	Convert WB right-turn lane to 3rd through/right-turn lane	$61
13. The City Dr & Chapman Ave	Convert NB through lane to shared through/right-turn lane Convert SB through lane to shared through/right-turn lane	$61
19. The City Dr & The City Way	Add 2nd SB left-turn lane	$81
23. Haster St & Lampson Ave	Add NB right-turn lane	$34
29. Haster St & Garden Grove Blvd	Convert 1 WB through lane to 2nd WB left-turn lane	$203
30. Fairview St & Garden Grove Blvd	Convert WB right-turn lane to 3rd through/right-turn lane	$237
31. Lewis St & Garden Grove Blvd	Convert 2 SB through lanes to shared through/right-turn lane and right-turn lane Add WB right-turn lane	$13
32. The City Dr & Garden Grove Blvd	Add 2nd EB left-turn lane	$237
43. The City Dr & Medical Ctr Way	Add 2nd SB left-turn lane	$50
TOTAL		$3,550

Table 7-2

YEAR 2020 ICU SUMMARY - WITH IMPROVEMENTS

INTERSECTION	2020 WITH PROJECT AM	2020 WITH PROJECT PM	2020 WITH PROJECT OFF-SITE PARKING AM	2020 WITH PROJECT OFF-SITE PARKING PM
10. Haster St & Chapman Ave	.68	.87	-	--
11. Lewis St & Chapman Ave	.76	.84	-	--
13. The City Dr & Chapman Ave	.84	.86	.73	.87
19. The City Dr & The City Way	.82	.87	.68	.81
23. Haster St & Lampson Ave	.88	.86	-	--
29. Haster St & Garden Grove	.70	.83	-	--
30. Fairview St & Garden Grove	.82	.82	-	--
31. Lewis St & Garden Grove	.83	.89	-	--
32. The City Dr & Garden Grove	.47	.89	-	--

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F

Table 7-3

LONG-RANGE FAIR SHARE SUMMARY

INTERSECTION	EXISTING VOLUME	W/PROJECT VOLUME	UCI MEDICAL CTR		OTHER PROJECTS*		TOTAL		THROUGH TRAFFIC**	TOTAL ADT GROWTH
			VOLUME	SHARE	VOLUME	SHARE	VOLUME	SHARE		
Haster St & Chapman Ave	95,000	110,000	2,800	35%	5,200	65%	8,000	100%	7,000	15,000
Lewis St & Chapman Ave	81,000	92,000	3,500	29%	8,400	71%	11,900	100%	negl.	11,900
The City Dr & Chapman Ave	133,000	169,000	19,900	58%	14,200	42%	34,100	100%	1,900	36,000
The City Dr & The City Way	60,000	93,000	11,600	58%	8,500	42%	20,100	100%	12,900	33,000
Haster St & Lampson Ave	64,000	79,000	1,100	24%	3,500	76%	4,600	100%	10,400	15,000
Haster St & Garden Grove	101,000	118,000	900	39%	1,400	61%	2,300	100%	14,700	17,000
Fairview St & Garden Grove	101,000	119,000	1,000	25%	3,000	75%	4,000	100%	14,000	18,000
Lewis St & Garden Grove	61,000	78,000	900	19%	3,900	81%	4,800	100%	12,200	17,000
The City Dr & Garden Grove	72,000	91,000	3,600	47%	4,100	53%	7,700	100%	11,300	19,000

* Other fair share fee participants (Equity Partners, The Block at Orange)
** Thru traffic, non-participants in fee program

The project will be responsible for contributing its fair share toward the cost of these improvements. The total cost of the long-range improvements is $3,550,000. Total trip generation from new projects in the area south of the I-5 Freeway is 36,700 ADT. The project's fair share of each improvement is summarized in Table 7-3. These intersection improvements will be linked to the phasing of the development in the area, with the intersection improvements initiated by the City.

The City may set up a Fee Program to fund these future intersection improvements in this area, in which case the proposed project will participate in lieu of the fair share percentages presented in Table 7-3.

APPENDIX A

INTERSECTION CAPACITY UTILIZATION

Peak hour intersection volume/capacity ratios are calculated by means of intersection capacity utilization (ICU) values. ICU calculations were performed for the intersections shown in Figure A-1. For simplicity, signalization is assumed at each intersection. Precise ICU calculations of existing non-signalized intersections would require a more detailed analysis.

The procedure is based on the critical movement methodology, and shows the amount of capacity utilized by each critical move. A capacity of 1700 vehicles per hour (VPH) per lane is assumed together with a .05 clearance interval. A "de-facto" right-turn lane is used in the ICU calculation for cases where a curb lane is wide enough to separately serve both thru and right-turn traffic (typically with a width of 19 feet from curb to outside of thru-lane with parking prohibited during peak periods). Such lanes are treated the same as striped right-turn lanes during the ICU calculations, but they are denoted on the ICU calculation worksheets using the letter "d" in place of a numerical entry for right-turn lanes.

The methodology also incorporates a check for right-turn capacity utilization. Both right-turn-on-green (RTOG) and right-turn-on-red (RTOR) capacity availability are calculated and checked against the total right-turn capacity need. If insufficient capacity is available, then an adjustment is made to the total capacity utilization value. The following example shows how this adjustment is made.

Example For Northbound Right

<u>1. Right-Turn-On-Green (RTOG)</u>

If NBT is critical move, then:

RTOG = V/C (NBT)

Otherwise,

RTOG = V/C (NBL) + V/C (SBT) - V/C (SBL)

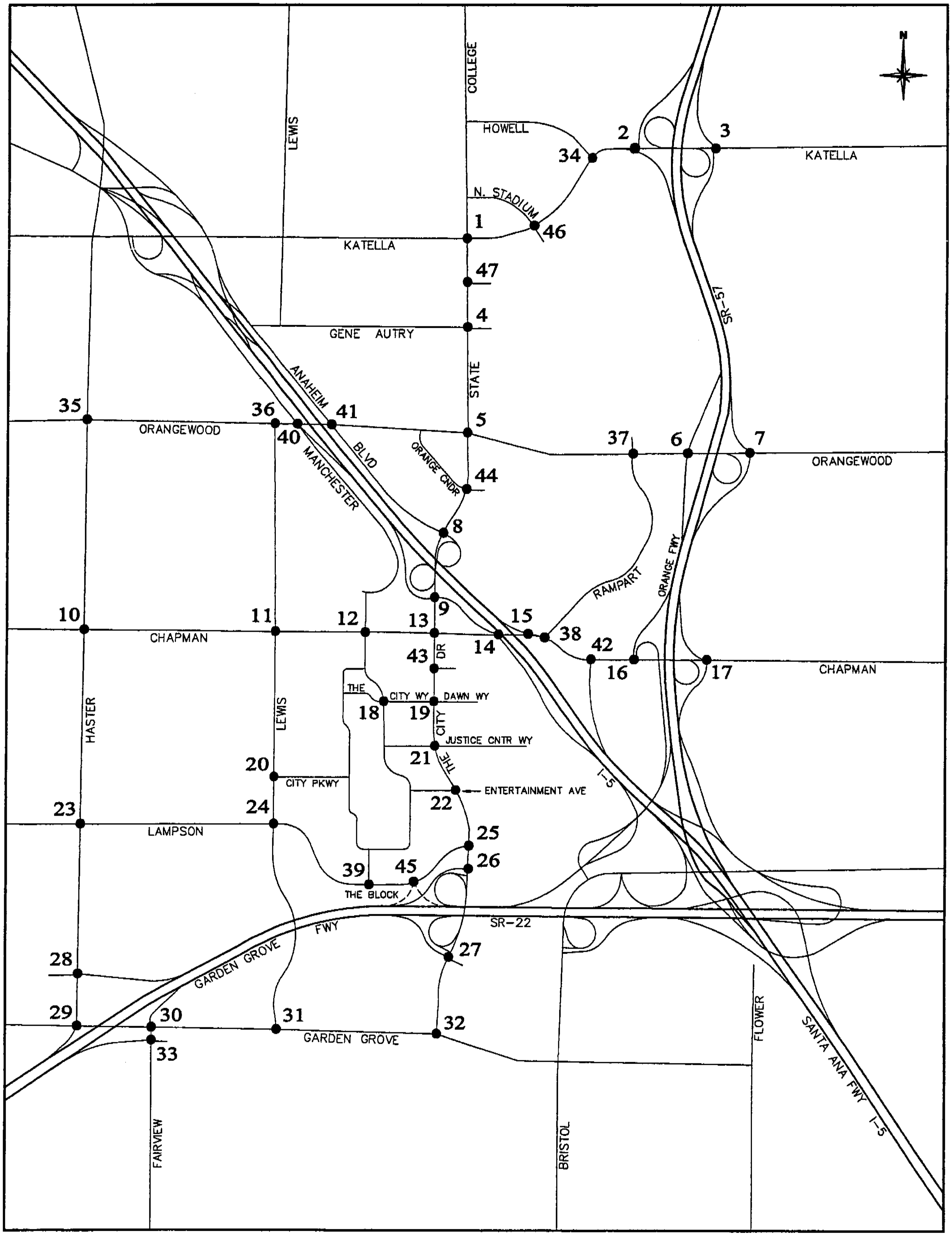


Figure A-1

WOCS INTERSECTION LOCATIONS

2. Right-Turn-On-Red (RTOR)

If WBL is critical move, then:

RTOR = V/C (WBL)

Otherwise,

RTOR = V/C (EBL) + V/C (WBT) - V/C (EBT)

3. Right-Turn Overlap Adjustment

If the northbound right is assumed to overlap with the adjacent westbound left, adjustments to the RTOG and RTOR values are made as follows:

RTOG = RTOG + V/C (WBL)

RTOR = RTOR - V/C (WBL)

4. Total Right-Turn Capacity (RTC) Availability For NBR

RTC = RTOG + factor x RTOR

Where factor = RTOR saturation flow factor (75%)

Right-turn adjustment is then as follows: Additional ICU = V/C (NBR) - RTC

A zero or negative value indicates that adequate capacity is available and no adjustment is necessary. A positive value indicates that the available RTOR and RTOG capacity does not adequately accommodate the right-turn V/C, therefore the right-turn is essentially considered to be a critical movement. In such cases, the right-turn adjustment is noted on the ICU worksheet and it is included in the total capacity utilization value. When it is determined that a right-turn adjustment is required for more than one right-turn movement, the word "multi" is printed on the worksheet instead of an actual right-turn movement reference, and the right-turn adjustments are cumulatively added to the total capacity utilization value. In such cases, further operational evaluation is typically carried out to determine if under actual operational conditions, the critical right-turns would operate simultaneously, and therefore a right-turn adjustment credit should be applied.

Shared Lane V/C Methodology

For intersection approaches where shared usage of a lane is permitted by more than one turn movement (e.g., left/thru, thru/right, left/thru/right), the individual turn volumes are evaluated to determine whether dedication of the shared lane is warranted to any one given turn movement. The following example demonstrates how this evaluation is carried out:

Example for Shared Left/Thru Lane

1. Average Lane Volume (ALV)

$$\text{ALV} = \frac{\text{Left-Turn Volume + Thru Volume}}{\text{Total Left + Thru Approach Lanes (including shared lane)}}$$

2. ALV for Each Approach

$$\text{ALV (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Lanes (including shared lane)}}$$

$$\text{ALV (Thru)} = \frac{\text{Thru Volume}}{\text{Thru Approach Lanes (including shared lane)}}$$

3. Lane Dedication is Warranted

If ALV (Left) is greater than ALV then full dedication of the shared lane to the left-turn approach is warranted. Left-turn and thru V/C ratios for this case are calculated as follows:

$$\text{V/C (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (including shared lane)}}$$

$$\text{V/C (Thru)} = \frac{\text{Thru Volume}}{\text{Thru Approach Capacity (excluding shared lane)}}$$

Similarly, if ALV (Thru) is greater than ALV then full dedication to the thru approach is warranted, and left-turn and thru V/C ratios are calculated as follows:

$$\text{V/C (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (excluding shared lane)}}$$

$$V/C\ (\text{Thru}) = \frac{\text{Thru Volume}}{\text{Thru Approach Capacity (including shared lane)}}$$

4. Lane Dedication is not Warranted

If ALV (Left) and ALV (Thru) are both less than ALV, the left/thru lane is assumed to be truly shared and each left, left/thru or thru approach lane carries an evenly distributed volume of traffic equal to ALV. A combined left/thru V/C ratio is calculated as follows:

$$V/C\ (\text{Left/Thru}) = \frac{\text{Left-Turn Volume + Thru Volume}}{\text{Total Left + Thru Approach Capacity (including shared lane)}}$$

This V/C (Left/Thru) ratio is assigned as the V/C (Thru) ratio for the critical movement analysis and ICU summary listing.

If split phasing has not been designated for this approach, the relative proportion of V/C (Thru) that is attributed to the left-turn volume is estimated as follows:

If approach has more than one left-turn (including shared lane), then:
V/C (Left) = V/C (Thru)

If approach has only one left-turn lane (shared lane), then:

$$V/C\ (\text{Left}) = \frac{\text{Left-Turn Volume}}{\text{Single Approach Lane Capacity}}$$

If this left-turn movement is determined to be a critical movement, the V/C (Left) value is posted in brackets on the ICU summary printout.

These same steps are carried out for shared thru/right lanes. If full dedication of a shared thru/right lane to the right-turn movement is warranted, the right-turn V/C value calculated in step three is checked against the RTOR and RTOG capacity availability if the option to include right-turns in the V/C ratio calculations is selected. If the V/C value that is determined using the shared lane methodology described here is reduced due to RTOR and RTOG capacity availability, the V/C value for the thru/right lanes is posted in brackets.

When an approach contains more than one shared lane (e.g., left/thru and thru/right), steps one and two listed above are carried out for the three turn movements combined. Step four is carried out if dedication is not warranted for either of the shared lanes. If dedication of one of the shared lanes is warranted to one movement or another, step three is carried out for the two movements involved, and then steps one through four are repeated for the two movements involved in the other shared lane.

1. State College Blvd & Katella Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	160	.05*	300	.09
NBT	3	5100	440	.12	1350	.33*
NBR	0	0	150		320	
SBL	2	3400	220	.06	160	.05*
SBT	3	5100	1030	.23*	840	.19
SBR	0	0	140		150	
EBL	2	3400	190	.06	190	.06
EBT	2.5	6800	770	.15*	800	.16*
EBR	1.5		170	.10	210	
WBL	2	3400	420	.12*	430	.13*
WBT	3	5100	610	.12	910	.18
WBR	1	1700	70	.04	260	.15
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.72

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06*	300	.09
NBT	3	5100	690	.20	1740	.44*
NBR	0	0	330		520	
SBL	2	3400	310	.09	260	.08*
SBT	3	5100	1230	.27*	940	.22
SBR	0	0	170		190	
EBL	2	3400	140	.04	220	.06
EBT	2.5	6800	870	.17*	950	.19*
EBR	1.5		150	.09	220	
WBL	2	3400	540	.16*	500	.15*
WBT	3	5100	650	.13	1000	.20
WBR	1	1700	30	.02	220	.13
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.91

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	310	.09*	810	.24
NBT	3	5100	720	.21	2180	.56*
NBR	0	0	490	.29	680	
SBL	2	3400	290	.09	300	.09*
SBT	3	5100	1720	.37*	1080	.23
SBR	0	0	190		100	
EBL	2	3400	130	.04	250	.07
EBT	2.5	6800	590	.17*	1270	.25*
EBR	1.5		650		370	
WBL	2	3400	880	.26*	720	.21*
WBT	3	5100	1090	.21	800	.16
WBR	1	1700	40	.02	240	.14
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.94		1.16

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	310	.09*	810	.24
NBT	3	5100	720	.21	2190	.56*
NBR	0	0	490	.29	690	
SBL	2	3400	290	.09	300	.09*
SBT	3	5100	1740	.38*	1080	.23
SBR	0	0	190		100	
EBL	2	3400	130	.04	250	.07
EBT	2.5	6800	590	.17*	1270	.25*
EBR	1.5		650		370	
WBL	2	3400	900	.26*	730	.21*
WBT	3	5100	1090	.21	800	.16
WBR	1	1700	40	.02	240	.14
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.95		1.16

2. SR-57 SB Ramps & Katella Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		190	.11*	430	
SBT	0	5100	0		0	{.19}*
SBR	1.5		620	.18	600	
EBL	0	0	0		0	
EBT	3	5100	910	.18	1610	.32*
EBR	1	1700	470	.28	530	.31
WBL	0	0	0		0	
WBT	3	5100	1260	.25*	1420	.28
WBR	1	1700	250	.15	440	.26
Right Turn Adjustment			SBR	.07*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .48 .56

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		190	.11*	480	
SBT	0	5100	0		0	{.21}*
SBR	1.5		850	.25	790	
EBL	0	0	0		0	
EBT	3	5100	1250	.25*	2210	.43*
EBR	1	1700	510	.30	610	.36
WBL	0	0	0		0	
WBT	3	5100	1180	.23	1450	.28
WBR	1	1700	320	.19	470	.28
Right Turn Adjustment			SBR	.12*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .53 .69

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		270	.16*	490	
SBT	0	5100	0		0	{.17}*
SBR	1.5		1340	.39	780	
EBL	0	0	0		0	
EBT	3	5100	960	.19	2980	.58*
EBR	1	1700	550	.32	1080	.64
WBL	0	0	0		0	
WBT	3	5100	2020	.40*	1430	.28
WBR	1	1700	320	.19	600	.35
Right Turn Adjustment			SBR	.23*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .84 .80

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		270	.16*	490	
SBT	0	5100	0		0	{.17}*
SBR	1.5		1350	.40	790	
EBL	0	0	0		0	
EBT	3	5100	960	.19	2990	.59*
EBR	1	1700	550	.32	1080	.64
WBL	0	0	0		0	
WBT	3	5100	2030	.40*	1430	.28
WBR	1	1700	320	.19	600	.35
Right Turn Adjustment			SBR	.24*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .85 .81

3. SR-57 NB Ramps & Katella Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		620	.18*	450	{.19}*
NBT	0	5100	0		0	{.19}
NBR	1.5		300	.18	550	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	790	.15	1250	.25
EBR	1	1700	310	.18	790	.46
WBL	0	0	0		0	
WBT	3	5100	890	.17*	1410	.28*
WBR	1	1700	210	.12	380	.22
Right Turn Adjustment					EBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.40		.56

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		370	{.12}*	220	.13*
NBT	0	5100	0	{.12}	0	
NBR	1.5		290		570	.17
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1000	.20	1580	.31
EBR	1	1700	430	.25	1100	.65
WBL	0	0	0		0	
WBT	3	5100	1130	.22*	1680	.33*
WBR	1	1700	240	.14	410	.24
Right Turn Adjustment					Multi	.24*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.75

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		770	.23*	300	{.17}*
NBT	0	5100	0		0	.17
NBR	1.5		390	{.13}	580	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	940	.18	1980	.39*
EBR	1	1700	300	.18	1450	.85
WBL	0	0	0		0	
WBT	3	5100	1570	.31*	1700	.33
WBR	1	1700	230	.14	510	.30
Right Turn Adjustment					EBR	.33*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.59		.94

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		770	.23*	300	{.17}*
NBT	0	5100	0		0	.17
NBR	1.5		390	{.13}	580	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	940	.18	1990	.39*
EBR	1	1700	300	.18	1450	.85
WBL	0	0	0		0	
WBT	3	5100	1580	.31*	1700	.33
WBR	1	1700	230	.14	510	.30
Right Turn Adjustment					EBR	.33*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.59		.94

4. State College Blvd & Gene Autry Way

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	90	.03*	50	.01
NBT	3	5100	690	.14	1810	.36*
NBR	0	0	10		10	
SBL	1	1700	0	.00	10	.01*
SBT	3	5100	1450	.32*	1420	.29
SBR	0	0	170		50	
EBL	2	3400	60	.02	150	.04
EBT	0.5	1700	0	.04*	0	.08*
EBR	0.5		70		140	
WBL	2	3400	0	.00	10	.00
WBT	1	1700	0	.00	0	.01
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.44		.50

Year 2010 - no Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06*	80	.05
NBT	3	5100	1160	.23	2590	.53*
NBR	0	0	10		90	
SBL	1	1700	10	.01	10	.01*
SBT	3	5100	1780	.38*	1780	.36
SBR	0	0	140		40	
EBL	2	3400	70	.02	120	.04
EBT	0.5	1700	10	.07*	0	.11*
EBR	0.5		110		180	
WBL	2	3400	10	.00	30	.01*
WBT	1	1700	10	.01	10	.01
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.56		.71

Year 2010 - with Project w/off-site parking (State College Warehouse/Equity Partners Lots)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06*	80	.05
NBT	3	5100	1162	.23	2598	.53*
NBR	0	0	10		90	
SBL	1	1700	10	.01	10	.01*
SBT	3	5100	1790	.38*	1782	.36
SBR	0	0	140		40	
EBL	2	3400	70	.02	120	.04
EBT	0.5	1700	10	.07*	0	.11*
EBR	0.5		110		180	
WBL	2	3400	10	.00	30	.01*
WBT	1	1700	10	.01	10	.01
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.56		.71

Year 2010 - with Project w/off-site parking (Edison Field Lot)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	97	.06*	70	.04
NBT	3	5100	1160	.27	2588	.53*
NBR	0	0	201		127	
SBL	1	1700	44	.03	17	.01*
SBT	3	5100	1766	.37*	1777	.36
SBR	0	0	140		40	
EBL	2	3400	70	.02	120	.04
EBT	0.5	1700	12	.07*	0	.11*
EBR	0.5		108		180	
WBL	2	3400	48	.01*	174	.05*
WBT	1	1700	13	.01	20	.03
WBR	0	0	5		27	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.56		.75

4. State College Blvd & Gene Autry Way

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	460	.27*	390	.23
NBT	3	5100	1570	.31	3590	.75*
NBR	0	0	30		240	
SBL	1	1700	10	.01	10	.01*
SBT	3	5100	2740	.56*	2480	.50
SBR	0	0	140		70	
EBL	2	3400	80	.02	210	.06
EBT	0.5	1700	10	.26*	10	.47*
EBR	0.5		430		790	
WBL	2	3400	130	.04*	110	.03*
WBT	1	1700	10	.01	20	.02
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				1.18		1.31

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	460	.27*	390	.23
NBT	3	5100	1580	.32	3610	.75*
NBR	0	0	30		240	
SBL	1	1700	10	.01	10	.01*
SBT	3	5100	2780	.57*	2490	.50
SBR	0	0	140		70	
EBL	2	3400	80	.02	210	.06
EBT	0.5	1700	10	.26*	10	.47*
EBR	0.5		430		790	
WBL	2	3400	130	.04*	110	.03*
WBT	1	1700	10	.01	20	.02
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				1.19		1.31

5. State College Blvd & Orangewood Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	100	.03*	100	.03
NBT	3	5100	510	.10	780	.15*
NBR	1	1700	340	.20	320	.19
SBL	2	3400	280	.08	300	.09*
SBT	4	6800	1040	.18*	1140	.19
SBR	0	0	200		130	
EBL	2	3400	110	.03*	320	.09
EBT	3	5100	430	.09	800	.17*
EBR	0	0	30		50	
WBL	2	3400	300	.09	420	.12*
WBT	2	3400	670	.20*	570	.17
WBR	1	1700	170	.10	770	.45
Right Turn Adjustment					WBR	.18*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.76

Year 2010 - no Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	270	.08*	180	.05
NBT	3	5100	1080	.21	1590	.31*
NBR	1	1700	410	.24	370	.22
SBL	2	3400	320	.09	350	.10*
SBT	4	6800	1370	.23*	1430	.24
SBR	0	0	220		190	
EBL	2	3400	100	.03*	400	.12
EBT	3	5100	510	.11	900	.19*
EBR	0	0	30		50	
WBL	2	3400	290	.09	440	.13*
WBT	2	3400	600	.18*	590	.17
WBR	1	1700	50	.03	760	.45
Right Turn Adjustment					WBR	.17*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.57		.95

Year 2010 - with Project w/off-site parking (State College Warehouse/Equity Partners Lots)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	270	.08	179	.05
NBT	3	5100	1150	.23*	1598	.31*
NBR	1	1700	409	.24	365	.21
SBL	2	3400	322	.09*	356	.10*
SBT	4	6800	1376	.24	1482	.25
SBR	0	0	223		202	
EBL	2	3400	116	.03*	403	.12
EBT	3	5100	510	.11	900	.19*
EBR	0	0	29		50	
WBL	2	3400	283	.08	439	.13*
WBT	2	3400	600	.18*	590	.17
WBR	1	1700	58	.03	762	.45
Right Turn Adjustment					WBR	.17*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.58		.95

Year 2010 - with Project w/off-site parking (Edison Field Lot)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	270	.08	178	.05
NBT	3	5100	1220	.24*	1606	.31*
NBR	1	1700	407	.24	360	.21
SBL	2	3400	323	.10*	362	.11*
SBT	4	6800	1382	.24	1535	.26
SBR	0	0	226		214	
EBL	2	3400	132	.04*	406	.12
EBT	3	5100	510	.11	900	.19*
EBR	0	0	28		50	
WBL	2	3400	276	.08	437	.13*
WBT	2	3400	600	.18*	590	.17
WBR	1	1700	66	.04	763	.45
Right Turn Adjustment					WBR	.17*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.61		.96

5. State College Blvd & Orangewood Ave

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	360	.11	250	.07
NBT	3	5100	1700	.33*	1770	.35*
NBR	1	1700	700	.41	680	.40
SBL	2	3400	690	.20*	600	.18*
SBT	4	6800	1490	.27	2200	.40
SBR	0	0	330		540	
EBL	2	3400	310	.09*	500	.15
EBT	3	5100	620	.16	1180	.28*
EBR	0	0	220		240	
WBL	2	3400	550	.16	640	.19*
WBT	2	3400	1060	.31*	790	.23
WBR	1	1700	430	.25	1160	.68
Right Turn Adjustment					WBR	.22*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.98		1.27

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	360	.11	260	.08
NBT	3	5100	1710	.34*	1800	.35*
NBR	1	1700	700	.41	690	.41
SBL	2	3400	690	.20*	600	.18*
SBT	4	6800	1530	.27	2210	.40
SBR	0	0	330		540	
EBL	2	3400	310	.09*	500	.15
EBT	3	5100	620	.16	1180	.28*
EBR	0	0	220		240	
WBL	2	3400	570	.17	650	.19*
WBT	2	3400	1060	.31*	790	.23
WBR	1	1700	430	.25	1160	.68
Right Turn Adjustment					WBR	.22*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.99		1.27

6. SR-57 SB Ramps & Orangewood Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		350	.10*	290	.09*
SBT	0	5100	0		0	
SBR	1.5		440	{.09}	410	{.00}
EBL	0	0	0		0	
EBT	1.5	5100	850	.25*	1320	.39*
EBR	1.5		120		200	.12
WBL	1	1700	280	.16*	480	.28*
WBT	2	3400	650	.19	1100	.32
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.56		.81

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		410	.12*	370	.11*
SBT	0	5100	0		0	
SBR	1.5		440	{.00}	420	{.00}
EBL	0	0	0		0	
EBT	1.5	5100	990	.29*	1540	.45*
EBR	1.5		180		180	
WBL	1	1700	370	.22*	530	.31*
WBT	2	3400	570	.17	1190	.35
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.92

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		470		410	.12*
SBT	0	5100	0	.24*	0	
SBR	1.5		740		520	{.00}
EBL	0	0	0		0	
EBT	1.5	5100	1010	.30	2540	.75*
EBR	1.5		150		360	.21
WBL	1	1700	270	.16	620	.36*
WBT	2	3400	1640	.48*	1240	.36
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.77		1.28

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		470		410	.12*
SBT	0	5100	0	.24*	0	
SBR	1.5		750		530	{.00}
EBL	0	0	0		0	
EBT	1.5	5100	1010	.30	2550	.75*
EBR	1.5		150		360	.21
WBL	1	1700	270	.16	620	.36*
WBT	2	3400	1650	.49*	1240	.36
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		1.28

7. SR-57 NB Ramps & Orangewood Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		290	{.16}*	430	{.14}*
NBT	0	5100	0	.16	0	.14
NBR	1.5		520		300	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1050	.31*	1180	.35*
EBR	2	3400	150	.04	430	.13
WBL	0	0	0		0	
WBT	2	3400	640	.19	1150	.34
WBR	1	1700	210	.12	350	.21
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.52		.54

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		130	.08*	360	{.15}*
NBT	0	5100	0		0	.15
NBR	1.5		600	.18	420	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1230	.36*	1420	.42*
EBR	2	3400	180	.05	470	.14
WBL	0	0	0		0	
WBT	2	3400	810	.24	1350	.40
WBR	1	1700	240	.14	430	.25
Right Turn Adjustment			NBR	.10*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.59		.62

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		730	{.27}*	450	{.16}*
NBT	0	5100	0	.27	0	.16
NBR	1.5		660		350	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1220	.36*	1940	.57*
EBR	2	3400	220	.06	980	.29
WBL	0	0	0		0	
WBT	2	3400	1200	.35	1390	.41
WBR	1	1700	270	.16	500	.29
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.78

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		730	{.27}*	450	{.16}*
NBT	0	5100	0	.27	0	.16
NBR	1.5		660		350	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1220	.36	1950	.57*
EBR	2	3400	220	.06	990	.29
WBL	0	0	0		0	
WBT	2	3400	1210	.36*	1390	.41
WBR	1	1700	270	.16	500	.29
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.78

8. The City Dr & I-5 NB Ramps

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	30	.01	120	.04
NBT	4	6800	1140	.17*	1330	.20*
NBR	1	1700	200	.12	320	.19
SBL	1	1700	50	.03*	130	.08*
SBT	4	6800	1320	.19	1570	.23
SBR	1	1700	0	.00	10	.01
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.25		.33

Year 2010 - no Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	40	.01*	110	.03*
NBT	4	6800	1030	.15	1510	.22
NBR	1	1700	290	.17	370	.22
SBL	1	1700	50	.03	110	.06
SBT	4	6800	1640	.24*	1890	.28*
SBR	1	1700	0	.00	10	.01
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0.5		180	.11*	110	.06*
WBT	2.5	5100	60	.02	140	.04
WBR	2	3400	910	.27	760	.22
Right Turn Adjustment			WBR	.08*	WBR	.09*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.51

Year 2010 - with Project w/off-site parking (State College Warehouse/Equity Partners Lots)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	40	.01*	110	.03*
NBT	4	6800	1070	.16	1506	.22
NBR	1	1700	288	.17	362	.21
SBL	1	1700	51	.03	113	.07
SBT	4	6800	1637	.24*	1938	.29*
SBR	1	1700	0	.00	10	.01
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0.5		180	.11*	110	.06*
WBT	2.5	5100	60	.02	140	.04
WBR	2	3400	938	.28	766	.23
Right Turn Adjustment			WBR	.10*	WBR	.09*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.52

Year 2010 - with Project w/off-site parking (Edison Field Lot)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	40	.01*	110	.03*
NBT	4	6800	1110	.16	1503	.22
NBR	1	1700	286	.17	355	.21
SBL	1	1700	52	.03	117	.07
SBT	4	6800	1635	.24*	1985	.29*
SBR	1	1700	0	.00	10	.01
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0.5		180	.11*	110	.06*
WBT	2.5	5100	60	.02	140	.04
WBR	2	3400	967	.28	771	.23
Right Turn Adjustment			WBR	.10*	WBR	.09*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.52

8. The City Dr & I-5 NB Ramps

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	50	.01	70	.02*
NBT	4	6800	2230	.33*	1450	.21
NBR	1	1700	280	.16	350	.21
SBL	1	1700	60	.04*	220	.13
SBT	4	6800	1470	.22	3440	.51*
SBR	1	1700	0	.00	40	.02
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5100	40	.01*	120	.02*
WBR	2	3400	1420	.42	870	.26
Right Turn Adjustment			WBR	.38*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.81		.60

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	50	.01	90	.03*
NBT	4	6800	2250	.33*	1500	.22
NBR	1	1700	300	.18	410	.24
SBL	1	1700	60	.04*	220	.13
SBT	4	6800	1530	.23	3470	.51*
SBR	1	1700	0	.00	40	.02
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5100	40	.01*	120	.02*
WBR	2	3400	1420	.42	870	.26
Right Turn Adjustment			WBR	.38*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.81		.61

9. The City Dr & I-5 SB Ramps

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4.5	8500	1180	.14	1580	.19
NBR	0.5		0		0	
SBL	0	0	0		0	
SBT	4	6800	1190	.18*	1330	.20*
SBR	1	1700	130	.08	240	.14
EBL	0.5		190	.11*	190	.11*
EBT	1.5	3400	130	.08	100	.06
EBR	2	3400	560	.16	320	.09
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.05*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.36

Year 2010 - no Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4.5	8500	1190	.14	1800	.21
NBR	0.5		0		0	
SBL	0	0	0		0	
SBT	4	6800	1630	.24*	1620	.24*
SBR	1	1700	200	.12	330	.19
EBL	0.5		170	.10*	210	.12*
EBT	1.5	3400	160	.09	130	.08
EBR	2	3400	670	.20	340	.10
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.10*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.41

Year 2010 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4.5	8500	1180	.15	1761	.21
NBR	0.5		82		16	
SBL	0	0	32		6	
SBT	4	6800	1598	.24*	1614	.24*
SBR	1	1700	200	.12	330	.19
EBL	0.5		170		210	.12*
EBT	1.5	3400	180	.10*	134	.08
EBR	2	3400	650	.19	336	.10
WBL	0	0	14	{.01}*	55	
WBT	0	0	0		0	
WBR	0	0	10		39	
Right Turn Adjustment			EBR	.09*	EBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.42

Year 2010 - with Project w/off-site parking (State College Warehouse/Equity Partners Lots)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4.5	8500	1224	.14	1787	.21
NBR	0.5		0		0	
SBL	0	0	0		0	
SBT	4	6800	1621	.24*	1646	.24*
SBR	1	1700	206	.12	352	.21
EBL	0.5		175	.10*	211	.12*
EBT	1.5	3400	160	.09	130	.08
EBR	2	3400	660	.19	338	.10
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.09*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.48		.41

9. The City Dr & I-5 SB Ramps

Year 2010 - with Project w/off-site parking (Edison Field Lot)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4.5	8500	1257	.15	1776	.21
NBR	0.5		0		0	
SBL	0	0	0		0	
SBT	4	6800	1613	.24*	1672	.25*
SBR	1	1700	211	.12	373	.22
EBL	0.5		179	.11*	212	.12*
EBT	1.5	3400	160	.09	130	.08
EBR	2	3400	650	.19	336	.10
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.08*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.48		.42

Year 2020 - no Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4.5	8500	2220	.26*	1610	.19
NBR	0.5		0		0	
SBL	0	0	0		0	
SBT	4	6800	1180	.17	2400	.35*
SBR	1	1700	290	.17	760	.45
EBL	0.5		330	.19*	300	.18*
EBT	1.5	3400	260	.15	130	.08
EBR	2	3400	460	.14	200	.06
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.50		.58

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4.5	8500	2260	.27*	1740	.20
NBR	0.5		0		0	
SBL	0	0	0		0	
SBT	4	6800	1240	.18	2420	.36*
SBR	1	1700	290	.17	760	.45
EBL	0.5		330	.19*	300	.18*
EBT	1.5	3400	260	.15	130	.08
EBR	2	3400	570	.17	220	.06
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.59

10. Haster St & Chapman Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05	220	.13*
NBT	2	3400	350	.14*	640	.24
NBR	0	0	110		170	
SBL	1	1700	210	.12*	180	.11
SBT	2	3400	520	.15	780	.23*
SBR	1	1700	110	.06	200	.12
EBL	1	1700	120	.07	250	.15*
EBT	2	3400	1120	.35*	750	.29
EBR	0	0	80		240	
WBL	1	1700	60	.04*	240	.14
WBT	2	3400	320	.09	1120	.33*
WBR	1	1700	60	.04	270	.16
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.70		.89

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	60	.04	190	.11
NBT	2	3400	340	.14*	700	.26*
NBR	0	0	120		170	
SBL	1	1700	240	.14*	180	.11*
SBT	2	3400	570	.17	820	.24
SBR	1	1700	150	.09	270	.16
EBL	1	1700	180	.11	360	.21*
EBT	2	3400	1250	.41*	820	.31
EBR	0	0	130		240	
WBL	1	1700	60	.04*	240	.14
WBT	2	3400	390	.11	1360	.40*
WBR	1	1700	50	.03	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		1.03

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06	310	.18*
NBT	2	3400	360	.14*	710	.26
NBR	0	0	120		170	
SBL	1	1700	260	.15*	180	.11
SBT	2	3400	590	.17	880	.26*
SBR	1	1700	140	.08	340	.20
EBL	1	1700	330	.19	390	.23*
EBT	2	3400	1270	.42*	830	.31
EBR	0	0	160		240	
WBL	1	1700	60	.04*	270	.16
WBT	2	3400	320	.09	1360	.40*
WBR	1	1700	50	.03	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.80		1.12

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06	310	.18*
NBT	2	3400	360	.14*	710	.26
NBR	0	0	130		170	
SBL	1	1700	270	.16*	180	.11
SBT	2	3400	590	.17	880	.26*
SBR	1	1700	140	.08	340	.20
EBL	1	1700	330	.19	390	.23*
EBT	2	3400	1320	.44*	840	.32
EBR	0	0	160		240	
WBL	1	1700	60	.04*	270	.16
WBT	2	3400	330	.10	1400	.41*
WBR	1	1700	50	.03	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		1.13

10. Haster St & Chapman Ave

Year 2020 - with Project w/mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06	310	.18*
NBT	2	3400	360	.14*	710	.26
NBR	0	0	130		170	
SBL	1	1700	270	.16*	180	.11
SBT	2	3400	590	.17	880	.26*
SBR	1	1700	140	.08	340	.20
EBL	2	3400	330	.10	390	.11*
EBT	3	5100	1320	.29*	840	.21
EBR	0	0	160		240	
WBL	1	1700	60	.04*	270	.16
WBT	3	5100	330	.06	1400	.27*
WBR	d	1700	50	.03	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.68**		**.87**

11. Lewis St & Chapman Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06*	240	.14
NBT	1	1700	110	.06	300	.18*
NBR	1	1700	350	.21	140	.08
SBL	1	1700	140	.08	160	.09*
SBT	1	1700	240	.14*	180	.11
SBR	1	1700	40	.02	70	.04
EBL	1	1700	110	.06	60	.04*
EBT	3	5100	1020	.26*	910	.20
EBR	0	0	310		130	
WBL	1	1700	360	.21*	300	.18
WBT	2	3400	290	.09	1320	.39*
WBR	1	1700	70	.04	180	.11
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.72		.75

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	120	.07*	310	.18
NBT	1	1700	160	.09	460	.27*
NBR	1	1700	350	.21	170	.10
SBL	1	1700	120	.07	170	.10*
SBT	1	1700	290	.17*	240	.14
SBR	1	1700	50	.03	90	.05
EBL	1	1700	160	.09	140	.08*
EBT	3	5100	1090	.28*	890	.20
EBR	0	0	360		150	
WBL	1	1700	360	.21*	290	.17
WBT	2	3400	350	.10	1440	.42*
WBR	1	1700	60	.04	140	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		.92

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	120	.07*	350	.21
NBT	1	1700	200	.12	470	.28*
NBR	1	1700	360	.21	180	.11
SBL	1	1700	60	.04	170	.10*
SBT	1	1700	250	.15*	270	.16
SBR	1	1700	40	.02	200	.12
EBL	1	1700	170	.10	200	.12*
EBT	3	5100	1150	.29*	830	.19
EBR	0	0	340		150	
WBL	1	1700	320	.19*	310	.18
WBT	2	3400	280	.08	1340	.39*
WBR	1	1700	60	.04	130	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.75		.94

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	120	.07*	350	.21
NBT	1	1700	200	.12	470	.28*
NBR	1	1700	360	.21	180	.11
SBL	1	1700	60	.04	170	.10*
SBT	1	1700	250	.15*	270	.16
SBR	1	1700	40	.02	210	.12
EBL	1	1700	170	.10	200	.12*
EBT	3	5100	1210	.30*	840	.19
EBR	0	0	340		150	
WBL	1	1700	320	.19*	310	.18
WBT	2	3400	290	.09	1380	.41*
WBR	1	1700	60	.04	130	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.76		.96

11. Lewis St & Chapman Ave

Year 2020 - with Project w/mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	120	.07*	350	.21*
NBT	2	3400	200	.12	470	.19
NBR	0	0	360	.21	180	
SBL	1	1700	60	.04	170	.10
SBT	1	1700	250	.15*	270	.16*
SBR	1	1700	40	.02	210	.12
EBL	1	1700	170	.10	200	.12*
EBT	3	5100	1210	.30*	840	.19
EBR	0	0	340		150	
WBL	1	1700	320	.19*	310	.18
WBT	3	5100	290	.07	1380	.30*
WBR	0	0	60		130	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.76		.84

12. Manchester Ave & Chapman Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02	180	.11*
NBT	1	1700	0	.00*	10	.01
NBR	2	3400	90	.03	550	.16
SBL	1	1700	80	.05*	130	.08
SBT	2	3400	10	.01	20	.01*
SBR	0	0	10		40	.02
EBL	1	1700	30	.02	0	.00
EBT	3	5100	1400	.29*	1070	.24*
EBR	0	0	80		140	
WBL	2	3400	440	.13*	290	.09*
WBT	3	5100	680	.13	1580	.31
WBR	1	1700	90	.05	60	.04
Right Turn Adjustment					NBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.52		.55

Year 2010 - no Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	210	.12*
NBT	1	1700	10	.01*	40	.02
NBR	2	3400	100	.03	570	.17
SBL	1	1700	180	.11*	130	.08
SBT	2	3400	30	.02	30	.02*
SBR	0	0	40	.02	70	.04
EBL	1	1700	60	.04	20	.01
EBT	3	5100	1370	.29*	990	.23*
EBR	0	0	130		180	
WBL	2	3400	480	.14*	290	.09*
WBT	3	5100	670	.13	1590	.31
WBR	1	1700	80	.05	70	.04
Right Turn Adjustment					Multi	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.56

Year 2010 - with Project w/off-site parking (State College Warehouse/Equity Partners Lots)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	208	.12*
NBT	1	1700	10	.01*	40	.02
NBR	2	3400	100	.03	570	.17
SBL	1	1700	179	.11*	130	.08
SBT	2	3400	30	.02	30	.02*
SBR	0	0	40	.02	70	.04
EBL	1	1700	60	.04	20	.01
EBT	3	5100	1362	.29*	988	.23*
EBR	0	0	128		180	
WBL	2	3400	480	.14*	290	.09*
WBT	3	5100	668	.13	1584	.31
WBR	1	1700	80	.05	69	.04
Right Turn Adjustment					Multi	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.56

Year 2020 - no Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	210	.12*
NBT	1	1700	10	.01*	40	.02
NBR	2	3400	90	.03	600	.18
SBL	1	1700	240	.14*	130	.08
SBT	2	3400	60	.03	40	.02*
SBR	0	0	50		60	.04
EBL	1	1700	60	.04	20	.01
EBT	3	5100	1380	.30*	940	.22*
EBR	0	0	140		180	
WBL	2	3400	460	.14*	290	.09*
WBT	3	5100	540	.11	1500	.29
WBR	1	1700	80	.05	160	.09
Right Turn Adjustment					NBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.64		.55

12. Manchester Ave & Chapman Ave

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	220	.13*
NBT	1	1700	10	.01*	40	.02
NBR	2	3400	90	.03	600	.18
SBL	1	1700	260	.15*	130	.08
SBT	2	3400	60	.03	40	.02*
SBR	0	0	50		60	.04
EBL	1	1700	60	.04	20	.01*
EBT	3	5100	1440	.31*	950	.22
EBR	0	0	150		180	
WBL	2	3400	460	.14*	290	.09
WBT	3	5100	560	.11	1540	.30*
WBR	1	1700	80	.05	160	.09
Right Turn Adjustment					Multi	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.66		.56

Year 2020 - with Project w/off-site parking

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	220	.13*
NBT	1	1700	10	.01*	40	.02
NBR	2	3400	90	.03	600	.18
SBL	1	1700	260	.15*	130	.08
SBT	2	3400	60	.03	40	.02*
SBR	0	0	50		60	.04
EBL	1	1700	60	.04	20	.01*
EBT	3	5100	1440	.31*	950	.22
EBR	0	0	150		180	
WBL	2	3400	460	.14*	290	.09
WBT	3	5100	560	.11	1540	.30*
WBR	1	1700	80	.05	160	.09
Right Turn Adjustment					Multi	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.66		.56

13. The City Dr & Chapman Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	170	.05*	220	.06*
NBT	4	6800	530	.08	1030	.15
NBR	1	1700	280	.16	430	.25
SBL	2	3400	90	.03	80	.02
SBT	3	5100	1230	.24*	1030	.20*
SBR	1	1700	430	.25	540	.32
EBL	2	3400	360	.11	370	.11
EBT	3	5100	1070	.21*	1310	.26*
EBR	1	1700	140	.08	70	.04
WBL	2	3400	490	.14*	370	.11*
WBT	3	5100	610	.12	1170	.23
WBR	1	1700	290	.17	180	.11
Right Turn Adjustment					SBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.69		.69

Year 2010 - no Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	180	.05*	200	.06*
NBT	4	6800	730	.11	1350	.20
NBR	1	1700	340	.20	690	.41
SBL	2	3400	90	.03	70	.02
SBT	3	5100	1570	.31*	1260	.25*
SBR	1	1700	650	.38	640	.38
EBL	2	3400	380	.11	430	.13
EBT	3	5100	1090	.21*	1290	.25*
EBR	1	1700	140	.08	70	.04
WBL	2	3400	690	.20*	460	.14*
WBT	3	5100	630	.12	1130	.22
WBR	1	1700	70	.04	30	.02
Right Turn Adjustment					NBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.82		.76

Year 2010 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	176	.05*	186	.05*
NBT	4	6800	793	.12	1325	.19
NBR	1	1700	323	.19	627	.37
SBL	2	3400	90	.03	70	.02
SBT	3	5100	1532	.30*	1305	.26*
SBR	1	1700	650	.38	640	.38
EBL	2	3400	389	.11	432	.13
EBT	3	5100	1099	.22*	1292	.25*
EBR	1	1700	122	.07	66	.04
WBL	2	3400	606	.18*	444	.13*
WBT	3	5100	634	.12	1144	.22
WBR	1	1700	70	.04	30	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.80		.74

Year 2010 - with Project w/off-site parking (State College Warehouse/Equity Partners Lot)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	178	.05*	193	.06*
NBT	4	6800	756	.11	1336	.20
NBR	1	1700	332	.20	658	.39
SBL	2	3400	92	.03	76	.02
SBT	3	5100	1550	.30*	1278	.25*
SBR	1	1700	650	.38	640	.38
EBL	2	3400	380	.11	430	.13
EBT	3	5100	1090	.21*	1290	.25*
EBR	1	1700	131	.08	68	.04
WBL	2	3400	648	.19*	452	.13*
WBT	3	5100	630	.12	1130	.22
WBR	1	1700	78	.05	32	.02
Right Turn Adjustment					SBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.80		.75

13. The City Dr & Chapman Ave

Year 2010 - with Project w/off-site parking (Edison Field Lot)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	176	.05*	186	.05*
NBT	4	6800	781	.11	1323	.19
NBR	1	1700	323	.19	627	.37
SBL	2	3400	93	.03	82	.02
SBT	3	5100	1530	.30*	1296	.25*
SBR	1	1700	650	.38	640	.38
EBL	2	3400	380	.11	430	.13
EBT	3	5100	1090	.21*	1290	.25*
EBR	1	1700	122	.07	66	.04
WBL	2	3400	606	.18*	444	.13*
WBT	3	5100	630	.12	1130	.22
WBR	1	1700	86	.05	33	.02
Right Turn Adjustment					SBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.79		.74

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06*	140	.04*
NBT	4	6800	1590	.23	1200	.18
NBR	1	1700	500	.29	860	.51
SBL	2	3400	80	.02	170	.05
SBT	3	5100	1090	.21*	1750	.34*
SBR	1	1700	480	.28	670	.39
EBL	2	3400	470	.14	430	.13
EBT	3	5100	1110	.22*	1270	.25*
EBR	1	1700	100	.06	70	.04
WBL	2	3400	570	.17*	480	.14*
WBT	3	5100	610	.12	1190	.23
WBR	1	1700	170	.10	60	.04
Right Turn Adjustment					NBR	.07*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.89

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	220	.06*	180	.05*
NBT	4	6800	1630	.24	1330	.20
NBR	1	1700	550	.32	1050	.62
SBL	2	3400	80	.02	170	.05
SBT	3	5100	1260	.25*	1800	.35*
SBR	1	1700	480	.28	670	.39
EBL	2	3400	470	.14	430	.13
EBT	3	5100	1110	.22*	1270	.25*
EBR	1	1700	180	.11	80	.05
WBL	2	3400	870	.26*	530	.16*
WBT	3	5100	610	.12	1190	.23
WBR	1	1700	170	.10	60	.04
Right Turn Adjustment					NBR	.15*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.84		1.01

Year 2020 - with Project w/off-site parking

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	220	.06*	180	.05*
NBT	4	6800	1630	.24	1330	.20
NBR	1	1700	550	.32	1050	.62
SBL	2	3400	80	.02	170	.05
SBT	3	5100	1260	.25*	1800	.35*
SBR	1	1700	480	.28	670	.39
EBL	2	3400	470	.14	430	.13
EBT	3	5100	1110	.22*	1270	.25*
EBR	1	1700	180	.11	80	.05
WBL	2	3400	870	.26*	530	.16*
WBT	3	5100	610	.12	1190	.23
WBR	1	1700	170	.10	60	.04
Right Turn Adjustment					NBR	.15*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.84		1.01

13. The City Dr & Chapman Ave

Year 2020 - with Project w/mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	220	.06*	180	.05*
NBT	3.5	8500	1630	{.24}	1330	.26
NBR	1.5		550	{.13}	1050	
SBL	2	3400	80	.02	170	.05
SBT	3	5100	1260	.25*	1800	.35*
SBR	1	1700	480	.28	670	.39
EBL	2	3400	470	.14	430	.13
EBT	3	5100	1110	.22*	1270	.25*
EBR	1	1700	180	.11	80	.05
WBL	2	3400	870	.26*	530	.16*
WBT	3	5100	610	.12	1190	.23
WBR	1	1700	170	.10	60	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.84		.86

14. I-5 SB Ramp on-Ramp & Chapman Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	120	.04*	80	.02*
SBT	0	0	50		1	
SBR	0	0	10		0	
EBL	0	0	0		0	
EBT	3.5	8500	790	.15	1050	.21
EBR	1.5		650	.19	770	.23
WBL	2	3400	190	.06	210	.06
WBT	3	5100	1350	.26*	1720	.34*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.35		.41

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	810	.24*	560	.16*
NBT	0	0	0		0	
NBR	1	1700	100	.06	50	.03
SBL	2	3400	140	.04	100	.03
SBT	0	0	50		10	
SBR	0	0	10		0	
EBL	0	0	0		0	
EBT	3.5	8500	830	{.14}*	1190	{.22}*
EBR	1.5		690		900	
WBL	2	3400	190	.06*	210	.06*
WBT	3	5100	550	.11	1060	.21
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.49

Year 2010 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	753	.22*	549	.16*
NBT	0	0	57		11	
NBR	1	1700	100	.06	50	.03
SBL	2	3400	145	.04	121	.04
SBT	0	0	61		53	
SBR	0	0	14		14	
EBL	0		9		2	
EBT	3.5	8500	825	{.14}*	1169	{.21}*
EBR	1.5		679		857	
WBL	2	3400	190	.06*	210	.06*
WBT	3	5100	523	.11	1055	.21
WBR	0	0	27		5	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.47		.48

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	680	.20*	560	.16*
NBT	0	0	0		0	
NBR	1	1700	410	.24	160	.09
SBL	2	3400	250	.07	110	.03
SBT	0	0	50		10	
SBR	0	0	10		0	
EBL	0	0	0		0	
EBT	3.5	8500	1090	{.16}*	1680	{.25}*
EBR	1.5		560		590	{.23}
WBL	2	3400	220	.06*	650	.19*
WBT	3	5100	630	.12	1160	.23
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.06*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.65

14. I-5 SB Ramp on-Ramp & Chapman Ave

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	850	.25*	600	.18*
NBT	0	0	0		0	
NBR	1	1700	410	.24	160	.09
SBL	2	3400	250	.07	110	.03
SBT	0	0	50		10	
SBR	0	0	10		0	
EBL	0	0	0		0	
EBT	3.5	8500	1120	{.16}*	1790	{.27}*
EBR	1.5		600		730	
WBL	2	3400	220	.06*	650	.19*
WBT	3	5100	760	.15	1180	.23
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.01*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.69

15. I-5 NB on-Ramp & Chapman Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	910	.18	1130	.22
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	1540	.51*	1930	.65*
WBR	0	0	200		280	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.56		.70

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1070	.21	1350	.26
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	740	.29*	1270	.48*
WBR	0	0	240		350	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.34		.53

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1750	.34*	1950	.38
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	860	.32	1800	.66*
WBR	0	0	240		440	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.71

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1780	.35	2060	.40
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	990	.36*	1820	.66*
WBR	0	0	240		440	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.41		.71

16. SR-57 SB Ramps & Chapman Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		20	{.01}*	190	
NBT	0.5	1700	10	.02	50	.14*
NBR	1	1700	10	.01	160	.09
SBL	0.5		230		220	{.13}*
SBT	0.5	1700	120	.21*	20	.14
SBR	1	1700	280	.16	270	.16
EBL	1	1700	0	.00	10	.01*
EBT	3	5100	900	.21*	1090	.22
EBR	0	0	180		30	
WBL	1	1700	90	.05*	30	.02
WBT	2	3400	670	.20	1170	.34*
WBR	1	1700	120	.07	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.67

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		20	{.01}*	190	
NBT	0.5	1700	10	.02	50	.14*
NBR	1	1700	10	.01	160	.09
SBL	0.5		320		260	{.15}*
SBT	0.5	1700	120	.26*	20	.16
SBR	1	1700	240	.14	270	.16
EBL	1	1700	0	.00	10	.01*
EBT	3	5100	950	.22*	1250	.25
EBR	0	0	180		30	
WBL	1	1700	90	.05*	30	.02
WBT	2	3400	830	.24	1310	.39*
WBR	1	1700	120	.07	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.59		.74

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		20	{.01}*	190	
NBT	0.5	1700	10	.02	50	.14*
NBR	1	1700	10	.01	160	.09
SBL	0.5		300		300	{.18}*
SBT	0.5	1700	120	.25*	20	.19
SBR	1	1700	340	.20	200	.12
EBL	1	1700	0	.00	10	.01*
EBT	3	5100	1040	.24	1870	.37
EBR	0	0	170		30	
WBL	1	1700	90	.05	30	.02
WBT	2	3400	1100	.32*	1360	.40*
WBR	1	1700	170	.10	180	.11
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.63		.78

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		20	{.01}*	190	
NBT	0.5	1700	10	.02	50	.14*
NBR	1	1700	10	.01	160	.09
SBL	0.5		300		300	{.18}*
SBT	0.5	1700	120	.25*	20	.19
SBR	1	1700	420	.25	210	.12
EBL	1	1700	0	.00	10	.01*
EBT	3	5100	1070	.24	1980	.39
EBR	0	0	170		30	
WBL	1	1700	90	.05	30	.02
WBT	2	3400	1150	.34*	1370	.40*
WBR	1	1700	170	.10	180	.11
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.65		.78

17. SR-57 NB Ramps & Chapman Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02*	30	.02*
NBT	0	0	0		0	
NBR	1	1700	100	.06	120	.07
SBL	0	0	0		0	
SBT	1	1700	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1700	0	.00	0	.00
EBT	2	3400	870	.26*	1080	.32
EBR	1	1700	270	.16	390	.23
WBL	0	0	0		0	
WBT	3	5100	840	.21	1340	.32*
WBR	0	0	240		280	
Right Turn Adjustment			NBR	.04*	NBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.37		.44

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	120	.07*	70	.04*
NBT	0	0	0		0	
NBR	1	1700	100	.06	120	.07
SBL	0	0	0		0	
SBT	1	1700	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1700	0	.00	0	.00
EBT	2	3400	1000	.29*	1250	.37*
EBR	1	1700	280	.16	420	.25
WBL	0	0	0		0	
WBT	3	5100	920	.24	1440	.35
WBR	0	0	290		340	
Right Turn Adjustment					NBR	.03*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.41		.49

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	200	.12*	60	.04*
NBT	0	0	0		0	
NBR	1	1700	90	.05	110	.06
SBL	0	0	0		0	
SBT	1	1700	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1700	0	.00	0	.00
EBT	2	3400	1020	.30*	1560	.46*
EBR	1	1700	330	.19	740	.44
WBL	0	0	0		0	
WBT	3	5100	1180	.29	1500	.36
WBR	0	0	320		340	
Right Turn Adjustment					NBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.47		.57

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	200	.12*	60	.04*
NBT	0	0	0		0	
NBR	1	1700	90	.05	110	.06
SBL	0	0	0		0	
SBT	1	1700	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1700	0	.00	0	.00
EBT	2	3400	1030	.30	1600	.47*
EBR	1	1700	350	.21	820	.48
WBL	0	0	0		0	
WBT	3	5100	1230	.30*	1510	.36
WBR	0	0	320		340	
Right Turn Adjustment					NBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.47		.58

18. City Blvd East & The City Way

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		0		10	
NBT	1	3400	30	.02*	60	.04*
NBR	0.5		30		80	.05
SBL	1	1700	60	.04*	100	.06*
SBT	2	3400	30	.01	90	.03
SBR	1	1700	40	.02	60	.04
EBL	1	1700	10	.01*	50	.03
EBT	1.5	3400	80	.02	190	.06*
EBR	0.5		0		10	
WBL	1	1700	30	.02	140	.08*
WBT	2	3400	130	.04*	150	.04
WBR	1	1700	120	.07	60	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.16		.29

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		0		10	
NBT	1	3400	30	.01*	70	.04*
NBR	0.5		20		70	
SBL	1	1700	60	.04*	120	.07*
SBT	2	3400	50	.01	110	.03
SBR	1	1700	50	.03	100	.06
EBL	1	1700	20	.01*	70	.04
EBT	1.5	3400	110	.03	230	.07*
EBR	0.5		0		10	
WBL	1	1700	30	.02	130	.08*
WBT	2	3400	170	.05*	200	.06
WBR	1	1700	140	.08	60	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.16		.31

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		0		10	
NBT	1	3400	60	.03*	70	.05*
NBR	0.5		30		80	
SBL	1	1700	100	.06*	110	.06*
SBT	2	3400	70	.02	130	.04
SBR	1	1700	60	.04	90	.05
EBL	1	1700	20	.01	50	.03
EBT	1.5	3400	180	.05*	240	.07*
EBR	0.5		0		10	
WBL	1	1700	30	.02*	140	.08*
WBT	2	3400	140	.04	220	.06
WBR	1	1700	120	.07	80	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.21		.31

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		0		10	
NBT	1	3400	60	.03*	70	.05*
NBR	0.5		30		80	
SBL	1	1700	110	.06*	110	.06*
SBT	2	3400	70	.02	130	.04
SBR	1	1700	60	.04	90	.05
EBL	1	1700	20	.01	50	.03
EBT	1.5	3400	220	.06*	240	.07*
EBR	0.5		0		10	
WBL	1	1700	30	.02*	140	.08*
WBT	2	3400	140	.04	240	.07
WBR	1	1700	120	.07	100	.06
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.22		.31

18. City Blvd East & The City Way

Year 2020 - with Project w/off-site parking

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		0		10	
NBT	1	3400	60	.03*	70	.05*
NBR	0.5		30		80	
SBL	1	1700	110	.06*	110	.06*
SBT	2	3400	70	.02	130	.04
SBR	1	1700	60	.04	90	.05
EBL	1	1700	20	.01	50	.03
EBT	1.5	3400	220	.06*	240	.07*
EBR	0.5		0		10	
WBL	1	1700	30	.02*	140	.08*
WBT	2	3400	140	.04	240	.07
WBR	1	1700	120	.07	100	.06
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.22		.31

19. The City Dr & The City Way

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	210	.06	90	.03*
NBT	4	6800	660	.13*	970	.15
NBR	0	0	400	.24	30	
SBL	1	1700	560	.33*	50	.03
SBT	4	6800	870	.16	1160	.20*
SBR	0	0	230		220	
EBL	1.5		80	{.02}*	290	.09*
EBT	1	6800	80	{.02}	30	{.04}
EBR	1.5		90		160	
WBL	1	1700	50	.03	170	.10
WBT	0.5	1700	10	.07*	50	.21*
WBR	0.5		110		310	
Right Turn Adjustment			NBR	.06*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.66		.58

Year 2010 - no Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06	80	.02*
NBT	4	6800	1040	.20*	1260	.19
NBR	0	0	330		20	
SBL	1	1700	650	.38*	70	.04
SBT	4	6800	1020	.19	1530	.26*
SBR	0	0	290		250	
EBL	1.5		90	{.03}*	360	.11*
EBT	1	6800	90	{.03}	30	.05
EBR	1.5		90		150	
WBL	1	1700	60	.04	180	.11
WBT	0.5	1700	10	.07*	70	.24*
WBR	0.5		110		330	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.73		.68

Year 2010 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06	80	.02*
NBT	4	6800	1084	.20*	1268	.19
NBR	0	0	287		12	
SBL	1	1700	598	.35*	60	.04
SBT	4	6800	1029	.19	1563	.27*
SBR	0	0	292		257	
EBL	1.5		99	.03*	362	.11*
EBT	1	6800	81	{.05}	28	{.04}
EBR	1.5		90		150	
WBL	1	1700	51	.03	148	.09
WBT	0.5	1700	8	.06*	63	.21*
WBR	0.5		100		291	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.69		.66

Year 2010 - with Project w/off-site parking (State College Warehouse/Equity Partners Lots)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06	80	.02*
NBT	4	6800	1061	.20*	1264	.19
NBR	0	0	308		16	
SBL	1	1700	624	.37*	65	.04
SBT	4	6800	1024	.19	1545	.26*
SBR	0	0	290		250	
EBL	1.5		90	.03*	360	.11*
EBT	1	6800	85	{.05}	29	.05
EBR	1.5		90		150	
WBL	1	1700	56	.03	164	.10
WBT	0.5	1700	9	.07*	67	.22*
WBR	0.5		105		310	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.72		.66

19. The City Dr & The City Way

Year 2010 - with Project w/off-site parking (Edison Field Lot)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06	80	.02*
NBT	4	6800	1081	.20*	1268	.19
NBR	0	0	287		12	
SBL	1	1700	598	.35*	60	.04
SBT	4	6800	1028	.19	1561	.27*
SBR	0	0	290		250	
EBL	1.5		90	.03*	360	.11*
EBT	1	6800	81	{.05}	28	{.04}
EBR	1.5		90		150	
WBL	1	1700	51	.03	148	.09
WBT	0.5	1700	8	.06*	63	.21*
WBR	0.5		100		291	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.69		.66

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	170	.05	90	.03*
NBT	4	6800	2000	.34*	1260	.19
NBR	0	0	330		10	
SBL	1	1700	520	.31*	30	.02
SBT	4	6800	720	.14	2020	.34*
SBR	0	0	230		290	
EBL	1.5		190	.06*	370	.11*
EBT	1	6800	110	.06	10	{.04}
EBR	1.5		100		150	
WBL	1	1700	60	.04	120	.07
WBT	0.5	1700	10	.07*	70	.23*
WBR	0.5		110		320	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.76

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	170	.05	100	.03*
NBT	4	6800	2000	.39*	1280	.19
NBR	0	0	650		20	
SBL	1	1700	750	.44*	110	.06
SBT	4	6800	720	.14	2010	.34*
SBR	0	0	230		280	
EBL	1.5		190	.06*	350	.10*
EBT	1	6800	160	{.09}	30	{.04}
EBR	1.5		100		160	
WBL	1	1700	110	.06	340	.20
WBT	0.5	1700	10	.10*	110	.35*
WBR	0.5		165		490	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				1.04		.87

Year 2020 - with Project w/off-site parking

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	170	.05	100	.03*
NBT	4	6800	2000	.39*	1280	.19
NBR	0	0	650		20	
SBL	1	1700	750	.44*	110	.06
SBT	4	6800	720	.14	2010	.34*
SBR	0	0	230		280	
EBL	1.5		190	.06*	350	.10*
EBT	1	6800	160	{.09}	30	{.04}
EBR	1.5		100		160	
WBL	1	1700	110	.06	340	.20
WBT	0.5	1700	10	.10*	110	.35*
WBR	0.5		165		490	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				1.04		.87

19. The City Dr & The City Way

Year 2020 - with Project w/mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	170	.05	100	.03*
NBT	4	6800	2000	.39*	1280	.19
NBR	0	0	650		20	
SBL	2	3400	750	.22*	110	.03
SBT	4	6800	720	.14	2010	.34*
SBR	0	0	230		280	
EBL	1.5		190	.06*	350	.10*
EBT	1	6800	160	{.09}	30	{.04}
EBR	1.5		100		160	
WBL	1	1700	110	.06	340	.20
WBT	0.5	1700	10	.10*	110	.35*
WBR	0.5		165		490	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.82		.87

20. Lewis St & City Pkwy West

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	10	.01
NBT	2	3400	590	.23*	610	.20*
NBR	0	0	180		80	
SBL	1	1700	110	.06*	60	.04*
SBT	2	3400	570	.18	720	.22
SBR	0	0	50		20	
EBL	0	0	10	{.01}*	60	
EBT	1	1700	0	.01	0	.06*
EBR	0	0	10		50	
WBL	1	1700	10	.01	190	.11*
WBT	1	1700	0	.01*	0	.08
WBR	0	0	10		140	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.36		.46

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02	10	.01
NBT	2	3400	670	.27*	710	.24*
NBR	0	0	250		110	
SBL	1	1700	180	.11*	80	.05*
SBT	2	3400	660	.21	820	.24
SBR	0	0	40		10	
EBL	0	0	10	{.01}*	50	{.03}*
EBT	1	1700	10	.02	10	.06
EBR	0	0	10		40	
WBL	1	1700	10	.01	260	.15
WBT	1	1700	20	.02*	20	.19*
WBR	0	0	10		300	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.46		.56

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	10	.01
NBT	2	3400	730	.34*	750	.25*
NBR	0	0	410		110	
SBL	1	1700	110	.06*	90	.05*
SBT	2	3400	610	.19	830	.25
SBR	0	0	40		10	
EBL	0	0	10	{.01}*	60	
EBT	1	1700	0	.01	10	.08*
EBR	0	0	10		60	
WBL	1	1700	10	.01	310	.18*
WBT	1	1700	20	.02*	20	.18
WBR	0	0	10		290	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.48		.61

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	10	.01
NBT	2	3400	730	.34*	750	.25*
NBR	0	0	440		110	
SBL	1	1700	110	.06*	90	.05*
SBT	2	3400	610	.19	830	.25
SBR	0	0	40		10	
EBL	0	0	10	{.01}*	60	
EBT	1	1700	10	.02	10	.08*
EBR	0	0	10		60	
WBL	1	1700	10	.01	330	.19*
WBT	1	1700	20	.02*	20	.18
WBR	0	0	10		290	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.48		.62

21. The City Dr & Justice Center Way

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	60	.02	60	.02*
NBT	4	6800	1210	.24*	830	.13
NBR	0	0	460	.27	50	
SBL	1	1700	170	.10*	30	.02
SBT	4	6800	780	.11	1280	.19*
SBR	1	1700	60	.04	180	.11
EBL	1.5		30	{.01}*	80	{.02}*
EBT	0.5	3400	10	.01	0	.02
EBR	2	3400	60	.02	120	.04
WBL	1.5		40		260	
WBT	0.5	3400	10	.01*	30	.09*
WBR	1	1700	30	.02	180	.11
Right Turn Adjustment			NBR	.02*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.43		.37

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	20	.01	40	.01*
NBT	4	6800	1480	.27*	960	.15
NBR	0	0	380		40	
SBL	1	1700	240	.14*	30	.02
SBT	4	6800	870	.13	1610	.24*
SBR	1	1700	80	.05	260	.15
EBL	1.5		60	{.02}*	170	{.05}*
EBT	0.5	3400	10	.02	10	.05
EBR	2	3400	70	.02	120	.04
WBL	1.5		30		230	
WBT	0.5	3400	10	.01*	40	.08*
WBR	1	1700	40	.02	220	.13
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.43

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	40	.01	90	.03*
NBT	4	6800	2410	.43*	1060	.16
NBR	0	0	520		50	
SBL	1	1700	160	.09*	30	.02
SBT	4	6800	670	.10	2000	.29*
SBR	1	1700	60	.04	270	.16
EBL	1.5		50	{.02}*	110	{.04}*
EBT	0.5	3400	30	.02	10	.04
EBR	2	3400	90	.03	140	.04
WBL	1.5		50		320	
WBT	0.5	3400	10	.02*	50	.11*
WBR	1	1700	30	.02	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.61		.52

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	40	.01	90	.03*
NBT	4	6800	2720	.48*	1100	.17
NBR	0	0	520		50	
SBL	1	1700	160	.09*	30	.02
SBT	4	6800	720	.11	2210	.33*
SBR	1	1700	60	.04	280	.16
EBL	1.5		60	{.03}*	110	{.04}*
EBT	0.5	3400	30	.03	10	.04
EBR	2	3400	90	.03	140	.04
WBL	1.5		50		320	
WBT	0.5	3400	10	.02*	50	.11*
WBR	1	1700	30	.02	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.67		.56

22. The City Dr & Entertainment Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	60	.02	240	.07*
NBT	4	6800	1720	.25*	870	.13
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	850	.13	1650	.24*
SBR	0	0	30		10	
EBL	2	3400	10	.00	70	.02*
EBT	0	0	0		0	
EBR	2	3400	20	.01	180	.05
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.30		.38

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	10	.00	110	.03*
NBT	4	6800	1820	.27*	920	.14
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	920	.14	1910	.28*
SBR	0	0	40		10	
EBL	2	3400	20	.01*	90	.03*
EBT	0	0	0		0	
EBR	2	3400	10	.00	110	.03
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.33		.39

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	30	.01	120	.04*
NBT	4	6800	2890	.43*	1100	.16
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	760	.12	2420	.36*
SBR	0	0	30		40	
EBL	2	3400	20	.01*	80	.02*
EBT	0	0	0		0	
EBR	2	3400	10	.00	160	.05
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.47

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	30	.01	120	.04*
NBT	4	6800	3200	.47*	1140	.17
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	810	.12	2620	.39*
SBR	0	0	30		50	
EBL	2	3400	20	.01*	80	.02*
EBT	0	0	0		0	
EBR	2	3400	10	.00	160	.05
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.50

23. Haster St & Lampson Ave

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	140	.08*	180	.11*
NBT	2	3400	420	.15	710	.22
NBR	0	0	80		30	
SBL	1	1700	180	.11	80	.05
SBT	2	3400	820	.25*	710	.24*
SBR	0	0	40		90	
EBL	1	1700	150	.09	140	.08*
EBT	1	1700	610	.36*	150	.09
EBR	1	1700	150	.09	70	.04
WBL	1	1700	80	.05*	160	.09
WBT	1	1700	110	.06	410	.24*
WBR	1	1700	120	.07	90	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.79		.72

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	150	.09*	150	.09*
NBT	2	3400	410	.16	620	.19
NBR	0	0	130		20	
SBL	1	1700	250	.15	90	.05
SBT	2	3400	840	.26*	770	.26*
SBR	0	0	40		110	
EBL	1	1700	150	.09	150	.09*
EBT	1	1700	690	.41*	160	.09
EBR	1	1700	150	.09	70	.04
WBL	1	1700	60	.04*	140	.08
WBT	1	1700	120	.07	510	.30*
WBR	1	1700	120	.07	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.85		.79

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	160	.09	110	.06*
NBT	2	3400	530	.23*	680	.21
NBR	0	0	260		20	
SBL	1	1700	310	.18*	90	.05
SBT	2	3400	830	.26	860	.29*
SBR	0	0	40		130	
EBL	1	1700	140	.08	160	.09*
EBT	1	1700	750	.44*	180	.11
EBR	1	1700	150	.09	70	.04
WBL	1	1700	50	.03*	130	.08
WBT	1	1700	120	.07	620	.36*
WBR	1	1700	120	.07	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.93		.85

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	160	.09	110	.06*
NBT	2	3400	530	.24*	680	.21
NBR	0	0	270		20	
SBL	1	1700	310	.18*	90	.05
SBT	2	3400	830	.26	860	.29*
SBR	0	0	40		130	
EBL	1	1700	140	.08	160	.09*
EBT	1	1700	770	.45*	180	.11
EBR	1	1700	150	.09	70	.04
WBL	1	1700	50	.03*	130	.08
WBT	1	1700	120	.07	630	.37*
WBR	1	1700	120	.07	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.95		.86

23. Haster St & Lampson Ave

Year 2020 - with Project w/mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	160	.09*	110	.06*
NBT	2	3400	530	.16	680	.20
NBR	1	1700	270	.16	20	.01
SBL	1	1700	310	.18	90	.05
SBT	2	3400	830	.26*	860	.29*
SBR	0	0	40		130	
EBL	1	1700	140	.08	160	.09*
EBT	1	1700	770	.45*	180	.11
EBR	1	1700	150	.09	70	.04
WBL	1	1700	50	.03*	130	.08
WBT	1	1700	120	.07	630	.37*
WBR	1	1700	120	.07	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.88		.86

24. Lewis St & Lampson Ave/The Block Dr

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06	250	.15*
NBT	2	3400	390	.14*	410	.13
NBR	0	0	90		30	
SBL	1	1700	120	.07*	90	.05
SBT	2	3400	370	.14	450	.20*
SBR	0	0	110		240	
EBL	1	1700	280	.16	90	.05*
EBT	1	1700	350	.34*	80	.08
EBR	0	0	220		60	
WBL	1	1700	20	.01*	110	.06
WBT	1	1700	40	.02	240	.14*
WBR	1	1700	70	.04	80	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.61		.59

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06	220	.13*
NBT	2	3400	430	.19*	450	.15
NBR	0	0	210		50	
SBL	1	1700	180	.11*	120	.07
SBT	2	3400	390	.15	520	.24*
SBR	0	0	110		300	
EBL	1	1700	360	.21	120	.07*
EBT	1	1700	470	.42*	90	.09
EBR	0	0	240		60	
WBL	1	1700	20	.01*	180	.11
WBT	1	1700	50	.03	440	.26*
WBR	1	1700	80	.05	120	.07
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		.75

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06	250	.15*
NBT	2	3400	470	.20*	450	.14
NBR	0	0	200		40	
SBL	1	1700	180	.11*	140	.08
SBT	2	3400	350	.13	560	.26*
SBR	0	0	100		330	
EBL	1	1700	520	.31	120	.07*
EBT	1	1700	550	.49*	100	.10
EBR	0	0	290		70	
WBL	1	1700	20	.01*	210	.12
WBT	1	1700	50	.03	580	.34*
WBR	1	1700	110	.06	140	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.86		.87

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06	250	.15*
NBT	2	3400	470	.20*	450	.14
NBR	0	0	200		40	
SBL	1	1700	180	.11*	140	.08
SBT	2	3400	350	.13	570	.27*
SBR	0	0	100		340	
EBL	1	1700	550	.32	120	.07*
EBT	1	1700	550	.49*	100	.10
EBR	0	0	290		70	
WBL	1	1700	20	.01*	210	.12
WBT	1	1700	50	.03	580	.34*
WBR	1	1700	110	.06	140	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.86		.88

25. The City Dr & SR-22 WB Ramps

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	600	.18*	350	.10*
NBT	4	6800	1670	.25	1060	.16
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	800	.12*	1760	.26*
SBR	1	1700	70	.04	70	.04
EBL	2	3400	110	.03*	50	.01*
EBT	0	0	0		0	
EBR	2	3400	440	.13	610	.18
WBL	0	0	10		10	
WBT	1	1700	0	.01*	0	.01*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.09*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.52

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	90	.03*	10	.00
NBT	4	6800	10	.00	10	.00
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	10	.00*	40	.01*
SBR	1	1700	70	.04	10	.01
EBL	2	3400	100	.03*	10	.00
EBT	0	0	0		0	
EBR	2	3400	260	.08	230	.07
WBL	0	0	10		10	
WBT	1	1700	0	.01*	0	.01*
WBR	0	0	0		0	
Right Turn Adjustment			Multi	.05*	EBR	.07*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.17		.14

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	100	.03	10	.00
NBT	4	6800	2750	.40*	1140	.17
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	710	.10	2520	.37*
SBR	1	1700	60	.04	20	.01
EBL	2	3400	100	.03*	60	.02*
EBT	0	0	0		0	
EBR	2	3400	250	.07	270	.08
WBL	0	0	10		10	
WBT	1	1700	0	.01*	0	.01*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.06*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.51

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	100	.03	10	.00
NBT	4	6800	3070	.45*	1180	.17
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	770	.11	2720	.40*
SBR	1	1700	60	.04	20	.01
EBL	2	3400	100	.03*	60	.02*
EBT	0	0	0		0	
EBR	2	3400	250	.07	270	.08
WBL	0	0	0		10	
WBT	1	1700	0	.00*	0	.01*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.06*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.54

26. The City Dr & SR-22 WB Ramps

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02	120	.07*
NBT	3	5100	1230	.24*	1180	.23
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	5100	970	.19	1640	.32*
SBR	1	1700	280	.16	740	.44
EBL	1.5		1040	.31*	230	.07*
EBT	0	5100	0		0	
EBR	1.5		520	.31	170	{.05}
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.07*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.58

27. The City Dr & SR-22 EB Ramps

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	200	.12*	250	.15*
NBT	3	5100	730	.15	1000	.20
NBR	0	0	10		10	
SBL	1	1700	100	.06	60	.04
SBT	2	3400	1120	.33*	970	.29*
SBR	1	1700	270	.16	780	.46
EBL	1.5		520	{.16}*	270	{.08}*
EBT	0.5	3400	30	.16	10	.08
EBR	1	1700	30	.02	110	.06
WBL	0.5		10		20	
WBT	0.5	1700	10	.01*	50	.04*
WBR	1	1700	10	.01	30	.02
Right Turn Adjustment					SBR	.11*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.67		.72

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	230	.14*	300	.18*
NBT	3	5100	980	.19	1220	.24
NBR	0	0	10		10	
SBL	1	1700	110	.06	60	.04
SBT	2	3400	1170	.34*	1010	.30*
SBR	1	1700	370	.22	960	.56
EBL	1.5		690	{.21}*	410	{.12}*
EBT	0.5	3400	30	.21	10	.12
EBR	1	1700	20	.01	110	.06
WBL	0.5		10		20	
WBT	0.5	1700	10	.01*	50	.04*
WBR	1	1700	10	.01	30	.02
Right Turn Adjustment					SBR	.17*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.75		.86

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	150	.09*	210	.12*
NBT	3	5100	1300	.26	1220	.24
NBR	0	0	10		10	
SBL	1	1700	120	.07	60	.04
SBT	2	3400	1110	.33*	1200	.35*
SBR	1	1700	490	.29	1280	.75
EBL	1.5		1060	{.32}*	560	{.17}*
EBT	0.5	3400	20	.32	10	.17
EBR	1	1700	10	.01	100	.06
WBL	0.5		10		20	
WBT	0.5	1700	10	.01*	50	.04*
WBR	1	1700	20	.01	30	.02
Right Turn Adjustment					SBR	.27*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.80		1.00

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	150	.09*	210	.12*
NBT	3	5100	1380	.27	1240	.25
NBR	0	0	10		10	
SBL	1	1700	120	.07	60	.04
SBT	2	3400	1130	.33*	1260	.37*
SBR	1	1700	500	.29	1330	.78
EBL	1.5		1190	{.36}*	580	{.17}*
EBT	0.5	3400	20	.36	10	.17
EBR	1	1700	10	.01	100	.06
WBL	0.5		10		20	
WBT	0.5	1700	10	.01*	50	.04*
WBR	1	1700	20	.01	30	.02
Right Turn Adjustment					SBR	.28*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.84		1.03

28. Haster St & SR-22 WB off-Ramp

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01*	40	.02*
NBT	2	3400	360	.11	890	.26
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1020	.30*	1030	.30*
SBR	0	0	0		0	
EBL	0.5		10		0	
EBT	0	1700	0	.01*	0	
EBR	0.5		10		0	
WBL	1.5		470	.14*	400	.12*
WBT	0	5100	0		10	
WBR	1.5		140		180	.11
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.49

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01*	40	.02*
NBT	2	3400	440	.13	870	.26
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1020	.30*	1040	.31*
SBR	0	0	0		0	
EBL	0.5		10		0	
EBT	0	1700	0	.01*	0	
EBR	0.5		10		0	
WBL	1.5		530	.16*	470	.14*
WBT	0	5100	0		10	
WBR	1.5		90		30	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.52

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01*	40	.02*
NBT	2	3400	590	.17	830	.24
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1000	.29*	1140	.34*
SBR	0	0	0		0	
EBL	0.5		10		0	
EBT	0	1700	0	.01*	0	
EBR	0.5		10		0	
WBL	1.5		510	.15*	540	.16*
WBT	0	5100	0		10	
WBR	1.5		180	.11	70	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.57

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01*	40	.02*
NBT	2	3400	600	.18	830	.24
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1000	.29*	1140	.34*
SBR	0	0	0		0	
EBL	0.5		10		0	
EBT	0	1700	0	.01*	0	
EBR	0.5		10		0	
WBL	1.5		510	.15*	540	.16*
WBT	0	5100	0		10	
WBR	1.5		180	.11	70	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.57

29. Haster St & Garden Grove Blvd

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		660		570	
SBT	0.5	3400	250	.27*	410	.29*
SBR	2	3400	220	.06	500	.15
EBL	1	1700	110	.06	230	.14
EBT	3	5100	1230	.25*	990	.22*
EBR	0	0	20		120	
WBL	1	1700	260	.15*	500	.29*
WBT	2.5	6800	830	.16	840	{.16}
WBR	1.5		150		600	{.14}
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.72		.85

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		690		620	
SBT	0.5	3400	230	.27*	410	.30*
SBR	2	3400	250	.07	530	.16
EBL	1	1700	160	.09	240	.14
EBT	3	5100	1340	.27*	1130	.25*
EBR	0	0	20		120	
WBL	1	1700	290	.17*	540	.32*
WBT	2.5	6800	900	.18	990	{.19}
WBR	1.5		160		590	{.12}
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.76		.92

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		670		640	
SBT	0.5	3400	200	.26*	460	.32*
SBR	2	3400	240	.07	620	.18
EBL	1	1700	190	.11	240	.14
EBT	3	5100	1460	.29*	1210	.26*
EBR	0	0	20		120	
WBL	1	1700	290	.17*	620	.36*
WBT	2.5	6800	920	.18	1090	{.21}
WBR	1.5		220		540	{.08}
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.77		.99

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		670		640	
SBT	0.5	3400	200	.26*	460	.32*
SBR	2	3400	240	.07	630	.19
EBL	1	1700	200	.12	240	.14
EBT	3	5100	1470	.29*	1210	.26*
EBR	0	0	20		120	
WBL	1	1700	290	.17*	620	.36*
WBT	2.5	6800	920	.18	1100	{.22}
WBR	1.5		220		540	{.08}
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.77		.99

29. Haster St & Garden Grove Blvd

Year 2020 - with Project w/mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		670		640	
SBT	0.5	3400	200	.26*	460	.32*
SBR	2	3400	240	.07	630	.19
EBL	1	1700	200	.12*	240	.14*
EBT	3	5100	1470	.29	1210	.26
EBR	0	0	20		120	
WBL	2	3400	290	.09	620	.18
WBT	1.5	5100	920	.27*	1100	.32*
WBR	1.5		220		540	.32
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.70		.83

30. Fairview St & Garden Grove Blvd

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		490	{.27}*	970	.29*
NBT	1.5	5100	890	.27	470	.28
NBR	1	1700	400	.24	500	.29
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	420	.25*	300	.18*
EBT	1.5	5100	560	{.22}	460	{.17}
EBR	1.5		910		800	
WBL	2	3400	320	.09	630	.19
WBT	2	3400	750	.22*	970	.29*
WBR	1	1700	130	.08	60	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.79		.81

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		570	{.29}*	1030	.30*
NBT	1.5	5100	910	.29	490	.29
NBR	1	1700	630	.37	630	.37
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	400	.24*	310	.18*
EBT	1.5	5100	670	{.25}	550	{.21}
EBR	1.5		970		880	
WBL	2	3400	380	.11	720	.21
WBT	2	3400	790	.23*	1090	.32*
WBR	1	1700	130	.08	50	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.81		.85

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		700	{.33}*	1050	{.31}*
NBT	1.5	5100	970	.33	530	.31
NBR	1	1700	690	.41	600	.35
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	440	.26*	360	.21*
EBT	1.5	5100	730	{.25}	530	{.21}
EBR	1.5		970		950	
WBL	2	3400	400	.12	740	.22
WBT	2	3400	780	.23*	1210	.36*
WBR	1	1700	120	.07	50	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.87		.93

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		700	{.33}*	1050	{.31}*
NBT	1.5	5100	970	.33	530	.31
NBR	1	1700	700	.41	600	.35
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	450	.26*	360	.21*
EBT	1.5	5100	740	{.25}	530	{.21}
EBR	1.5		970		950	
WBL	2	3400	400	.12	750	.22
WBT	2	3400	780	.23*	1220	.36*
WBR	1	1700	120	.07	50	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.87		.93

30. Fairview St & Garden Grove Blvd

Year 2020 - with Project w/mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		700	{.33}*	1050	{.31}*
NBT	1.5	5100	970	.33	530	.31
NBR	1	1700	700	.41	600	.35
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	450	.26*	360	.21*
EBT	1.5	5100	740	{.25}	530	{.21}
EBR	1.5		970		950	
WBL	2	3400	400	.12	750	.22
WBT	3	5100	780	.18*	1220	.25*
WBR	0	0	120		50	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.82		.82

31. Lewis St & Garden Grove Blvd

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	50		50	
NBT	1	1700	20	.05*	50	.06*
NBR	0	0	10		10	
SBL	1	1700	320	.19*	270	.16*
SBT	2	3400	30	.02	110	.06
SBR	0	0	280	.16	540	.32
EBL	1	1700	290	.17*	300	.18*
EBT	2	3400	670	.20	610	.19
EBR	0	0	0		50	
WBL	1	1700	0	.00	10	.01
WBT	2	3400	870	.29*	1070	.48*
WBR	0	0	100		550	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.75		.93

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	50		50	
NBT	1	1700	20	.05*	50	.06*
NBR	0	0	10		10	
SBL	1	1700	330	.19*	340	.20*
SBT	2	3400	30	.02	110	.06
SBR	0	0	300	.18	610	.36
EBL	1	1700	390	.23*	350	.21*
EBT	2	3400	910	.27	790	.25
EBR	0	0	0		50	
WBL	1	1700	0	.00	10	.01
WBT	2	3400	960	.31*	1210	.51*
WBR	0	0	110		520	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		1.03

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	50		50	
NBT	1	1700	20	.05*	50	.06*
NBR	0	0	10		10	
SBL	1	1700	360	.21*	340	.20*
SBT	2	3400	30	.02	110	.06
SBR	0	0	260	.15	700	.41
EBL	1	1700	390	.23*	340	.20*
EBT	2	3400	1030	.30	740	.23
EBR	0	0	0		50	
WBL	1	1700	0	.00	10	.01
WBT	2	3400	980	.33*	1280	.54*
WBR	0	0	130		550	
Right Turn Adjustment					SBR	.03*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.87		1.08

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	50		50	
NBT	1	1700	20	.05*	50	.06*
NBR	0	0	10		10	
SBL	1	1700	360	.21*	340	.20*
SBT	2	3400	30	.02	110	.06
SBR	0	0	260	.15	700	.41
EBL	1	1700	390	.23*	340	.20*
EBT	2	3400	1050	.31	740	.23
EBR	0	0	0		50	
WBL	1	1700	0	.00	10	.01
WBT	2	3400	990	.33*	1290	.54*
WBR	0	0	130		550	
Right Turn Adjustment					SBR	.03*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.87		1.08

31. Lewis St & Garden Grove Blvd

Year 2020 - with Project w/mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	50		50	
NBT	1	1700	20	.05*	50	.06*
NBR	0	0	10		10	
SBL	1	1700	360	.21*	340	.20*
SBT	0.5	3400	30	{.02}	110	{.16}
SBR	1.5		260		700	
EBL	1	1700	390	.23*	340	.20*
EBT	2	3400	1050	.31	740	.23
EBR	0	0	0		50	
WBL	1	1700	0	.00	10	.01
WBT	2	3400	990	.29*	1290	.38*
WBR	1	1700	130	.08	550	.32
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.89

32. The City Dr & Garden Grove Blvd

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	490	.14*	570	.17*
SBT	0	0	0		0	
SBR	1	1700	670	.39	530	.31
EBL	1	1700	400	.24*	490	.29*
EBT	2	3400	600	.18	400	.12
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	300	.09*	1100	.32*
WBR	1	1700	540	.32	770	.45
Right Turn Adjustment			Multi	.19*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.83

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	500	.15*	670	.20*
SBT	0	0	0		0	
SBR	1	1700	730	.43	470	.28
EBL	1	1700	520	.31*	650	.38*
EBT	2	3400	720	.21	480	.14
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	350	.10*	1260	.37*
WBR	1	1700	690	.41	890	.52
Right Turn Adjustment			Multi	.25*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.86		1.00

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	420	.12*	820	.24*
SBT	0	0	0		0	
SBR	1	1700	760	.45	500	.29
EBL	1	1700	580	.34*	640	.38*
EBT	2	3400	800	.24	450	.13
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	360	.11*	1320	.39*
WBR	1	1700	800	.47	850	.50
Right Turn Adjustment			Multi	.34*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.96		1.06

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	430	.13*	870	.26*
SBT	0	0	0		0	
SBR	1	1700	770	.45	510	.30
EBL	1	1700	600	.35*	640	.38*
EBT	2	3400	800	.24	450	.13
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	360	.11*	1320	.39*
WBR	1	1700	860	.51	860	.51
Right Turn Adjustment			Multi	.36*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				1.00		1.08

32. The City Dr & Garden Grove Blvd

Year 2020 - with Project w/mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	430	.13*	870	.26*
SBT	0	0	0		0	
SBR	1	1700	770	.45	510	.30
EBL	2	3400	600	.18*	640	.19*
EBT	2	3400	800	.24	450	.13
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	360	.11*	1320	.39*
WBR	1	1700	860	.51	860	.51
Right Turn Adjustment			Multi	.49*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.96		.89

33. Fairview St & SR-22 EB off-Ramp

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1650	.49*	1700	.50*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1230	.36	1430	.42
SBR	0	0	0		0	
EBL	1	1700	130	.08*	230	.14*
EBT	0	0	0		0	
EBR	1	1700	70	.04	180	.11
WBL	0	0	0		0	
WBT	1	1700	0	.00*	0	.01*
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.62		.70

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1900	.56*	1890	.56*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1360	.40	1600	.47
SBR	0	0	0		0	
EBL	1	1700	200	.12*	250	.15*
EBT	0	0	0		0	
EBR	1	1700	80	.05	180	.11
WBL	0	0	0		0	
WBT	1	1700	0	.00*	0	.01*
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.73		.77

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	2060	.61*	1930	.57*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1380	.41	1690	.50
SBR	0	0	0		0	
EBL	1	1700	290	.17*	250	.15*
EBT	0	0	0		0	
EBR	1	1700	70	.04	190	.11
WBL	0	0	0		0	
WBT	1	1700	0	.00*	0	.01*
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.78

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	2070	.61*	1930	.57*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1380	.41	1700	.50
SBR	0	0	0		0	
EBL	1	1700	290	.17*	250	.15*
EBT	0	0	0		0	
EBR	1	1700	70	.04	190	.11
WBL	0	0	0		0	
WBT	1	1700	0	.00*	0	.01*
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.78

34. Howell & Katella

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01	90	.05
NBT	1	1700	10	.01*	60	.04*
NBR	1	1700	20	.01	390	.23
SBL	2	3400	330	.10*	450	.13*
SBT	0.5	1700	50	.08	30	.11
SBR	0.5		90		160	
EBL	1	1700	70	.04*	90	.05*
EBT	3	5100	1030	.22	1300	.26
EBR	0	0	80		40	
WBL	2	3400	250	.07	60	.02
WBT	3	5100	1090	.32*	1400	.38*
WBR	0	0	540		560	
Right Turn Adjustment					NBR	.06*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.52		.71

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01	100	.06*
NBT	1	1700	10	.01*	60	.04
NBR	1	1700	20	.01	390	.23
SBL	2	3400	390	.11*	520	.15
SBT	0.5	1700	50	.09	30	.14*
SBR	0.5		100		200	
EBL	1	1700	90	.05*	110	.06*
EBT	3	5100	1360	.29	1890	.38
EBR	0	0	100		40	
WBL	2	3400	250	.07	60	.02
WBT	3	5100	1170	.34*	1550	.43*
WBR	0	0	610	.36	650	
Right Turn Adjustment					NBR	.10*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.56		.84

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	310	.18*
NBT	1	1700	10	.01*	70	.04
NBR	1	1700	70	.04	740	.44
SBL	2	3400	410	.12*	500	.15
SBT	0.5	1700	60	.09	30	.14*
SBR	0.5		100		200	
EBL	1	1700	100	.06*	120	.07
EBT	3	5100	1040	.26	2760	.57*
EBR	0	0	310		150	
WBL	2	3400	590	.17	160	.05*
WBT	3	5100	2160	.54*	1430	.41
WBR	0	0	570		650	
Right Turn Adjustment					NBR	.23*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		1.22

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	310	.18*
NBT	1	1700	10	.01*	70	.04
NBR	1	1700	70	.04	740	.44
SBL	2	3400	410	.12*	500	.15
SBT	0.5	1700	60	.09	30	.14*
SBR	0.5		100		200	
EBL	1	1700	100	.06*	120	.07
EBT	3	5100	1040	.26	2770	.57*
EBR	0	0	310		150	
WBL	2	3400	590	.17	160	.05*
WBT	3	5100	2180	.54*	1440	.41
WBR	0	0	570		650	
Right Turn Adjustment					NBR	.23*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		1.22

35. Haster & Orangewood

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05*	240	.14*
NBT	2	3400	450	.16	670	.23
NBR	0	0	90		100	
SBL	1	1700	70	.04	120	.07
SBT	2	3400	440	.15*	820	.29*
SBR	0	0	60		160	
EBL	1	1700	230	.14	140	.08*
EBT	2	3400	920	.30*	460	.17
EBR	0	0	90		120	
WBL	1	1700	80	.05*	180	.11
WBT	2	3400	250	.09	700	.23*
WBR	0	0	50		90	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.79

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	200	.12*
NBT	2	3400	490	.17*	780	.28
NBR	0	0	100		180	
SBL	1	1700	80	.05*	150	.09
SBT	2	3400	550	.18	920	.33*
SBR	0	0	60		190	
EBL	1	1700	250	.15	150	.09*
EBT	2	3400	1070	.35*	550	.20
EBR	0	0	120		120	
WBL	1	1700	90	.05*	190	.11
WBT	2	3400	350	.12	880	.30*
WBR	0	0	60		130	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.67		.89

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	60	.04*	250	.15*
NBT	2	3400	470	.16	830	.30
NBR	0	0	90		200	
SBL	1	1700	90	.05	170	.10
SBT	2	3400	620	.20*	930	.32*
SBR	0	0	70		150	
EBL	1	1700	230	.14	150	.09*
EBT	2	3400	1260	.47*	650	.23
EBR	0	0	350		120	
WBL	1	1700	90	.05*	200	.12
WBT	2	3400	360	.13	1230	.41*
WBR	0	0	70		180	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.81		1.02

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	60	.04*	250	.15*
NBT	2	3400	470	.16	830	.30
NBR	0	0	90		200	
SBL	1	1700	90	.05	170	.10
SBT	2	3400	630	.21*	930	.32*
SBR	0	0	70		150	
EBL	1	1700	230	.14	150	.09*
EBT	2	3400	1260	.48*	650	.23
EBR	0	0	360		120	
WBL	1	1700	90	.05*	200	.12
WBT	2	3400	360	.13	1230	.41*
WBR	0	0	70		180	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		1.02

36. Lewis & Orangewood

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03*	170	.10*
NBT	0	0	0		0	
NBR	1	1700	290	.17	240	.14
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1070	.34*	550	.19*
EBR	0	0	80		80	
WBL	1	1700	110	.06*	210	.12*
WBT	2	3400	260	.08	1000	.29
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.09*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.57		.46

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03*	230	.14*
NBT	0	0	0		0	
NBR	1	1700	370	.22	470	.28
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1240	.39*	720	.24*
EBR	0	0	90		100	
WBL	1	1700	150	.09*	290	.17*
WBT	2	3400	380	.11	1190	.35
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.12*	NBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.61

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02*	180	.11*
NBT	0	0	0		0	
NBR	1	1700	700	.41	490	.29
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1560	.46*	870	.28*
EBR	0	0	20		90	
WBL	1	1700	130	.08*	400	.24*
WBT	2	3400	410	.12	1620	.48
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.33*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.94		.68

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02*	180	.11*
NBT	0	0	0		0	
NBR	1	1700	700	.41	490	.29
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1560	.46*	870	.28*
EBR	0	0	20		90	
WBL	1	1700	130	.08*	400	.24*
WBT	2	3400	410	.12	1630	.48
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.33*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.94		.68

37. Rampart & Orangewood

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		190	.06*	290	{.09}*
NBT	1	5100	0	.05	2	.09
NBR	0.5		90		200	.12
SBL	1	1700	0	.00	0	.00
SBT	1	1700	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1700	0	.00	10	.01
EBT	2	3400	880	.31*	1320	.41*
EBR	0	0	170		90	
WBL	1	1700	140	.08*	70	.04*
WBT	2	3400	850	.25	1210	.36
WBR	1	1700	0	.00	30	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.50		.59

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		150	{.04}*	250	
NBT	1	5100	0	.04	10	.08*
NBR	0.5		80	.05	170	.10
SBL	1	1700	0	.00	130	.08*
SBT	1	1700	0	.00*	10	.02
SBR	0	0	0		30	
EBL	1	1700	10	.01	10	.01
EBT	2	3400	1090	.38*	1420	.45*
EBR	0	0	210		100	
WBL	1	1700	150	.09*	70	.04*
WBT	2	3400	710	.21	1260	.37
WBR	1	1700	110	.06	30	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.56		.70

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		350	.10*	820	
NBT	1	5100	10	.10	10	.24*
NBR	0.5		160		610	.36
SBL	1	1700	0	.00	120	.07*
SBT	1	1700	0	.00*	10	.02
SBR	0	0	0		30	
EBL	1	1700	30	.02	10	.01
EBT	2	3400	1010	.54*	2140	.74*
EBR	0	0	810		360	
WBL	1	1700	570	.34*	190	.11*
WBT	2	3400	1660	.49	1280	.38
WBR	1	1700	90	.05	30	.02
Right Turn Adjustment					NBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				1.03		1.25

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		350	.10*	820	
NBT	1	5100	10	.10	10	.24*
NBR	0.5		160		610	.36
SBL	1	1700	0	.00	120	.07*
SBT	1	1700	0	.00*	10	.02
SBR	0	0	0		30	
EBL	1	1700	30	.02	10	.01
EBT	2	3400	1010	.54*	2150	.74*
EBR	0	0	810		360	
WBL	1	1700	570	.34*	190	.11*
WBT	2	3400	1680	.49	1290	.38
WBR	1	1700	90	.05	30	.02
Right Turn Adjustment					NBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				1.03		1.25

38. Rampart & Chapman

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	40	.02*	40	.02*
SBT	0	0	0		0	
SBR	1	1700	60	.04	60	.04
EBL	1	1700	50	.03*	80	.05*
EBT	2	3400	860	.25	1050	.31
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	1580	.46*	1950	.57*
WBR	1	1700	100	.06	160	.09
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.56		.69

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	40	.02*	40	.02*
SBT	0	0	0		0	
SBR	1	1700	70	.04	60	.04
EBL	1	1700	50	.03	110	.06*
EBT	2	3400	1000	.29*	1240	.36
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	860	.25	1380	.41*
WBR	1	1700	10	.01	70	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.36		.54

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	70	.04*	230	.14*
SBT	0	0	0		0	
SBR	1	1700	90	.05	720	.42
EBL	1	1700	590	.35*	260	.15*
EBT	2	3400	1070	.31	1670	.49
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	930	.27*	1320	.39*
WBR	1	1700	210	.12	120	.07
Right Turn Adjustment					SBR	.17*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.90

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	70	.04*	230	.14*
SBT	0	0	0		0	
SBR	1	1700	90	.05	720	.42
EBL	1	1700	590	.35*	260	.15*
EBT	2	3400	1100	.32	1780	.52
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	1060	.31*	1340	.39*
WBR	1	1700	210	.12	120	.07
Right Turn Adjustment					SBR	.17*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.75		.90

39. City Blvd & The Block Dr

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		10	
NBT	1	1700	0	.01*	0	.04*
NBR	0	0	10		50	
SBL	1	1700	60	.04*	340	.20*
SBT	0	0	0		0	
SBR	1	1700	20	.01	90	.05
EBL	1	1700	130	.08*	120	.07*
EBT	2	3400	300	.09	200	.06
EBR	0	0	10		0	
WBL	1	1700	80	.05	10	.01
WBT	2	3400	220	.13*	150	.09*
WBR	0	0	220		240	.14
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.31		.45

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		10	
NBT	1	1700	0	.01*	0	.04*
NBR	0	0	10		50	
SBL	1	1700	140	.08*	570	.34*
SBT	0	0	0		0	
SBR	1	1700	30	.02	80	.05
EBL	1	1700	110	.06*	120	.07*
EBT	2	3400	380	.11	460	.14
EBR	0	0	10		0	
WBL	1	1700	80	.05	10	.01
WBT	2	3400	440	.26*	410	.24*
WBR	0	0	610	.36	540	.32
Right Turn Adjustment			WBR	.04*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.50		.74

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		10	
NBT	1	1700	0	.01*	0	.04*
NBR	0	0	10		50	
SBL	1	1700	140	.08*	620	.36*
SBT	0	0	0		0	
SBR	1	1700	10	.01	90	.05
EBL	1	1700	100	.06*	110	.06*
EBT	2	3400	410	.12	500	.15
EBR	0	0	10		0	
WBL	1	1700	80	.05	10	.01
WBT	2	3400	520	.31*	610	.33*
WBR	0	0	630	.37	510	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.84

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		10	
NBT	1	1700	0	.01*	0	.04*
NBR	0	0	10		50	
SBL	1	1700	140	.08*	630	.37*
SBT	0	0	0		0	
SBR	1	1700	10	.01	90	.05
EBL	1	1700	100	.06*	110	.06*
EBT	2	3400	410	.12	500	.15
EBR	0	0	10		0	
WBL	1	1700	80	.05	10	.01
WBT	2	3400	520	.31*	610	.33*
WBR	0	0	630	.37	510	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.85

40. Manchester & Orangewood

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	430	.13*	550	.16*
SBT	3	5100	320	.08	120	.04
SBR	0	0	110		100	.06
EBL	0	0	0		0	
EBT	3	5100	1160	.23*	720	.14
EBR	1	1700	480	.28	570	.34
WBL	2	3400	10	.00	30	.01
WBT	3	5100	230	.05	940	.18*
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.01*	EBR	.08*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.42		.47

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	1060	.31*	680	.20*
SBT	3	5100	240	.07	100	.03
SBR	0	0	110		90	.05
EBL	0	0	0		0	
EBT	3	5100	1730	.34*	820	.16
EBR	1	1700	560	.33	640	.38
WBL	2	3400	40	.01*	370	.11
WBT	3	5100	240	.05	1480	.29*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.07*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.61

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	1060	.31*	680	.20*
SBT	3	5100	270	.07	110	.03
SBR	0	0	110		90	.05
EBL	0	0	0		0	
EBT	3	5100	1730	.34*	820	.16
EBR	1	1700	560	.33	640	.38
WBL	2	3400	40	.01*	370	.11
WBT	3	5100	240	.05	1490	.29*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.07*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.61

41. Anaheim Blvd & Orangewood

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		60	.04*	160	.09*
NBT	3.5	6800	30	.01	220	.04
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3400	120	.04	190	.06*
EBT	3	5100	1470	.29*	1080	.21
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5100	190	.04	810	.16*
WBR	1	1700	420	.25	660	.39
Right Turn Adjustment					WBR	.19*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.38		.55

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		40	.02*	160	.09*
NBT	3.5	6800	40	.01	200	.04
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3400	100	.03	190	.06*
EBT	3	5100	2690	.53*	1300	.25
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5100	230	.05	1700	.33*
WBR	1	1700	500	.29	1100	.65
Right Turn Adjustment					WBR	.28*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.81

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		40	.02*	160	.09*
NBT	3.5	6800	40	.01	220	.04
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3400	100	.03	190	.06*
EBT	3	5100	2690	.53*	1300	.25
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5100	230	.05	1700	.33*
WBR	1	1700	500	.29	1110	.65
Right Turn Adjustment					WBR	.28*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.81

42. I-5 NB Off-Ramp & Chapman

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	760	.45*	680	.40*
NBT	0	0	0		0	
NBR	1	1700	180	.11	40	.02
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	900	.26	1090	.32
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	970	.29*	1630	.48*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.79		.93

43. The City Dr & Medical Center Dr

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03*	80	.05
NBT	4	6800	730	.12	1440	.22*
NBR	0	0	70		50	
SBL	1	1700	200	.12	80	.05*
SBT	4	6800	1560	.24*	1290	.20
SBR	0	0	100		100	
EBL	1	1700	100	.06*	90	.05*
EBT	1	1700	0	.03	0	.04
EBR	0	0	50		60	
WBL	1	1700	50	.03	80	.05
WBT	0.5	1700	10	.09*	10	.09*
WBR	0.5		150		150	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.47		.46

Year 2010 - no Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	190	.11*	90	.05
NBT	4	6800	970	.15	1800	.27*
NBR	0	0	70		50	
SBL	1	1700	260	.15	100	.06*
SBT	4	6800	1850	.31*	1550	.25
SBR	0	0	270		140	
EBL	1	1700	130	.08*	290	.17*
EBT	0	0	0		0	
EBR	1	1700	70	.04	200	.12
WBL	1	1700	50	.03	80	.05
WBT	1	1700	10	.09*	10	.09*
WBR	0	0	150		150	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.64		.64

Year 2010 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	190	.11*	90	.05
NBT	4	6800	1033	.16	1775	.27*
NBR	0	0	50		46	
SBL	1	1700	158	.09	80	.05*
SBT	4	6800	1812	.31*	1595	.26
SBR	0	0	270		140	
EBL	1	1700	130	.08*	290	.17*
EBT	0	0	0		0	
EBR	1	1700	70	.04	200	.12
WBL	1	1700	46	.03	65	.04
WBT	1	1700	10	.08*	10	.05*
WBR	0	0	130		73	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.63		.59

Year 2010 - with Project w/off-site parking (State College Warehouse/Equity Partners Lots)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	190	.11*	90	.05
NBT	4	6800	996	.16	1786	.27*
NBR	0	0	60		48	
SBL	1	1700	209	.12	90	.05*
SBT	4	6800	1830	.31*	1568	.25
SBR	0	0	270		140	
EBL	1	1700	130	.08*	290	.17*
EBT	0	0	0		0	
EBR	1	1700	70	.04	200	.12
WBL	1	1700	48	.03	72	.04
WBT	1	1700	10	.09*	10	.07*
WBR	0	0	140		111	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.64		.61

43. The City Dr & Medical Center Dr

Year 2010 - with Project w/off-site parking (Edison Field Lot)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	190	.11*	90	.05
NBT	4	6800	1021	.16	1773	.27*
NBR	0	0	50		46	
SBL	1	1700	158	.09	80	.05*
SBT	4	6800	1810	.31*	1586	.25
SBR	0	0	270		140	
EBL	1	1700	130	.08*	290	.17*
EBT	0	0	0		0	
EBR	1	1700	70	.04	200	.12
WBL	1	1700	46	.03	65	.04
WBT	1	1700	10	.08*	10	.05*
WBR	0	0	130		73	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.63		.59

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	210	.12	100	.06*
NBT	4	6800	1990	.30*	1780	.27
NBR	0	0	70		50	
SBL	1	1700	150	.09*	90	.05
SBT	4	6800	1350	.23	2040	.32*
SBR	0	0	240		160	
EBL	1	1700	140	.08*	280	.16*
EBT	0	0	0		0	
EBR	1	1700	70	.04	200	.12
WBL	1	1700	40	.02	80	.05
WBT	1	1700	10	.09*	10	.08*
WBR	0	0	150		120	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.61		.67

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	210	.12	100	.06*
NBT	4	6800	2020	.31*	1950	.29
NBR	0	0	70		50	
SBL	1	1700	470	.28*	150	.09
SBT	4	6800	1580	.27	2100	.33*
SBR	0	0	240		160	
EBL	1	1700	140	.08*	280	.16*
EBT	0	0	0		0	
EBR	1	1700	70	.04	200	.12
WBL	1	1700	40	.02	80	.05
WBT	1	1700	10	.11*	10	.13*
WBR	0	0	180		210	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.73

Year 2020 - with Project w/off-site parking

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	210	.12	100	.06*
NBT	4	6800	2020	.31*	1870	.28
NBR	0	0	70		50	
SBL	1	1700	470	.28*	150	.09
SBT	4	6800	1580	.27	2100	.33*
SBR	0	0	240		160	
EBL	1	1700	140	.08*	280	.16*
EBT	0	0	0		0	
EBR	1	1700	70	.04	200	.12
WBL	1	1700	40	.02	80	.05
WBT	1	1700	10	.11*	10	.13*
WBR	0	0	180		210	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.73

43. The City Dr & Medical Center Dr

Year 2020 - with Project w/mitigation

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	210	.12	100	.06*
NBT	4	6800	2020	.31*	1950	.29
NBR	0	0	70		50	
SBL	2	3400	470	.14*	150	.04
SBT	4	6800	1580	.27	2100	.33*
SBR	0	0	240		160	
EBL	1	1700	140	.08*	280	.16*
EBT	0	0	0		0	
EBR	1	1700	70	.04	200	.12
WBL	1	1700	40	.02	80	.05
WBT	1	1700	10	.11*	10	.13*
WBR	0	0	180		210	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.69		.73

44. The City Dr & Orange Cndr

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06*	150	.04*
NBT	4	6800	940	.14	1180	.17
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	1170	.17*	1460	.21*
SBR	1	1700	200	.12	150	.09
EBL	2	3400	10	.00	20	.01*
EBT	0	0	0		0	
EBR	2	3400	200	.06	250	.07
WBL	0	0	0		0	
WBT	1	1700	0	.00*	0	.00*
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.01*	EBR	.03*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.29		.34

Year 2010 - no Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	190	.06*	140	.04
NBT	4	6800	1750	.26	2140	.31*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	1480	.22*	1770	.26
SBR	1	1700	210	.12	160	.09
EBL	1	1700	10	.01*	20	.01*
EBT	0	0	0		0	
EBR	1	1700	200	.12	250	.15
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.06*	EBR	.10*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.40		.47

Year 2010 - with Project w/off-site parking (State College Warehouse/Equity Partners Lots)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	190	.06*	140	.04*
NBT	4	6800	1814	.27	2141	.31
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	1477	.22*	1818	.27*
SBR	1	1700	210	.12	160	.09
EBL	1	1700	10	.01*	20	.01*
EBT	0	0	0		0	
EBR	1	1700	200	.12	250	.15
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.06*	EBR	.11*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.40		.48

Year 2010 - with Project w/off-site parking (Edison Field Lot)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	190	.06	140	.04
NBT	4	6800	1878	.28*	2142	.32*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	1475	.22	1865	.27
SBR	1	1700	210	.12	160	.09
EBL	1	1700	10	.01*	20	.01*
EBT	0	0	0		0	
EBR	1	1700	200	.12	250	.15
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.06*	EBR	.10*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.40		.48

45. SR-22 WB Ramps & The Block Dr

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	970	.29*	670	.20*
NBT	0	0	0		0	
NBR	2	3400	520	.15	190	.06
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	180	.05*	280	.08*
EBR	2	3400	160	.05	930	.27
WBL	2	3400	140	.04*	370	.11*
WBT	2	3400	220	.06	430	.13
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.43		.48

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	920	.27*	750	.22*
NBT	0	0	0		0	
NBR	2	3400	610	.18	160	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	350	.10*	380	.11*
EBR	2	3400	170	.05	990	.29
WBL	2	3400	140	.04*	420	.12*
WBT	2	3400	240	.07	480	.14
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.46		.51

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	920	.27*	750	.22*
NBT	0	0	0		0	
NBR	2	3400	700	.21	170	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	350	.10*	380	.11*
EBR	2	3400	190	.06	1080	.32
WBL	2	3400	140	.04*	430	.13*
WBT	2	3400	240	.07	480	.14
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.46		.55

46. N. Stadium & Katella

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01	10	.01
NBT	0.5	3400	10	.01*	10	.01*
NBR	1.5		20		20	
SBL	1	1700	80	.05*	200	.12*
SBT	1	1700	0	.00	0	.00
SBR	1	1700	60	.04	150	.09
EBL	1	1700	50	.03*	60	.04*
EBT	3	5100	1080	.21	1210	.24
EBR	0	0	10		10	
WBL	1	1700	10	.01	10	.01
WBT	3	5100	1030	.20*	1440	.28*
WBR	1	1700	150	.09	200	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.34		.50

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	10	.00	40	.01
NBT	0.5	3400	10	.01*	20	{.05}*
NBR	1.5		20		200	
SBL	1	1700	80	.05*	210	.12*
SBT	1	1700	0	.00	10	.01
SBR	1	1700	60	.04	130	.08
EBL	1	1700	60	.04	60	.04*
EBT	3	5100	1450	.28*	1620	.32
EBR	1	1700	10	.01	50	.03
WBL	2	3400	10	.00	90	.03
WBT	3	5100	1150	.23	1560	.31*
WBR	1	1700	120	.07	180	.11
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.57

Year 2020 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	20	.01	90	.03
NBT	0.5	3400	10	{.01}*	20	{.16}*
NBR	1.5		150		590	
SBL	1	1700	90	.05*	240	.14*
SBT	1	1700	0	.00	10	.01
SBR	1	1700	50	.03	120	.07
EBL	1	1700	40	.02*	40	.02
EBT	3	5100	1220	.24	2160	.42*
EBR	1	1700	90	.05	50	.03
WBL	2	3400	200	.06	160	.05*
WBT	3	5100	1910	.37*	1560	.31
WBR	1	1700	160	.09	200	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.50		.82

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	20	.01	90	.03
NBT	0.5	3400	10	{.01}*	20	{.16}*
NBR	1.5		150		590	
SBL	1	1700	90	.05*	240	.14*
SBT	1	1700	0	.00	10	.01
SBR	1	1700	50	.03	120	.07
EBL	1	1700	40	.02*	40	.02
EBT	3	5100	1220	.24	2160	.42*
EBR	1	1700	90	.05	50	.03
WBL	2	3400	200	.06	160	.05*
WBT	3	5100	1930	.38*	1570	.31
WBR	1	1700	160	.09	200	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.82

47. State College & Entrance

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	790	.15	1870	.37*
NBR	0	0	0		0	
SBL	2	3400	0	.00	0	.00
SBT	3	5100	1620	.32*	1480	.29
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	0	.00	0	.00
WBT	0	0	0		0	
WBR	1	1700	0	.00	0	.00
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.37		.42

Year 2010 - No Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1250	.25	2410	.51*
NBR	0	0	10		200	
SBL	1	1700	10	.01	60	.04*
SBT	3	5100	1920	.38*	1610	.32
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	10	.01*	160	.09*
WBT	0	0	0		0	
WBR	1	1700	10	.01	70	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.44		.69

Year 2020 - No Project

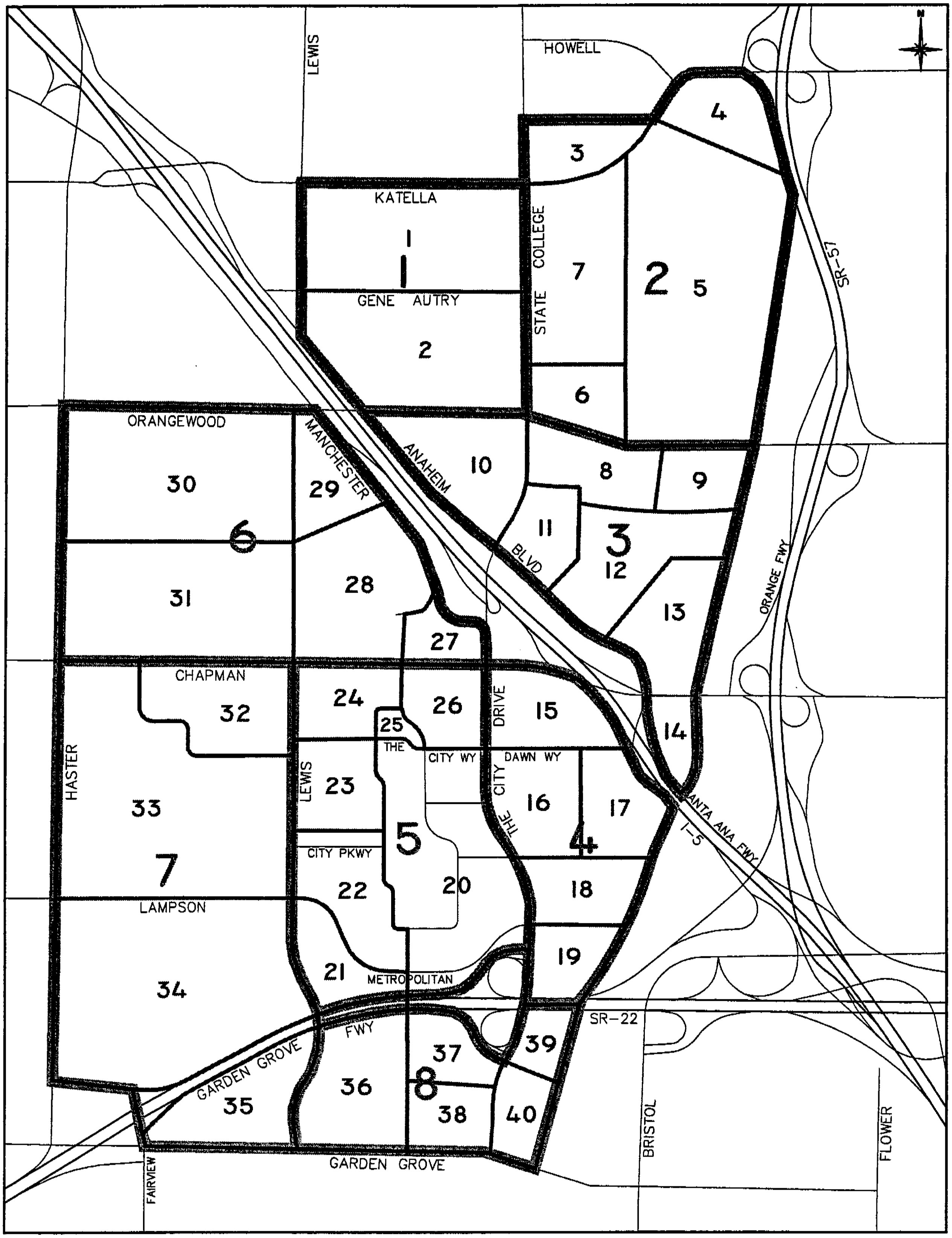
	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1490	.33	3440	.73*
NBR	0	0	200		260	
SBL	1	1700	70	.04	130	.08*
SBT	3	5100	3180	.62*	2040	.40
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	0	.00	220	.13*
WBT	0	0	0		0	
WBR	1	1700	50	.03	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.67		.99

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1500	.33	3460	.73*
NBR	0	0	200		260	
SBL	1	1700	70	.04	130	.08*
SBT	3	5100	3220	.63*	2050	.40
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	0	.00	220	.13*
WBT	0	0	0		0	
WBR	1	1700	50	.03	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.99

APPENDIX B

WOCS TRAFFIC MODEL LAND USE



Legend

Traffic Zone
Sub-Area

Figure B-1

WEST ORANGE CIRCULATION STUDY TRAFFIC ZONES

LAND USE AND TRIP GENERATION SUMMARY

Zone	Land Use Category	Units	--- Base Year -- Amount	ADT	----- 2005 ----- Amount	ADT	----- 2010 ----- Amount	ADT	----- 2020 ---- Amount	ADT
1	9. General Commercial	TSF	15	644	15	644	15	644	190	8,155
	11. Office	TSF	500	5,505	500	5,505	500	5,505	1,780	19,598
	13. Industrial	TSF	719	5,011	719	5,011	719	5,011	699	4,872
	16. Hotel	ROOM	133	1,095	133	1,095	133	1,095	133	1,095
	SUB-TOTAL			12,255		12,255		12,255		33,720
2	9. General Commercial	TSF	40	1,717	40	1,717	40	1,717	159	6,824
	11. Office	TSF	380	4,184	380	4,184	380	4,184	2,222	24,464
	13. Industrial	TSF	540	3,764	540	3,764	540	3,764	--	--
	16. Hotel	ROOM	400	3,292	400	3,292	400	3,292	400	3,292
	SUB-TOTAL			12,957		12,957		12,957		34,580
3	9. General Commercial	TSF	68	2,919	68	2,919	68	2,919	68	2,919
	11. Office	TSF	80	881	80	881	80	881	80	881
	16. Hotel	ROOM	150	1,234	150	1,234	150	1,234	150	1,234
	SUB-TOTAL			5,034		5,034		5,034		5,034
4	9. General Commercial	TSF	10	429	10	429	10	429	80	3,434
	11. Office	TSF	240	2,642	240	2,642	240	2,642	630	6,936
	SUB-TOTAL			3,071		3,071		3,071		10,370
5	35. Anaheim Stadium	SG	100	2,000	100	2,000	100	2,000	100	2,000
	SUB-TOTAL			2,000		2,000		2,000		2,000
6	11. Office	TSF	21	231	21	231	21	231	160	1,762
	13. Industrial	TSF	87	606	87	606	87	606	--	--
	SUB-TOTAL			837		837		837		1,762
7	37. Gotcha Glacier	SG	--	--	1,000	8,330	1,000	8,330	--	--
	38. Sportstown	SG	49	1,549	49	1,549	49	1,549	900	28,458
	SUB-TOTAL			1,549		9,879		9,879		28,458
8	9. General Commercial	TSF	17	730	17	730	17	730	40	1,717
	11. Office	TSF	60	661	60	661	60	661	441	4,855
	13. Industrial	TSF	120	836	120	836	120	836	282	1,966
	SUB-TOTAL			2,227		2,227		2,227		8,538
9	11. Office	TSF	70	771	70	771	70	771	441	4,855
	13. Industrial	TSF	110	767	110	767	110	767	282	1,966
	SUB-TOTAL			1,538		1,538		1,538		6,821
10	10. Restaurant	TSF	40	5,214	40	5,214	40	5,214	40	5,214
	11. Office	TSF	290	3,193	290	3,193	290	3,193	790	8,698
	16. Hotel	ROOM	230	1,893	230	1,893	230	1,893	230	1,893
	SUB-TOTAL			10,300		10,300		10,300		15,805
11	9. General Commercial	TSF	--	--	--	--	--	--	119	5,107
	11. Office	TSF	--	--	--	--	--	--	1,000	11,010
	SUB-TOTAL			--		--		--		16,117

LAND USE AND TRIP GENERATION SUMMARY

Zone	Land Use Category	Units	--- Base Year --		----- 2005 -----		----- 2010 -----		----- 2020 -----	
			Amount	ADT	Amount	ADT	Amount	ADT	Amount	ADT
12	5. Mobile Home	DU	203	976	203	976	203	976	--	--
	9. General Commercial	TSF	--	--	--	--	--	--	200	8,584
	16. Hotel	ROOM	104	856	104	856	104	856	--	--
	SUB-TOTAL			1,832		1,832		1,832		8,584
13	11. Office	TSF	60	661	60	661	60	661	1,000	11,010
	16. Hotel	ROOM	100	823	100	823	100	823	--	--
	SUB-TOTAL			1,484		1,484		1,484		11,010
14	10. Restaurant	TSF	20	2,607	20	2,607	20	2,607	20	2,607
	11. Office	TSF	240	2,642	240	2,642	240	2,642	240	2,642
	16. Hotel	ROOM	153	1,259	153	1,259	153	1,259	153	1,259
	SUB-TOTAL			6,508		6,508		6,508		6,508
15	12. Medical Office	SG	100	9,522	100	9,522	100	9,522	208	19,806
	19. Hospital	BED	382	4,278	382	4,278	524	5,869	524	5,869
	SUB-TOTAL			13,800		13,800		15,391		25,675
16	11. Office	TSF	131	1,442	131	1,442	131	1,442	131	1,442
	SUB-TOTAL			1,442		1,442		1,442		1,442
17	29. County Facil. (SG)	UNIT	550	5,500	550	5,500	550	5,500	650	6,500
	SUB-TOTAL			5,500		5,500		5,500		6,500
18	11. Office	TSF	100	1,101	100	1,101	100	1,101	100	1,101
	SUB-TOTAL			1,101		1,101		1,101		1,101
19	11. Office	TSF	31	341	31	341	31	341	31	341
	SUB-TOTAL			341		341		341		341
20	39. The Block	TSF	811	35,497	1,061	46,440	1,061	46,440	1,061	46,440
	SUB-TOTAL			35,497		46,440		46,440		46,440
21	11. Office	TSF	134	1,475	134	1,475	134	1,475	134	1,475
	SUB-TOTAL			1,475		1,475		1,475		1,475
22	11. Office	TSF	527	5,802	527	5,802	1,087	11,968	1,087	11,968
	SUB-TOTAL			5,802		5,802		11,968		11,968
23	4. Res - High/Apt.	DU	440	2,917	440	2,917	440	2,917	440	2,917
	SUB-TOTAL			2,917		2,917		2,917		2,917
24	10. Restaurant	TSF	45	5,865	45	5,865	45	5,865	45	5,865
	11. Office	TSF	344	3,787	344	3,787	344	3,787	344	3,787
	SUB-TOTAL			9,652		9,652		9,652		9,652
25	11. Office	TSF	420	4,624	420	4,624	420	4,624	420	4,624
	SUB-TOTAL			4,624		4,624		4,624		4,624
26	11. Office	TSF	--	--	465	5,120	465	5,120	465	5,120

LAND USE AND TRIP GENERATION SUMMARY

Zone	Land Use Category	Units	--- Base Year -- Amount	ADT	----- 2005 ----- Amount	ADT	----- 2010 ----- Amount	ADT	----- 2020 ----- Amount	ADT
26	16. Hotel	ROOM	460	3,786	460	3,786	460	3,786	460	3,786
	SUB-TOTAL			3,786		8,906		8,906		8,906
27	11. Office	TSF	--	--	132	1,453	132	1,453	132	1,453
	16. Hotel	ROOM	130	1,070	130	1,070	267	2,197	267	2,197
	SUB-TOTAL			1,070		2,523		3,650		3,650
28	5. Mobile Home	DU	174	837	174	837	174	837	174	837
	SUB-TOTAL			837		837		837		837
29	4. Res - High/Apt.	DU	80	530	80	530	80	530	80	530
	SUB-TOTAL			530		530		530		530
30	1. Res - Low	DU	184	1,761	184	1,761	184	1,761	184	1,761
	2. Res - Medium	DU	162	1,259	162	1,259	162	1,259	162	1,259
	3. Res - Med-High	DU	332	2,357	332	2,357	332	2,357	332	2,357
	9. General Commercial	TSF	5	215	5	215	5	215	5	215
	SUB-TOTAL			5,592		5,592		5,592		5,592
31	1. Res - Low	DU	184	1,761	184	1,761	184	1,761	184	1,761
	2. Res - Medium	DU	162	1,259	162	1,259	162	1,259	162	1,259
	3. Res - Med-High	DU	332	2,357	332	2,357	332	2,357	332	2,357
	9. General Commercial	TSF	5	215	5	215	5	215	5	215
	SUB-TOTAL			5,592		5,592		5,592		5,592
32	36. Crystal Cathedral	SG	100	1,000	100	1,000	100	1,000	100	1,000
	SUB-TOTAL			1,000		1,000		1,000		1,000
33	1. Res - Low	DU	325	3,110	325	3,110	325	3,110	325	3,110
	3. Res - Med-High	DU	857	6,085	857	6,085	857	6,085	857	6,085
	5. Mobile Home	DU	89	428	89	428	89	428	89	428
	9. General Commercial	TSF	70	3,004	70	3,004	70	3,004	70	3,004
	11. Office	TSF	400	4,404	400	4,404	400	4,404	400	4,404
	24. Elementary School	STU	400	580	400	580	400	580	400	580
	SUB-TOTAL			17,611		17,611		17,611		17,611
34	1. Res - Low	DU	325	3,110	325	3,110	325	3,110	325	3,110
	3. Res - Med-High	DU	577	4,097	577	4,097	577	4,097	577	4,097
	5. Mobile Home	DU	250	1,203	250	1,203	250	1,203	250	1,203
	SUB-TOTAL			8,410		8,410		8,410		8,410
35	1. Res - Low	DU	50	479	50	479	50	479	--	--
	4. Res - High/Apt.	DU	--	--	--	--	--	--	50	332
	9. General Commercial	TSF	30	1,288	30	1,288	30	1,288	30	1,288
	11. Office	TSF	200	2,202	200	2,202	200	2,202	200	2,202
	SUB-TOTAL			3,969		3,969		3,969		3,822
36	4. Res - High/Apt.	DU	620	4,111	620	4,111	620	4,111	620	4,111
	9. General Commercial	TSF	60	2,575	60	2,575	60	2,575	60	2,575
	SUB-TOTAL			6,686		6,686		6,686		6,686

LAND USE AND TRIP GENERATION SUMMARY

Zone	Land Use Category	Units	--- Base Year -- Amount	ADT	----- 2005 ----- Amount	ADT	----- 2010 ----- Amount	ADT	----- 2020 ---- Amount	AD
37	2. Res - Medium	DU	208	1,616	208	1,616	208	1,616	208	1,61
	11. Office	TSF	80	881	80	881	80	881	80	88
	SUB-TOTAL			2,497		2,497		2,497		2,49
38	11. Office	TSF	260	2,863	260	2,863	260	2,863	260	2,86
	16. Hotel	ROOM	142	1,169	142	1,169	142	1,169	142	1,16
	SUB-TOTAL			4,032		4,032		4,032		4,03
39	11. Office	TSF	150	1,652	150	1,652	150	1,652	150	1,65
	SUB-TOTAL			1,652		1,652		1,652		1,65
40	11. Office	TSF	100	1,101	100	1,101	100	1,101	100	1,10
	SUB-TOTAL			1,101		1,101		1,101		1,10

LAND USE AND TRIP GENERATION SUMMARY

Zone	Land Use Category	Units	--- Base Year --		----- 2005 -----		----- 2010 -----		----- 2020 -----	
			Amount	ADT	Amount	ADT	Amount	ADT	Amount	ADT
TOTAL	1. Res - Low	DU	1,068	10,221	1,068	10,221	1,068	10,221	1,018	9,742
	2. Res - Medium	DU	532	4,134	532	4,134	532	4,134	532	4,134
	3. Res - Med-High	DU	2,098	14,896	2,098	14,896	2,098	14,896	2,098	14,896
	4. Res - High/Apt.	DU	1,140	7,558	1,140	7,558	1,140	7,558	1,190	7,890
	5. Mobile Home	DU	716	3,444	716	3,444	716	3,444	513	2,468
	9. General Commercial	TSF	320	13,736	320	13,736	320	13,736	1,026	44,037
	10. Restaurant	TSF	105	13,686	105	13,686	105	13,686	105	13,686
	11. Office	TSF	4,818	53,046	5,415	59,619	5,975	65,785	12,818	141,125
	12. Medical Office	SG	100	9,522	100	9,522	100	9,522	208	19,806
	13. Industrial	TSF	1,576	10,984	1,576	10,984	1,576	10,984	1,263	8,804
	16. Hotel	ROOM	2,002	16,477	2,002	16,477	2,139	17,604	1,935	15,925
	19. Hospital	BED	382	4,278	382	4,278	524	5,869	524	5,869
	24. Elementary School	STU	400	580	400	580	400	580	400	580
	29. County Facil. (SG)	UNIT	550	5,500	550	5,500	550	5,500	650	6,500
	35. Anaheim Stadium	SG	100	2,000	100	2,000	100	2,000	100	2,000
	36. Crystal Cathedral	SG	100	1,000	100	1,000	100	1,000	100	1,000
	37. Gotcha Glacier	SG	--	--	1,000	8,330	1,000	8,330	--	--
	38. Sportstown	SG	49	1,549	49	1,549	49	1,549	900	28,458
	39. The Block	TSF	811	35,497	1,061	46,440	1,061	46,440	1,061	46,440
	TOTAL			208,108		233,954		242,838		373,360

APPENDIX C

TRIP GENERATION COUNT DATA

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.006

LOCATION - THE CITY DR(IN MEDICAL CNTR)-S/O DAWN VOLUMES FOR - TUESDAY 8/17/99

AM TIME	NB		SB		TOTAL		PM TIME	NB		SB		TOTAL	
12:00 - 12:15	-		-		-		12:00 - 12:15	53		40		93	
12:15 - 12:30	-		-		-		12:15 - 12:30	37		35		72	
12:30 - 12:45	-		-		-		12:30 - 12:45	32		28		60	
12:45 - 1:00	-	-	-	-	-	-	12:45 - 1:00	28	150	28	131	56	281
1:00 - 1:15	-		-		-		1:00 - 1:15	22		24		46	
1:15 - 1:30	-		-		-		1:15 - 1:30	20		41		61	
1:30 - 1:45	-		-		-		1:30 - 1:45	21		27		48	
1:45 - 2:00	-	-	-	-	-	-	1:45 - 2:00	24	87	36	128	60	215
2:00 - 2:15	-		-		-		2:00 - 2:15	34		32		66	
2:15 - 2:30	-		-		-		2:15 - 2:30	19		32		51	
2:30 - 2:45	-		-		-		2:30 - 2:45	27		28		55	
2:45 - 3:00	-	-	-	-	-	-	2:45 - 3:00	31	111	32	124	63	235
3:00 - 3:15	-		-		-		3:00 - 3:15	25		19		44	
3:15 - 3:30	-		-		-		3:15 - 3:30	26		22		48	
3:30 - 3:45	-		-		-		3:30 - 3:45	60		44		104	
3:45 - 4:00	-	-	-	-	-	-	3:45 - 4:00	37	148	35	120	72	268
4:00 - 4:15	-		-		-		4:00 - 4:15	32		32		64	
4:15 - 4:30	-		-		-		4:15 - 4:30	39		25		64	
4:30 - 4:45	-		-		-		4:30 - 4:45	38		30		68	
4:45 - 5:00	-	-	-	-	-	-	4:45 - 5:00	44	153	39	126	83	279
5:00 - 5:15	-		-		-		5:00 - 5:15	60		33		93	
5:15 - 5:30	-		-		-		5:15 - 5:30	44		27		71	
5:30 - 5:45	-		-		-		5:30 - 5:45	23		19		42	
5:45 - 6:00	-	-	-	-	-	-	5:45 - 6:00	26	153	20	99	46	252
6:00 - 6:15	-		-		-		6:00 - 6:15	20		13		33	
6:15 - 6:30	-		-		-		6:15 - 6:30	15		9		24	
6:30 - 6:45	-		-		-		6:30 - 6:45	16		11		27	
6:45 - 7:00	-	-	-	-	-	-	6:45 - 7:00	14	65	12	45	26	110
7:00 - 7:15	-		-		-		7:00 - 7:15	15		10		25	
7:15 - 7:30	-		-		-		7:15 - 7:30	10		4		14	
7:30 - 7:45	-		-		-		7:30 - 7:45	10		6		16	
7:45 - 8:00	-	-	-	-	-	-	7:45 - 8:00	14	49	10	30	24	79
8:00 - 8:15	-		-		-		8:00 - 8:15	4		8		12	
8:15 - 8:30	-		-		-		8:15 - 8:30	9		5		14	
8:30 - 8:45	-		-		-		8:30 - 8:45	12		12		24	
8:45 - 9:00	-	-	-	-	-	-	8:45 - 9:00	11	36	9	34	20	70
9:00 - 9:15	-		-		-		9:00 - 9:15	9		5		14	
9:15 - 9:30	-		-		-		9:15 - 9:30	6		7		13	
9:30 - 9:45	-		-		-		9:30 - 9:45	8		2		10	
9:45 - 10:00	-	-	-	-	-	-	9:45 - 10:00	4	27	10	24	14	51
10:00 - 10:15	37		26		63		10:00 - 10:15	6		6		12	
10:15 - 10:30	26		26		52		10:15 - 10:30	7		6		13	
10:30 - 10:45	59		47		106		10:30 - 10:45	6		3		9	
10:45 - 11:00	20	142	31	130	51	272	10:45 - 11:00	4	23	2	17	6	40
11:00 - 11:15	21		38		59		11:00 - 11:15	5		4		9	
11:15 - 11:30	24		33		57		11:15 - 11:30	3		3		6	
11:30 - 11:45	54		45		99		11:30 - 11:45	6		2		8	
11:45 - 12:00	40	139	41	157	81	296	11:45 - 12:00	1	15	1	10	2	25
TOTALS		281		287		568			1,017		888		1,905
ADT'S									1,298		1,175		2,473

LOCATION - THE CITY DR(IN MEDICAL CNTR)-S/O DAWN

VOLUMES FOR - WEDNESDAY 8/18/99

AM							PM						
TIME	NB		SB		TOTAL		TIME	NB		SB		TOTAL	
12:00 - 12:15	1		1		2		12:00 - 12:15	36		36		72	
12:15 - 12:30	0		3		3		12:15 - 12:30	41		39		80	
12:30 - 12:45	1		1		2		12:30 - 12:45	21		28		49	
12:45 - 1:00	4	6	4	9	8	15	12:45 - 1:00	14	112	19	122	33	234
1:00 - 1:15	3		3		6		1:00 - 1:15	19		29		48	
1:15 - 1:30	0		0		0		1:15 - 1:30	22		28		50	
1:30 - 1:45	0		0		0		1:30 - 1:45	22		48		70	
1:45 - 2:00	0	3	0	3	0	6	1:45 - 2:00	26	89	42	147	68	236
2:00 - 2:15	2		2		4		2:00 - 2:15	28		32		60	
2:15 - 2:30	0		1		1		2:15 - 2:30	30		36		66	
2:30 - 2:45	1		1		2		2:30 - 2:45	31		28		59	
2:45 - 3:00	0	3	0	4	0	7	2:45 - 3:00	23	112	22	118	45	230
3:00 - 3:15	1		1		2		3:00 - 3:15	29		28		57	
3:15 - 3:30	0		2		2		3:15 - 3:30	26		17		43	
3:30 - 3:45	2		2		4		3:30 - 3:45	32		32		64	
3:45 - 4:00	1	4	0	5	1	9	3:45 - 4:00	29	116	17	94	46	210
4:00 - 4:15	1		3		4		4:00 - 4:15	33		23		56	
4:15 - 4:30	0		0		0		4:15 - 4:30	22		11		33	
4:30 - 4:45	1		1		2		4:30 - 4:45	24		24		48	
4:45 - 5:00	0	2	1	5	1	7	4:45 - 5:00	40	119	34	92	74	211
5:00 - 5:15	2		2		4		5:00 - 5:15	46		41		87	
5:15 - 5:30	4		5		9		5:15 - 5:30	32		16		48	
5:30 - 5:45	2		10		12		5:30 - 5:45	18		18		36	
5:45 - 6:00	2	10	6	23	8	33	5:45 - 6:00	20	116	13	88	33	204
6:00 - 6:15	7		21		28		6:00 - 6:15	28		18		46	
6:15 - 6:30	0		12		12		6:15 - 6:30	19		11		30	
6:30 - 6:45	8		12		20		6:30 - 6:45	10		11		21	
6:45 - 7:00	8	23	26	71	34	94	6:45 - 7:00	18	75	14	54	32	129
7:00 - 7:15	10		29		39		7:00 - 7:15	13		9		22	
7:15 - 7:30	6		30		36		7:15 - 7:30	12		10		22	
7:30 - 7:45	12		38		50		7:30 - 7:45	10		6		16	
7:45 - 8:00	10	38	40	137	50	175	7:45 - 8:00	12	47	4	29	16	76
8:00 - 8:15	17		37		54		8:00 - 8:15	11		13		24	
8:15 - 8:30	8		18		26		8:15 - 8:30	14		4		18	
8:30 - 8:45	14		30		44		8:30 - 8:45	3		5		8	
8:45 - 9:00	30	69	33	118	63	187	8:45 - 9:00	14	42	7	29	21	71
9:00 - 9:15	16		22		38		9:00 - 9:15	10		6		16	
9:15 - 9:30	28		36		64		9:15 - 9:30	6		2		8	
9:30 - 9:45	24		30		54		9:30 - 9:45	4		6		10	
9:45 - 10:00	31	99	33	121	64	220	9:45 - 10:00	2	22	4	18	6	40
10:00 - 10:15	28		41		69		10:00 - 10:15	13		6		19	
10:15 - 10:30	18		29		47		10:15 - 10:30	2		3		5	
10:30 - 10:45	24		32		56		10:30 - 10:45	10		5		15	
10:45 - 11:00	12	82	26	128	38	210	10:45 - 11:00	3	28	4	18	7	46
11:00 - 11:15	16		24		40		11:00 - 11:15	5		5		10	
11:15 - 11:30	23		25		48		11:15 - 11:30	2		1		3	
11:30 - 11:45	32		28		60		11:30 - 11:45	5		2		7	
11:45 - 12:00	32	103	34	111	66	214	11:45 - 12:00	1	13	1	9	2	22
TOTALS		442		735		1,177			891		818		1,709
ADT'S									1,333		1,553		2,886

LOCATION - THE CITY DR(IN MEDICAL CNTR)-S/O DAWN VOLUMES FOR - THURSDAY 8/19/99

AM							PM						
TIME	NB		SB		TOTAL		TIME	NB		SB		TOTAL	
12:00 - 12:15	2		2		4		12:00 - 12:15	-		-		-	
12:15 - 12:30	0		0		0		12:15 - 12:30	-		-		-	
12:30 - 12:45	0		0		0		12:30 - 12:45	-		-		-	
12:45 - 1:00	3	5	2	4	5	9	12:45 - 1:00	-	-	-	-	-	-
1:00 - 1:15	3		2		5		1:00 - 1:15	-		-		-	
1:15 - 1:30	1		3		4		1:15 - 1:30	-		-		-	
1:30 - 1:45	0		0		0		1:30 - 1:45	-		-		-	
1:45 - 2:00	0	4	1	6	1	10	1:45 - 2:00	-	-	-	-	-	-
2:00 - 2:15	4		4		8		2:00 - 2:15	-		-		-	
2:15 - 2:30	2		2		4		2:15 - 2:30	-		-		-	
2:30 - 2:45	1		1		2		2:30 - 2:45	-		-		-	
2:45 - 3:00	2	9	2	9	4	18	2:45 - 3:00	-	-	-	-	-	-
3:00 - 3:15	0		0		0		3:00 - 3:15	-		-		-	
3:15 - 3:30	0		3		3		3:15 - 3:30	-		-		-	
3:30 - 3:45	0		2		2		3:30 - 3:45	-		-		-	
3:45 - 4:00	0	0	0	5	0	5	3:45 - 4:00	-	-	-	-	-	-
4:00 - 4:15	4		6		10		4:00 - 4:15	-		-		-	
4:15 - 4:30	1		3		4		4:15 - 4:30	-		-		-	
4:30 - 4:45	1		2		3		4:30 - 4:45	-		-		-	
4:45 - 5:00	1	7	2	13	3	20	4:45 - 5:00	-	-	-	-	-	-
5:00 - 5:15	2		3		5		5:00 - 5:15	-		-		-	
5:15 - 5:30	1		3		4		5:15 - 5:30	-		-		-	
5:30 - 5:45	4		6		10		5:30 - 5:45	-		-		-	
5:45 - 6:00	3	10	9	21	12	31	5:45 - 6:00	-	-	-	-	-	-
6:00 - 6:15	7		9		16		6:00 - 6:15	-		-		-	
6:15 - 6:30	6		17		23		6:15 - 6:30	-		-		-	
6:30 - 6:45	4		20		24		6:30 - 6:45	-		-		-	
6:45 - 7:00	12	29	32	78	44	107	6:45 - 7:00	-	-	-	-	-	-
7:00 - 7:15	7		19		26		7:00 - 7:15	-		-		-	
7:15 - 7:30	10		22		32		7:15 - 7:30	-		-		-	
7:30 - 7:45	9		27		36		7:30 - 7:45	-		-		-	
7:45 - 8:00	7	33	25	93	32	126	7:45 - 8:00	-	-	-	-	-	-
8:00 - 8:15	14		32		46		8:00 - 8:15	-		-		-	
8:15 - 8:30	12		23		35		8:15 - 8:30	-		-		-	
8:30 - 8:45	18		22		40		8:30 - 8:45	-		-		-	
8:45 - 9:00	22	66	26	103	48	169	8:45 - 9:00	-	-	-	-	-	-
9:00 - 9:15	22		18		40		9:00 - 9:15	-		-		-	
9:15 - 9:30	36		28		64		9:15 - 9:30	-		-		-	
9:30 - 9:45	22		29		51		9:30 - 9:45	-		-		-	
9:45 - 10:00	33	113	31	106	64	219	9:45 - 10:00	-	-	-	-	-	-
10:00 - 10:15	-		-		-		10:00 - 10:15	-		-		-	
10:15 - 10:30	-		-		-		10:15 - 10:30	-		-		-	
10:30 - 10:45	-		-		-		10:30 - 10:45	-		-		-	
10:45 - 11:00	-	-	-	-	-	-	10:45 - 11:00	-	-	-	-	-	-
11:00 - 11:15	-		-		-		11:00 - 11:15	-		-		-	
11:15 - 11:30	-		-		-		11:15 - 11:30	-		-		-	
11:30 - 11:45	-		-		-		11:30 - 11:45	-		-		-	
11:45 - 12:00	-	-	-	-	-	-	11:45 - 12:00	-	-	-	-	-	-
TOTALS		276		438		714			-		-		-
ADT'S									276		438		714

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.006

LOCATION - THE CITY DR(IN MEDICAL CNTR)-S/O DAWN AVERAGED VOLUMES FOR - TUESDAY 8/17/99 TO THURSDAY 8/19/99

AM							PM						
TIME	NB		SB		TOTAL		TIME	NB		SB		TOTAL	
12:00 - 12:15	2		2		4		12:00 - 12:15	45		38		83	
12:15 - 12:30	0		2		2		12:15 - 12:30	39		37		76	
12:30 - 12:45	1		1		2		12:30 - 12:45	27		28		55	
12:45 - 1:00	4	7	3	8	7	15	12:45 - 1:00	21	132	24	127	45	259
1:00 - 1:15	3		3		6		1:00 - 1:15	21		27		48	
1:15 - 1:30	1		2		3		1:15 - 1:30	21		35		56	
1:30 - 1:45	0		0		0		1:30 - 1:45	22		38		60	
1:45 - 2:00	0	4	1	6	1	10	1:45 - 2:00	25	89	39	139	64	228
2:00 - 2:15	3		3		6		2:00 - 2:15	31		32		63	
2:15 - 2:30	1		2		3		2:15 - 2:30	25		34		59	
2:30 - 2:45	1		1		2		2:30 - 2:45	29		28		57	
2:45 - 3:00	1	6	1	7	2	13	2:45 - 3:00	27	112	27	121	54	233
3:00 - 3:15	1		1		2		3:00 - 3:15	27		24		51	
3:15 - 3:30	0		3		3		3:15 - 3:30	26		20		46	
3:30 - 3:45	1		2		3		3:30 - 3:45	46		38		84	
3:45 - 4:00	1	3	0	6	1	9	3:45 - 4:00	33	132	26	108	59	240
4:00 - 4:15	3		5		8		4:00 - 4:15	33		28		61	
4:15 - 4:30	1		2		3		4:15 - 4:30	31		18		49	
4:30 - 4:45	1		2		3		4:30 - 4:45	31		27		58	
4:45 - 5:00	1	6	2	11	3	17	4:45 - 5:00	42	137	37	110	79	247
5:00 - 5:15	2		3		5		5:00 - 5:15	53		37		90	
5:15 - 5:30	3		4		7		5:15 - 5:30	38		22		60	
5:30 - 5:45	3		8		11		5:30 - 5:45	21		19		40	
5:45 - 6:00	3	11	8	23	11	34	5:45 - 6:00	23	135	17	95	40	230
6:00 - 6:15	7		15		22		6:00 - 6:15	24		16		40	
6:15 - 6:30	3		15		18		6:15 - 6:30	17		10		27	
6:30 - 6:45	6		16		22		6:30 - 6:45	13		11		24	
6:45 - 7:00	10	26	29	75	39	101	6:45 - 7:00	16	70	13	50	29	120
7:00 - 7:15	9		24		33		7:00 - 7:15	14		10		24	
7:15 - 7:30	8		26		34		7:15 - 7:30	11		7		18	
7:30 - 7:45	11		33		44		7:30 - 7:45	10		6		16	
7:45 - 8:00	9	37	33	116	42	153	7:45 - 8:00	13	48	7	30	20	78
8:00 - 8:15	16		35		51		8:00 - 8:15	8		11		19	
8:15 - 8:30	10		21		31		8:15 - 8:30	12		5		17	
8:30 - 8:45	16		26		42		8:30 - 8:45	8		9		17	
8:45 - 9:00	26	68	30	112	56	180	8:45 - 9:00	13	41	8	33	21	74
9:00 - 9:15	19		20		39		9:00 - 9:15	10		6		16	
9:15 - 9:30	32		32		64		9:15 - 9:30	6		5		11	
9:30 - 9:45	23		30		53		9:30 - 9:45	6		4		10	
9:45 - 10:00	32	106	32	114	64	220	9:45 - 10:00	3	25	7	22	10	47
10:00 - 10:15	33		34		67		10:00 - 10:15	10		6		16	
10:15 - 10:30	22		28		50		10:15 - 10:30	5		5		10	
10:30 - 10:45	42		40		82		10:30 - 10:45	8		4		12	
10:45 - 11:00	16	113	29	131	45	244	10:45 - 11:00	4	27	3	18	7	45
11:00 - 11:15	19		31		50		11:00 - 11:15	5		5		10	
11:15 - 11:30	24		29		53		11:15 - 11:30	3		2		5	
11:30 - 11:45	43		37		80		11:30 - 11:45	6		2		8	
11:45 - 12:00	36	122	38	135	74	257	11:45 - 12:00	1	15	1	10	2	25
TOTALS		509		744		1,253			963		863		1,826
ADT'S									1,472		1,607		3,079

LOCATION - MEDICAL CENTER DR-E/O THE CITY DR VOLUMES FOR - TUESDAY 8/17/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	7		22		29		12:00 - 12:15	40		50		90	
12:15 - 12:30	4		5		9		12:15 - 12:30	50		48		98	
12:30 - 12:45	3		7		10		12:30 - 12:45	67		42		109	
12:45 - 1:00	2	16	4	38	6	54	12:45 - 1:00	63	220	49	189	112	409
1:00 - 1:15	2		4		6		1:00 - 1:15	61		47		108	
1:15 - 1:30	2		1		3		1:15 - 1:30	50		40		90	
1:30 - 1:45	3		5		8		1:30 - 1:45	66		42		108	
1:45 - 2:00	1	8	3	13	4	21	1:45 - 2:00	40	217	34	163	74	380
2:00 - 2:15	2		1		3		2:00 - 2:15	63		33		96	
2:15 - 2:30	0		2		2		2:15 - 2:30	63		39		102	
2:30 - 2:45	1		0		1		2:30 - 2:45	53		46		99	
2:45 - 3:00	4	7	7	10	11	17	2:45 - 3:00	57	236	33	151	90	387
3:00 - 3:15	6		2		8		3:00 - 3:15	46		52		98	
3:15 - 3:30	2		9		11		3:15 - 3:30	44		41		85	
3:30 - 3:45	1		0		1		3:30 - 3:45	46		50		96	
3:45 - 4:00	2	11	3	14	5	25	3:45 - 4:00	49	185	49	192	98	377
4:00 - 4:15	1		2		3		4:00 - 4:15	45		43		88	
4:15 - 4:30	3		0		3		4:15 - 4:30	50		50		100	
4:30 - 4:45	3		2		5		4:30 - 4:45	26		46		72	
4:45 - 5:00	5	12	5	9	10	21	4:45 - 5:00	35	156	52	191	87	347
5:00 - 5:15	8		6		14		5:00 - 5:15	48		88		136	
5:15 - 5:30	13		6		19		5:15 - 5:30	28		58		86	
5:30 - 5:45	7		6		13		5:30 - 5:45	37		46		83	
5:45 - 6:00	16	44	4	22	20	66	5:45 - 6:00	36	149	46	238	82	387
6:00 - 6:15	26		8		34		6:00 - 6:15	35		43		78	
6:15 - 6:30	33		9		42		6:15 - 6:30	49		45		94	
6:30 - 6:45	44		12		56		6:30 - 6:45	75		42		117	
6:45 - 7:00	75	178	29	58	104	236	6:45 - 7:00	65	224	49	179	114	403
7:00 - 7:15	72		22		94		7:00 - 7:15	33		42		75	
7:15 - 7:30	48		30		78		7:15 - 7:30	26		36		62	
7:30 - 7:45	60		74		134		7:30 - 7:45	33		58		91	
7:45 - 8:00	74	254	52	178	126	432	7:45 - 8:00	19	111	35	171	54	282
8:00 - 8:15	84		44		128		8:00 - 8:15	23		32		55	
8:15 - 8:30	70		28		98		8:15 - 8:30	30		32		62	
8:30 - 8:45	72		32		104		8:30 - 8:45	17		30		47	
8:45 - 9:00	71	297	36	140	107	437	8:45 - 9:00	24	94	28	122	52	216
9:00 - 9:15	66		24		90		9:00 - 9:15	13		31		44	
9:15 - 9:30	43		26		69		9:15 - 9:30	22		30		52	
9:30 - 9:45	48		26		74		9:30 - 9:45	7		15		22	
9:45 - 10:00	10	167	6	82	16	249	9:45 - 10:00	14	56	22	98	36	154
10:00 - 10:15	51		41		92		10:00 - 10:15	16		14		30	
10:15 - 10:30	49		36		85		10:15 - 10:30	11		13		24	
10:30 - 10:45	56		44		100		10:30 - 10:45	8		10		18	
10:45 - 11:00	67	223	35	156	102	379	10:45 - 11:00	19	54	15	52	34	106
11:00 - 11:15	48		48		96		11:00 - 11:15	8		28		36	
11:15 - 11:30	38		32		70		11:15 - 11:30	12		30		42	
11:30 - 11:45	44		26		70		11:30 - 11:45	10		26		36	
11:45 - 12:00	39	169	40	146	79	315	11:45 - 12:00	2	32	22	106	24	138
TOTALS		1,386		866		2,252			1,734		1,852		3,586
ADT'S									3,120		2,718		5,838

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.J01

LOCATION - MEDICAL CENTER DR-E/O THE CITY DR VOLUMES FOR - WEDNESDAY 8/18/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	3		13		16		12:00 - 12:15	60		58		118	
12:15 - 12:30	4		13		17		12:15 - 12:30	67		49		116	
12:30 - 12:45	3		2		5		12:30 - 12:45	71		55		126	
12:45 - 1:00	6	16	9	37	15	53	12:45 - 1:00	61	259	51	213	112	472
1:00 - 1:15	2		8		10		1:00 - 1:15	62		42		104	
1:15 - 1:30	4		6		10		1:15 - 1:30	64		50		114	
1:30 - 1:45	2		6		8		1:30 - 1:45	55		44		99	
1:45 - 2:00	1	9	8	28	9	37	1:45 - 2:00	60	241	46	182	106	423
2:00 - 2:15	2		0		2		2:00 - 2:15	61		29		90	
2:15 - 2:30	2		7		9		2:15 - 2:30	41		28		69	
2:30 - 2:45	1		2		3		2:30 - 2:45	38		32		70	
2:45 - 3:00	2	7	3	12	5	19	2:45 - 3:00	53	193	34	123	87	316
3:00 - 3:15	3		3		6		3:00 - 3:15	62		55		117	
3:15 - 3:30	3		1		4		3:15 - 3:30	34		58		92	
3:30 - 3:45	0		4		4		3:30 - 3:45	49		72		121	
3:45 - 4:00	2	8	2	10	4	18	3:45 - 4:00	54	199	38	223	92	422
4:00 - 4:15	2		2		4		4:00 - 4:15	56		49		105	
4:15 - 4:30	2		1		3		4:15 - 4:30	47		49		96	
4:30 - 4:45	4		4		8		4:30 - 4:45	40		48		88	
4:45 - 5:00	4	12	2	9	6	21	4:45 - 5:00	34	177	50	196	84	373
5:00 - 5:15	6		2		8		5:00 - 5:15	29		94		123	
5:15 - 5:30	9		4		13		5:15 - 5:30	25		63		88	
5:30 - 5:45	8		3		11		5:30 - 5:45	24		56		80	
5:45 - 6:00	13	36	5	14	18	50	5:45 - 6:00	34	112	43	256	77	368
6:00 - 6:15	24		6		30		6:00 - 6:15	34		56		90	
6:15 - 6:30	40		12		52		6:15 - 6:30	36		50		86	
6:30 - 6:45	46		18		64		6:30 - 6:45	54		24		78	
6:45 - 7:00	60	170	26	62	86	232	6:45 - 7:00	76	200	38	168	114	368
7:00 - 7:15	64		22		86		7:00 - 7:15	27		42		69	
7:15 - 7:30	56		30		86		7:15 - 7:30	34		45		79	
7:30 - 7:45	68		64		132		7:30 - 7:45	23		49		72	
7:45 - 8:00	72	260	59	175	131	435	7:45 - 8:00	29	113	36	172	65	285
8:00 - 8:15	82		39		121		8:00 - 8:15	25		41		66	
8:15 - 8:30	82		24		106		8:15 - 8:30	29		39		68	
8:30 - 8:45	62		32		94		8:30 - 8:45	23		30		53	
8:45 - 9:00	81	307	32	127	113	434	8:45 - 9:00	14	91	30	140	44	231
9:00 - 9:15	60		46		106		9:00 - 9:15	10		18		28	
9:15 - 9:30	46		28		74		9:15 - 9:30	15		16		31	
9:30 - 9:45	50		32		82		9:30 - 9:45	11		12		23	
9:45 - 10:00	58	214	22	128	80	342	9:45 - 10:00	14	50	20	66	34	116
10:00 - 10:15	66		38		104		10:00 - 10:15	9		16		25	
10:15 - 10:30	57		44		101		10:15 - 10:30	16		14		30	
10:30 - 10:45	52		30		82		10:30 - 10:45	10		6		16	
10:45 - 11:00	59	234	41	153	100	387	10:45 - 11:00	22	57	10	46	32	103
11:00 - 11:15	50		42		92		11:00 - 11:15	12		22		34	
11:15 - 11:30	46		40		86		11:15 - 11:30	9		9		18	
11:30 - 11:45	57		47		104		11:30 - 11:45	6		24		30	
11:45 - 12:00	42	195	46	175	88	370	11:45 - 12:00	7	34	15	70	22	104
TOTALS		1,468		930		2,398			1,726		1,855		3,581
ADT'S									3,194		2,785		5,979

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.J01

LOCATION - MEDICAL CENTER DR-E/O THE CITY DR VOLUMES FOR - THURSDAY 8/19/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	6		10		16		12:00 - 12:15	49		53		102	
12:15 - 12:30	5		9		14		12:15 - 12:30	41		39		80	
12:30 - 12:45	5		9		14		12:30 - 12:45	41		40		81	
12:45 - 1:00	1	17	4	32	5	49	12:45 - 1:00	65	196	54	186	119	382
1:00 - 1:15	5		7		12		1:00 - 1:15	53		52		105	
1:15 - 1:30	4		1		5		1:15 - 1:30	65		41		106	
1:30 - 1:45	0		8		8		1:30 - 1:45	50		34		84	
1:45 - 2:00	1	10	6	22	7	32	1:45 - 2:00	48	216	38	165	86	381
2:00 - 2:15	4		4		8		2:00 - 2:15	50		38		88	
2:15 - 2:30	0		1		1		2:15 - 2:30	45		42		87	
2:30 - 2:45	2		1		3		2:30 - 2:45	48		38		86	
2:45 - 3:00	6	12	5	11	11	23	2:45 - 3:00	47	190	28	146	75	336
3:00 - 3:15	2		6		8		3:00 - 3:15	43		56		99	
3:15 - 3:30	1		9		10		3:15 - 3:30	47		51		98	
3:30 - 3:45	1		0		1		3:30 - 3:45	39		48		87	
3:45 - 4:00	2	6	2	17	4	23	3:45 - 4:00	35	164	54	209	89	373
4:00 - 4:15	3		1		4		4:00 - 4:15	34		44		78	
4:15 - 4:30	2		4		6		4:15 - 4:30	30		50		80	
4:30 - 4:45	3		1		4		4:30 - 4:45	35		63		98	
4:45 - 5:00	4	12	4	10	8	22	4:45 - 5:00	48	147	54	211	102	358
5:00 - 5:15	4		2		6		5:00 - 5:15	27		66		93	
5:15 - 5:30	9		4		13		5:15 - 5:30	30		54		84	
5:30 - 5:45	7		3		10		5:30 - 5:45	32		54		86	
5:45 - 6:00	15	35	6	15	21	50	5:45 - 6:00	35	124	34	208	69	332
6:00 - 6:15	20		12		32		6:00 - 6:15	34		40		74	
6:15 - 6:30	24		6		30		6:15 - 6:30	38		36		74	
6:30 - 6:45	34		14		48		6:30 - 6:45	54		30		84	
6:45 - 7:00	54	132	26	58	80	190	6:45 - 7:00	78	204	62	168	140	372
7:00 - 7:15	72		24		96		7:00 - 7:15	34		28		62	
7:15 - 7:30	40		30		70		7:15 - 7:30	25		29		54	
7:30 - 7:45	62		66		128		7:30 - 7:45	17		38		55	
7:45 - 8:00	72	246	62	182	134	428	7:45 - 8:00	18	94	30	125	48	219
8:00 - 8:15	82		46		128		8:00 - 8:15	23		26		49	
8:15 - 8:30	71		31		102		8:15 - 8:30	24		28		52	
8:30 - 8:45	74		34		108		8:30 - 8:45	20		30		50	
8:45 - 9:00	83	310	35	146	118	456	8:45 - 9:00	18	85	32	116	50	201
9:00 - 9:15	61		31		92		9:00 - 9:15	14		16		30	
9:15 - 9:30	65		44		109		9:15 - 9:30	9		22		31	
9:30 - 9:45	52		38		90		9:30 - 9:45	14		20		34	
9:45 - 10:00	48	226	26	139	74	365	9:45 - 10:00	14	51	15	73	29	124
10:00 - 10:15	52		22		74		10:00 - 10:15	19		20		39	
10:15 - 10:30	35		29		64		10:15 - 10:30	10		22		32	
10:30 - 10:45	67		40		107		10:30 - 10:45	12		8		20	
10:45 - 11:00	46	200	30	121	76	321	10:45 - 11:00	28	69	16	66	44	135
11:00 - 11:15	44		28		72		11:00 - 11:15	11		15		26	
11:15 - 11:30	31		45		76		11:15 - 11:30	8		16		24	
11:30 - 11:45	45		35		80		11:30 - 11:45	8		24		32	
11:45 - 12:00	50	170	46	154	96	324	11:45 - 12:00	5	32	19	74	24	106
TOTALS		1,376		907		2,283			1,572		1,747		3,319
ADT'S									2,948		2,654		5,602

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.J01

LOCATION - MEDICAL CENTER DR-E/O THE CITY DR AVERAGED VOLUMES FOR - TUESDAY 8/17/99 TO FRIDAY 8/20/99

AM							PM						
TIME	EB		WB		TOTAL		TIME	EB		WB		TOTAL	
12:00 - 12:15	5		15		20		12:00 - 12:15	50		54		104	
12:15 - 12:30	4		9		13		12:15 - 12:30	53		45		98	
12:30 - 12:45	4		6		10		12:30 - 12:45	60		46		106	
12:45 - 1:00	3	16	6	36	9	52	12:45 - 1:00	63	226	51	196	114	422
1:00 - 1:15	3		6		9		1:00 - 1:15	59		47		106	
1:15 - 1:30	3		3		6		1:15 - 1:30	60		44		104	
1:30 - 1:45	2		6		8		1:30 - 1:45	57		40		97	
1:45 - 2:00	1	9	6	21	7	30	1:45 - 2:00	49	225	39	170	88	395
2:00 - 2:15	3		2		5		2:00 - 2:15	58		33		91	
2:15 - 2:30	1		3		4		2:15 - 2:30	50		36		86	
2:30 - 2:45	1		1		2		2:30 - 2:45	46		39		85	
2:45 - 3:00	4	9	5	11	9	20	2:45 - 3:00	52	206	32	140	84	346
3:00 - 3:15	4		4		8		3:00 - 3:15	50		54		104	
3:15 - 3:30	2		6		8		3:15 - 3:30	42		50		92	
3:30 - 3:45	1		1		2		3:30 - 3:45	45		57		102	
3:45 - 4:00	2	9	2	13	4	22	3:45 - 4:00	46	183	47	208	93	391
4:00 - 4:15	2		2		4		4:00 - 4:15	45		45		90	
4:15 - 4:30	2		2		4		4:15 - 4:30	42		50		92	
4:30 - 4:45	3		2		5		4:30 - 4:45	34		52		86	
4:45 - 5:00	4	11	4	10	8	21	4:45 - 5:00	39	160	52	199	91	359
5:00 - 5:15	6		3		9		5:00 - 5:15	35		83		118	
5:15 - 5:30	10		5		15		5:15 - 5:30	28		58		86	
5:30 - 5:45	7		4		11		5:30 - 5:45	31		52		83	
5:45 - 6:00	15	38	5	17	20	55	5:45 - 6:00	35	129	41	234	76	363
6:00 - 6:15	23		9		32		6:00 - 6:15	34		46		80	
6:15 - 6:30	32		9		41		6:15 - 6:30	41		44		85	
6:30 - 6:45	41		15		56		6:30 - 6:45	61		32		93	
6:45 - 7:00	63	159	27	60	90	219	6:45 - 7:00	73	209	50	172	123	381
7:00 - 7:15	69		23		92		7:00 - 7:15	31		37		68	
7:15 - 7:30	48		30		78		7:15 - 7:30	28		37		65	
7:30 - 7:45	63		68		131		7:30 - 7:45	24		48		72	
7:45 - 8:00	73	253	58	179	131	432	7:45 - 8:00	22	105	34	156	56	261
8:00 - 8:15	83		43		126		8:00 - 8:15	24		33		57	
8:15 - 8:30	74		28		102		8:15 - 8:30	28		33		61	
8:30 - 8:45	69		33		102		8:30 - 8:45	20		30		50	
8:45 - 9:00	78	304	34	138	112	442	8:45 - 9:00	19	91	30	126	49	217
9:00 - 9:15	62		34		96		9:00 - 9:15	12		22		34	
9:15 - 9:30	51		33		84		9:15 - 9:30	15		23		38	
9:30 - 9:45	50		32		82		9:30 - 9:45	11		16		27	
9:45 - 10:00	39	202	18	117	57	319	9:45 - 10:00	14	52	19	80	33	132
10:00 - 10:15	56		34		90		10:00 - 10:15	15		17		32	
10:15 - 10:30	47		36		83		10:15 - 10:30	12		16		28	
10:30 - 10:45	58		38		96		10:30 - 10:45	10		8		18	
10:45 - 11:00	57	218	35	143	92	361	10:45 - 11:00	23	60	14	55	37	115
11:00 - 11:15	47		39		86		11:00 - 11:15	10		22		32	
11:15 - 11:30	38		39		77		11:15 - 11:30	10		18		28	
11:30 - 11:45	49		36		85		11:30 - 11:45	8		25		33	
11:45 - 12:00	44	178	44	158	88	336	11:45 - 12:00	5	33	19	84	24	117
TOTALS		1,406		903		2,309			1,679		1,820		3,499
ADT'S									3,085		2,723		5,808

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.B01

LOCATION - MEDICAL CENTER DR-JUST E/O THE CITY DR VOLUMES FOR - MONDAY 8/9/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	1		14		15		12:00 - 12:15	44		42		86	
12:15 - 12:30	1		6		7		12:15 - 12:30	32		54		86	
12:30 - 12:45	0		6		6		12:30 - 12:45	48		44		92	
12:45 - 1:00	2	4	2	28	4	32	12:45 - 1:00	73	197	52	192	125	389
1:00 - 1:15	1		8		9		1:00 - 1:15	55		48		103	
1:15 - 1:30	1		12		13		1:15 - 1:30	56		40		96	
1:30 - 1:45	4		3		7		1:30 - 1:45	56		40		96	
1:45 - 2:00	3	9	1	24	4	33	1:45 - 2:00	53	220	40	168	93	388
2:00 - 2:15	2		6		8		2:00 - 2:15	47		51		98	
2:15 - 2:30	2		1		3		2:15 - 2:30	48		46		94	
2:30 - 2:45	1		3		4		2:30 - 2:45	51		46		97	
2:45 - 3:00	3	8	2	12	5	20	2:45 - 3:00	60	206	36	179	96	385
3:00 - 3:15	2		3		5		3:00 - 3:15	63		53		116	
3:15 - 3:30	3		2		5		3:15 - 3:30	40		60		100	
3:30 - 3:45	1		1		2		3:30 - 3:45	55		56		111	
3:45 - 4:00	0	6	4	10	4	16	3:45 - 4:00	45	203	52	221	97	424
4:00 - 4:15	2		0		2		4:00 - 4:15	35		59		94	
4:15 - 4:30	0		0		0		4:15 - 4:30	52		47		99	
4:30 - 4:45	6		0		6		4:30 - 4:45	32		70		102	
4:45 - 5:00	4	12	2	2	6	14	4:45 - 5:00	36	155	54	230	90	385
5:00 - 5:15	4		4		8		5:00 - 5:15	35		67		102	
5:15 - 5:30	11		7		18		5:15 - 5:30	36		70		106	
5:30 - 5:45	12		1		13		5:30 - 5:45	32		62		94	
5:45 - 6:00	13	40	9	21	22	61	5:45 - 6:00	39	142	64	263	103	405
6:00 - 6:15	19		0		19		6:00 - 6:15	31		35		66	
6:15 - 6:30	36		14		50		6:15 - 6:30	23		51		74	
6:30 - 6:45	44		16		60		6:30 - 6:45	71		47		118	
6:45 - 7:00	58	157	16	46	74	203	6:45 - 7:00	69	194	38	171	107	365
7:00 - 7:15	61		25		86		7:00 - 7:15	28		30		58	
7:15 - 7:30	48		32		80		7:15 - 7:30	25		34		59	
7:30 - 7:45	66		72		138		7:30 - 7:45	33		44		77	
7:45 - 8:00	78	253	70	199	148	452	7:45 - 8:00	23	109	28	136	51	245
8:00 - 8:15	87		52		139		8:00 - 8:15	22		38		60	
8:15 - 8:30	78		20		98		8:15 - 8:30	18		40		58	
8:30 - 8:45	79		27		106		8:30 - 8:45	20		32		52	
8:45 - 9:00	68	312	38	137	106	449	8:45 - 9:00	15	75	27	137	42	212
9:00 - 9:15	66		36		102		9:00 - 9:15	10		22		32	
9:15 - 9:30	64		30		94		9:15 - 9:30	9		21		30	
9:30 - 9:45	49		30		79		9:30 - 9:45	11		15		26	
9:45 - 10:00	52	231	38	134	90	365	9:45 - 10:00	20	50	24	82	44	132
10:00 - 10:15	60		34		94		10:00 - 10:15	13		32		45	
10:15 - 10:30	50		31		81		10:15 - 10:30	16		16		32	
10:30 - 10:45	48		36		84		10:30 - 10:45	32		32		64	
10:45 - 11:00	62	220	34	135	96	355	10:45 - 11:00	16	77	10	90	26	167
11:00 - 11:15	45		45		90		11:00 - 11:15	8		18		26	
11:15 - 11:30	46		34		80		11:15 - 11:30	13		17		30	
11:30 - 11:45	33		43		76		11:30 - 11:45	8		28		36	
11:45 - 12:00	57	181	47	169	104	350	11:45 - 12:00	8	37	16	79	24	116
TOTALS		1,433		917		2,350			1,665		1,948		3,613
ADT'S									3,098		2,865		5,963

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.B01

LOCATION - MEDICAL CENTER DR-JUST E/O THE CITY DR VOLUMES FOR - TUESDAY 8/10/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	1		11		12		12:00 - 12:15	54		56		110	
12:15 - 12:30	8		10		18		12:15 - 12:30	34		48		82	
12:30 - 12:45	2		4		6		12:30 - 12:45	56		42		98	
12:45 - 1:00	4	15	5	30	9	45	12:45 - 1:00	69	213	54	200	123	413
1:00 - 1:15	2		6		8		1:00 - 1:15	67		41		108	
1:15 - 1:30	0		2		2		1:15 - 1:30	60		44		104	
1:30 - 1:45	3		6		9		1:30 - 1:45	67		48		115	
1:45 - 2:00	3	8	2	16	5	24	1:45 - 2:00	44	238	30	163	74	401
2:00 - 2:15	4		3		7		2:00 - 2:15	59		42		101	
2:15 - 2:30	1		3		4		2:15 - 2:30	48		39		87	
2:30 - 2:45	2		2		4		2:30 - 2:45	60		44		104	
2:45 - 3:00	1	8	8	16	9	24	2:45 - 3:00	58	225	46	171	104	396
3:00 - 3:15	6		2		8		3:00 - 3:15	48		50		98	
3:15 - 3:30	1		4		5		3:15 - 3:30	50		42		92	
3:30 - 3:45	1		3		4		3:30 - 3:45	46		58		104	
3:45 - 4:00	0	8	2	11	2	19	3:45 - 4:00	46	190	62	212	108	402
4:00 - 4:15	2		2		4		4:00 - 4:15	44		50		94	
4:15 - 4:30	2		2		4		4:15 - 4:30	47		59		106	
4:30 - 4:45	6		3		9		4:30 - 4:45	34		64		98	
4:45 - 5:00	3	13	2	9	5	22	4:45 - 5:00	42	167	70	243	112	410
5:00 - 5:15	4		6		10		5:00 - 5:15	34		69		103	
5:15 - 5:30	15		2		17		5:15 - 5:30	30		64		94	
5:30 - 5:45	10		8		18		5:30 - 5:45	48		55		103	
5:45 - 6:00	14	43	2	18	16	61	5:45 - 6:00	28	140	50	238	78	378
6:00 - 6:15	32		6		38		6:00 - 6:15	32		38		70	
6:15 - 6:30	34		10		44		6:15 - 6:30	25		51		76	
6:30 - 6:45	42		12		54		6:30 - 6:45	56		42		98	
6:45 - 7:00	63	171	26	54	89	225	6:45 - 7:00	69	182	46	177	115	359
7:00 - 7:15	65		27		92		7:00 - 7:15	30		42		72	
7:15 - 7:30	56		34		90		7:15 - 7:30	28		24		52	
7:30 - 7:45	61		70		131		7:30 - 7:45	31		45		76	
7:45 - 8:00	72	254	56	187	128	441	7:45 - 8:00	15	104	43	154	58	258
8:00 - 8:15	90		30		120		8:00 - 8:15	16		30		46	
8:15 - 8:30	84		44		128		8:15 - 8:30	24		34		58	
8:30 - 8:45	74		38		112		8:30 - 8:45	23		37		60	
8:45 - 9:00	70	318	36	148	106	466	8:45 - 9:00	20	83	28	129	48	212
9:00 - 9:15	65		31		96		9:00 - 9:15	20		21		41	
9:15 - 9:30	50		32		82		9:15 - 9:30	18		20		38	
9:30 - 9:45	46		26		72		9:30 - 9:45	13		25		38	
9:45 - 10:00	44	205	26	115	70	320	9:45 - 10:00	14	65	22	88	36	153
10:00 - 10:15	55		36		91		10:00 - 10:15	12		18		30	
10:15 - 10:30	49		38		87		10:15 - 10:30	14		25		39	
10:30 - 10:45	40		36		76		10:30 - 10:45	20		26		46	
10:45 - 11:00	56	200	44	154	100	354	10:45 - 11:00	23	69	24	93	47	162
11:00 - 11:15	50		38		88		11:00 - 11:15	16		20		36	
11:15 - 11:30	34		36		70		11:15 - 11:30	3		16		19	
11:30 - 11:45	33		34		67		11:30 - 11:45	7		29		36	
11:45 - 12:00	46	163	41	149	87	312	11:45 - 12:00	5	31	15	80	20	111
TOTALS		1,406		907		2,313			1,707		1,948		3,655
ADT'S									3,113		2,855		5,968

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.B01

LOCATION - MEDICAL CENTER DR-JUST E/O THE CITY DR VOLUMES FOR - WEDNESDAY 8/11/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	8		18		26		12:00 - 12:15	59		44		103	
12:15 - 12:30	6		6		12		12:15 - 12:30	56		44		100	
12:30 - 12:45	4		6		10		12:30 - 12:45	52		44		96	
12:45 - 1:00	6	24	9	39	15	63	12:45 - 1:00	57	224	47	179	104	403
1:00 - 1:15	5		5		10		1:00 - 1:15	73		50		123	
1:15 - 1:30	1		7		8		1:15 - 1:30	59		44		103	
1:30 - 1:45	2		6		8		1:30 - 1:45	50		36		86	
1:45 - 2:00	4	12	8	26	12	38	1:45 - 2:00	68	250	42	172	110	422
2:00 - 2:15	1		1		2		2:00 - 2:15	56		48		104	
2:15 - 2:30	3		1		4		2:15 - 2:30	57		42		99	
2:30 - 2:45	0		4		4		2:30 - 2:45	64		47		111	
2:45 - 3:00	5	9	3	9	8	18	2:45 - 3:00	58	235	46	183	104	418
3:00 - 3:15	3		9		12		3:00 - 3:15	54		68		122	
3:15 - 3:30	3		3		6		3:15 - 3:30	52		54		106	
3:30 - 3:45	1		3		4		3:30 - 3:45	55		52		107	
3:45 - 4:00	2	9	3	18	5	27	3:45 - 4:00	30	191	60	234	90	425
4:00 - 4:15	3		4		7		4:00 - 4:15	36		53		89	
4:15 - 4:30	4		4		8		4:15 - 4:30	38		60		98	
4:30 - 4:45	4		2		6		4:30 - 4:45	27		70		97	
4:45 - 5:00	5	16	9	19	14	35	4:45 - 5:00	40	141	56	239	96	380
5:00 - 5:15	11		2		13		5:00 - 5:15	38		80		118	
5:15 - 5:30	8		6		14		5:15 - 5:30	34		54		88	
5:30 - 5:45	11		2		13		5:30 - 5:45	40		52		92	
5:45 - 6:00	21	51	9	19	30	70	5:45 - 6:00	25	137	44	230	69	367
6:00 - 6:15	36		6		42		6:00 - 6:15	31		53		84	
6:15 - 6:30	24		6		30		6:15 - 6:30	40		52		92	
6:30 - 6:45	36		12		48		6:30 - 6:45	48		38		86	
6:45 - 7:00	76	172	25	49	101	221	6:45 - 7:00	64	183	40	183	104	366
7:00 - 7:15	64		26		90		7:00 - 7:15	31		29		60	
7:15 - 7:30	63		35		98		7:15 - 7:30	22		48		70	
7:30 - 7:45	45		72		117		7:30 - 7:45	28		37		65	
7:45 - 8:00	78	250	61	194	139	444	7:45 - 8:00	26	107	42	156	68	263
8:00 - 8:15	68		44		112		8:00 - 8:15	27		34		61	
8:15 - 8:30	70		30		100		8:15 - 8:30	24		28		52	
8:30 - 8:45	76		32		108		8:30 - 8:45	22		38		60	
8:45 - 9:00	66	280	28	134	94	414	8:45 - 9:00	22	95	20	120	42	215
9:00 - 9:15	79		29		108		9:00 - 9:15	19		29		48	
9:15 - 9:30	54		30		84		9:15 - 9:30	12		9		21	
9:30 - 9:45	56		32		88		9:30 - 9:45	9		25		34	
9:45 - 10:00	56	245	35	126	91	371	9:45 - 10:00	11	51	15	78	26	129
10:00 - 10:15	51		35		86		10:00 - 10:15	11		11		22	
10:15 - 10:30	47		40		87		10:15 - 10:30	15		21		36	
10:30 - 10:45	56		39		95		10:30 - 10:45	24		20		44	
10:45 - 11:00	40	194	26	140	66	334	10:45 - 11:00	24	74	24	76	48	150
11:00 - 11:15	52		46		98		11:00 - 11:15	14		19		33	
11:15 - 11:30	44		38		82		11:15 - 11:30	12		16		28	
11:30 - 11:45	41		47		88		11:30 - 11:45	8		24		32	
11:45 - 12:00	46	183	32	163	78	346	11:45 - 12:00	4	38	18	77	22	115
TOTALS		1,445		936		2,381			1,726		1,927		3,653
ADT'S									3,171		2,863		6,034

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.B01

LOCATION - MEDICAL CENTER DR-JUST E/O THE CITY DR VOLUMES FOR - THURSDAY 8/12/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	8		10		18		12:00 - 12:15	50		58		108	
12:15 - 12:30	9		16		25		12:15 - 12:30	43		44		87	
12:30 - 12:45	6		15		21		12:30 - 12:45	48		58		106	
12:45 - 1:00	4	27	2	43	6	70	12:45 - 1:00	66	207	40	200	106	407
1:00 - 1:15	4		8		12		1:00 - 1:15	66		46		112	
1:15 - 1:30	3		5		8		1:15 - 1:30	53		49		102	
1:30 - 1:45	3		5		8		1:30 - 1:45	58		48		106	
1:45 - 2:00	6	16	8	26	14	42	1:45 - 2:00	57	234	44	187	101	421
2:00 - 2:15	0		3		3		2:00 - 2:15	47		38		85	
2:15 - 2:30	5		4		9		2:15 - 2:30	64		34		98	
2:30 - 2:45	1		0		1		2:30 - 2:45	66		46		112	
2:45 - 3:00	3	9	2	9	5	18	2:45 - 3:00	62	239	38	156	100	395
3:00 - 3:15	2		3		5		3:00 - 3:15	70		56		126	
3:15 - 3:30	2		9		11		3:15 - 3:30	39		51		90	
3:30 - 3:45	2		6		8		3:30 - 3:45	34		56		90	
3:45 - 4:00	5	11	3	21	8	32	3:45 - 4:00	40	183	42	205	82	388
4:00 - 4:15	0		8		8		4:00 - 4:15	42		44		86	
4:15 - 4:30	4		1		5		4:15 - 4:30	48		58		106	
4:30 - 4:45	6		4		10		4:30 - 4:45	42		68		110	
4:45 - 5:00	5	15	4	17	9	32	4:45 - 5:00	43	175	60	230	103	405
5:00 - 5:15	5		4		9		5:00 - 5:15	29		61		90	
5:15 - 5:30	5		4		9		5:15 - 5:30	34		56		90	
5:30 - 5:45	6		8		14		5:30 - 5:45	29		64		93	
5:45 - 6:00	16	32	4	20	20	52	5:45 - 6:00	22	114	54	235	76	349
6:00 - 6:15	24		16		40		6:00 - 6:15	36		38		74	
6:15 - 6:30	40		15		55		6:15 - 6:30	43		39		82	
6:30 - 6:45	35		12		47		6:30 - 6:45	54		38		92	
6:45 - 7:00	63	162	21	64	84	226	6:45 - 7:00	84	217	38	153	122	370
7:00 - 7:15	65		28		93		7:00 - 7:15	32		34		66	
7:15 - 7:30	51		34		85		7:15 - 7:30	29		41		70	
7:30 - 7:45	69		63		132		7:30 - 7:45	35		49		84	
7:45 - 8:00	82	267	80	205	162	472	7:45 - 8:00	25	121	62	186	87	307
8:00 - 8:15	78		54		132		8:00 - 8:15	22		30		52	
8:15 - 8:30	80		36		116		8:15 - 8:30	25		20		45	
8:30 - 8:45	66		24		90		8:30 - 8:45	20		36		56	
8:45 - 9:00	71	295	31	145	102	440	8:45 - 9:00	10	77	24	110	34	187
9:00 - 9:15	64		34		98		9:00 - 9:15	14		26		40	
9:15 - 9:30	65		37		102		9:15 - 9:30	16		20		36	
9:30 - 9:45	57		43		100		9:30 - 9:45	12		18		30	
9:45 - 10:00	60	246	38	152	98	398	9:45 - 10:00	17	59	16	80	33	139
10:00 - 10:15	59		29		88		10:00 - 10:15	13		17		30	
10:15 - 10:30	38		34		72		10:15 - 10:30	4		18		22	
10:30 - 10:45	36		33		69		10:30 - 10:45	23		13		36	
10:45 - 11:00	48	181	50	146	98	327	10:45 - 11:00	27	67	11	59	38	126
11:00 - 11:15	36		31		67		11:00 - 11:15	12		24		36	
11:15 - 11:30	41		41		82		11:15 - 11:30	8		17		25	
11:30 - 11:45	38		32		70		11:30 - 11:45	10		40		50	
11:45 - 12:00	44	159	37	141	81	300	11:45 - 12:00	6	36	14	95	20	131
TOTALS		1,420		989		2,409			1,729		1,896		3,625
ADT'S									3,149		2,885		6,034

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.B01

LOCATION - MEDICAL CENTER DR-JUST E/O THE CITY DR

VOLUMES FOR - FRIDAY 8/13/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	3		14		17		12:00 - 12:15	58		56		114	
12:15 - 12:30	8		15		23		12:15 - 12:30	42		62		104	
12:30 - 12:45	6		16		22		12:30 - 12:45	44		46		90	
12:45 - 1:00	2	19	6	51	8	70	12:45 - 1:00	59	203	57	221	116	424
1:00 - 1:15	4		4		8		1:00 - 1:15	58		36		94	
1:15 - 1:30	0		8		8		1:15 - 1:30	51		44		95	
1:30 - 1:45	2		7		9		1:30 - 1:45	45		50		95	
1:45 - 2:00	7	13	7	26	14	39	1:45 - 2:00	60	214	34	164	94	378
2:00 - 2:15	3		1		4		2:00 - 2:15	40		49		89	
2:15 - 2:30	6		5		11		2:15 - 2:30	46		40		86	
2:30 - 2:45	2		2		4		2:30 - 2:45	62		54		116	
2:45 - 3:00	2	13	2	10	4	23	2:45 - 3:00	70	218	44	187	114	405
3:00 - 3:15	2		4		6		3:00 - 3:15	40		60		100	
3:15 - 3:30	0		1		1		3:15 - 3:30	37		56		93	
3:30 - 3:45	2		8		10		3:30 - 3:45	49		60		109	
3:45 - 4:00	1	5	1	14	2	19	3:45 - 4:00	36	162	52	228	88	390
4:00 - 4:15	5		4		9		4:00 - 4:15	46		50		96	
4:15 - 4:30	2		2		4		4:15 - 4:30	40		50		90	
4:30 - 4:45	2		4		6		4:30 - 4:45	42		64		106	
4:45 - 5:00	3	12	4	14	7	26	4:45 - 5:00	35	163	53	217	88	380
5:00 - 5:15	8		1		9		5:00 - 5:15	41		77		118	
5:15 - 5:30	14		1		15		5:15 - 5:30	40		46		86	
5:30 - 5:45	9		5		14		5:30 - 5:45	26		54		80	
5:45 - 6:00	16	47	6	13	22	60	5:45 - 6:00	26	133	28	205	54	338
6:00 - 6:15	27		10		37		6:00 - 6:15	24		36		60	
6:15 - 6:30	34		10		44		6:15 - 6:30	27		35		62	
6:30 - 6:45	44		20		64		6:30 - 6:45	71		47		118	
6:45 - 7:00	70	175	23	63	93	238	6:45 - 7:00	58	180	46	164	104	344
7:00 - 7:15	53		20		73		7:00 - 7:15	32		34		66	
7:15 - 7:30	59		32		91		7:15 - 7:30	20		38		58	
7:30 - 7:45	52		78		130		7:30 - 7:45	21		34		55	
7:45 - 8:00	81	245	69	199	150	444	7:45 - 8:00	20	93	34	140	54	233
8:00 - 8:15	79		57		136		8:00 - 8:15	21		40		61	
8:15 - 8:30	68		24		92		8:15 - 8:30	26		24		50	
8:30 - 8:45	80		40		120		8:30 - 8:45	26		30		56	
8:45 - 9:00	57	284	29	150	86	434	8:45 - 9:00	17	90	24	118	41	208
9:00 - 9:15	57		34		91		9:00 - 9:15	21		28		49	
9:15 - 9:30	43		32		75		9:15 - 9:30	10		18		28	
9:30 - 9:45	54		30		84		9:30 - 9:45	12		31		43	
9:45 - 10:00	49	203	26	122	75	325	9:45 - 10:00	9	52	19	96	28	148
10:00 - 10:15	64		26		90		10:00 - 10:15	18		18		36	
10:15 - 10:30	6		4		10		10:15 - 10:30	12		6		18	
10:30 - 10:45	48		42		90		10:30 - 10:45	15		12		27	
10:45 - 11:00	51	169	36	108	87	277	10:45 - 11:00	20	65	14	50	34	115
11:00 - 11:15	48		36		84		11:00 - 11:15	6		20		26	
11:15 - 11:30	47		45		92		11:15 - 11:30	9		18		27	
11:30 - 11:45	47		52		99		11:30 - 11:45	8		42		50	
11:45 - 12:00	49	191	35	168	84	359	11:45 - 12:00	6	29	24	104	30	133
TOTALS		1,376		938		2,314			1,602		1,894		3,496
ADT'S									2,978		2,832		5,810

LOCATION - MEDICAL CENTER DR-JUST E/O THE CITY DR

VOLUMES FOR - SATURDAY 8/14/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	8		10		18		12:00 - 12:15	25		25		50	
12:15 - 12:30	7		13		20		12:15 - 12:30	20		18		38	
12:30 - 12:45	10		10		20		12:30 - 12:45	14		22		36	
12:45 - 1:00	5	30	9	42	14	72	12:45 - 1:00	28	87	24	89	52	176
1:00 - 1:15	3		4		7		1:00 - 1:15	26		12		38	
1:15 - 1:30	5		7		12		1:15 - 1:30	17		27		44	
1:30 - 1:45	1		2		3		1:30 - 1:45	18		26		44	
1:45 - 2:00	8	17	6	19	14	36	1:45 - 2:00	24	85	31	96	55	181
2:00 - 2:15	4		5		9		2:00 - 2:15	18		24		42	
2:15 - 2:30	4		2		6		2:15 - 2:30	26		16		42	
2:30 - 2:45	1		4		5		2:30 - 2:45	21		18		39	
2:45 - 3:00	3	12	3	14	6	26	2:45 - 3:00	37	102	18	76	55	178
3:00 - 3:15	0		6		6		3:00 - 3:15	22		26		48	
3:15 - 3:30	2		2		4		3:15 - 3:30	26		36		62	
3:30 - 3:45	1		5		6		3:30 - 3:45	22		46		68	
3:45 - 4:00	4	7	4	17	8	24	3:45 - 4:00	20	90	28	136	48	226
4:00 - 4:15	3		2		5		4:00 - 4:15	12		24		36	
4:15 - 4:30	0		4		4		4:15 - 4:30	12		18		30	
4:30 - 4:45	3		0		3		4:30 - 4:45	18		20		38	
4:45 - 5:00	5	11	3	9	8	20	4:45 - 5:00	18	60	17	79	35	139
5:00 - 5:15	3		4		7		5:00 - 5:15	14		24		38	
5:15 - 5:30	6		4		10		5:15 - 5:30	15		16		31	
5:30 - 5:45	6		4		10		5:30 - 5:45	26		23		49	
5:45 - 6:00	4	19	1	13	5	32	5:45 - 6:00	19	74	15	78	34	152
6:00 - 6:15	9		1		10		6:00 - 6:15	14		16		30	
6:15 - 6:30	21		5		26		6:15 - 6:30	27		19		46	
6:30 - 6:45	47		9		56		6:30 - 6:45	54		16		70	
6:45 - 7:00	84	161	16	31	100	192	6:45 - 7:00	57	152	32	83	89	235
7:00 - 7:15	36		16		52		7:00 - 7:15	22		18		40	
7:15 - 7:30	20		16		36		7:15 - 7:30	18		30		48	
7:30 - 7:45	13		69		82		7:30 - 7:45	26		76		102	
7:45 - 8:00	36	105	48	149	84	254	7:45 - 8:00	13	79	40	164	53	243
8:00 - 8:15	20		18		38		8:00 - 8:15	13		26		39	
8:15 - 8:30	16		8		24		8:15 - 8:30	20		20		40	
8:30 - 8:45	20		8		28		8:30 - 8:45	13		19		32	
8:45 - 9:00	23	79	14	48	37	127	8:45 - 9:00	16	62	14	79	30	141
9:00 - 9:15	17		24		41		9:00 - 9:15	15		11		26	
9:15 - 9:30	17		17		34		9:15 - 9:30	4		10		14	
9:30 - 9:45	24		12		36		9:30 - 9:45	12		22		34	
9:45 - 10:00	12	70	16	69	28	139	9:45 - 10:00	9	40	18	61	27	101
10:00 - 10:15	25		15		40		10:00 - 10:15	6		15		21	
10:15 - 10:30	19		13		32		10:15 - 10:30	11		10		21	
10:30 - 10:45	19		22		41		10:30 - 10:45	18		6		24	
10:45 - 11:00	28	91	26	76	54	167	10:45 - 11:00	17	52	18	49	35	101
11:00 - 11:15	20		9		29		11:00 - 11:15	12		16		28	
11:15 - 11:30	20		16		36		11:15 - 11:30	8		10		18	
11:30 - 11:45	22		30		52		11:30 - 11:45	7		20		27	
11:45 - 12:00	20	82	22	77	42	159	11:45 - 12:00	5	32	19	65	24	97
TOTALS		684		564		1,248			915		1,055		1,970
ADT'S									1,599		1,619		3,218

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.B01

LOCATION - MEDICAL CENTER DR-JUST E/O THE CITY DR VOLUMES FOR - SUNDAY 8/15/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	12		16		28		12:00 - 12:15	18		14		32	
12:15 - 12:30	14		20		34		12:15 - 12:30	14		11		25	
12:30 - 12:45	4		5		9		12:30 - 12:45	24		18		42	
12:45 - 1:00	4	34	3	44	7	78	12:45 - 1:00	20	76	22	65	42	141
1:00 - 1:15	3		9		12		1:00 - 1:15	26		20		46	
1:15 - 1:30	2		2		4		1:15 - 1:30	26		20		46	
1:30 - 1:45	1		2		3		1:30 - 1:45	17		29		46	
1:45 - 2:00	0	6	1	14	1	20	1:45 - 2:00	17	86	18	87	35	173
2:00 - 2:15	1		6		7		2:00 - 2:15	12		20		32	
2:15 - 2:30	2		3		5		2:15 - 2:30	24		20		44	
2:30 - 2:45	2		6		8		2:30 - 2:45	18		14		32	
2:45 - 3:00	0	5	1	16	1	21	2:45 - 3:00	27	81	19	73	46	154
3:00 - 3:15	0		4		4		3:00 - 3:15	26		30		56	
3:15 - 3:30	5		3		8		3:15 - 3:30	34		30		64	
3:30 - 3:45	1		8		9		3:30 - 3:45	18		36		54	
3:45 - 4:00	1	7	3	18	4	25	3:45 - 4:00	20	98	18	114	38	212
4:00 - 4:15	4		1		5		4:00 - 4:15	15		20		35	
4:15 - 4:30	2		2		4		4:15 - 4:30	15		14		29	
4:30 - 4:45	2		4		6		4:30 - 4:45	17		19		36	
4:45 - 5:00	4	12	4	11	8	23	4:45 - 5:00	18	65	20	73	38	138
5:00 - 5:15	5		0		5		5:00 - 5:15	8		10		18	
5:15 - 5:30	5		3		8		5:15 - 5:30	14		20		34	
5:30 - 5:45	3		2		5		5:30 - 5:45	12		22		34	
5:45 - 6:00	5	18	1	6	6	24	5:45 - 6:00	21	55	25	77	46	132
6:00 - 6:15	9		2		11		6:00 - 6:15	19		19		38	
6:15 - 6:30	21		4		25		6:15 - 6:30	25		25		50	
6:30 - 6:45	44		8		52		6:30 - 6:45	50		22		72	
6:45 - 7:00	83	157	16	30	99	187	6:45 - 7:00	57	151	20	86	77	237
7:00 - 7:15	29		14		43		7:00 - 7:15	26		26		52	
7:15 - 7:30	20		26		46		7:15 - 7:30	23		37		60	
7:30 - 7:45	13		44		57		7:30 - 7:45	28		56		84	
7:45 - 8:00	19	81	35	119	54	200	7:45 - 8:00	15	92	47	166	62	258
8:00 - 8:15	14		20		34		8:00 - 8:15	16		28		44	
8:15 - 8:30	17		14		31		8:15 - 8:30	12		22		34	
8:30 - 8:45	11		9		20		8:30 - 8:45	23		29		52	
8:45 - 9:00	20	62	14	57	34	119	8:45 - 9:00	12	63	30	109	42	172
9:00 - 9:15	16		9		25		9:00 - 9:15	12		16		28	
9:15 - 9:30	11		11		22		9:15 - 9:30	10		14		24	
9:30 - 9:45	11		3		14		9:30 - 9:45	10		12		22	
9:45 - 10:00	18	56	10	33	28	89	9:45 - 10:00	15	47	15	57	30	104
10:00 - 10:15	11		12		23		10:00 - 10:15	11		15		26	
10:15 - 10:30	3		12		15		10:15 - 10:30	13		14		27	
10:30 - 10:45	12		10		22		10:30 - 10:45	12		16		28	
10:45 - 11:00	18	44	20	54	38	98	10:45 - 11:00	17	53	14	59	31	112
11:00 - 11:15	8		20		28		11:00 - 11:15	9		11		20	
11:15 - 11:30	16		14		30		11:15 - 11:30	9		15		24	
11:30 - 11:45	20		10		30		11:30 - 11:45	4		20		24	
11:45 - 12:00	23	67	20	64	43	131	11:45 - 12:00	3	25	18	64	21	89
TOTALS		549		466		1,015			892		1,030		1,922
ADT'S									1,441		1,496		2,937

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.003

LOCATION - DAWN-JUST E/O THE CITY DR VOLUMES FOR - TUESDAY 8/17/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	-		-		-		12:00 - 12:15	48		131		179	
12:15 - 12:30	-		-		-		12:15 - 12:30	59		109		168	
12:30 - 12:45	-		-		-		12:30 - 12:45	68		114		182	
12:45 - 1:00	-	-	-	-	-	-	12:45 - 1:00	80	255	83	437	163	692
1:00 - 1:15	-		-		-		1:00 - 1:15	70		70		140	
1:15 - 1:30	-		-		-		1:15 - 1:30	90		72		162	
1:30 - 1:45	-		-		-		1:30 - 1:45	88		78		166	
1:45 - 2:00	-	-	-	-	-	-	1:45 - 2:00	86	334	76	296	162	630
2:00 - 2:15	-		-		-		2:00 - 2:15	53		94		147	
2:15 - 2:30	-		-		-		2:15 - 2:30	66		83		149	
2:30 - 2:45	-		-		-		2:30 - 2:45	59		101		160	
2:45 - 3:00	-	-	-	-	-	-	2:45 - 3:00	65	243	78	356	143	599
3:00 - 3:15	-		-		-		3:00 - 3:15	59		86		145	
3:15 - 3:30	-		-		-		3:15 - 3:30	48		90		138	
3:30 - 3:45	-		-		-		3:30 - 3:45	44		137		181	
3:45 - 4:00	-	-	-	-	-	-	3:45 - 4:00	37	188	98	411	135	599
4:00 - 4:15	-		-		-		4:00 - 4:15	26		105		131	
4:15 - 4:30	-		-		-		4:15 - 4:30	28		102		130	
4:30 - 4:45	-		-		-		4:30 - 4:45	22		124		146	
4:45 - 5:00	-	-	-	-	-	-	4:45 - 5:00	22	98	118	449	140	547
5:00 - 5:15	-		-		-		5:00 - 5:15	16		137		153	
5:15 - 5:30	-		-		-		5:15 - 5:30	25		118		143	
5:30 - 5:45	-		-		-		5:30 - 5:45	14		88		102	
5:45 - 6:00	-	-	-	-	-	-	5:45 - 6:00	18	73	81	424	99	497
6:00 - 6:15	-		-		-		6:00 - 6:15	20		77		97	
6:15 - 6:30	-		-		-		6:15 - 6:30	28		55		83	
6:30 - 6:45	-		-		-		6:30 - 6:45	25		48		73	
6:45 - 7:00	-	-	-	-	-	-	6:45 - 7:00	35	108	46	226	81	334
7:00 - 7:15	-		-		-		7:00 - 7:15	25		32		57	
7:15 - 7:30	-		-		-		7:15 - 7:30	13		40		53	
7:30 - 7:45	-		-		-		7:30 - 7:45	18		36		54	
7:45 - 8:00	-	-	-	-	-	-	7:45 - 8:00	17	73	44	152	61	225
8:00 - 8:15	-		-		-		8:00 - 8:15	10		48		58	
8:15 - 8:30	-		-		-		8:15 - 8:30	5		36		41	
8:30 - 8:45	-		-		-		8:30 - 8:45	5		32		37	
8:45 - 9:00	-	-	-	-	-	-	8:45 - 9:00	9	29	18	134	27	163
9:00 - 9:15	-		-		-		9:00 - 9:15	5		28		33	
9:15 - 9:30	-		-		-		9:15 - 9:30	8		27		35	
9:30 - 9:45	-		-		-		9:30 - 9:45	8		26		34	
9:45 - 10:00	-	-	-	-	-	-	9:45 - 10:00	17	38	14	95	31	133
10:00 - 10:15	72		80		152		10:00 - 10:15	6		25		31	
10:15 - 10:30	58		78		136		10:15 - 10:30	12		24		36	
10:30 - 10:45	48		102		150		10:30 - 10:45	4		20		24	
10:45 - 11:00	51	229	76	336	127	565	10:45 - 11:00	3	25	14	83	17	108
11:00 - 11:15	54		92		146		11:00 - 11:15	2		16		18	
11:15 - 11:30	42		82		124		11:15 - 11:30	4		14		18	
11:30 - 11:45	46		129		175		11:30 - 11:45	1		32		33	
11:45 - 12:00	60	202	88	391	148	593	11:45 - 12:00	2	9	13	75	15	84
TOTALS		431		727		1,158			1,473		3,138		4,611
ADT'S									1,904		3,865		5,769

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.003

LOCATION - DAWN-JUST E/O THE CITY DR VOLUMES FOR - WEDNESDAY 8/18/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	1		14		15		12:00 - 12:15	39		146		185	
12:15 - 12:30	5		3		8		12:15 - 12:30	67		134		201	
12:30 - 12:45	2		10		12		12:30 - 12:45	72		85		157	
12:45 - 1:00	0	8	8	35	8	43	12:45 - 1:00	81	259	79	444	160	703
1:00 - 1:15	1		10		11		1:00 - 1:15	108		78		186	
1:15 - 1:30	0		2		2		1:15 - 1:30	84		75		159	
1:30 - 1:45	2		3		5		1:30 - 1:45	94		84		178	
1:45 - 2:00	0	3	3	18	3	21	1:45 - 2:00	101	387	72	309	173	696
2:00 - 2:15	1		4		5		2:00 - 2:15	66		89		155	
2:15 - 2:30	1		0		1		2:15 - 2:30	79		88		167	
2:30 - 2:45	0		1		1		2:30 - 2:45	68		102		170	
2:45 - 3:00	0	2	2	7	2	9	2:45 - 3:00	64	277	87	366	151	643
3:00 - 3:15	1		3		4		3:00 - 3:15	46		122		168	
3:15 - 3:30	4		0		4		3:15 - 3:30	40		102		142	
3:30 - 3:45	2		3		5		3:30 - 3:45	50		137		187	
3:45 - 4:00	0	7	2	8	2	15	3:45 - 4:00	40	176	111	472	151	648
4:00 - 4:15	1		4		5		4:00 - 4:15	43		132		175	
4:15 - 4:30	2		2		4		4:15 - 4:30	28		87		115	
4:30 - 4:45	6		1		7		4:30 - 4:45	27		147		174	
4:45 - 5:00	17	26	2	9	19	35	4:45 - 5:00	32	130	144	510	176	640
5:00 - 5:15	8		3		11		5:00 - 5:15	29		160		189	
5:15 - 5:30	9		6		15		5:15 - 5:30	23		116		139	
5:30 - 5:45	20		3		23		5:30 - 5:45	21		74		95	
5:45 - 6:00	23	60	2	14	25	74	5:45 - 6:00	33	106	90	440	123	546
6:00 - 6:15	30		11		41		6:00 - 6:15	20		67		87	
6:15 - 6:30	50		6		56		6:15 - 6:30	17		54		71	
6:30 - 6:45	72		21		93		6:30 - 6:45	25		47		72	
6:45 - 7:00	99	251	12	50	111	301	6:45 - 7:00	31	93	44	212	75	305
7:00 - 7:15	83		17		100		7:00 - 7:15	18		42		60	
7:15 - 7:30	100		14		114		7:15 - 7:30	14		36		50	
7:30 - 7:45	134		37		171		7:30 - 7:45	17		54		71	
7:45 - 8:00	172	489	24	92	196	581	7:45 - 8:00	12	61	53	185	65	246
8:00 - 8:15	172		44		216		8:00 - 8:15	6		40		46	
8:15 - 8:30	190		32		222		8:15 - 8:30	6		35		41	
8:30 - 8:45	142		34		176		8:30 - 8:45	7		29		36	
8:45 - 9:00	139	643	46	156	185	799	8:45 - 9:00	12	31	40	144	52	175
9:00 - 9:15	90		54		144		9:00 - 9:15	5		28		33	
9:15 - 9:30	88		83		171		9:15 - 9:30	5		20		25	
9:30 - 9:45	86		72		158		9:30 - 9:45	8		21		29	
9:45 - 10:00	82	346	74	283	156	629	9:45 - 10:00	11	29	20	89	31	118
10:00 - 10:15	63		96		159		10:00 - 10:15	8		34		42	
10:15 - 10:30	62		97		159		10:15 - 10:30	4		16		20	
10:30 - 10:45	56		111		167		10:30 - 10:45	6		27		33	
10:45 - 11:00	64	245	105	409	169	654	10:45 - 11:00	4	22	13	90	17	112
11:00 - 11:15	50		102		152		11:00 - 11:15	6		28		34	
11:15 - 11:30	55		88		143		11:15 - 11:30	5		12		17	
11:30 - 11:45	50		128		178		11:30 - 11:45	5		31		36	
11:45 - 12:00	56	211	110	428	166	639	11:45 - 12:00	1	17	13	84	14	101
TOTALS		2,291		1,509		3,800			1,588		3,345		4,933
ADT'S									3,879		4,854		8,733

TRAFFIC DATA SERVICES, INC.
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LOCATION - DAWN-JUST E/O THE CITY DR

*************************** AM ************************

TIME	EB		WB		TOTAL	
12:00 - 12:15	0		10		10	
12:15 - 12:30	2		7		9	
12:30 - 12:45	1		10		11	
12:45 - 1:00	0	3	8	35	8	38
1:00 - 1:15	3		10		13	
1:15 - 1:30	0		8		8	
1:30 - 1:45	4		4		8	
1:45 - 2:00	3	10	6	28	9	38
2:00 - 2:15	2		1		3	
2:15 - 2:30	2		5		7	
2:30 - 2:45	1		5		6	
2:45 - 3:00	3	8	2	13	5	21
3:00 - 3:15	0		1		1	
3:15 - 3:30	3		0		3	
3:30 - 3:45	2		4		6	
3:45 - 4:00	0	5	0	5	0	10
4:00 - 4:15	2		0		2	
4:15 - 4:30	7		4		11	
4:30 - 4:45	8		5		13	
4:45 - 5:00	10	27	4	13	14	40
5:00 - 5:15	11		4		15	
5:15 - 5:30	14		3		17	
5:30 - 5:45	16		8		24	
5:45 - 6:00	21	62	3	18	24	80
6:00 - 6:15	24		12		36	
6:15 - 6:30	43		6		49	
6:30 - 6:45	74		8		82	
6:45 - 7:00	120	261	22	48	142	309
7:00 - 7:15	79		14		93	
7:15 - 7:30	87		24		111	
7:30 - 7:45	124		21		145	
7:45 - 8:00	161	451	28	87	189	538
8:00 - 8:15	169		46		215	
8:15 - 8:30	152		28		180	
8:30 - 8:45	140		40		180	
8:45 - 9:00	129	590	46	160	175	750
9:00 - 9:15	92		50		142	
9:15 - 9:30	75		90		165	
9:30 - 9:45	78		62		140	
9:45 - 10:00	68	313	74	276	142	589
10:00 - 10:15	-		-		-	
10:15 - 10:30	-		-		-	
10:30 - 10:45	-		-		-	
10:45 - 11:00	-	-	-	-	-	-
11:00 - 11:15	-		-		-	
11:15 - 11:30	-		-		-	
11:30 - 11:45	-		-		-	
11:45 - 12:00	-	-	-	-	-	-
TOTALS		1,730		683		2,413
ADT'S						

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TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.003

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LOCATION - DAWN-JUST E/O THE CITY DR VOLUMES FOR - THURSDAY 8/19/99

TIME (AM)	EB		WB		TOTAL		TIME (PM)	EB		WB		TOTAL	
12:00 - 12:15	0		10		10		12:00 - 12:15	-		-		-	
12:15 - 12:30	2		7		9		12:15 - 12:30	-		-		-	
12:30 - 12:45	1		10		11		12:30 - 12:45	-		-		-	
12:45 - 1:00	0	3	8	35	8	38	12:45 - 1:00	-	-	-	-	-	-
1:00 - 1:15	3		10		13		1:00 - 1:15	-		-		-	
1:15 - 1:30	0		8		8		1:15 - 1:30	-		-		-	
1:30 - 1:45	4		4		8		1:30 - 1:45	-		-		-	
1:45 - 2:00	3	10	6	28	9	38	1:45 - 2:00	-	-	-	-	-	-
2:00 - 2:15	2		1		3		2:00 - 2:15	-		-		-	
2:15 - 2:30	2		5		7		2:15 - 2:30	-		-		-	
2:30 - 2:45	1		5		6		2:30 - 2:45	-		-		-	
2:45 - 3:00	3	8	2	13	5	21	2:45 - 3:00	-	-	-	-	-	-
3:00 - 3:15	0		1		1		3:00 - 3:15	-		-		-	
3:15 - 3:30	3		0		3		3:15 - 3:30	-		-		-	
3:30 - 3:45	2		4		6		3:30 - 3:45	-		-		-	
3:45 - 4:00	0	5	0	5	0	10	3:45 - 4:00	-	-	-	-	-	-
4:00 - 4:15	2		0		2		4:00 - 4:15	-		-		-	
4:15 - 4:30	7		4		11		4:15 - 4:30	-		-		-	
4:30 - 4:45	8		5		13		4:30 - 4:45	-		-		-	
4:45 - 5:00	10	27	4	13	14	40	4:45 - 5:00	-	-	-	-	-	-
5:00 - 5:15	11		4		15		5:00 - 5:15	-		-		-	
5:15 - 5:30	14		3		17		5:15 - 5:30	-		-		-	
5:30 - 5:45	16		8		24		5:30 - 5:45	-		-		-	
5:45 - 6:00	21	62	3	18	24	80	5:45 - 6:00	-	-	-	-	-	-
6:00 - 6:15	24		12		36		6:00 - 6:15	-		-		-	
6:15 - 6:30	43		6		49		6:15 - 6:30	-		-		-	
6:30 - 6:45	74		8		82		6:30 - 6:45	-		-		-	
6:45 - 7:00	120	261	22	48	142	309	6:45 - 7:00	-	-	-	-	-	-
7:00 - 7:15	79		14		93		7:00 - 7:15	-		-		-	
7:15 - 7:30	87		24		111		7:15 - 7:30	-		-		-	
7:30 - 7:45	124		21		145		7:30 - 7:45	-		-		-	
7:45 - 8:00	161	451	28	87	189	538	7:45 - 8:00	-	-	-	-	-	-
8:00 - 8:15	169		46		215		8:00 - 8:15	-		-		-	
8:15 - 8:30	152		28		180		8:15 - 8:30	-		-		-	
8:30 - 8:45	140		40		180		8:30 - 8:45	-		-		-	
8:45 - 9:00	129	590	46	160	175	750	8:45 - 9:00	-	-	-	-	-	-
9:00 - 9:15	92		50		142		9:00 - 9:15	-		-		-	
9:15 - 9:30	75		90		165		9:15 - 9:30	-		-		-	
9:30 - 9:45	78		62		140		9:30 - 9:45	-		-		-	
9:45 - 10:00	68	313	74	276	142	589	9:45 - 10:00	-	-	-	-	-	-
10:00 - 10:15	-		-		-		10:00 - 10:15	-		-		-	
10:15 - 10:30	-		-		-		10:15 - 10:30	-		-		-	
10:30 - 10:45	-		-		-		10:30 - 10:45	-		-		-	
10:45 - 11:00	-	-	-	-	-	-	10:45 - 11:00	-	-	-	-	-	-
11:00 - 11:15	-		-		-		11:00 - 11:15	-		-		-	
11:15 - 11:30	-		-		-		11:15 - 11:30	-		-		-	
11:30 - 11:45	-		-		-		11:30 - 11:45	-		-		-	
11:45 - 12:00	-	-	-	-	-	-	11:45 - 12:00	-	-	-	-	-	-
TOTALS		1,730		683		2,413			-		-		-
ADT'S									1,730		683		2,413

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TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.003

LOCATION - DAWN-JUST E/O THE CITY DR AVERAGED VOLUMES FOR - TUESDAY 8/17/99 TO THURSDAY 8/19/99

AM							PM						
TIME	EB		WB		TOTAL		TIME	EB		WB		TOTAL	
12:00 - 12:15	1		12		13		12:00 - 12:15	44		139		183	
12:15 - 12:30	4		5		9		12:15 - 12:30	63		122		185	
12:30 - 12:45	2		10		12		12:30 - 12:45	70		100		170	
12:45 - 1:00	0	7	8	35	8	42	12:45 - 1:00	81	258	81	442	162	700
1:00 - 1:15	2		10		12		1:00 - 1:15	89		74		163	
1:15 - 1:30	0		5		5		1:15 - 1:30	87		74		161	
1:30 - 1:45	3		4		7		1:30 - 1:45	91		81		172	
1:45 - 2:00	2	7	5	24	7	31	1:45 - 2:00	94	361	74	303	168	664
2:00 - 2:15	2		3		5		2:00 - 2:15	60		92		152	
2:15 - 2:30	2		3		5		2:15 - 2:30	73		86		159	
2:30 - 2:45	1		3		4		2:30 - 2:45	64		102		166	
2:45 - 3:00	2	7	2	11	4	18	2:45 - 3:00	65	262	83	363	148	625
3:00 - 3:15	1		2		3		3:00 - 3:15	53		104		157	
3:15 - 3:30	4		0		4		3:15 - 3:30	44		96		140	
3:30 - 3:45	2		4		6		3:30 - 3:45	47		137		184	
3:45 - 4:00	0	7	1	7	1	14	3:45 - 4:00	39	183	105	442	144	625
4:00 - 4:15	2		2		4		4:00 - 4:15	35		119		154	
4:15 - 4:30	5		3		8		4:15 - 4:30	28		95		123	
4:30 - 4:45	7		3		10		4:30 - 4:45	25		136		161	
4:45 - 5:00	14	28	3	11	17	39	4:45 - 5:00	27	115	131	481	158	596
5:00 - 5:15	10		4		14		5:00 - 5:15	23		149		172	
5:15 - 5:30	12		5		17		5:15 - 5:30	24		117		141	
5:30 - 5:45	18		6		24		5:30 - 5:45	18		81		99	
5:45 - 6:00	22	62	3	18	25	80	5:45 - 6:00	26	91	86	433	112	524
6:00 - 6:15	27		12		39		6:00 - 6:15	20		72		92	
6:15 - 6:30	47		6		53		6:15 - 6:30	23		55		78	
6:30 - 6:45	73		15		88		6:30 - 6:45	25		48		73	
6:45 - 7:00	110	257	17	50	127	307	6:45 - 7:00	33	101	45	220	78	321
7:00 - 7:15	81		16		97		7:00 - 7:15	22		37		59	
7:15 - 7:30	94		19		113		7:15 - 7:30	14		38		52	
7:30 - 7:45	129		29		158		7:30 - 7:45	18		45		63	
7:45 - 8:00	167	471	26	90	193	561	7:45 - 8:00	15	69	49	169	64	238
8:00 - 8:15	171		45		216		8:00 - 8:15	8		44		52	
8:15 - 8:30	171		30		201		8:15 - 8:30	6		36		42	
8:30 - 8:45	141		37		178		8:30 - 8:45	6		31		37	
8:45 - 9:00	134	617	46	158	180	775	8:45 - 9:00	11	31	29	140	40	171
9:00 - 9:15	91		52		143		9:00 - 9:15	5		28		33	
9:15 - 9:30	82		87		169		9:15 - 9:30	7		24		31	
9:30 - 9:45	82		67		149		9:30 - 9:45	8		24		32	
9:45 - 10:00	75	330	74	280	149	610	9:45 - 10:00	14	34	17	93	31	127
10:00 - 10:15	68		88		156		10:00 - 10:15	7		30		37	
10:15 - 10:30	60		88		148		10:15 - 10:30	8		20		28	
10:30 - 10:45	52		107		159		10:30 - 10:45	5		24		29	
10:45 - 11:00	58	238	91	374	149	612	10:45 - 11:00	4	24	14	88	18	112
11:00 - 11:15	52		97		149		11:00 - 11:15	4		22		26	
11:15 - 11:30	49		85		134		11:15 - 11:30	5		13		18	
11:30 - 11:45	48		129		177		11:30 - 11:45	3		32		35	
11:45 - 12:00	58	207	99	410	157	617	11:45 - 12:00	2	14	13	80	15	94
TOTALS		2,238		1,468		3,706			1,543		3,254		4,797
ADT'S									3,781		4,722		8,503

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.004

LOCATION - DAWN-JUST W/O COUNTY GARAGE VOLUMES FOR - TUESDAY 8/17/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	-		-		-		12:00 - 12:15	55		71		126	
12:15 - 12:30	-		-		-		12:15 - 12:30	72		58		130	
12:30 - 12:45	-		-		-		12:30 - 12:45	78		40		118	
12:45 - 1:00	-	-	-	-	-	-	12:45 - 1:00	99	304	39	208	138	512
1:00 - 1:15	-		-		-		1:00 - 1:15	76		38		114	
1:15 - 1:30	-		-		-		1:15 - 1:30	100		39		139	
1:30 - 1:45	-		-		-		1:30 - 1:45	104		26		130	
1:45 - 2:00	-	-	-	-	-	-	1:45 - 2:00	103	383	30	133	133	516
2:00 - 2:15	-		-		-		2:00 - 2:15	73		47		120	
2:15 - 2:30	-		-		-		2:15 - 2:30	76		32		108	
2:30 - 2:45	-		-		-		2:30 - 2:45	67		51		118	
2:45 - 3:00	-	-	-	-	-	-	2:45 - 3:00	78	294	41	171	119	465
3:00 - 3:15	-		-		-		3:00 - 3:15	69		43		112	
3:15 - 3:30	-		-		-		3:15 - 3:30	51		45		96	
3:30 - 3:45	-		-		-		3:30 - 3:45	53		86		139	
3:45 - 4:00	-	-	-	-	-	-	3:45 - 4:00	48	221	40	214	88	435
4:00 - 4:15	-		-		-		4:00 - 4:15	38		54		92	
4:15 - 4:30	-		-		-		4:15 - 4:30	34		54		88	
4:30 - 4:45	-		-		-		4:30 - 4:45	27		79		106	
4:45 - 5:00	-	-	-	-	-	-	4:45 - 5:00	26	125	69	256	95	381
5:00 - 5:15	-		-		-		5:00 - 5:15	17		91		108	
5:15 - 5:30	-		-		-		5:15 - 5:30	25		73		98	
5:30 - 5:45	-		-		-		5:30 - 5:45	18		54		72	
5:45 - 6:00	-	-	-	-	-	-	5:45 - 6:00	21	81	39	257	60	338
6:00 - 6:15	-		-		-		6:00 - 6:15	20		44		64	
6:15 - 6:30	-		-		-		6:15 - 6:30	31		30		61	
6:30 - 6:45	-		-		-		6:30 - 6:45	39		25		64	
6:45 - 7:00	-	-	-	-	-	-	6:45 - 7:00	41	131	25	124	66	255
7:00 - 7:15	-		-		-		7:00 - 7:15	30		22		52	
7:15 - 7:30	-		-		-		7:15 - 7:30	16		24		40	
7:30 - 7:45	-		-		-		7:30 - 7:45	24		24		48	
7:45 - 8:00	-	-	-	-	-	-	7:45 - 8:00	20	90	24	94	44	184
8:00 - 8:15	-		-		-		8:00 - 8:15	12		28		40	
8:15 - 8:30	-		-		-		8:15 - 8:30	6		24		30	
8:30 - 8:45	-		-		-		8:30 - 8:45	6		28		34	
8:45 - 9:00	-	-	-	-	-	-	8:45 - 9:00	11	35	17	97	28	132
9:00 - 9:15	-		-		-		9:00 - 9:15	4		16		20	
9:15 - 9:30	-		-		-		9:15 - 9:30	7		13		20	
9:30 - 9:45	-		-		-		9:30 - 9:45	9		19		28	
9:45 - 10:00	-	-	-	-	-	-	9:45 - 10:00	14	34	8	56	22	90
10:00 - 10:15	79		50		129		10:00 - 10:15	7		19		26	
10:15 - 10:30	72		38		110		10:15 - 10:30	10		16		26	
10:30 - 10:45	54		62		116		10:30 - 10:45	4		15		19	
10:45 - 11:00	63	268	24	174	87	442	10:45 - 11:00	4	25	11	61	15	86
11:00 - 11:15	61		56		117		11:00 - 11:15	2		10		12	
11:15 - 11:30	54		47		101		11:15 - 11:30	3		9		12	
11:30 - 11:45	59		74		133		11:30 - 11:45	2		25		27	
11:45 - 12:00	66	240	60	237	126	477	11:45 - 12:00	2	9	6	50	8	59
TOTALS		508		411		919			1,732		1,721		3,453
ADT'S									2,240		2,132		4,372

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.004

LOCATION - DAWN-JUST W/O COUNTY GARAGE VOLUMES FOR - WEDNESDAY 8/18/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	2		14		16		12:00 - 12:15	48		92		140	
12:15 - 12:30	5		2		7		12:15 - 12:30	78		83		161	
12:30 - 12:45	2		6		8		12:30 - 12:45	84		59		143	
12:45 - 1:00	0	9	8	30	8	39	12:45 - 1:00	92	302	46	280	138	582
1:00 - 1:15	1		9		10		1:00 - 1:15	114		50		164	
1:15 - 1:30	0		2		2		1:15 - 1:30	99		35		134	
1:30 - 1:45	2		3		5		1:30 - 1:45	109		35		144	
1:45 - 2:00	0	3	3	17	3	20	1:45 - 2:00	114	436	38	158	152	594
2:00 - 2:15	0		2		2		2:00 - 2:15	90		37		127	
2:15 - 2:30	1		0		1		2:15 - 2:30	82		38		120	
2:30 - 2:45	0		1		1		2:30 - 2:45	76		62		138	
2:45 - 3:00	0	1	0	3	0	4	2:45 - 3:00	76	324	46	183	122	507
3:00 - 3:15	1		2		3		3:00 - 3:15	54		62		116	
3:15 - 3:30	4		0		4		3:15 - 3:30	41		55		96	
3:30 - 3:45	3		3		6		3:30 - 3:45	59		81		140	
3:45 - 4:00	0	8	2	7	2	15	3:45 - 4:00	50	204	66	264	116	468
4:00 - 4:15	1		2		3		4:00 - 4:15	46		74		120	
4:15 - 4:30	2		2		4		4:15 - 4:30	38		50		88	
4:30 - 4:45	7		1		8		4:30 - 4:45	31		94		125	
4:45 - 5:00	17	27	2	7	19	34	4:45 - 5:00	38	153	95	313	133	466
5:00 - 5:15	9		3		12		5:00 - 5:15	34		110		144	
5:15 - 5:30	9		5		14		5:15 - 5:30	26		77		103	
5:30 - 5:45	22		2		24		5:30 - 5:45	23		38		61	
5:45 - 6:00	20	60	1	11	21	71	5:45 - 6:00	35	118	42	267	77	385
6:00 - 6:15	32		11		43		6:00 - 6:15	24		42		66	
6:15 - 6:30	49		5		54		6:15 - 6:30	19		30		49	
6:30 - 6:45	77		21		98		6:30 - 6:45	26		22		48	
6:45 - 7:00	104	262	8	45	112	307	6:45 - 7:00	34	103	28	122	62	225
7:00 - 7:15	86		14		100		7:00 - 7:15	22		26		48	
7:15 - 7:30	98		14		112		7:15 - 7:30	18		18		36	
7:30 - 7:45	142		20		162		7:30 - 7:45	17		21		38	
7:45 - 8:00	174	500	16	64	190	564	7:45 - 8:00	13	70	23	88	36	158
8:00 - 8:15	186		34		220		8:00 - 8:15	6		13		19	
8:15 - 8:30	202		18		220		8:15 - 8:30	9		18		27	
8:30 - 8:45	152		14		166		8:30 - 8:45	10		8		18	
8:45 - 9:00	155	695	19	85	174	780	8:45 - 9:00	16	41	18	57	34	98
9:00 - 9:15	97		18		115		9:00 - 9:15	6		10		16	
9:15 - 9:30	94		42		136		9:15 - 9:30	6		10		16	
9:30 - 9:45	98		31		129		9:30 - 9:45	8		6		14	
9:45 - 10:00	94	383	42	133	136	516	9:45 - 10:00	12	32	10	36	22	68
10:00 - 10:15	87		67		154		10:00 - 10:15	7		17		24	
10:15 - 10:30	76		52		128		10:15 - 10:30	8		6		14	
10:30 - 10:45	66		58		124		10:30 - 10:45	5		17		22	
10:45 - 11:00	76	305	59	236	135	541	10:45 - 11:00	6	26	8	48	14	74
11:00 - 11:15	52		51		103		11:00 - 11:15	6		14		20	
11:15 - 11:30	58		57		115		11:15 - 11:30	5		6		11	
11:30 - 11:45	60		75		135		11:30 - 11:45	6		22		28	
11:45 - 12:00	64	234	76	259	140	493	11:45 - 12:00	1	18	6	48	7	66
TOTALS		2,487		897		3,384			1,827		1,864		3,691
ADT'S									4,314		2,761		7,075

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.004

LOCATION - DAWN-JUST W/O COUNTY GARAGE VOLUMES FOR - THURSDAY 8/19/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	2		8		10		12:00 - 12:15	-		-		-	
12:15 - 12:30	2		4		6		12:15 - 12:30	-		-		-	
12:30 - 12:45	2		4		6		12:30 - 12:45	-		-		-	
12:45 - 1:00	0	6	6	22	6	28	12:45 - 1:00	-	-	-	-	-	-
1:00 - 1:15	3		8		11		1:00 - 1:15	-		-		-	
1:15 - 1:30	0		4		4		1:15 - 1:30	-		-		-	
1:30 - 1:45	4		3		7		1:30 - 1:45	-		-		-	
1:45 - 2:00	3	10	2	17	5	27	1:45 - 2:00	-	-	-	-	-	-
2:00 - 2:15	2		1		3		2:00 - 2:15	-		-		-	
2:15 - 2:30	2		4		6		2:15 - 2:30	-		-		-	
2:30 - 2:45	1		2		3		2:30 - 2:45	-		-		-	
2:45 - 3:00	4	9	2	9	6	18	2:45 - 3:00	-	-	-	-	-	-
3:00 - 3:15	0		1		1		3:00 - 3:15	-		-		-	
3:15 - 3:30	3		0		3		3:15 - 3:30	-		-		-	
3:30 - 3:45	3		4		7		3:30 - 3:45	-		-		-	
3:45 - 4:00	0	6	0	5	0	11	3:45 - 4:00	-	-	-	-	-	-
4:00 - 4:15	2		0		2		4:00 - 4:15	-		-		-	
4:15 - 4:30	7		2		9		4:15 - 4:30	-		-		-	
4:30 - 4:45	8		3		11		4:30 - 4:45	-		-		-	
4:45 - 5:00	8	25	3	8	11	33	4:45 - 5:00	-	-	-	-	-	-
5:00 - 5:15	12		4		16		5:00 - 5:15	-		-		-	
5:15 - 5:30	16		3		19		5:15 - 5:30	-		-		-	
5:30 - 5:45	17		6		23		5:30 - 5:45	-		-		-	
5:45 - 6:00	20	65	2	15	22	80	5:45 - 6:00	-	-	-	-	-	-
6:00 - 6:15	24		10		34		6:00 - 6:15	-		-		-	
6:15 - 6:30	42		4		46		6:15 - 6:30	-		-		-	
6:30 - 6:45	75		7		82		6:30 - 6:45	-		-		-	
6:45 - 7:00	124	265	14	35	138	300	6:45 - 7:00	-	-	-	-	-	-
7:00 - 7:15	86		9		95		7:00 - 7:15	-		-		-	
7:15 - 7:30	90		22		112		7:15 - 7:30	-		-		-	
7:30 - 7:45	125		17		142		7:30 - 7:45	-		-		-	
7:45 - 8:00	164	465	16	64	180	529	7:45 - 8:00	-	-	-	-	-	-
8:00 - 8:15	180		28		208		8:00 - 8:15	-		-		-	
8:15 - 8:30	160		24		184		8:15 - 8:30	-		-		-	
8:30 - 8:45	156		21		177		8:30 - 8:45	-		-		-	
8:45 - 9:00	144	640	19	92	163	732	8:45 - 9:00	-	-	-	-	-	-
9:00 - 9:15	96		24		120		9:00 - 9:15	-		-		-	
9:15 - 9:30	92		56		148		9:15 - 9:30	-		-		-	
9:30 - 9:45	92		34		126		9:30 - 9:45	-		-		-	
9:45 - 10:00	74	354	39	153	113	507	9:45 - 10:00	-	-	-	-	-	-
10:00 - 10:15	-		-		-		10:00 - 10:15	-		-		-	
10:15 - 10:30	-		-		-		10:15 - 10:30	-		-		-	
10:30 - 10:45	-		-		-		10:30 - 10:45	-		-		-	
10:45 - 11:00	-	-	-	-	-	-	10:45 - 11:00	-	-	-	-	-	-
11:00 - 11:15	-		-		-		11:00 - 11:15	-		-		-	
11:15 - 11:30	-		-		-		11:15 - 11:30	-		-		-	
11:30 - 11:45	-		-		-		11:30 - 11:45	-		-		-	
11:45 - 12:00	-	-	-	-	-	-	11:45 - 12:00	-	-	-	-	-	-
TOTALS		1,845		420		2,265			-		-		-
ADT'S									1,845		420		2,265

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.004

LOCATION - DAWN-JUST W/O COUNTY GARAGE

AVERAGED VOLUMES FOR - TUESDAY 8/17/99 TO THURSDAY 8/19/99

AM							PM						
TIME	EB		WB		TOTAL		TIME	EB		WB		TOTAL	
12:00 - 12:15	2		11		13		12:00 - 12:15	52		82		134	
12:15 - 12:30	4		3		7		12:15 - 12:30	75		71		146	
12:30 - 12:45	2		5		7		12:30 - 12:45	81		50		131	
12:45 - 1:00	0	8	7	26	7	34	12:45 - 1:00	96	304	43	246	139	550
1:00 - 1:15	2		9		11		1:00 - 1:15	95		44		139	
1:15 - 1:30	0		3		3		1:15 - 1:30	100		37		137	
1:30 - 1:45	3		3		6		1:30 - 1:45	107		31		138	
1:45 - 2:00	2	7	3	18	5	25	1:45 - 2:00	109	411	34	146	143	557
2:00 - 2:15	1		2		3		2:00 - 2:15	82		42		124	
2:15 - 2:30	2		2		4		2:15 - 2:30	79		35		114	
2:30 - 2:45	1		2		3		2:30 - 2:45	72		57		129	
2:45 - 3:00	2	6	1	7	3	13	2:45 - 3:00	77	310	44	178	121	488
3:00 - 3:15	1		2		3		3:00 - 3:15	62		53		115	
3:15 - 3:30	4		0		4		3:15 - 3:30	46		50		96	
3:30 - 3:45	3		4		7		3:30 - 3:45	56		84		140	
3:45 - 4:00	0	8	1	7	1	15	3:45 - 4:00	49	213	53	240	102	453
4:00 - 4:15	2		1		3		4:00 - 4:15	42		64		106	
4:15 - 4:30	5		2		7		4:15 - 4:30	36		52		88	
4:30 - 4:45	8		2		10		4:30 - 4:45	29		87		116	
4:45 - 5:00	13	28	3	8	16	36	4:45 - 5:00	32	139	82	285	114	424
5:00 - 5:15	11		4		15		5:00 - 5:15	26		101		127	
5:15 - 5:30	13		4		17		5:15 - 5:30	26		75		101	
5:30 - 5:45	20		4		24		5:30 - 5:45	21		46		67	
5:45 - 6:00	20	64	2	14	22	78	5:45 - 6:00	28	101	41	263	69	364
6:00 - 6:15	28		11		39		6:00 - 6:15	22		43		65	
6:15 - 6:30	46		5		51		6:15 - 6:30	25		30		55	
6:30 - 6:45	76		14		90		6:30 - 6:45	33		24		57	
6:45 - 7:00	114	264	11	41	125	305	6:45 - 7:00	38	118	27	124	65	242
7:00 - 7:15	86		12		98		7:00 - 7:15	26		24		50	
7:15 - 7:30	94		18		112		7:15 - 7:30	17		21		38	
7:30 - 7:45	134		19		153		7:30 - 7:45	21		23		44	
7:45 - 8:00	169	483	16	65	185	548	7:45 - 8:00	17	81	24	92	41	173
8:00 - 8:15	183		31		214		8:00 - 8:15	9		21		30	
8:15 - 8:30	181		21		202		8:15 - 8:30	8		21		29	
8:30 - 8:45	154		18		172		8:30 - 8:45	8		18		26	
8:45 - 9:00	150	668	19	89	169	757	8:45 - 9:00	14	39	18	78	32	117
9:00 - 9:15	97		21		118		9:00 - 9:15	5		13		18	
9:15 - 9:30	93		49		142		9:15 - 9:30	7		12		19	
9:30 - 9:45	95		33		128		9:30 - 9:45	9		13		22	
9:45 - 10:00	84	369	41	144	125	513	9:45 - 10:00	13	34	9	47	22	81
10:00 - 10:15	83		59		142		10:00 - 10:15	7		18		25	
10:15 - 10:30	74		45		119		10:15 - 10:30	9		11		20	
10:30 - 10:45	60		60		120		10:30 - 10:45	5		16		21	
10:45 - 11:00	70	287	42	206	112	493	10:45 - 11:00	5	26	10	55	15	81
11:00 - 11:15	57		54		111		11:00 - 11:15	4		12		16	
11:15 - 11:30	56		52		108		11:15 - 11:30	4		8		12	
11:30 - 11:45	60		75		135		11:30 - 11:45	4		24		28	
11:45 - 12:00	65	238	68	249	133	487	11:45 - 12:00	2	14	6	50	8	64
TOTALS		2,430		874		3,304			1,790		1,804		3,594
ADT'S									4,220		2,678		6,898

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.005

LOCATION - DAWN-JUST E/O COUNTY GARAGE VOLUMES FOR - TUESDAY 8/17/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	-		-		-		12:00 - 12:15	51		70		121	
12:15 - 12:30	-		-		-		12:15 - 12:30	54		60		114	
12:30 - 12:45	-		-		-		12:30 - 12:45	60		42		102	
12:45 - 1:00	-	-	-	-	-	-	12:45 - 1:00	76	241	42	214	118	455
1:00 - 1:15	-		-		-		1:00 - 1:15	58		40		98	
1:15 - 1:30	-		-		-		1:15 - 1:30	70		42		112	
1:30 - 1:45	-		-		-		1:30 - 1:45	67		26		93	
1:45 - 2:00	-	-	-	-	-	-	1:45 - 2:00	68	263	36	144	104	407
2:00 - 2:15	-		-		-		2:00 - 2:15	58		48		106	
2:15 - 2:30	-		-		-		2:15 - 2:30	64		30		94	
2:30 - 2:45	-		-		-		2:30 - 2:45	54		52		106	
2:45 - 3:00	-	-	-	-	-	-	2:45 - 3:00	56	232	40	170	96	402
3:00 - 3:15	-		-		-		3:00 - 3:15	58		46		104	
3:15 - 3:30	-		-		-		3:15 - 3:30	42		45		87	
3:30 - 3:45	-		-		-		3:30 - 3:45	47		88		135	
3:45 - 4:00	-	-	-	-	-	-	3:45 - 4:00	41	188	45	224	86	412
4:00 - 4:15	-		-		-		4:00 - 4:15	33		55		88	
4:15 - 4:30	-		-		-		4:15 - 4:30	29		65		94	
4:30 - 4:45	-		-		-		4:30 - 4:45	24		90		114	
4:45 - 5:00	-	-	-	-	-	-	4:45 - 5:00	28	114	76	286	104	400
5:00 - 5:15	-		-		-		5:00 - 5:15	16		106		122	
5:15 - 5:30	-		-		-		5:15 - 5:30	23		78		101	
5:30 - 5:45	-		-		-		5:30 - 5:45	16		60		76	
5:45 - 6:00	-	-	-	-	-	-	5:45 - 6:00	19	74	39	283	58	357
6:00 - 6:15	-		-		-		6:00 - 6:15	17		44		61	
6:15 - 6:30	-		-		-		6:15 - 6:30	28		32		60	
6:30 - 6:45	-		-		-		6:30 - 6:45	32		27		59	
6:45 - 7:00	-	-	-	-	-	-	6:45 - 7:00	34	111	26	129	60	240
7:00 - 7:15	-		-		-		7:00 - 7:15	26		24		50	
7:15 - 7:30	-		-		-		7:15 - 7:30	13		30		43	
7:30 - 7:45	-		-		-		7:30 - 7:45	24		30		54	
7:45 - 8:00	-	-	-	-	-	-	7:45 - 8:00	13	76	38	122	51	198
8:00 - 8:15	-		-		-		8:00 - 8:15	10		38		48	
8:15 - 8:30	-		-		-		8:15 - 8:30	6		28		34	
8:30 - 8:45	-		-		-		8:30 - 8:45	5		38		43	
8:45 - 9:00	-	-	-	-	-	-	8:45 - 9:00	14	35	22	126	36	161
9:00 - 9:15	-		-		-		9:00 - 9:15	6		20		26	
9:15 - 9:30	-		-		-		9:15 - 9:30	8		16		24	
9:30 - 9:45	-		-		-		9:30 - 9:45	9		25		34	
9:45 - 10:00	-	-	-	-	-	-	9:45 - 10:00	14	37	10	71	24	108
10:00 - 10:15	57		50		107		10:00 - 10:15	6		22		28	
10:15 - 10:30	46		42		88		10:15 - 10:30	11		17		28	
10:30 - 10:45	42		78		120		10:30 - 10:45	5		20		25	
10:45 - 11:00	52	197	28	198	80	395	10:45 - 11:00	4	26	12	71	16	97
11:00 - 11:15	46		50		96		11:00 - 11:15	3		12		15	
11:15 - 11:30	48		44		92		11:15 - 11:30	3		9		12	
11:30 - 11:45	48		74		122		11:30 - 11:45	0		30		30	
11:45 - 12:00	47	189	50	218	97	407	11:45 - 12:00	2	8	6	57	8	65
TOTALS		386		416		802			1,405		1,897		3,302
ADT'S									1,791		2,313		4,104

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.005

LOCATION - DAWN-JUST E/O COUNTY GARAGE VOLUMES FOR - WEDNESDAY 8/18/99

AM							PM						
TIME	EB		WB		TOTAL		TIME	EB		WB		TOTAL	
12:00 - 12:15	2		14		16		12:00 - 12:15	42		68		110	
12:15 - 12:30	7		2		9		12:15 - 12:30	59		62		121	
12:30 - 12:45	2		7		9		12:30 - 12:45	70		36		106	
12:45 - 1:00	0	11	10	33	10	44	12:45 - 1:00	66	237	32	198	98	435
1:00 - 1:15	2		6		8		1:00 - 1:15	89		38		127	
1:15 - 1:30	0		4		4		1:15 - 1:30	79		30		109	
1:30 - 1:45	2		4		6		1:30 - 1:45	76		28		104	
1:45 - 2:00	0	4	4	18	4	22	1:45 - 2:00	78	322	30	126	108	448
2:00 - 2:15	0		2		2		2:00 - 2:15	68		39		107	
2:15 - 2:30	2		1		3		2:15 - 2:30	59		43		102	
2:30 - 2:45	0		1		1		2:30 - 2:45	58		58		116	
2:45 - 3:00	0	2	0	4	0	6	2:45 - 3:00	64	249	35	175	99	424
3:00 - 3:15	1		2		3		3:00 - 3:15	48		50		98	
3:15 - 3:30	4		0		4		3:15 - 3:30	36		43		79	
3:30 - 3:45	3		3		6		3:30 - 3:45	49		62		111	
3:45 - 4:00	0	8	2	7	2	15	3:45 - 4:00	44	177	48	203	92	380
4:00 - 4:15	1		1		2		4:00 - 4:15	40		54		94	
4:15 - 4:30	1		3		4		4:15 - 4:30	29		37		66	
4:30 - 4:45	6		1		7		4:30 - 4:45	26		70		96	
4:45 - 5:00	16	24	2	7	18	31	4:45 - 5:00	32	127	74	235	106	362
5:00 - 5:15	7		3		10		5:00 - 5:15	32		88		120	
5:15 - 5:30	9		5		14		5:15 - 5:30	26		68		94	
5:30 - 5:45	21		3		24		5:30 - 5:45	20		42		62	
5:45 - 6:00	19	56	1	12	20	68	5:45 - 6:00	34	112	34	232	68	344
6:00 - 6:15	22		11		33		6:00 - 6:15	22		48		70	
6:15 - 6:30	39		4		43		6:15 - 6:30	18		34		52	
6:30 - 6:45	48		22		70		6:30 - 6:45	23		22		45	
6:45 - 7:00	75	184	10	47	85	231	6:45 - 7:00	32	95	28	132	60	227
7:00 - 7:15	62		12		74		7:00 - 7:15	21		29		50	
7:15 - 7:30	77		9		86		7:15 - 7:30	19		19		38	
7:30 - 7:45	95		16		111		7:30 - 7:45	18		22		40	
7:45 - 8:00	104	338	12	49	116	387	7:45 - 8:00	12	70	26	96	38	166
8:00 - 8:15	98		31		129		8:00 - 8:15	5		13		18	
8:15 - 8:30	90		18		108		8:15 - 8:30	12		17		29	
8:30 - 8:45	87		19		106		8:30 - 8:45	10		8		18	
8:45 - 9:00	80	355	40	108	120	463	8:45 - 9:00	17	44	19	57	36	101
9:00 - 9:15	66		22		88		9:00 - 9:15	6		9		15	
9:15 - 9:30	66		40		106		9:15 - 9:30	7		11		18	
9:30 - 9:45	69		41		110		9:30 - 9:45	8		7		15	
9:45 - 10:00	69	270	44	147	113	417	9:45 - 10:00	14	35	10	37	24	72
10:00 - 10:15	71		55		126		10:00 - 10:15	7		16		23	
10:15 - 10:30	51		32		83		10:15 - 10:30	7		5		12	
10:30 - 10:45	54		33		87		10:30 - 10:45	4		18		22	
10:45 - 11:00	58	234	35	155	93	389	10:45 - 11:00	6	24	7	46	13	70
11:00 - 11:15	42		34		76		11:00 - 11:15	5		17		22	
11:15 - 11:30	45		30		75		11:15 - 11:30	6		6		12	
11:30 - 11:45	47		56		103		11:30 - 11:45	6		21		27	
11:45 - 12:00	55	189	56	176	111	365	11:45 - 12:00	1	18	6	50	7	68
TOTALS		1,675		763		2,438			1,510		1,587		3,097
ADT'S									3,185		2,350		5,535

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.005

LOCATION - DAWN-JUST E/O COUNTY GARAGE

VOLUMES FOR - THURSDAY 8/19/99

AM TIME	EB		WB		TOTAL		PM TIME	EB		WB		TOTAL	
12:00 - 12:15	2		7		9		12:00 - 12:15	-		-		-	
12:15 - 12:30	2		3		5		12:15 - 12:30	-		-		-	
12:30 - 12:45	3		4		7		12:30 - 12:45	-		-		-	
12:45 - 1:00	0	7	3	17	3	24	12:45 - 1:00	-	-	-	-	-	-
1:00 - 1:15	3		7		10		1:00 - 1:15	-		-		-	
1:15 - 1:30	0		4		4		1:15 - 1:30	-		-		-	
1:30 - 1:45	4		3		7		1:30 - 1:45	-		-		-	
1:45 - 2:00	4	11	2	16	6	27	1:45 - 2:00	-	-	-	-	-	-
2:00 - 2:15	2		1		3		2:00 - 2:15	-		-		-	
2:15 - 2:30	2		4		6		2:15 - 2:30	-		-		-	
2:30 - 2:45	1		2		3		2:30 - 2:45	-		-		-	
2:45 - 3:00	4	9	2	9	6	18	2:45 - 3:00	-	-	-	-	-	-
3:00 - 3:15	0		1		1		3:00 - 3:15	-		-		-	
3:15 - 3:30	3		0		3		3:15 - 3:30	-		-		-	
3:30 - 3:45	4		4		8		3:30 - 3:45	-		-		-	
3:45 - 4:00	0	7	0	5	0	12	3:45 - 4:00	-	-	-	-	-	-
4:00 - 4:15	2		0		2		4:00 - 4:15	-		-		-	
4:15 - 4:30	7		1		8		4:15 - 4:30	-		-		-	
4:30 - 4:45	8		3		11		4:30 - 4:45	-		-		-	
4:45 - 5:00	7	24	3	7	10	31	4:45 - 5:00	-	-	-	-	-	-
5:00 - 5:15	8		4		12		5:00 - 5:15	-		-		-	
5:15 - 5:30	16		3		19		5:15 - 5:30	-		-		-	
5:30 - 5:45	13		6		19		5:30 - 5:45	-		-		-	
5:45 - 6:00	17	54	1	14	18	68	5:45 - 6:00	-	-	-	-	-	-
6:00 - 6:15	17		9		26		6:00 - 6:15	-		-		-	
6:15 - 6:30	30		5		35		6:15 - 6:30	-		-		-	
6:30 - 6:45	50		9		59		6:30 - 6:45	-		-		-	
6:45 - 7:00	82	179	14	37	96	216	6:45 - 7:00	-	-	-	-	-	-
7:00 - 7:15	68		9		77		7:00 - 7:15	-		-		-	
7:15 - 7:30	62		16		78		7:15 - 7:30	-		-		-	
7:30 - 7:45	78		14		92		7:30 - 7:45	-		-		-	
7:45 - 8:00	100	308	14	53	114	361	7:45 - 8:00	-	-	-	-	-	-
8:00 - 8:15	102		25		127		8:00 - 8:15	-		-		-	
8:15 - 8:30	73		21		94		8:15 - 8:30	-		-		-	
8:30 - 8:45	84		24		108		8:30 - 8:45	-		-		-	
8:45 - 9:00	85	344	26	96	111	440	8:45 - 9:00	-	-	-	-	-	-
9:00 - 9:15	68		26		94		9:00 - 9:15	-		-		-	
9:15 - 9:30	70		54		124		9:15 - 9:30	-		-		-	
9:30 - 9:45	68		32		100		9:30 - 9:45	-		-		-	
9:45 - 10:00	58	264	37	149	95	413	9:45 - 10:00	-	-	-	-	-	-
10:00 - 10:15	-		-		-		10:00 - 10:15	-		-		-	
10:15 - 10:30	-		-		-		10:15 - 10:30	-		-		-	
10:30 - 10:45	-		-		-		10:30 - 10:45	-		-		-	
10:45 - 11:00	-	-	-	-	-	-	10:45 - 11:00	-	-	-	-	-	-
11:00 - 11:15	-		-		-		11:00 - 11:15	-		-		-	
11:15 - 11:30	-		-		-		11:15 - 11:30	-		-		-	
11:30 - 11:45	-		-		-		11:30 - 11:45	-		-		-	
11:45 - 12:00	-	-	-	-	-	-	11:45 - 12:00	-	-	-	-	-	-
TOTALS	1,207		403		1,610			-		-		-	
ADT'S								1,207		403		1,610	

TRAFFIC DATA SERVICES, INC. LOCATION CODE 08906.005

LOCATION - DAWN-JUST E/O COUNTY GARAGE AVERAGED VOLUMES FOR - TUESDAY 8/17/99 TO THURSDAY 8/19/99

AM							PM						
TIME	EB		WB		TOTAL		TIME	EB		WB		TOTAL	
12:00 - 12:15	2		11		13		12:00 - 12:15	47		69		116	
12:15 - 12:30	5		3		8		12:15 - 12:30	57		61		118	
12:30 - 12:45	3		6		9		12:30 - 12:45	65		39		104	
12:45 - 1:00	0	10	7	27	7	37	12:45 - 1:00	71	240	37	206	108	446
1:00 - 1:15	3		7		10		1:00 - 1:15	74		39		113	
1:15 - 1:30	0		4		4		1:15 - 1:30	75		36		111	
1:30 - 1:45	3		4		7		1:30 - 1:45	72		27		99	
1:45 - 2:00	2	8	3	18	5	26	1:45 - 2:00	73	294	33	135	106	429
2:00 - 2:15	1		2		3		2:00 - 2:15	63		44		107	
2:15 - 2:30	2		3		5		2:15 - 2:30	62		37		99	
2:30 - 2:45	1		2		3		2:30 - 2:45	56		55		111	
2:45 - 3:00	2	6	1	8	3	14	2:45 - 3:00	60	241	38	174	98	415
3:00 - 3:15	1		2		3		3:00 - 3:15	53		48		101	
3:15 - 3:30	4		0		4		3:15 - 3:30	39		44		83	
3:30 - 3:45	4		4		8		3:30 - 3:45	48		75		123	
3:45 - 4:00	0	9	1	7	1	16	3:45 - 4:00	43	183	47	214	90	397
4:00 - 4:15	2		1		3		4:00 - 4:15	37		55		92	
4:15 - 4:30	4		2		6		4:15 - 4:30	29		51		80	
4:30 - 4:45	7		2		9		4:30 - 4:45	25		80		105	
4:45 - 5:00	12	25	3	8	15	33	4:45 - 5:00	30	121	75	261	105	382
5:00 - 5:15	8		4		12		5:00 - 5:15	24		97		121	
5:15 - 5:30	13		4		17		5:15 - 5:30	25		73		98	
5:30 - 5:45	17		5		22		5:30 - 5:45	18		51		69	
5:45 - 6:00	18	56	1	14	19	70	5:45 - 6:00	27	94	37	258	64	352
6:00 - 6:15	20		10		30		6:00 - 6:15	20		46		66	
6:15 - 6:30	35		5		40		6:15 - 6:30	23		33		56	
6:30 - 6:45	49		16		65		6:30 - 6:45	28		25		53	
6:45 - 7:00	79	183	12	43	91	226	6:45 - 7:00	33	104	27	131	60	235
7:00 - 7:15	65		11		76		7:00 - 7:15	24		27		51	
7:15 - 7:30	70		13		83		7:15 - 7:30	16		25		41	
7:30 - 7:45	87		15		102		7:30 - 7:45	21		26		47	
7:45 - 8:00	102	324	13	52	115	376	7:45 - 8:00	13	74	32	110	45	184
8:00 - 8:15	100		28		128		8:00 - 8:15	8		26		34	
8:15 - 8:30	82		20		102		8:15 - 8:30	9		23		32	
8:30 - 8:45	86		22		108		8:30 - 8:45	8		23		31	
8:45 - 9:00	83	351	33	103	116	454	8:45 - 9:00	16	41	21	93	37	134
9:00 - 9:15	67		24		91		9:00 - 9:15	6		15		21	
9:15 - 9:30	68		47		115		9:15 - 9:30	8		14		22	
9:30 - 9:45	69		37		106		9:30 - 9:45	9		16		25	
9:45 - 10:00	64	268	41	149	105	417	9:45 - 10:00	14	37	10	55	24	92
10:00 - 10:15	64		53		117		10:00 - 10:15	7		19		26	
10:15 - 10:30	49		37		86		10:15 - 10:30	9		11		20	
10:30 - 10:45	48		56		104		10:30 - 10:45	5		19		24	
10:45 - 11:00	55	216	32	178	87	394	10:45 - 11:00	5	26	10	59	15	85
11:00 - 11:15	44		42		86		11:00 - 11:15	4		15		19	
11:15 - 11:30	47		37		84		11:15 - 11:30	5		8		13	
11:30 - 11:45	48		65		113		11:30 - 11:45	3		26		29	
11:45 - 12:00	51	190	53	197	104	387	11:45 - 12:00	2	14	6	55	8	69
TOTALS		1,646		804		2,450			1,469		1,751		3,220
ADT'S									3,115		2,555		5,670

APPENDIX D

PARKING DEMAND COUNT DATA

Table D
UCI MEDICAL CENTER - EXISTING HOURLY PARKING SUMMARY

	ON-SITE				OFF-SITE		
	North Structure	South Structure	Surface Spaces	TOTAL	County Structure	Manchester Lot	TOTAL
SPACES	318	671	577	1,566	375	500	2,441
Tues 8/17/99							
6:00 AM	174	79	150	403	35	82	520
7:00 AM	193	172	256	621	106	232	959
8:00 AM	228	325	382	935	184	428	1,547
9:00 AM	267	481	445	1,193	266	460	1,919
10:00 AM	288	547	423	1,258	244	474	1,976
11:00 AM	295	541	424	1,260	226	470	1,956
12:00 PM	298	532	409	1,239	207	452	1,898
1:00 PM	287	552	411	1,250	207	424	1,881
2:00 PM	283	589	416	1,288	201	464	1,953
3:00 PM	282	566	392	1,240	162	402	1,804
4:00 PM	261	461	325	1,047	137	346	1,530
5:00 PM	196	311	228	735	70	188	993
6:00 PM	182	264	184	630	44	148	822
7:00 PM	201	264	172	637	23	120	780
Wed 8/18/99							
6:00 AM	167	85	140	392	49	74	515
7:00 AM	183	198	263	644	128	242	1,014
8:00 AM	221	386	374	981	230	388	1,599
9:00 AM	266	529	416	1,211	314	448	1,973
10:00 AM	277	568	415	1,260	292	448	2,000
11:00 AM	286	548	422	1,256	263	472	1,991
12:00 PM	281	511	404	1,196	235	456	1,887
1:00 PM	279	564	409	1,252	232	442	1,926
2:00 PM	283	576	396	1,255	204	410	1,869
3:00 PM	291	551	385	1,227	167	384	1,778
4:00 PM	281	431	338	1,050	128	260	1,438
5:00 PM	237	281	248	766	73	214	1,053
6:00 PM	174	256	208	638	47	118	803
7:00 PM	224	272	179	675	31	94	800
Average							
6:00 AM	171	82	147	400	42	78	520
7:00 AM	188	185	262	635	117	238	990
8:00 AM	225	356	381	962	207	408	1,577
9:00 AM	267	505	434	1,206	290	454	1,950
10:00 AM	283	558	422	1,263	268	462	1,993
11:00 AM	291	545	425	1,261	245	472	1,978
12:00 PM	290	522	409	1,221	221	454	1,896
1:00 PM	283	558	413	1,254	220	434	1,908
2:00 PM	283	583	407	1,273	203	438	1,914
3:00 PM	287	559	391	1,237	165	394	1,796
4:00 PM	271	446	335	1,052	133	304	1,489
5:00 PM	217	296	239	752	72	202	1,026
6:00 PM	178	260	199	637	46	134	817
7:00 PM	213	268	179	660	27	108	795

UCI MEDICAL CENTER LRDP OFF-SITE PARKING

TRAFFIC ANALYSIS

OCTOBER 2001

AUSTIN-FOUST ASSOCIATES, INC.

UCI MEDICAL CENTER LRDP
OFF-SITE PARKING
Traffic Analysis

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October 25, 2001

UCI MEDICAL CENTER LRDP OFF-SITE PARKING
Traffic Analysis

This report summarizes the analysis of a proposed 1,600 space off-site parking structure for the UCI Medical Center Long Range Development Plan (LRDP). The proposed parking structure is located on the southwest corner of Manchester Blvd/The City Way and Chapman Avenue. The UCI Medical Center LRDP proposed on-site parking supply will be reduced by a similar amount.

ANALYSIS METHODOLOGY AND ASSUMPTIONS

The UCI Medical Center LRDP was originally analyzed assuming that all parking would be provided on-site. A parking structure does not generate trips on its own. However, the location of an off-site parking structure will change the destination of a portion of the trips generated by the UCI Medical Center LRDP. For this analysis, peak hour traffic associated with 1,600 parking spaces was redistributed to the off-site parking structure. An assumption was made that the parking structure would be utilized by UCI Medical Center staff rather than patients, visitors, doctors or nurses. Based on this assumption, a substantial portion of the project peak hour trips were subtracted from the original assignment to the UCI Medical Center and redistributed to the new off-site parking structure location.

Intersection capacity utilization (ICU) values were calculated based on long-range lane configurations at the intersections affected by the change in the location of the parking. Table 1 summarizes the results of the ICU analysis (actual ICU calculation sheets are included in the appendix).

As this table shows, the off-site parking structure will result in lower ICU values at the intersections of The City Drive and City Way/Dawn Way and The City Drive and Medical Center Way. The off-site parking structure will increase the ICU values at the intersection of Manchester Boulevard and Chapman Avenue; however, the intersection will remain at an acceptable level of service. At the

Table 1
ICU COMPARISON SUMMARY

INTERSECTION	2020 WITH PROJECT AM	PM	2020 WITH PROJECT OFF-SITE PARKING AM	PM	2020 WITH PROJECT OFF-SITE PARKING W/MITIGATION AM	PM
12. Manchester & Chapman	.66	.56	.79	.65		
13. City Dr & Chapman	.84	1.01	.73	1.05	.73	.87
18. City Blvd East & City Way	.22	.31	.38	.44		
19. City Dr & City Way	1.04	.87	.83	.81	.68	.81
43. City Dr & Medical Center	.83	.73	.61	.66		

Level of Service ranges:
.00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F

intersection of The City Drive and Chapman Avenue, the ICU value will decrease in the AM peak hour and increase in the PM peak hour to an unacceptable level of service. Areawide intersection improvements have been identified at the intersection of The City Drive and Chapman Avenue which will result in an acceptable level of service with the proposed off-site parking structure.

CONCLUSIONS

The proposed 1,600-space parking structure located on the southwest corner of Manchester Blvd/The City Way and Chapman Ave will redistribute a portion of the trips generated by the UCI Medical Center LRDP. This redistribution of traffic will result in no additional significant impacts.

APPENDIX

12. Manchester Ave & Chapman Ave

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	220	.13*
NBT	1	1700	10	.01*	40	.02
NBR	2	3400	90	.03	600	.18
SBL	1	1700	260	.15*	130	.08
SBT	2	3400	60	.03	40	.02*
SBR	0	0	50		60	.04
EBL	1	1700	60	.04	20	.01*
EBT	3	5100	1440	.31*	950	.22
EBR	0	0	150		180	
WBL	2	3400	460	.14*	290	.09
WBT	3	5100	560	.11	1540	.30*
WBR	1	1700	80	.05	160	.09
Right Turn Adjustment					Multi	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.66		.56

Year 2020 - with Project (off-site parking)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	67	.04	260	.15*
NBT	1	1700	10	.01*	45	.03
NBR	2	3400	146	.04	796	.23
SBL	1	1700	241	.14*	130	.08
SBT	2	3400	79	.04	40	.02*
SBR	0	0	50		60	.04
EBL	1	1700	60	.04	20	.01
EBT	3	5100	1430	.31*	1135	.26*
EBR	0	0	140		179	
WBL	2	3400	958	.28*	392	.12*
WBT	3	5100	543	.11	1500	.29
WBR	1	1700	80	.05	155	.09
Right Turn Adjustment					NBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.79		.65

13. The City Dr & Chapman Ave

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	220	.06*	180	.05*
NBT	4	6800	1630	.24	1330	.20
NBR	1	1700	550	.32	1050	.62
SBL	2	3400	80	.02	170	.05
SBT	3	5100	1260	.25*	1800	.35*
SBR	1	1700	480	.28	670	.39
EBL	2	3400	470	.14	430	.13
EBT	3	5100	1110	.22*	1270	.25*
EBR	1	1700	180	.11	80	.05
WBL	2	3400	870	.26*	530	.16*
WBT	3	5100	610	.12	1190	.23
WBR	1	1700	170	.10	60	.04
Right Turn Adjustment					NBR	.15*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.84		1.01

Year 2020 - with Project (off-site parking)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	203	.06*	135	.04*
NBT	4	6800	1591	.23	1193	.18
NBR	1	1700	550	.32	1050	.62
SBL	2	3400	76	.02	170	.05
SBT	3	5100	1083	.21*	1753	.34*
SBR	1	1700	661	.39	717	.42
EBL	2	3400	509	.15	567	.17
EBT	3	5100	1183	.23*	1525	.30*
EBR	1	1700	95	.06	69	.04
WBL	2	3400	553	.16*	475	.14*
WBT	3	5100	927	.18	1245	.24
WBR	1	1700	170	.10	60	.04
Right Turn Adjustment			SBR	.02*	NBR	.18*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.73		1.05

Year 2020 - with Project (off-site parking) w/m

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	203	.06*	135	.04*
NBT	3.5	8500	1591	{.23}	1193	.23
NBR	1.5		550	{.20}	1050	.31
SBL	2	3400	76	.02	170	.05
SBT	3	5100	1083	.21*	1753	.34*
SBR	1	1700	661	.39	717	.42
EBL	2	3400	509	.15	567	.17
EBT	3	5100	1183	.23*	1525	.30*
EBR	1	1700	95	.06	69	.04
WBL	2	3400	553	.16*	475	.14*
WBT	3	5100	927	.18	1245	.24
WBR	1	1700	170	.10	60	.04
Right Turn Adjustment			SBR	.02*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.73		.87

18. City Blvd East & The City Way

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		0		10	
NBT	1	3400	60	.03*	70	.05*
NBR	0.5		30		80	
SBL	1	1700	110	.06*	110	.06*
SBT	2	3400	70	.02	130	.04
SBR	1	1700	60	.04	90	.05
EBL	1	1700	20	.01	50	.03
EBT	1.5	3400	220	.06*	240	.07*
EBR	0.5		0		10	
WBL	1	1700	30	.02*	140	.08*
WBT	2	3400	140	.04	240	.07
WBR	1	1700	120	.07	100	.06
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.22		.31

Year 2020 - with Project (off-site parking)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		0		10	
NBT	1	3400	60	.03*	70	.05*
NBR	0.5		30		80	
SBL	1	1700	152	.09*	328	.19*
SBT	2	3400	70	.02	130	.04
SBR	1	1700	60	.04	90	.05
EBL	1	1700	20	.01	50	.03
EBT	1.5	3400	183	.05*	236	.07*
EBR	0.5		0		10	
WBL	1	1700	30	.02*	140	.08*
WBT	2	3400	137	.04	220	.06
WBR	1	1700	457	.27	132	.08
Right Turn Adjustment			WBR	.14*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.38		.44

19. The City Dr & The City Way

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	170	.05	100	.03*
NBT	4	6800	2000	.39*	1280	.19
NBR	0	0	650		20	
SBL	1	1700	750	.44*	110	.06
SBT	4	6800	720	.14	2010	.34*
SBR	0	0	230		280	
EBL	1.5		190	.06*	350	.10*
EBT	1	6800	160	{.09}	30	{.04}
EBR	1.5		100		160	
WBL	1	1700	110	.06	340	.20
WBT	0.5	1700	10	.10*	110	.35*
WBR	0.5		165		490	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				1.04		.87

Year 2020 - with Project (off-site parking)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	507	.15	148	.04*
NBT	4	6800	2000	.34*	1280	.18
NBR	0	0	313		-28	
SBL	1	1700	508	.30*	53	.03
SBT	4	6800	720	.14	2010	.34*
SBR	0	0	230		280	
EBL	1.5		190	.06*	350	{.10}*
EBT	1	6800	109	{.06}	25	{.10}
EBR	1.5		151		379	
WBL	1	1700	53	.03	121	.07
WBT	0.5	1700	7	.08*	74	.28*
WBR	0.5		137		404	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.81

Year 2020 - with Project (off-site parking) w/m

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	507	.15	148	.04*
NBT	4	6800	2000	.34*	1280	.18
NBR	0	0	313		-28	
SBL	2	3400	508	.15*	53	.02
SBT	4	6800	720	.14	2010	.34*
SBR	0	0	230		280	
EBL	1.5		190	.06*	350	{.10}*
EBT	1	6800	109	{.06}	25	{.10}
EBR	1.5		151		379	
WBL	1	1700	53	.03	121	.07
WBT	0.5	1700	7	.08*	74	.28*
WBR	0.5		137		404	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.81

43. The City Dr & Medical Center Dr

Year 2020 - with Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	210	.12	100	.06*
NBT	4	6800	2020	.31*	1870	.28
NBR	0	0	70		50	
SBL	1	1700	470	.28*	150	.09
SBT	4	6800	1580	.27	2100	.33*
SBR	0	0	240		160	
EBL	1	1700	140	.08*	280	.16*
EBT	0	0	0		0	
EBR	1	1700	70	.04	200	.12
WBL	1	1700	40	.02	80	.05
WBT	1	1700	10	.11*	10	.13*
WBR	0	0	180		210	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.73

Year 2020 - with Project (off-site parking)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	210	.12	100	.06*
NBT	4	6800	1992	.30*	1784	.27
NBR	0	0	70		50	
SBL	1	1700	133	.08*	93	.05
SBT	4	6800	1338	.23	2043	.32*
SBR	0	0	240		160	
EBL	1	1700	140	.08*	280	.16*
EBT	0	0	0		0	
EBR	1	1700	70	.04	200	.12
WBL	1	1700	40	.02	80	.05
WBT	1	1700	10	.10*	10	.07*
WBR	0	0	153		114	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.61		.66

WEST ORANGE CIRCULATION STUDY
Traffic Model Description and Database

Prepared by:

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August 2, 2001

WEST ORANGE CIRCULATION STUDY
TRAFFIC MODEL DESCRIPTION AND DATABASE

This report describes the West Orange Circulation Study traffic model developed for traffic forecasting work in the westernmost part of the City of Orange. It has been prepared to provide a description of the traffic model and to summarize its land use and traffic forecast database.

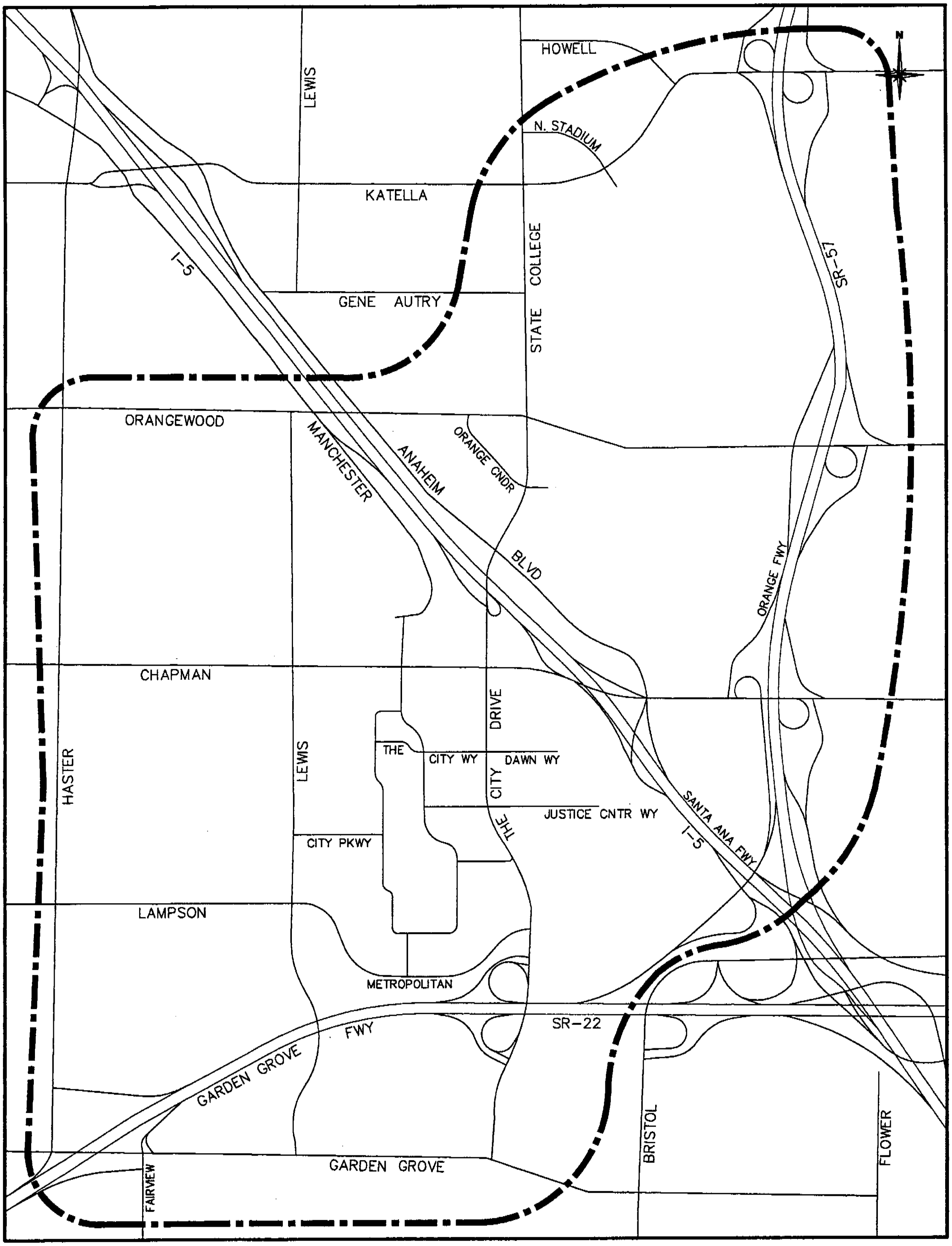
OVERVIEW

The West Orange Circulation Study (WOCS) is a focused traffic study for the western part of the City of Orange. It encompasses the City Center area, the UCI Medical Center and the Uptown Specific Plan area plus portions of the City of Garden Grove and Anaheim (see WOCS area in Figure 1). Several traffic studies for land use proposals in this area are currently being carried out, and the WOCS provides a consistent and comprehensive database for these studies.

The WOCS traffic model (WOCSTM) provides a detailed traffic forecasting tool for the modeled area. Model outputs include average daily traffic (ADT) and peak hour volumes for various time frames, responding to anticipated changes in land use and circulation over a 20 year time period. Roadway system changes include the improvements currently under way for the I-5 Freeway and the proposed improvements to the SR-22 Freeway interchange with The City Drive.

While the traffic model is a tightly windowed formulation, the travel patterns contained in the model have been extracted from the latest Orange County Traffic Analysis Model (OCTAM 3.01). In this manner, regional travel patterns from the regional modeling database are incorporated into the WOCSTM, providing both the external and thru-trip patterns for the study area.

The model provides the ability to provide detailed peak hour traffic forecast information, including turn movement volumes at the major intersections in the study area. The land use database is specified according to different land use types and the land use and trip generation data is quantified



Legend

Project Area

Figure 1

WEST ORANGE CIRICULATION STUDY
STUDY AREA

according to a set of traffic zones defined for the study area. In this manner, the WOCSTM provides a traffic database for various studies and entitlements in this West Orange area.

DATABASE TIME FRAMES

The traffic forecast database presented here uses a set of incremental steps to depict the effects of changes in land use and circulation over time. A separate version of the model has been produced for each step and these can be summarized as follows:

1. Year 2005 - This version of the WOCSTM depicts traffic increases due to growth over the next five years plus changes in traffic patterns due to the completion of the I-5 Freeway project.

2. Year 2010 - This shows the estimated traffic growth over the next 10 years plus the effect of additional changes in traffic patterns as a result of Phase I of The City Drive/SR-22 project.

3. Year 2020 - This shows estimated traffic volumes for year 2020, and is considered to be representative of full buildout of the area. It forms the basis for the long-range traffic analysis being carried out in this area.

Each version of WOCSTM reflects growth in internal and external traffic and applicable changes in the circulation system. Table 1 summarizes the study area land use and trip generation for the existing and three future time periods. Detailed land use and trip generation by traffic zone is given in Appendix A. The sections which follow present existing data, and then traffic forecasts for each of the future year versions of the model.

EXISTING CONDITIONS

The WOCSTM existing database includes land use and traffic count data for year 2000. Traffic count information was collected in early 2000 and current land use data was derived for the same time period. This 2000 represents a "Base Case" for the data presented in this report.

Table 1

LAND USE AND TRIP GENERATION SUMMARY

LAND USE CATEGORY	UNITS	BASE YEAR AMOUNT	BASE YEAR ADT	2005 AMOUNT	2005 ADT	2010 AMOUNT	2010 ADT	2020 AMOUNT	2020 ADT
1. Res - Low	DU	1,068	10,221	1,068	10,221	1,068	10,221	1,018	9,742
2. Res - Medium	DU	532	4,134	532	4,134	532	4,134	532	4,134
3. Res - Med-High	DU	2,098	14,896	2,098	14,896	2,098	14,896	2,098	14,896
4. Res - High/Apt.	DU	1,140	7,558	1,140	7,558	1,140	7,558	1,190	7,890
5. Mobile Home	DU	716	3,444	716	3,444	716	3,444	513	2,468
9. General Commercial	TSF	320	13,736	320	13,736	320	13,736	1,026	44,037
10. Restaurant	TSF	105	13,686	105	13,686	105	13,686	105	13,686
11. Office	TSF	4,818	53,046	5,415	59,619	5,975	65,785	12,818	141,125
12. Medical Office	SG	100	9,522	100	9,522	100	9,522	208	19,806
13. Industrial	TSF	1,576	10,984	1,576	10,984	1,576	10,984	1,263	8,804
16. Hotel	ROOM	2,002	16,477	2,002	16,477	2,139	17,604	1,935	15,925
19. Hospital	BED	382	4,278	382	4,278	524	5,869	524	5,869
24. Elementary School	STU	400	580	400	580	400	580	400	580
29. County Facil. (SG)	UNIT	550	5,500	550	5,500	550	5,500	650	6,500
35. Anaheim Stadium	SG	100	2,000	100	2,000	100	2,000	100	2,000
36. Crystal Cathedral	SG	100	1,000	100	1,000	100	1,000	100	1,000
37. Gotcha Glacier	SG	--	--	1,000	8,330	1,000	8,330	--	--
38. Sportstown	SG	49	1,549	49	1,549	49	1,549	900	28,458
39. The Block	TSF	811	35,499	1,061	46,440	1,061	46,440	1,061	46,440
TOTAL			208,108		233,954		242,838		373,360

DU - dwelling unit
TSF - thousand square feet of floor area
STU - students
SG - special generator

Source: 1-11, 13-29. "Trip Generation" 6th Edition, Institute of Transportation Engineers, 1997
12., 19. "UCI Medical Center Expansion, Preliminary Trip Generation Summary," Austin-Foust Associates, Inc., Oct 18, 2000.
35. Anaheim Traffic Analysis Model
37. "Gotcha Glacier Parking and Trip Generation Summary," Austin-Foust Associates, Inc., June 2000
38. "Anaheim Sports Complex Traffic Analysis," Austin-Foust Associates, Inc., January 1996
39. Driveway counts, June 1999

Figure 2 shows the existing ADT volumes on the study area highway system. The I-5 freeway at the time of the counts was nearing final completion of the widening project, and ramp configurations were as shown in this diagram. Over the next two to three years the improvements to the I-5 Freeway will be completed and these are addressed as part of the 2005 traffic forecast database presented in the next section of this report.

Peak hour traffic volume data was collected for a set of intersections in the study area. Existing intersection capacity utilization (ICU) values were calculated from these peak hour intersection counts and are summarized later in this report.

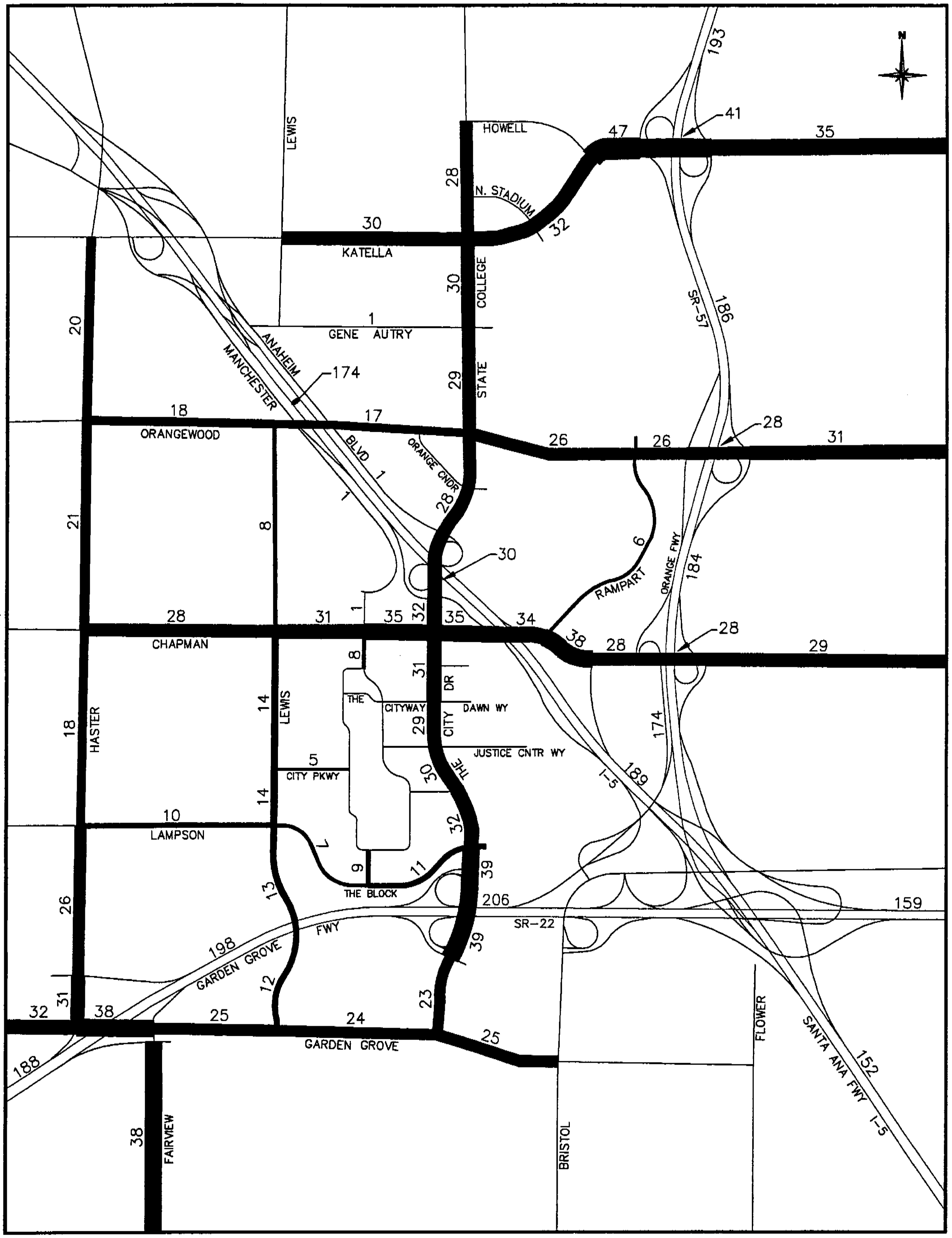
YEAR 2005

This version of the WOCSTM shows increases in local and through traffic volumes plus changes in traffic patterns due to completion of the I-5 widening project. Figure 3 shows the ramp changes for the I-5 project in this time frame. The I-5 northbound off-ramp to Chapman Avenue is reconfigured to cross over the freeway and intersect at the southbound ramp intersection. Also, the I-5 northbound off-ramp to State College is completed. The land use for this time frame includes development of the Gotcha Glacier on Anaheim Stadium property, expansion of The Block in Orange, and development of two of the four Spieker Office development sites.

Figure 4 shows the 2005 ADT volumes on the WOCSTM highway network. The corresponding ICU values are given in a later section of this report in which intersection levels of service are discussed. The ADT volumes show overall increases throughout the study area except for the section of Chapman Avenue just east of I-5. Changing the northbound off-ramp to its new location west of I-5 results in a reduction on ADT volumes on the section of Chapman Avenue immediately east of the freeway.

YEAR 2010

The year 2010 volumes include ambient growth in through-trips, plus growth in land use in the study area as summarized earlier. Major changes to the 2010 land use database include development of the entire Anaheim Sportstown project on the Anaheim Stadium property and development of the

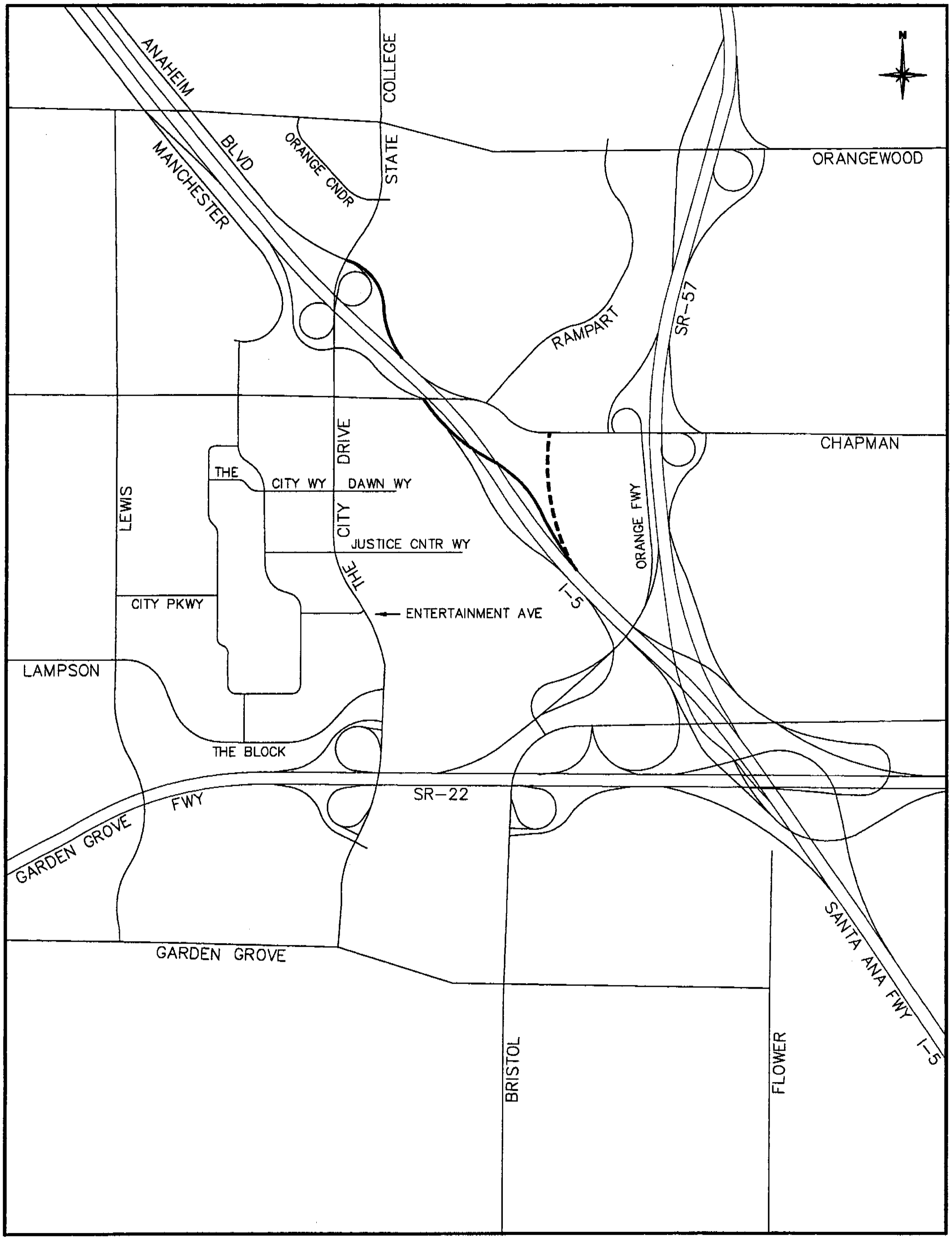


Legend

10 20 30 ADT Volumes

Figure 2

EXISTING ADT VOLUMES (000's)

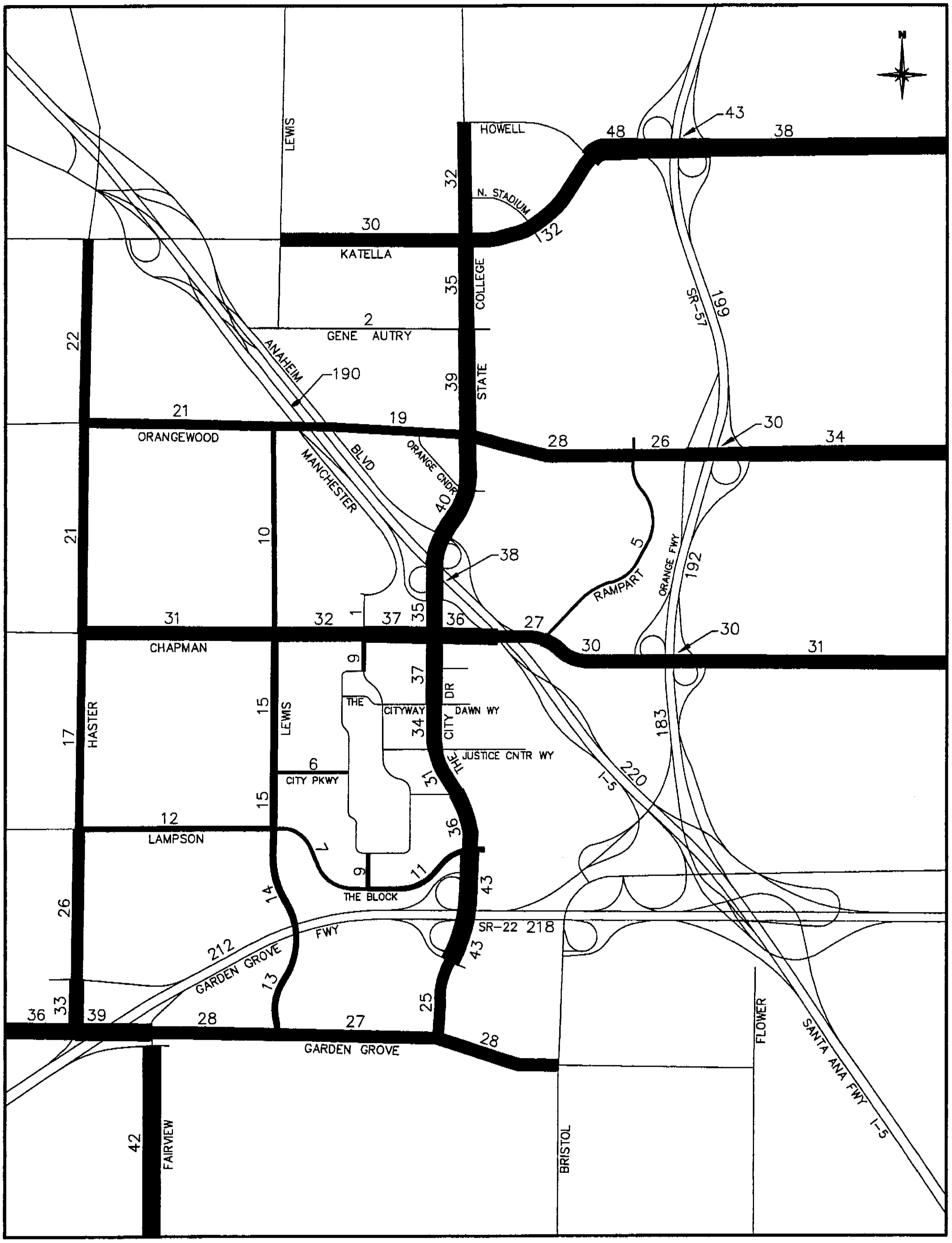


Legend

Added by 2005
Deleted by 2005

Figure 3

I-5 CONNECTION CHANGES ASSUMED FOR 2005



Legend
10 20 30 ADT Volumes

Figure 4
2005 ADT VOLUMES (000's)

remaining two Spieker office development sites. Also, circulation system changes at the SR-22/The City Drive ramps are assumed as shown in Figure 5. These changes feature a realignment of Metropolitan Drive and the consolidation of the two closely spaced intersections on City Drive to a single intersection at Metropolitan Drive.

Figure 6 shows the 2010 ADT volumes and the corresponding ICU values are presented later in this report in the section addressing intersection levels of service.

YEAR 2020

The year 2020 analysis assumes the projected long-range land uses in the study area and year 2020 demographic data in the surrounding County area. Major land use changes include expansion of UCI Medical Center, development of the Orange Uptown area with mixed office/commercial uses and buildout of the Anaheim Stadium Area Master Land Use Plan.

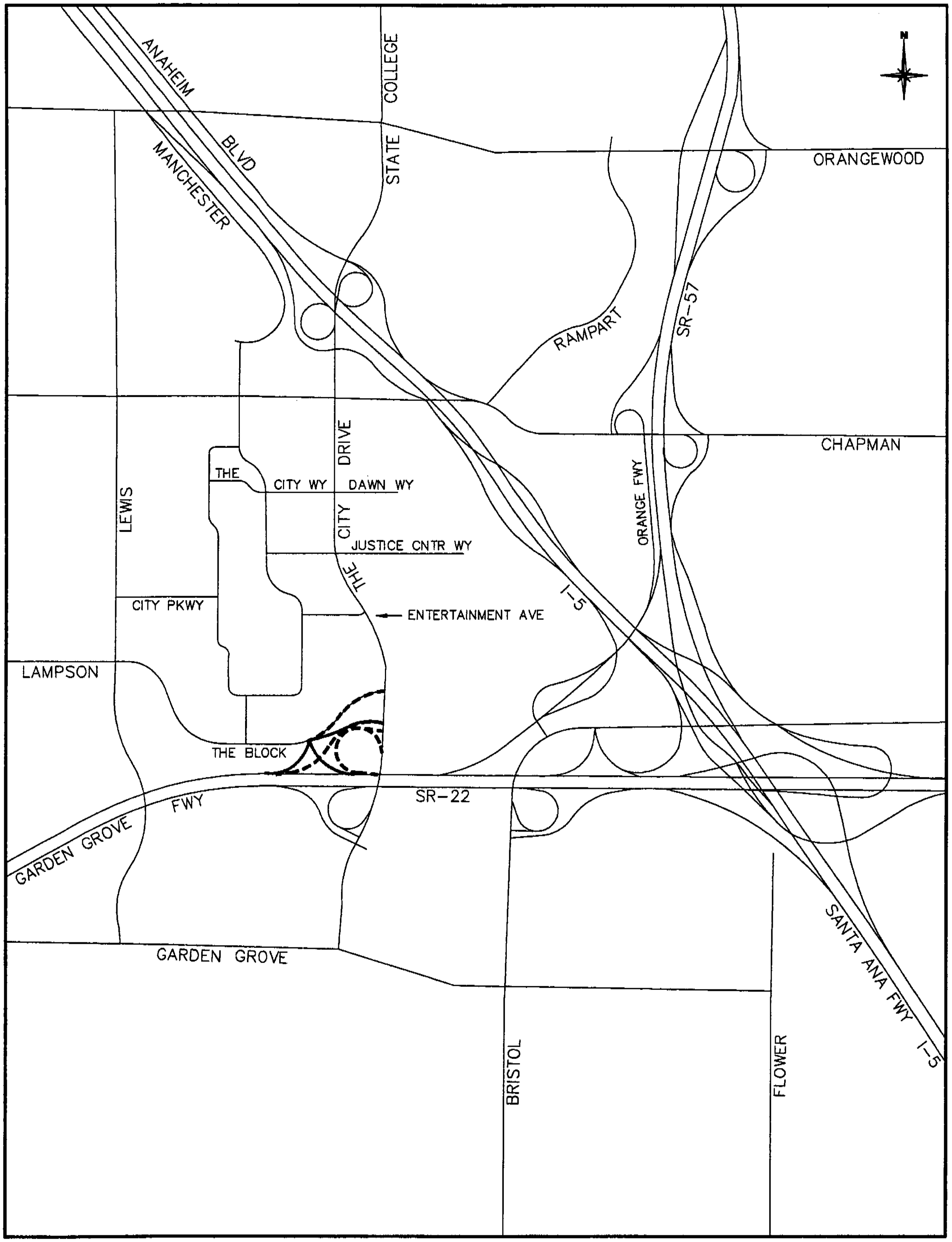
Figure 7 shows the ADT volumes. Note that the highway network for this time frame assumes completion of the SR-22 project, with the direct southbound SR-57 to westbound SR-22 separation and the direct ramp to Metropolitan Drive (The Block) as shown in Figure 8.

INTERSECTION LEVELS OF SERVICE

Peak hour intersection volumes were forecast for the major intersections throughout the study area, and used to determine levels of service and potential improvements for each of the forecast years. Figure 9 shows the intersection locations, and Table 2 lists the ICUs based on the existing lane configurations (note that the 2005, 2010 and 2020 intersection configurations reflect the ramp changes discussed earlier). Actual ICU calculations can be found in Appendix B.

LONG-RANGE INTERSECTION IMPROVEMENTS

Intersection improvements are identified for nine intersections in the City of Orange. These intersection improvements are summarized in Table 3 and will result in LOS "D" or better.

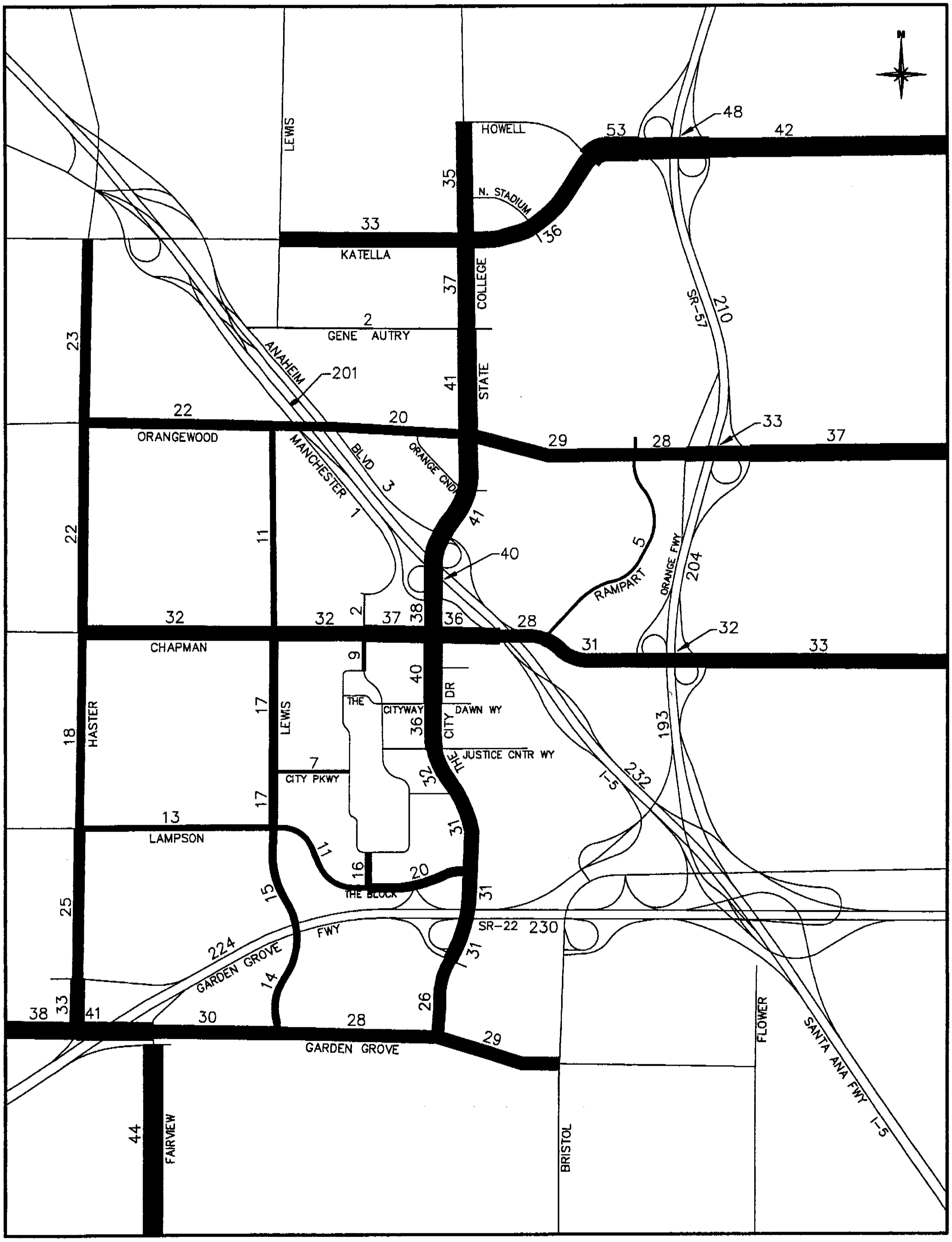


Legend

————	Added by 2010
- - - - - -	Deleted by 2010

Figure 5

SR-22 CONNECTION CHANGES ASSUMED FOR 2010

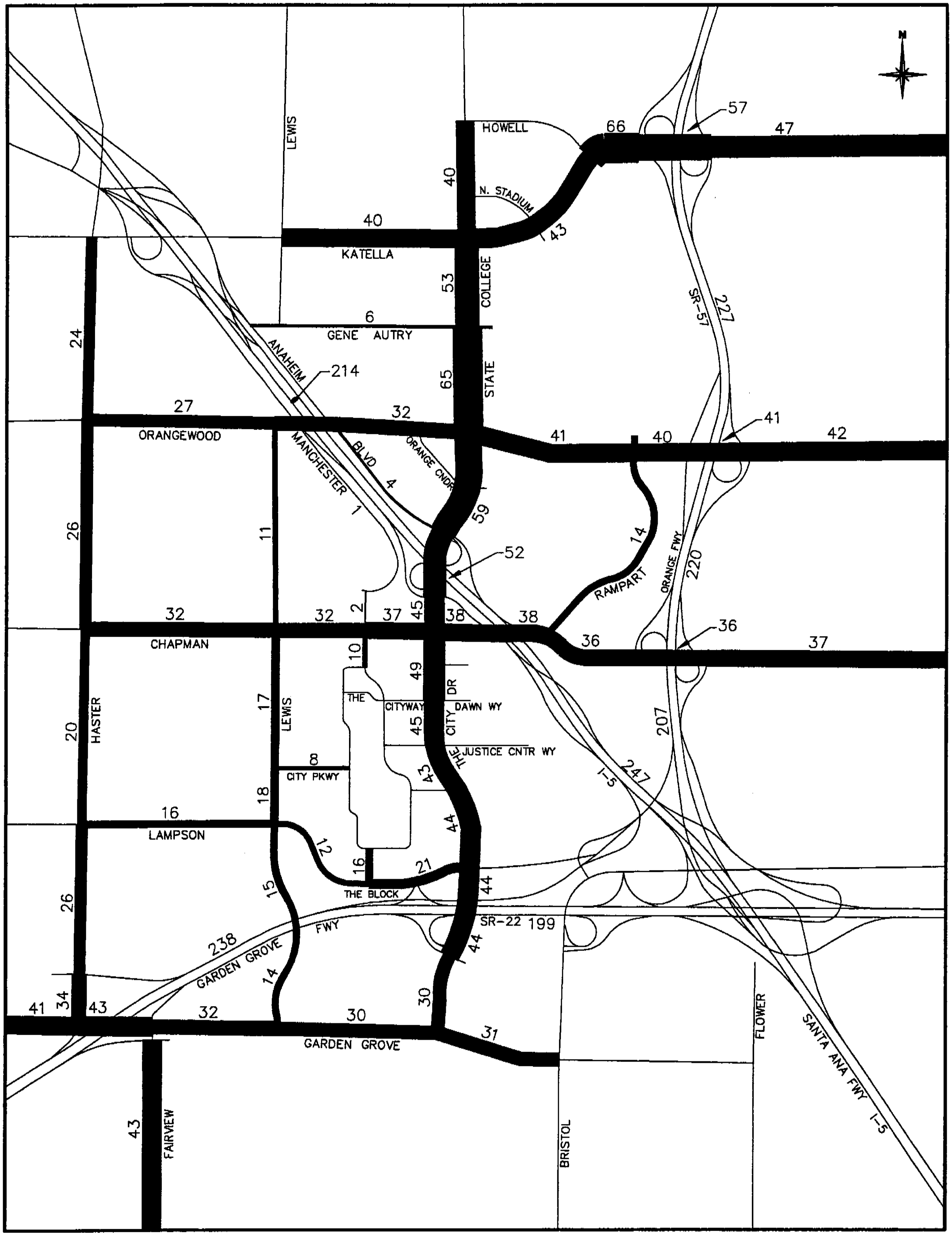


Legend

10 20 30 ADT Volumes

Figure 6

2010 ADT VOLUMES (000's)

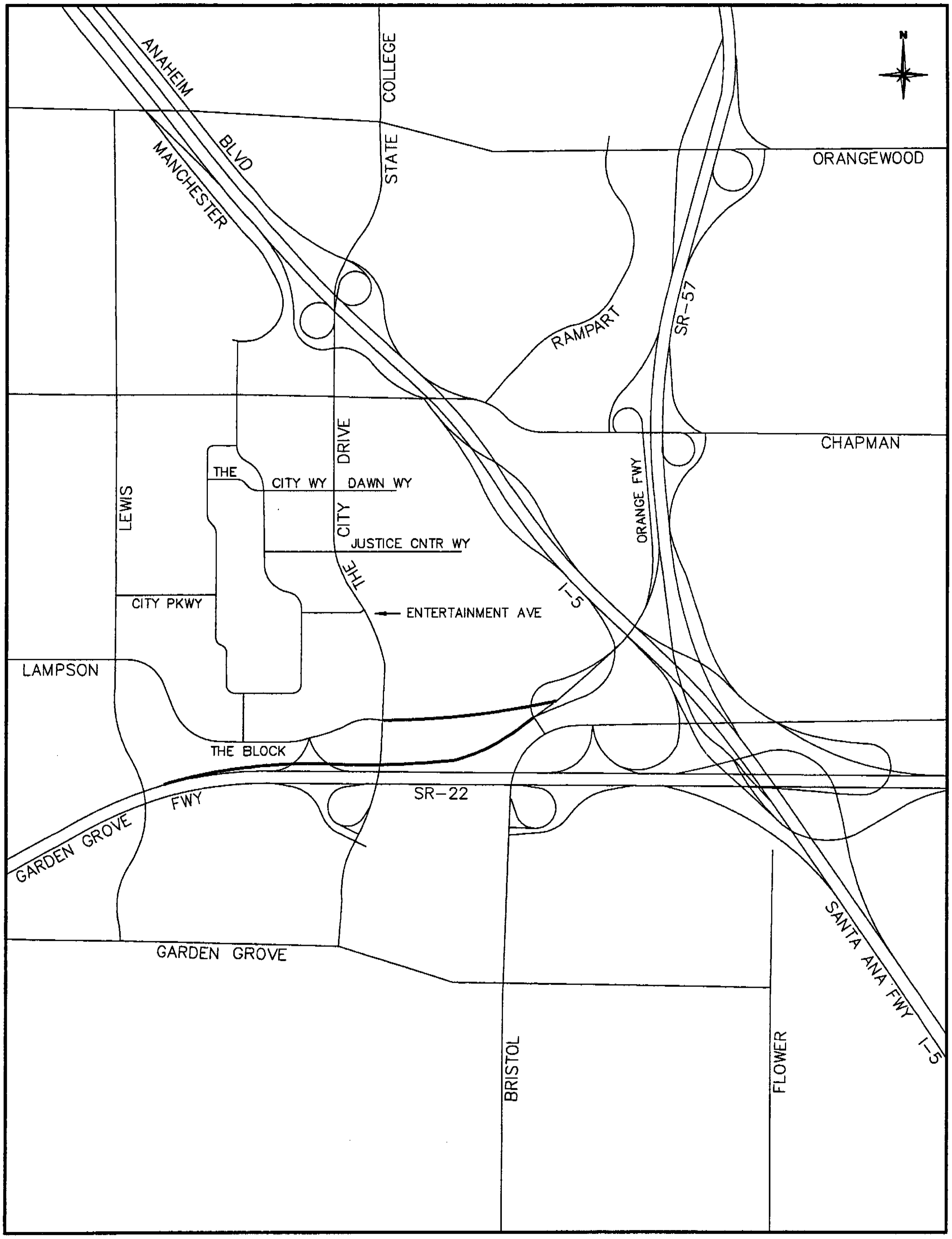


Legend

10 20 30 ADT Volumes

Figure 7

2020 ADT VOLUMES (000's)



Legend

Added by 2020

Figure 8

SR-22 CONNECTION CHANGES ASSUMED FOR 2020

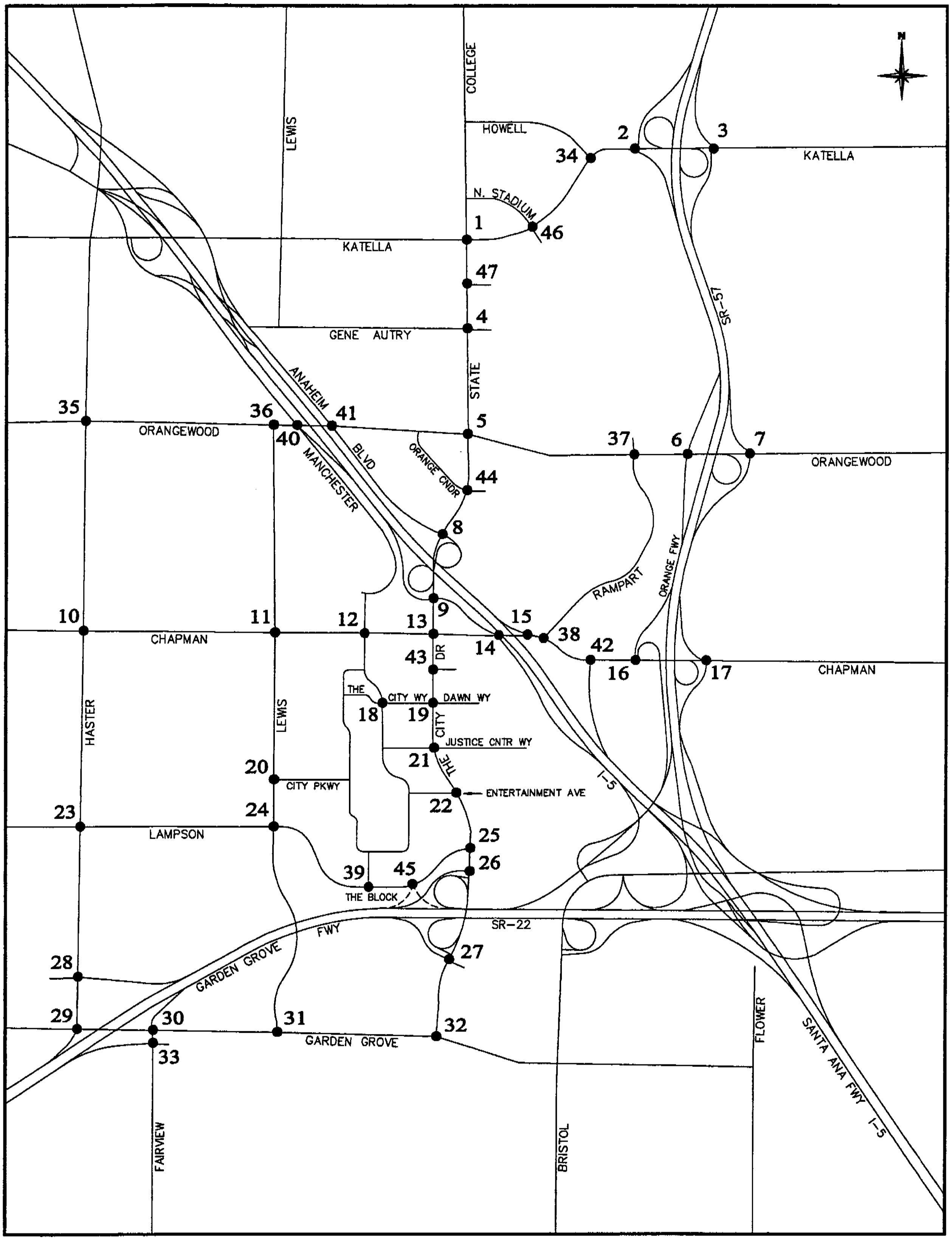


Figure 9

WOCS INTERSECTION LOCATIONS

Table 2

ICU SUMMARY

LOCATION*	2000 AM	2000 PM	2005 AM	2005 PM	2010 AM	2010 PM	2020 AM	2020 PM
1. State College & Katella	.60	.72	.60	.83	.71	.91	.95	1.16
2. SR-57 SB Ramps & Katella	.48	.56	.46	.62	.53	.69	.85	.81
3. SR-57 NB Ramps & Katella	.40	.56	.37	.69	.39	.75	.59	.94
4. State College & Gene Autry	.44	.50	.51	.66	.56	.71	1.19	1.31
5. State College & Orangewood	.49	.76	.53	.90	.57	.95	.99	1.27
6. SR-57 SB Ramps & Orangewood	.56	.81	.59	.89	.68	.92	.78	1.28
7. SR-57 NB Ramps & Orangewood	.52	.54	.55	.57	.59	.62	.68	.78
8. The City Dr & I-5 NB Ramps	.25	.33	.50	.49	.49	.51	.81	.61
9. The City Dr & I-5 SB Ramps	.39	.36	.45	.40	.49	.41	.51	.59
10. Haster & Chapman	.70	.89	.73	.97	.78	1.03	.83	1.13
11. Lewis & Chapman	.72	.75	.76	.83	.78	.92	.76	.96
12. Manchester & Chapman	.52	.55	.58	.55	.60	.56	.66	.56
13. The City Dr & Chapman	.69	.69	.77	.74	.82	.76	.84	1.01
14. I-5 SB Ramp & Chapman	.35	.41	.46	.48	.49	.49	.53	.69
15. I-5 NB on-Ramp & Chapman	.56	.70	.34	.51	.34	.53	.41	.71
16. SR-57 SB Ramps & Chapman	.53	.67	.56	.72	.59	.74	.65	.78
17. SR-57 NB Ramps & Chapman	.37	.44	.39	.46	.41	.49	.47	.58
18. City Blvd East & The City Way	.16	.29	.17	.30	.16	.31	.22	.31
19. The City Dr & The City Way	.66	.58	.69	.63	.73	.68	1.04	.87
20. Lewis St & City Pkwy West	.36	.46	.40	.53	.46	.56	.48	.62
21. The City Dr & Justice Center	.43	.37	.46	.45	.49	.43	.67	.56
22. The City Dr & Entertainment	.30	.38	.33	.44	.33	.39	.53	.50
23. Haster & Lampson	.79	.72	.83	.77	.85	.79	.95	.86
24. Lewis & Lampson/The Block Dr	.61	.59	.64	.69	.78	.75	.86	.88
25. The City Dr & The Block Dr	.39	.52	.40	.59	.17	.14	.53	.54
26. The City Dr & SR-22 WB Ramps	.60	.58	.64	.66	--	--	--	--
27. The City Dr & SR-22 EB Ramps	.67	.72	.67	.77	.75	.86	.84	1.03
28. Haster & SR-22 WB off-Ramp	.51	.49	.53	.51	.53	.52	.51	.57
29. Haster & Garden Grove	.72	.85	.75	.90	.76	.92	.77	.99
30. Fairview & Garden Grove	.79	.81	.80	.84	.81	.85	.87	.93
31. Lewis & Garden Grove	.75	.93	.77	.98	.83	1.03	.87	1.08
32. The City Dr & Garden Grove	.71	.83	.75	.92	.86	1.00	.64	1.08
33. Fairview & SR-22 EB off-Ramp	.62	.70	.67	.73	.73	.77	.83	.78
34. Howell & Katella	.52	.71	.49	.78	.56	.84	.78	1.22
35. Haster & Orangewood	.60	.79	.65	.85	.67	.89	.83	1.02
36. Lewis & Orangewood	.57	.46	.65	.55	.68	.61	.94	.68
37. Rampart & Orangewood	.50	.59	.54	.68	.56	.70	1.03	1.25
38. Rampart & Chapman	.56	.69	.37	.52	.36	.54	.75	.90
39. City Blvd & The Block Dr	.31	.45	.31	.51	.50	.74	.51	.85
40. Manchester & Orangewood	--	--	--	--	.42	.47	.71	.61
41. Anaheim & Orangewood	--	--	--	--	.38	.55	.60	.81
42. I-5 NB Off-Ramp & Chapman	.79	.93	--	--	--	--	--	--
43. The City Dr & Medical Center	.47	.46	.63	.60	.64	.64	.83	.73
44. The City Dr & Orange Cndr	.29	.34	.38	.46	.40	.47	.76	1.09
45. SR-22 WB Ramps & The Block Dr	--	--	--	--	.43	.48	.46	.55
46. N. Stadium & Katella	.34	.50	.35	.53	.39	.57	.51	.82
47. State College & Entrance	.37	.42	.39	.65	.44	.69	.68	.99

* See intersection location map in Figure 8

Table 3

SUMMARY OF LONG-RANGE IMPROVEMENTS

LOCATION	IMPROVEMENT
10. Haster St & Chapman Ave	Add 2nd EB left-turn lane or 2nd NB left-turn lane Add 3rd EB through lane Add 3rd WB through lane
11. Lewis St & Chapman Ave	Convert WB right-turn lane to 3rd through/right-turn lane
13. The City Dr & Chapman Ave	Convert NB through lane to shared through/right-turn lane
19. The City Dr & The City Way	Add 2nd SB left-turn lane
23. Haster St & Lampson Ave	Add NB right-turn lane
29. Haster St & Garden Grove Blvd	Convert 1 WB through lane to 2nd WB left-turn lane
30. Fairview St & Garden Grove Blvd	Convert WB right-turn lane to 3rd through/right-turn lane
31. Lewis St & Garden Grove Blvd	Convert 2 SB through lanes to shared through/right-turn lane and right-turn lane Add WB right-turn lane
32. The City Dr & Garden Grove Blvd	Add 2nd EB left-turn lane

Year 2020 ICU values for the intersection improvements discussed here are summarized in Table 4. The three major land use developments south of the I-5 Freeway will be responsible for their fair share of the cost of these intersection improvements. The breakdown of the projects fair share based on daily trip generation is summarized in the following table:

LAND USE	ADT	FAIR SHARE
UCI Medical Center Expansion	11,870	32%
Spieker Office Properties	13,870	38%
The Block Expansion	10,940	30%
TOTAL	36,680	100%

The total cost of the intersection improvements identified here is $3,500,000.

Table 4

YEAR 2020 ICU SUMMARY - WITH IMPROVEMENTS

INTERSECTION	YEAR 2020 WITH PROJECT AM	PM
10. Haster St & Chapman Ave	.68	.87
11. Lewis St & Chapman Ave	.76	.84
13. The City Dr & Chapman Ave	.84	.86
19. The City Dr & The City Way	.82	.87
23. Haster St & Lampson Ave	.88	.86
29. Haster St & Garden Grove	.70	.83
30. Fairview St & Garden Grove	.82	.82
31. Lewis St & Garden Grove	.83	.89
32. The City Dr & Garden Grove	.47	.89

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F

APPENDIX A

LAND USE BY TRAFFIC ZONE

This appendix contains the zonal land use and trip generation data for each of the versions of WOCSTM (2000, 2005, 2010, and 2020). Figure A-1 shows the WOCS traffic zones. Table A-1 lists the trip generation rates and Table A-2 shows the trip generation derivation for Zone 7 (Anaheim Sportstown). Note that for this project, only Gotcha Glacier is included for 2005, and hence is listed under that trip rate category. For 2010 and 2020 Gotcha Glacier is part of the composite trip rate for Anaheim Sportstown.

The table which follows lists land use and trip generation by zone. Totals for the study area can be found on the last page of this table.

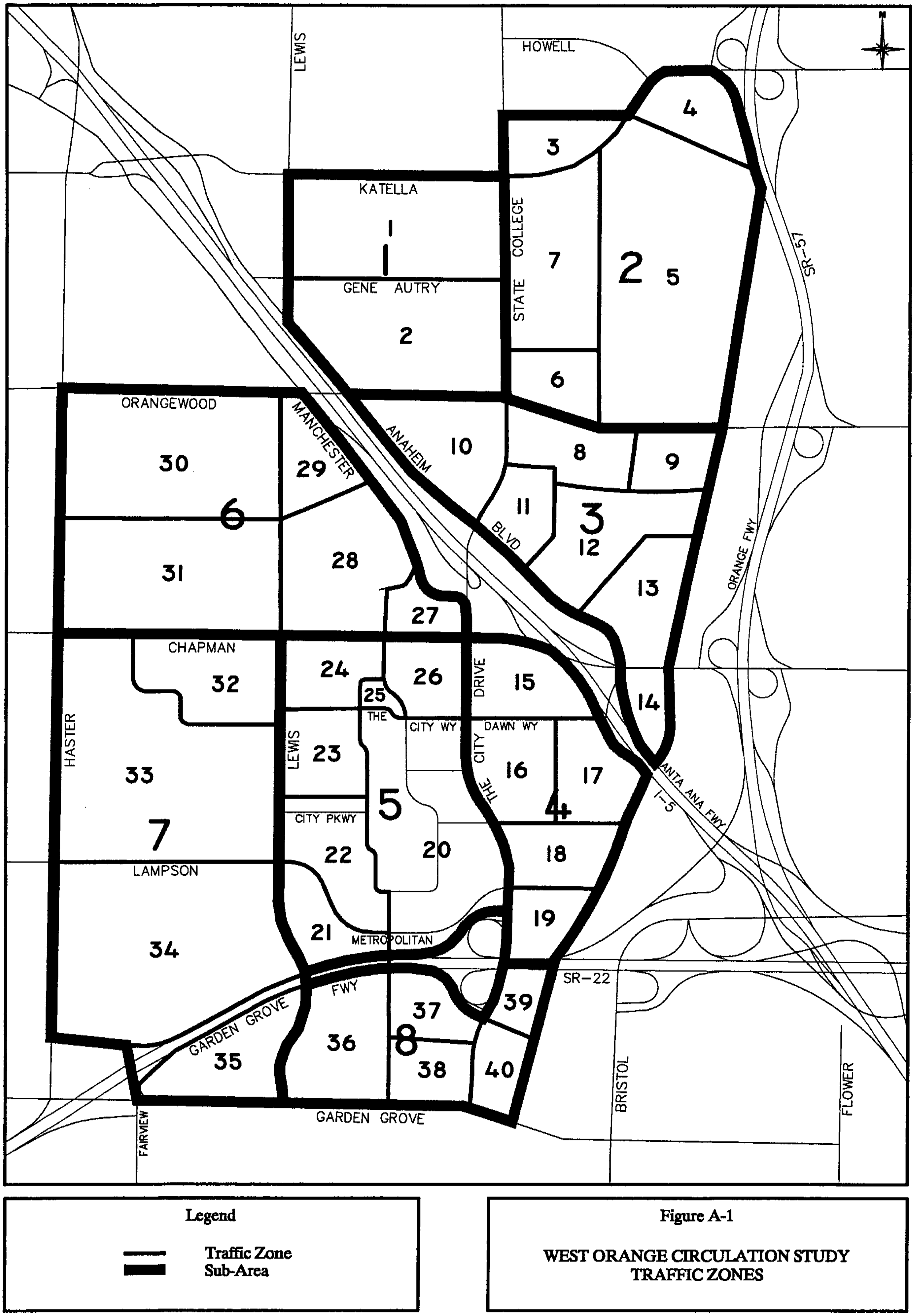


Figure A-1

WEST ORANGE CIRCULATION STUDY
TRAFFIC ZONES

Table A-1

TRIP GENERATION RATES

LAND USE TYPE	UNITS	---AM PEAK HOUR--- IN	OUT	TOTAL	---PM PEAK HOUR--- IN	OUT	TOTAL	ADT
1. Res - Low	DU	0.19	0.56	0.75	0.65	0.36	1.01	9.57
2. Res - Medium	DU	0.18	0.43	0.61	0.43	0.27	0.70	7.77
3. Res - Med-High	DU	0.15	0.43	0.58	0.43	0.25	0.68	7.10
4. Res - High/Apt.	DU	0.08	0.43	0.51	0.42	0.20	0.62	6.63
5. Mobile Home	DU	0.08	0.32	0.40	0.35	0.21	0.56	4.81
9. General Commercial	TSF	0.63	0.40	1.03	1.80	1.94	3.74	42.92
10. Restaurant	TSF	4.82	4.45	9.27	6.52	4.34	10.86	130.34
11. Office	TSF	1.37	0.19	1.56	0.25	1.24	1.49	11.01
12. Medical Office	SG	7.76	1.55	9.31	1.49	5.82	7.31	95.22
13. Industrial	TSF	0.49	0.07	0.56	0.09	0.41	0.50	6.97
16. Hotel	ROOM	0.34	0.22	0.56	0.32	0.29	0.61	8.23
19. Hospital	BED	0.85	0.17	1.02	0.16	0.62	0.78	11.20
24. Elementary School	STU	0.26	0.20	0.46	0.08	0.08	0.16	1.45
29. County Facil. (SG)	UNIT	0.56	0.16	0.72	0.10	0.84	0.94	10.00
35. Anaheim Stadium	SG	2.10	0.00	2.10	0.00	2.70	2.70	20.00
36. Crystal Cathedral	SG	0.10	0.10	0.20	0.10	0.10	0.20	10.00
37. Gotcha Glacier	SG	0.00	0.00	0.00	0.65	0.68	1.33	8.33
38. Sportstown	SG	0.97	0.45	1.42	1.32	2.19	3.51	31.62
39. The Block	TSF	1.22	0.81	2.03	1.46	2.16	3.62	43.77

Source: 1-11, 13-29. "Trip Generation" 6th Edition, Institute of Transportation Engineers, 1997
12., 19. "UCI Medical Center Expansion, Preliminary Trip Generation Summary," Austin-Foust Associates, Inc., Oct 18, 2000.
35. Anaheim Traffic Analysis Model
37. "Gotcha Glacier Parking and Trip Generation Summary," Austin-Foust Associates, Inc., June 2000
38. "Anaheim Sports Complex Traffic Analysis," Austin-Foust Associates, Inc., January 1996
39. Driveway counts, June 1999

Table A-2

ANAHEIM SPORTSTOWN TRIP GENERATION SUMMARY

LAND USE TYPE	UNITS	---AM PEAK HOUR--- IN	OUT	TOTAL	---PM PEAK HOUR— IN	OUT	TOTAL	ADT
TRIP RATES								
Entertainment Retail	TSF	.47	.27	.74	1.35	2.13	3.48	30.75
Hotel	Room	.32	.37	.69	.43	.34	.77	9.45
Office	TSF	1.84	.23	2.07	.35	1.70	2.05	15.33
Live Theater	Seat	negl.	negl.	negl.	.10	.05	.15	2.20
TRIP GENERATION								
Entertainment Retail	750 TSF	352	203	555	1,012	1,598	2,610	23,062
Hotel	500 Room	160	185	345	215	170	385	4,725
Office	250 TSF	460	58	518	88	425	513	3,832
TOTAL		972	446	1,418	1,315	2,193	3,508	31,619
Gotcha Glacier*		65	68	133	651	678	1,329	8,328

* Gotcha Glacier retail trip generation based on Sportstown Entertainment Retail trip rates, and ski slope/sports facilities trip generation assumes 5 sessions/day at 50% capacity on weekdays

LAND USE AND TRIP GENERATION SUMMARY

Zone	Land Use Category	Units	--- Base Year -- Amount	ADT	----- 2005 ----- Amount	ADT	----- 2010 ----- Amount	ADT	----- 2020 ----- Amount	ADT
1	9. General Commercial	TSF	15	644	15	644	15	644	190	8,155
	11. Office	TSF	500	5,505	500	5,505	500	5,505	1,780	19,598
	13. Industrial	TSF	719	5,011	719	5,011	719	5,011	699	4,872
	16. Hotel	ROOM	133	1,095	133	1,095	133	1,095	133	1,095
	SUB-TOTAL			12,255		12,255		12,255		33,720
2	9. General Commercial	TSF	40	1,717	40	1,717	40	1,717	159	6,824
	11. Office	TSF	380	4,184	380	4,184	380	4,184	2,222	24,464
	13. Industrial	TSF	540	3,764	540	3,764	540	3,764	--	--
	16. Hotel	ROOM	400	3,292	400	3,292	400	3,292	400	3,292
	SUB-TOTAL			12,957		12,957		12,957		34,580
3	9. General Commercial	TSF	68	2,919	68	2,919	68	2,919	68	2,919
	11. Office	TSF	80	881	80	881	80	881	80	881
	16. Hotel	ROOM	150	1,234	150	1,234	150	1,234	150	1,234
	SUB-TOTAL			5,034		5,034		5,034		5,034
4	9. General Commercial	TSF	10	429	10	429	10	429	80	3,434
	11. Office	TSF	240	2,642	240	2,642	240	2,642	630	6,936
	SUB-TOTAL			3,071		3,071		3,071		10,370
5	35. Anaheim Stadium	SG	100	2,000	100	2,000	100	2,000	100	2,000
	SUB-TOTAL			2,000		2,000		2,000		2,000
6	11. Office	TSF	21	231	21	231	21	231	160	1,762
	13. Industrial	TSF	87	606	87	606	87	606	--	--
	SUB-TOTAL			837		837		837		1,762
7	37. Gotcha Glacier	SG	--	--	1,000	8,330	1,000	8,330	--	--
	38. Sportstown	SG	49	1,549	49	1,549	49	1,549	900	28,458
	SUB-TOTAL			1,549		9,879		9,879		28,458
8	9. General Commercial	TSF	17	730	17	730	17	730	40	1,717
	11. Office	TSF	60	661	60	661	60	661	441	4,855
	13. Industrial	TSF	120	836	120	836	120	836	282	1,966
	SUB-TOTAL			2,227		2,227		2,227		8,538
9	11. Office	TSF	70	771	70	771	70	771	441	4,855
	13. Industrial	TSF	110	767	110	767	110	767	282	1,966
	SUB-TOTAL			1,538		1,538		1,538		6,821
10	10. Restaurant	TSF	40	5,214	40	5,214	40	5,214	40	5,214
	11. Office	TSF	290	3,193	290	3,193	290	3,193	790	8,698
	16. Hotel	ROOM	230	1,893	230	1,893	230	1,893	230	1,893
	SUB-TOTAL			10,300		10,300		10,300		15,805
11	9. General Commercial	TSF	--	--	--	--	--	--	119	5,107
	11. Office	TSF	--	--	--	--	--	--	1,000	11,010
	SUB-TOTAL			--		--		--		16,117

LAND USE AND TRIP GENERATION SUMMARY

Zone	Land Use Category	Units	--- Base Year -- Amount	ADT	----- 2005 ----- Amount	ADT	----- 2010 ----- Amount	ADT	----- 2020 ----- Amount	ADT
12	5. Mobile Home	DU	203	976	203	976	203	976	--	--
	9. General Commercial	TSF	--	--	--	--	--	--	200	8,584
	16. Hotel	ROOM	104	856	104	856	104	856	--	--
	SUB-TOTAL			1,832		1,832		1,832		8,584
13	11. Office	TSF	60	661	60	661	60	661	1,000	11,010
	16. Hotel	ROOM	100	823	100	823	100	823	--	--
	SUB-TOTAL			1,484		1,484		1,484		11,010
14	10. Restaurant	TSF	20	2,607	20	2,607	20	2,607	20	2,607
	11. Office	TSF	240	2,642	240	2,642	240	2,642	240	2,642
	16. Hotel	ROOM	153	1,259	153	1,259	153	1,259	153	1,259
	SUB-TOTAL			6,508		6,508		6,508		6,508
15	12. Medical Office	SG	100	9,522	100	9,522	100	9,522	208	19,806
	19. Hospital	BED	382	4,278	382	4,278	524	5,869	524	5,869
	SUB-TOTAL			13,800		13,800		15,391		25,675
16	11. Office	TSF	131	1,442	131	1,442	131	1,442	131	1,442
	SUB-TOTAL			1,442		1,442		1,442		1,442
17	29. County Facil. (SG)	UNIT	550	5,500	550	5,500	550	5,500	650	6,500
	SUB-TOTAL			5,500		5,500		5,500		6,500
18	11. Office	TSF	100	1,101	100	1,101	100	1,101	100	1,101
	SUB-TOTAL			1,101		1,101		1,101		1,101
19	11. Office	TSF	31	341	31	341	31	341	31	341
	SUB-TOTAL			341		341		341		341
20	39. The Block	TSF	811	35,497	1,061	46,440	1,061	46,440	1,061	46,440
	SUB-TOTAL			35,497		46,440		46,440		46,440
21	11. Office	TSF	134	1,475	134	1,475	134	1,475	134	1,475
	SUB-TOTAL			1,475		1,475		1,475		1,475
22	11. Office	TSF	527	5,802	527	5,802	1,087	11,968	1,087	11,968
	SUB-TOTAL			5,802		5,802		11,968		11,968
23	4. Res - High/Apt.	DU	440	2,917	440	2,917	440	2,917	440	2,917
	SUB-TOTAL			2,917		2,917		2,917		2,917
24	10. Restaurant	TSF	45	5,865	45	5,865	45	5,865	45	5,865
	11. Office	TSF	344	3,787	344	3,787	344	3,787	344	3,787
	SUB-TOTAL			9,652		9,652		9,652		9,652
25	11. Office	TSF	420	4,624	420	4,624	420	4,624	420	4,624
	SUB-TOTAL			4,624		4,624		4,624		4,624
26	11. Office	TSF	--	--	465	5,120	465	5,120	465	5,120

LAND USE AND TRIP GENERATION SUMMARY

Zone	Land Use Category	Units	--- Base Year -- Amount	ADT	----- 2005 ----- Amount	ADT	----- 2010 ----- Amount	ADT	----- 2020 ----- Amount	ADT
26	16. Hotel	ROOM	460	3,786	460	3,786	460	3,786	460	3,786
	SUB-TOTAL			3,786		8,906		8,906		8,906
27	11. Office	TSF	--	--	132	1,453	132	1,453	132	1,453
	16. Hotel	ROOM	130	1,070	130	1,070	267	2,197	267	2,197
	SUB-TOTAL			1,070		2,523		3,650		3,650
28	5. Mobile Home	DU	174	837	174	837	174	837	174	837
	SUB-TOTAL			837		837		837		837
29	4. Res - High/Apt.	DU	80	530	80	530	80	530	80	530
	SUB-TOTAL			530		530		530		530
30	1. Res - Low	DU	184	1,761	184	1,761	184	1,761	184	1,761
	2. Res - Medium	DU	162	1,259	162	1,259	162	1,259	162	1,259
	3. Res - Med-High	DU	332	2,357	332	2,357	332	2,357	332	2,357
	9. General Commercial	TSF	5	215	5	215	5	215	5	215
	SUB-TOTAL			5,592		5,592		5,592		5,592
31	1. Res - Low	DU	184	1,761	184	1,761	184	1,761	184	1,761
	2. Res - Medium	DU	162	1,259	162	1,259	162	1,259	162	1,259
	3. Res - Med-High	DU	332	2,357	332	2,357	332	2,357	332	2,357
	9. General Commercial	TSF	5	215	5	215	5	215	5	215
	SUB-TOTAL			5,592		5,592		5,592		5,592
32	36. Crystal Cathedral	SG	100	1,000	100	1,000	100	1,000	100	1,000
	SUB-TOTAL			1,000		1,000		1,000		1,000
33	1. Res - Low	DU	325	3,110	325	3,110	325	3,110	325	3,110
	3. Res - Med-High	DU	857	6,085	857	6,085	857	6,085	857	6,085
	5. Mobile Home	DU	89	428	89	428	89	428	89	428
	9. General Commercial	TSF	70	3,004	70	3,004	70	3,004	70	3,004
	11. Office	TSF	400	4,404	400	4,404	400	4,404	400	4,404
	24. Elementary School	STU	400	580	400	580	400	580	400	580
	SUB-TOTAL			17,611		17,611		17,611		17,611
34	1. Res - Low	DU	325	3,110	325	3,110	325	3,110	325	3,110
	3. Res - Med-High	DU	577	4,097	577	4,097	577	4,097	577	4,097
	5. Mobile Home	DU	250	1,203	250	1,203	250	1,203	250	1,203
	SUB-TOTAL			8,410		8,410		8,410		8,410
35	1. Res - Low	DU	50	479	50	479	50	479	--	--
	4. Res - High/Apt.	DU	--	--	--	--	--	--	50	332
	9. General Commercial	TSF	30	1,288	30	1,288	30	1,288	30	1,288
	11. Office	TSF	200	2,202	200	2,202	200	2,202	200	2,202
	SUB-TOTAL			3,969		3,969		3,969		3,822
36	4. Res - High/Apt.	DU	620	4,111	620	4,111	620	4,111	620	4,111
	9. General Commercial	TSF	60	2,575	60	2,575	60	2,575	60	2,575
	SUB-TOTAL			6,686		6,686		6,686		6,686

LAND USE AND TRIP GENERATION SUMMARY

Zone	Land Use Category	Units	--- Base Year -- Amount	ADT	----- 2005 ----- Amount	ADT	----- 2010 ----- Amount	ADT	----- 2020 ----- Amount	ADT
37	2. Res - Medium	DU	208	1,616	208	1,616	208	1,616	208	1,616
	11. Office	TSF	80	881	80	881	80	881	80	881
	SUB-TOTAL			2,497		2,497		2,497		2,497
38	11. Office	TSF	260	2,863	260	2,863	260	2,863	260	2,863
	16. Hotel	ROOM	142	1,169	142	1,169	142	1,169	142	1,169
	SUB-TOTAL			4,032		4,032		4,032		4,032
39	11. Office	TSF	150	1,652	150	1,652	150	1,652	150	1,652
	SUB-TOTAL			1,652		1,652		1,652		1,652
40	11. Office	TSF	100	1,101	100	1,101	100	1,101	100	1,101
	SUB-TOTAL			1,101		1,101		1,101		1,101

LAND USE AND TRIP GENERATION SUMMARY

Zone	Land Use Category	Units	--- Base Year -- Amount	ADT	----- 2005 ----- Amount	ADT	----- 2010 ----- Amount	ADT	----- 2020 ----- Amount	ADT
TOTAL	1. Res - Low	DU	1,068	10,221	1,068	10,221	1,068	10,221	1,018	9,742
	2. Res - Medium	DU	532	4,134	532	4,134	532	4,134	532	4,134
	3. Res - Med-High	DU	2,098	14,896	2,098	14,896	2,098	14,896	2,098	14,896
	4. Res - High/Apt.	DU	1,140	7,558	1,140	7,558	1,140	7,558	1,190	7,890
	5. Mobile Home	DU	716	3,444	716	3,444	716	3,444	513	2,468
	9. General Commercial	TSF	320	13,736	320	13,736	320	13,736	1,026	44,037
	10. Restaurant	TSF	105	13,686	105	13,686	105	13,686	105	13,686
	11. Office	TSF	4,818	53,046	5,415	59,619	5,975	65,785	12,818	141,125
	12. Medical Office	SG	100	9,522	100	9,522	100	9,522	208	19,806
	13. Industrial	TSF	1,576	10,984	1,576	10,984	1,576	10,984	1,263	8,804
	16. Hotel	ROOM	2,002	16,477	2,002	16,477	2,139	17,604	1,935	15,925
	19. Hospital	BED	382	4,278	382	4,278	524	5,869	524	5,869
	24. Elementary School	STU	400	580	400	580	400	580	400	580
	29. County Facil. (SG)	UNIT	550	5,500	550	5,500	550	5,500	650	6,500
	35. Anaheim Stadium	SG	100	2,000	100	2,000	100	2,000	100	2,000
	36. Crystal Cathedral	SG	100	1,000	100	1,000	100	1,000	100	1,000
	37. Gotcha Glacier	SG	--	--	1,000	8,330	1,000	8,330	--	--
	38. Sportstown	SG	49	1,549	49	1,549	49	1,549	900	28,458
	39. The Block	TSF	811	35,497	1,061	46,440	1,061	46,440	1,061	46,440
	TOTAL			208,108		233,954		242,838		373,360

APPENDIX B

INTERSECTION CAPACITY UTILIZATION WORKSHEETS

Peak hour intersection volume/capacity ratios are calculated by means of intersection capacity utilization (ICU) values. ICU calculations were performed for the intersections shown in Figure B-1. For simplicity, signalization is assumed at each intersection. Precise ICU calculations of existing non-signalized intersections would require a more detailed analysis.

The procedure is based on the critical movement methodology, and shows the amount of capacity utilized by each critical move. A capacity of 1700 vehicles per hour (VPH) per lane is assumed together with a .05 clearance interval. A "de-facto" right-turn lane is used in the ICU calculation for cases where a curb lane is wide enough to separately serve both thru and right-turn traffic (typically with a width of 19 feet from curb to outside of thru-lane with parking prohibited during peak periods). Such lanes are treated the same as striped right-turn lanes during the ICU calculations, but they are denoted on the ICU calculation worksheets using the letter "d" in place of a numerical entry for right-turn lanes.

The methodology also incorporates a check for right-turn capacity utilization. Both right-turn-on-green (RTOG) and right-turn-on-red (RTOR) capacity availability are calculated and checked against the total right-turn capacity need. If insufficient capacity is available, then an adjustment is made to the total capacity utilization value. The following example shows how this adjustment is made.

Example For Northbound Right

1. Right-Turn-On-Green (RTOG)

If NBT is critical move, then:
RTOG = V/C (NBT)
Otherwise,
RTOG = V/C (NBL) + V/C (SBT) - V/C (SBL)

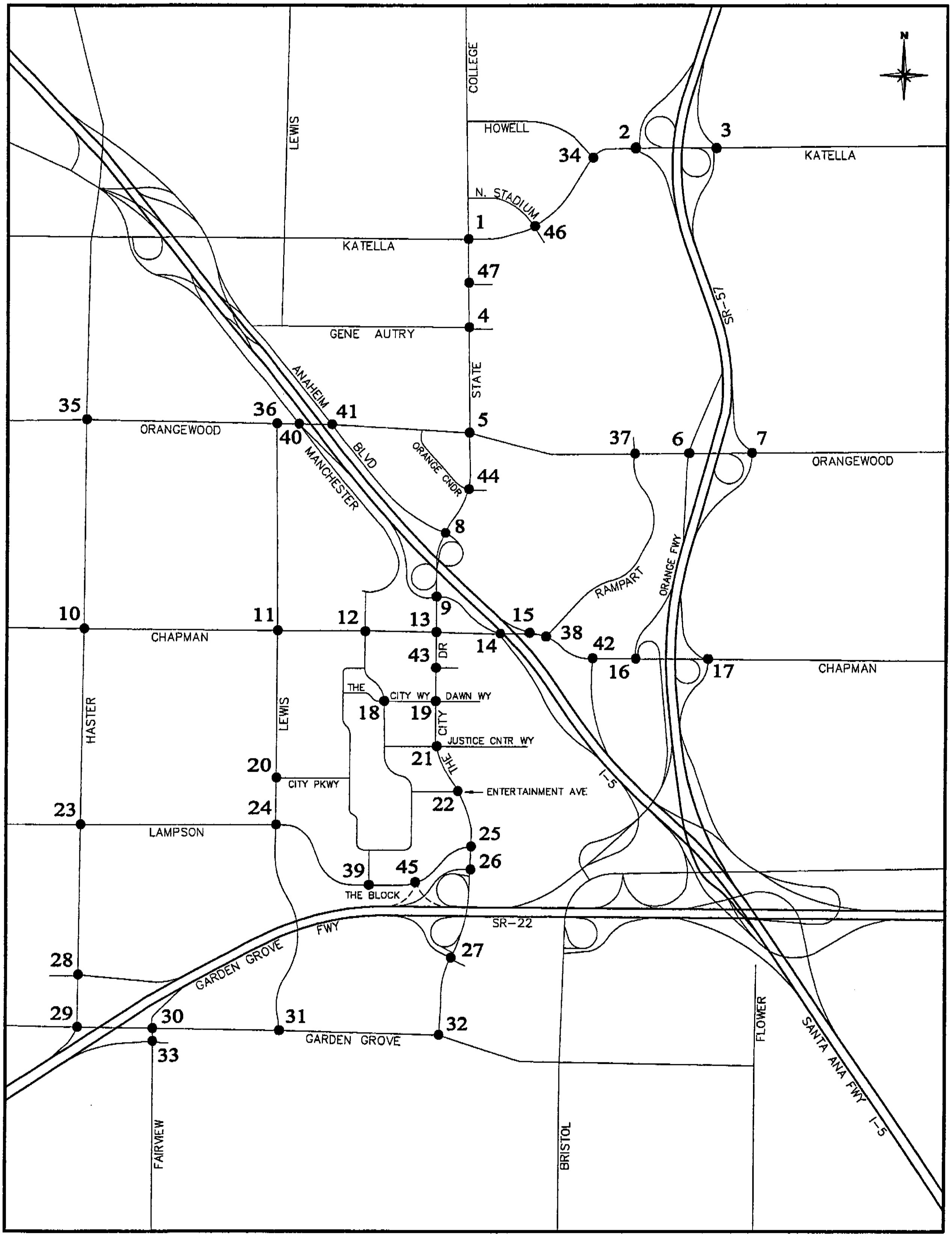


Figure B-1

WOCS INTERSECTION LOCATIONS

2. Right-Turn-On-Red (RTOR)

If WBL is critical move, then:
RTOR = V/C (WBL)
Otherwise,
RTOR = V/C (EBL) + V/C (WBT) - V/C (EBT)

3. Right-Turn Overlap Adjustment

If the northbound right is assumed to overlap with the adjacent westbound left, adjustments to the RTOG and RTOR values are made as follows:

RTOG = RTOG + V/C (WBL)
RTOR = RTOR - V/C (WBL)

4. Total Right-Turn Capacity (RTC) Availability For NBR

RTC = RTOG + factor x RTOR
Where factor = RTOR saturation flow factor (75%)

Right-turn adjustment is then as follows: Additional ICU = V/C (NBR) - RTC

A zero or negative value indicates that adequate capacity is available and no adjustment is necessary. A positive value indicates that the available RTOR and RTOG capacity does not adequately accommodate the right-turn V/C, therefore the right-turn is essentially considered to be a critical movement. In such cases, the right-turn adjustment is noted on the ICU worksheet and it is included in the total capacity utilization value. When it is determined that a right-turn adjustment is required for more than one right-turn movement, the word "multi" is printed on the worksheet instead of an actual right-turn movement reference, and the right-turn adjustments are cumulatively added to the total capacity utilization value. In such cases, further operational evaluation is typically carried out to determine if under actual operational conditions, the critical right-turns would operate simultaneously, and therefore a right-turn adjustment credit should be applied.

Shared Lane V/C Methodology

For intersection approaches where shared usage of a lane is permitted by more than one turn movement (e.g., left/thru, thru/right, left/thru/right), the individual turn volumes are evaluated to determine whether dedication of the shared lane is warranted to any one given turn movement. The following example demonstrates how this evaluation is carried out:

Example for Shared Left/Thru Lane

1. Average Lane Volume (ALV)

$$\text{ALV} = \frac{\text{Left-Turn Volume + Thru Volume}}{\text{Total Left + Thru Approach Lanes (including shared lane)}}$$

2. ALV for Each Approach

$$\text{ALV (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Lanes (including shared lane)}}$$

$$\text{ALV (Thru)} = \frac{\text{Thru Volume}}{\text{Thru Approach Lanes (including shared lane)}}$$

3. Lane Dedication is Warranted

If ALV (Left) is greater than ALV then full dedication of the shared lane to the left-turn approach is warranted. Left-turn and thru V/C ratios for this case are calculated as follows:

$$\text{V/C (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (including shared lane)}}$$

$$\text{V/C (Thru)} = \frac{\text{Thru Volume}}{\text{Thru Approach Capacity (excluding shared lane)}}$$

Similarly, if ALV (Thru) is greater than ALV then full dedication to the thru approach is warranted, and left-turn and thru V/C ratios are calculated as follows:

$$\text{V/C (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (excluding shared lane)}}$$

$$\text{V/C (Thru)} = \frac{\text{Thru Volume}}{\text{Thru Approach Capacity (including shared lane)}}$$

4. Lane Dedication is not Warranted

If ALV (Left) and ALV (Thru) are both less than ALV, the left/thru lane is assumed to be truly shared and each left, left/thru or thru approach lane carries an evenly distributed volume of traffic equal to ALV. A combined left/thru V/C ratio is calculated as follows:

$$V/C\ (Left/Thru) = \frac{\text{Left-Turn Volume + Thru Volume}}{\text{Total Left + Thru Approach Capacity (including shared lane)}}$$

This V/C (Left/Thru) ratio is assigned as the V/C (Thru) ratio for the critical movement analysis and ICU summary listing.

If split phasing has not been designated for this approach, the relative proportion of V/C (Thru) that is attributed to the left-turn volume is estimated as follows:

If approach has more than one left-turn (including shared lane), then:
V/C (Left) = V/C (Thru)

If approach has only one left-turn lane (shared lane), then:

$$V/C\ (Left) = \frac{\text{Left-Turn Volume}}{\text{Single Approach Lane Capacity}}$$

If this left-turn movement is determined to be a critical movement, the V/C (Left) value is posted in brackets on the ICU summary printout.

These same steps are carried out for shared thru/right lanes. If full dedication of a shared thru/right lane to the right-turn movement is warranted, the right-turn V/C value calculated in step three is checked against the RTOR and RTOG capacity availability if the option to include right-turns in the V/C ratio calculations is selected. If the V/C value that is determined using the shared lane methodology described here is reduced due to RTOR and RTOG capacity availability, the V/C value for the thru/right lanes is posted in brackets.

When an approach contains more than one shared lane (e.g., left/thru and thru/right), steps one and two listed above are carried out for the three turn movements combined. Step four is carried out if dedication is not warranted for either of the shared lanes. If dedication of one of the shared lanes is warranted to one movement or another, step three is carried out for the two movements involved, and then steps one through four are repeated for the two movements involved in the other shared lane.

1. State College Blvd & Katella Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	160	.05*	300	.09
NBT	3	5100	440	.12	1350	.33*
NBR	0	0	150		320	
SBL	2	3400	220	.06	160	.05*
SBT	3	5100	1030	.23*	840	.19
SBR	0	0	140		150	
EBL	2	3400	190	.06	190	.06
EBT	2.5	6800	770	.15*	800	.16*
EBR	1.5		170	.10	210	
WBL	2	3400	420	.12*	430	.13*
WBT	3	5100	610	.12	910	.18
WBR	1	1700	70	.04	260	.15
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.72

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	220	.06*	310	.09
NBT	3	5100	650	.18	1620	.40*
NBR	0	0	270		420	
SBL	2	3400	250	.07	230	.07*
SBT	3	5100	1100	.24*	920	.21
SBR	0	0	140		140	
EBL	2	3400	110	.03	190	.06
EBT	2.5	6800	670	.13*	890	.17*
EBR	1.5		160	.09	230	
WBL	2	3400	400	.12*	460	.14*
WBT	3	5100	580	.11	830	.16
WBR	1	1700	20	.01	180	.11
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.83

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06*	300	.09
NBT	3	5100	690	.20	1740	.44*
NBR	0	0	330		520	
SBL	2	3400	310	.09	260	.08*
SBT	3	5100	1230	.27*	940	.22
SBR	0	0	170		190	
EBL	2	3400	140	.04	220	.06
EBT	2.5	6800	870	.17*	950	.19*
EBR	1.5		150	.09	220	
WBL	2	3400	540	.16*	500	.15*
WBT	3	5100	650	.13	1000	.20
WBR	1	1700	30	.02	220	.13
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.91

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	310	.09*	810	.24
NBT	3	5100	720	.21	2190	.56*
NBR	0	0	490	.29	690	
SBL	2	3400	290	.09	300	.09*
SBT	3	5100	1740	.38*	1080	.23
SBR	0	0	190		100	
EBL	2	3400	130	.04	250	.07
EBT	2.5	6800	590	.17*	1270	.25*
EBR	1.5		650		370	
WBL	2	3400	900	.26*	730	.21*
WBT	3	5100	1090	.21	800	.16
WBR	1	1700	40	.02	240	.14
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.95		1.16

2. SR-57 SB Ramps & Katella Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		190	.11*	430	
SBT	0	5100	0		0	{.19}*
SBR	1.5		620	.18	600	
EBL	0	0	0		0	
EBT	3	5100	910	.18	1610	.32*
EBR	1	1700	470	.28	530	.31
WBL	0	0	0		0	
WBT	3	5100	1260	.25*	1420	.28
WBR	1	1700	250	.15	440	.26
Right Turn Adjustment			SBR	.07*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.48		.56

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		190	.11*	450	
SBT	0	5100	0		0	{.19}*
SBR	1.5		690	.20	710	
EBL	0	0	0		0	
EBT	3	5100	940	.18	1950	.38*
EBR	1	1700	490	.29	650	.38
WBL	0	0	0		0	
WBT	3	5100	1080	.21*	1280	.25
WBR	1	1700	250	.15	470	.28
Right Turn Adjustment			SBR	.09*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.46		.62

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		190	.11*	480	
SBT	0	5100	0		0	{.21}*
SBR	1.5		850	.25	790	
EBL	0	0	0		0	
EBT	3	5100	1250	.25*	2210	.43*
EBR	1	1700	510	.30	610	.36
WBL	0	0	0		0	
WBT	3	5100	1180	.23	1450	.28
WBR	1	1700	320	.19	470	.28
Right Turn Adjustment			SBR	.12*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.69

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		270	.16*	490	
SBT	0	5100	0		0	{.17}*
SBR	1.5		1350	.40	790	
EBL	0	0	0		0	
EBT	3	5100	960	.19	2990	.59*
EBR	1	1700	550	.32	1080	.64
WBL	0	0	0		0	
WBT	3	5100	2030	.40*	1430	.28
WBR	1	1700	320	.19	600	.35
Right Turn Adjustment			SBR	.24*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.85		.81

3. SR-57 NB Ramps & Katella Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		620	.18*	450	{.19}*
NBT	0	5100	0		0	{.19}
NBR	1.5		300	.18	550	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	790	.15	1250	.25
EBR	1	1700	310	.18	790	.46
WBL	0	0	0		0	
WBT	3	5100	890	.17*	1410	.28*
WBR	1	1700	210	.12	380	.22
Right Turn Adjustment					EBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.40		.56

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		370	{.13}*	200	.12*
NBT	0	5100	0	{.13}	0	
NBR	1.5		320		530	.16
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	850	.17	1390	.27
EBR	1	1700	290	.17	1000	.59
WBL	0	0	0		0	
WBT	3	5100	970	.19*	1540	.30*
WBR	1	1700	210	.12	400	.24
Right Turn Adjustment					Multi	.22*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.37		.69

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		370	{.12}*	220	.13*
NBT	0	5100	0	{.12}	0	
NBR	1.5		290		570	.17
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1000	.20	1580	.31
EBR	1	1700	430	.25	1100	.65
WBL	0	0	0		0	
WBT	3	5100	1130	.22*	1680	.33*
WBR	1	1700	240	.14	410	.24
Right Turn Adjustment					Multi	.24*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.75

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		770	.23*	300	{.17}*
NBT	0	5100	0		0	.17
NBR	1.5		390	{.13}	580	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	940	.18	1990	.39*
EBR	1	1700	300	.18	1450	.85
WBL	0	0	0		0	
WBT	3	5100	1580	.31*	1700	.33
WBR	1	1700	230	.14	510	.30
Right Turn Adjustment					EBR	.33*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.59		.94

4. State College Blvd & Gene Autry Way

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	90	.03*	50	.01
NBT	3	5100	690	.14	1810	.36*
NBR	0	0	10		10	
SBL	1	1700	0	.00	10	.01*
SBT	3	5100	1450	.32*	1420	.29
SBR	0	0	170		50	
EBL	2	3400	60	.02	150	.04
EBT	0.5	1700	0	.04*	0	.08*
EBR	0.5		70		140	
WBL	2	3400	0	.00	10	.00
WBT	1	1700	0	.00	0	.01
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.44**		**.50**

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06*	80	.05
NBT	3	5100	1090	.22	2370	.48*
NBR	0	0	10		100	
SBL	1	1700	10	.01	10	.01*
SBT	3	5100	1520	.33*	1710	.34
SBR	0	0	140		40	
EBL	2	3400	70	.02	120	.04
EBT	0.5	1700	10	.07*	0	.11*
EBR	0.5		110		180	
WBL	2	3400	10	.00	30	.01*
WBT	1	1700	10	.01	10	.01
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.51**		**.66**

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06*	80	.05
NBT	3	5100	1160	.23	2590	.53*
NBR	0	0	10		90	
SBL	1	1700	10	.01	10	.01*
SBT	3	5100	1780	.38*	1780	.36
SBR	0	0	140		40	
EBL	2	3400	70	.02	120	.04
EBT	0.5	1700	10	.07*	0	.11*
EBR	0.5		110		180	
WBL	2	3400	10	.00	30	.01*
WBT	1	1700	10	.01	10	.01
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.56**		**.71**

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	460	.27*	390	.23
NBT	3	5100	1580	.32	3610	.75*
NBR	0	0	30		240	
SBL	1	1700	10	.01	10	.01*
SBT	3	5100	2780	.57*	2490	.50
SBR	0	0	140		70	
EBL	2	3400	80	.02	210	.06
EBT	0.5	1700	10	.26*	10	.47*
EBR	0.5		430		790	
WBL	2	3400	130	.04*	110	.03*
WBT	1	1700	10	.01	20	.02
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**1.19**		**1.31**

5. State College Blvd & Orangewood Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	100	.03*	100	.03
NBT	3	5100	510	.10	780	.15*
NBR	1	1700	340	.20	320	.19
SBL	2	3400	280	.08	300	.09*
SBT	4	6800	1040	.18*	1140	.19
SBR	0	0	200		130	
EBL	2	3400	110	.03*	320	.09
EBT	3	5100	430	.09	800	.17*
EBR	0	0	30		50	
WBL	2	3400	300	.09	420	.12*
WBT	2	3400	670	.20*	570	.17
WBR	1	1700	170	.10	770	.45
Right Turn Adjustment					WBR	.18*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.76

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	270	.08*	200	.06
NBT	3	5100	1030	.20	1420	.28*
NBR	1	1700	450	.26	400	.24
SBL	2	3400	280	.08	330	.10*
SBT	4	6800	1160	.20*	1380	.23
SBR	0	0	210		190	
EBL	2	3400	100	.03*	370	.11
EBT	3	5100	470	.10	830	.17*
EBR	0	0	40		50	
WBL	2	3400	320	.09	410	.12*
WBT	2	3400	570	.17*	540	.16
WBR	1	1700	50	.03	750	.44
Right Turn Adjustment					WBR	.18*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.90

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	270	.08*	180	.05
NBT	3	5100	1080	.21	1590	.31*
NBR	1	1700	410	.24	370	.22
SBL	2	3400	320	.09	350	.10*
SBT	4	6800	1370	.23*	1430	.24
SBR	0	0	220		190	
EBL	2	3400	100	.03*	400	.12
EBT	3	5100	510	.11	900	.19*
EBR	0	0	30		50	
WBL	2	3400	290	.09	440	.13*
WBT	2	3400	600	.18*	590	.17
WBR	1	1700	50	.03	760	.45
Right Turn Adjustment					WBR	.17*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.57		.95

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	360	.11	260	.08
NBT	3	5100	1710	.34*	1800	.35*
NBR	1	1700	700	.41	690	.41
SBL	2	3400	690	.20*	600	.18*
SBT	4	6800	1530	.27	2210	.40
SBR	0	0	330		540	
EBL	2	3400	310	.09*	500	.15
EBT	3	5100	620	.16	1180	.28*
EBR	0	0	220		240	
WBL	2	3400	570	.17	650	.19*
WBT	2	3400	1060	.31*	790	.23
WBR	1	1700	430	.25	1160	.68
Right Turn Adjustment					WBR	.22*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.99		1.27

6. SR-57 SB Ramps & Orangewood Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		350	.10*	290	.09*
SBT	0	5100	0		0	
SBR	1.5		440	{.09}	410	{.00}
EBL	0	0	0		0	
EBT	1.5	5100	850	.25*	1320	.39*
EBR	1.5		120		200	.12
WBL	1	1700	280	.16*	480	.28*
WBT	2	3400	650	.19	1100	.32
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.56		.81

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		380	.11*	320	.09*
SBT	0	5100	0		0	
SBR	1.5		470	{.06}	410	{.00}
EBL	0	0	0		0	
EBT	1.5	5100	930	.27*	1480	.44*
EBR	1.5		150		170	
WBL	1	1700	280	.16*	520	.31*
WBT	2	3400	480	.14	1090	.32
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.59		.89

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		410	.12*	370	.11*
SBT	0	5100	0		0	
SBR	1.5		440	{.00}	420	{.00}
EBL	0	0	0		0	
EBT	1.5	5100	990	.29*	1540	.45*
EBR	1.5		180		180	
WBL	1	1700	370	.22*	530	.31*
WBT	2	3400	570	.17	1190	.35
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.92

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		470		410	.12*
SBT	0	5100	0	.24*	0	
SBR	1.5		750		530	{.00}
EBL	0	0	0		0	
EBT	1.5	5100	1010	.30	2550	.75*
EBR	1.5		150		360	.21
WBL	1	1700	270	.16	620	.36*
WBT	2	3400	1650	.49*	1240	.36
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		1.28

7. SR-57 NB Ramps & Orangewood Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		290	{.16}*	430	{.14}*
NBT	0	5100	0	.16	0	.14
NBR	1.5		520		300	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1050	.31*	1180	.35*
EBR	2	3400	150	.04	430	.13
WBL	0	0	0		0	
WBT	2	3400	640	.19	1150	.34
WBR	1	1700	210	.12	350	.21
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.52		.54

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		60	.04*	340	{.13}*
NBT	0	5100	0		0	.13
NBR	1.5		580	.17	320	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1120	.33*	1310	.39*
EBR	2	3400	200	.06	480	.14
WBL	0	0	0		0	
WBT	2	3400	690	.20	1270	.37
WBR	1	1700	220	.13	400	.24
Right Turn Adjustment			NBR	.13*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.55		.57

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		130	.08*	360	{.15}*
NBT	0	5100	0		0	.15
NBR	1.5		600	.18	420	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1230	.36*	1420	.42*
EBR	2	3400	180	.05	470	.14
WBL	0	0	0		0	
WBT	2	3400	810	.24	1350	.40
WBR	1	1700	240	.14	430	.25
Right Turn Adjustment			NBR	.10*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.59		.62

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		730	{.27}*	450	{.16}*
NBT	0	5100	0	.27	0	.16
NBR	1.5		660		350	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1220	.36	1950	.57*
EBR	2	3400	220	.06	990	.29
WBL	0	0	0		0	
WBT	2	3400	1210	.36*	1390	.41
WBR	1	1700	270	.16	500	.29
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.78

8. The City Dr & I-5 NB Ramps

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	30	.01	120	.04
NBT	4	6800	1140	.17*	1330	.20*
NBR	1	1700	200	.12	320	.19
SBL	1	1700	50	.03*	130	.08*
SBT	4	6800	1320	.19	1570	.23
SBR	1	1700	0	.00	10	.01
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.25		.33

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	30	.01*	80	.02*
NBT	4	6800	990	.15	1420	.21
NBR	1	1700	250	.15	310	.18
SBL	1	1700	50	.03	120	.07
SBT	4	6800	1470	.22*	1810	.27*
SBR	1	1700	0	.00	10	.01
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0.5		150	.09*	110	.06*
WBT	2.5	5100	60	.02	120	.04
WBR	2	3400	940	.28	720	.21
Right Turn Adjustment			WBR	.13*	WBR	.09*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.50		.49

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	40	.01*	110	.03*
NBT	4	6800	1030	.15	1510	.22
NBR	1	1700	290	.17	370	.22
SBL	1	1700	50	.03	110	.06
SBT	4	6800	1640	.24*	1890	.28*
SBR	1	1700	0	.00	10	.01
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0.5		180	.11*	110	.06*
WBT	2.5	5100	60	.02	140	.04
WBR	2	3400	910	.27	760	.22
Right Turn Adjustment			WBR	.08*	WBR	.09*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.51

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	50	.01	90	.03*
NBT	4	6800	2250	.33*	1500	.22
NBR	1	1700	300	.18	410	.24
SBL	1	1700	60	.04*	220	.13
SBT	4	6800	1530	.23	3470	.51*
SBR	1	1700	0	.00	40	.02
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5100	40	.01*	120	.02*
WBR	2	3400	1420	.42	870	.26
Right Turn Adjustment			WBR	.38*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.81		.61

9. The City Dr & I-5 SB Ramps

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4.5	8500	1180	.14	1580	.19
NBR	0.5		0		0	
SBL	0	0	0		0	
SBT	4	6800	1190	.18*	1330	.20*
SBR	1	1700	130	.08	240	.14
EBL	0.5		190	.11*	190	.11*
EBT	1.5	3400	130	.08	100	.06
EBR	2	3400	560	.16	320	.09
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.05*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.36

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4.5	8500	1090	.13	1620	.19
NBR	0.5		0		0	
SBL	0	0	0		0	
SBT	4	6800	1480	.22*	1580	.23*
SBR	1	1700	150	.09	310	.18
EBL	0.5		170	.10*	200	.12*
EBT	1.5	3400	130	.08	100	.06
EBR	2	3400	620	.18	330	.10
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.08*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.45		.40

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4.5	8500	1190	.14	1800	.21
NBR	0.5		0		0	
SBL	0	0	0		0	
SBT	4	6800	1630	.24*	1620	.24*
SBR	1	1700	200	.12	330	.19
EBL	0.5		170	.10*	210	.12*
EBT	1.5	3400	160	.09	130	.08
EBR	2	3400	670	.20	340	.10
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.10*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.41

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	4.5	8500	2260	.27*	1740	.20
NBR	0.5		0		0	
SBL	0	0	0		0	
SBT	4	6800	1240	.18	2420	.36*
SBR	1	1700	290	.17	760	.45
EBL	0.5		330	.19*	300	.18*
EBT	1.5	3400	260	.15	130	.08
EBR	2	3400	570	.17	220	.06
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.59

10. Haster St & Chapman Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05	220	.13*
NBT	2	3400	350	.14*	640	.24
NBR	0	0	110		170	
SBL	1	1700	210	.12*	180	.11
SBT	2	3400	520	.15	780	.23*
SBR	1	1700	110	.06	200	.12
EBL	1	1700	120	.07	250	.15*
EBT	2	3400	1120	.35*	750	.29
EBR	0	0	80		240	
WBL	1	1700	60	.04*	240	.14
WBT	2	3400	320	.09	1120	.33*
WBR	1	1700	60	.04	270	.16
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.70		.89

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	60	.04	130	.08
NBT	2	3400	340	.14*	660	.24*
NBR	0	0	120		170	
SBL	1	1700	210	.12*	180	.11*
SBT	2	3400	530	.16	810	.24
SBR	1	1700	140	.08	260	.15
EBL	1	1700	170	.10	320	.19*
EBT	2	3400	1190	.38*	780	.30
EBR	0	0	90		240	
WBL	1	1700	60	.04*	240	.14
WBT	2	3400	360	.11	1300	.38*
WBR	1	1700	50	.03	230	.14
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.73		.97

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	60	.04	190	.11
NBT	2	3400	340	.14*	700	.26*
NBR	0	0	120		170	
SBL	1	1700	240	.14*	180	.11*
SBT	2	3400	570	.17	820	.24
SBR	1	1700	150	.09	270	.16
EBL	1	1700	180	.11	360	.21*
EBT	2	3400	1250	.41*	820	.31
EBR	0	0	130		240	
WBL	1	1700	60	.04*	240	.14
WBT	2	3400	390	.11	1360	.40*
WBR	1	1700	50	.03	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		1.03

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06	310	.18*
NBT	2	3400	360	.14*	710	.26
NBR	0	0	130		170	
SBL	1	1700	270	.16*	180	.11
SBT	2	3400	590	.17	880	.26*
SBR	1	1700	140	.08	340	.20
EBL	1	1700	330	.19	390	.23*
EBT	2	3400	1320	.44*	840	.32
EBR	0	0	160		240	
WBL	1	1700	60	.04*	270	.16
WBT	2	3400	330	.10	1400	.41*
WBR	1	1700	50	.03	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		1.13

10. Haster St & Chapman Ave

Year 2020 - with improvements

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06	310	.18*
NBT	2	3400	360	.14*	710	.26
NBR	0	0	130		170	
SBL	1	1700	270	.16*	180	.11
SBT	2	3400	590	.17	880	.26*
SBR	1	1700	140	.08	340	.20
EBL	2	3400	330	.10	390	.11*
EBT	3	5100	1320	.29*	840	.21
EBR	0	0	160		240	
WBL	1	1700	60	.04*	270	.16
WBT	3	5100	330	.06	1400	.27*
WBR	d	1700	50	.03	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.87

11. Lewis St & Chapman Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06*	240	.14
NBT	1	1700	110	.06	300	.18*
NBR	1	1700	350	.21	140	.08
SBL	1	1700	140	.08	160	.09*
SBT	1	1700	240	.14*	180	.11
SBR	1	1700	40	.02	70	.04
EBL	1	1700	110	.06	60	.04*
EBT	3	5100	1020	.26*	910	.20
EBR	0	0	310		130	
WBL	1	1700	360	.21*	300	.18
WBT	2	3400	290	.09	1320	.39*
WBR	1	1700	70	.04	180	.11
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.72		.75

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06*	290	.17*
NBT	1	1700	130	.08	350	.21
NBR	1	1700	350	.21	130	.08
SBL	1	1700	120	.07	160	.09
SBT	1	1700	250	.15*	230	.14*
SBR	1	1700	40	.02	110	.06
EBL	1	1700	110	.06	110	.06*
EBT	3	5100	1080	.28*	880	.20
EBR	0	0	330		150	
WBL	1	1700	380	.22*	300	.18
WBT	2	3400	320	.09	1390	.41*
WBR	1	1700	60	.04	120	.07
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.76		.83

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	120	.07*	310	.18
NBT	1	1700	160	.09	460	.27*
NBR	1	1700	350	.21	170	.10
SBL	1	1700	120	.07	170	.10*
SBT	1	1700	290	.17*	240	.14
SBR	1	1700	50	.03	90	.05
EBL	1	1700	160	.09	140	.08*
EBT	3	5100	1090	.28*	890	.20
EBR	0	0	360		150	
WBL	1	1700	360	.21*	290	.17
WBT	2	3400	350	.10	1440	.42*
WBR	1	1700	60	.04	140	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		.92

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	120	.07*	350	.21
NBT	1	1700	200	.12	470	.28*
NBR	1	1700	360	.21	180	.11
SBL	1	1700	60	.04	170	.10*
SBT	1	1700	250	.15*	270	.16
SBR	1	1700	40	.02	210	.12
EBL	1	1700	170	.10	200	.12*
EBT	3	5100	1210	.30*	840	.19
EBR	0	0	340		150	
WBL	1	1700	320	.19*	310	.18
WBT	2	3400	290	.09	1380	.41*
WBR	1	1700	60	.04	130	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.76		.96

11. Lewis St & Chapman Ave

Year 2020 - with improvements

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	120	.07*	350	.21*
NBT	2	3400	200	.12	470	.19
NBR	0	0	360	.21	180	
SBL	1	1700	60	.04	170	.10
SBT	1	1700	250	.15*	270	.16*
SBR	1	1700	40	.02	210	.12
EBL	1	1700	170	.10	200	.12*
EBT	3	5100	1210	.30*	840	.19
EBR	0	0	340		150	
WBL	1	1700	320	.19*	310	.18
WBT	3	5100	290	.07	1380	.30*
WBR	0	0	60		130	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .76 .84

12. Manchester Ave & Chapman Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02	180	.11*
NBT	1	1700	0	.00*	10	.01
NBR	2	3400	90	.03	550	.16
SBL	1	1700	80	.05*	130	.08
SBT	2	3400	10	.01	20	.01*
SBR	0	0	10		40	.02
EBL	1	1700	30	.02	0	.00
EBT	3	5100	1400	.29*	1070	.24*
EBR	0	0	80		140	
WBL	2	3400	440	.13*	290	.09*
WBT	3	5100	680	.13	1580	.31
WBR	1	1700	90	.05	60	.04
Right Turn Adjustment					NBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.52**		**.55**

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	200	.12*
NBT	1	1700	10	.01*	30	.02
NBR	2	3400	100	.03	550	.16
SBL	1	1700	130	.08*	130	.08
SBT	2	3400	20	.01	30	.02*
SBR	0	0	20		60	.04
EBL	1	1700	50	.03	10	.01
EBT	3	5100	1390	.30*	1000	.23*
EBR	0	0	120		170	
WBL	2	3400	470	.14*	300	.09*
WBT	3	5100	670	.13	1570	.31
WBR	1	1700	80	.05	80	.05
Right Turn Adjustment					Multi	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.58**		**.55**

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	210	.12*
NBT	1	1700	10	.01*	40	.02
NBR	2	3400	100	.03	570	.17
SBL	1	1700	180	.11*	130	.08
SBT	2	3400	30	.02	30	.02*
SBR	0	0	40	.02	70	.04
EBL	1	1700	60	.04	20	.01
EBT	3	5100	1370	.29*	990	.23*
EBR	0	0	130		180	
WBL	2	3400	480	.14*	290	.09*
WBT	3	5100	670	.13	1590	.31
WBR	1	1700	80	.05	70	.04
Right Turn Adjustment					Multi	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.60**		**.56**

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	220	.13*
NBT	1	1700	10	.01*	40	.02
NBR	2	3400	90	.03	600	.18
SBL	1	1700	260	.15*	130	.08
SBT	2	3400	60	.03	40	.02*
SBR	0	0	50		60	.04
EBL	1	1700	60	.04	20	.01*
EBT	3	5100	1440	.31*	950	.22
EBR	0	0	150		180	
WBL	2	3400	460	.14*	290	.09
WBT	3	5100	560	.11	1540	.30*
WBR	1	1700	80	.05	160	.09
Right Turn Adjustment					Multi	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.66**		**.56**

13. The City Dr & Chapman Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	170	.05*	220	.06*
NBT	4	6800	530	.08	1030	.15
NBR	1	1700	280	.16	430	.25
SBL	2	3400	90	.03	80	.02
SBT	3	5100	1230	.24*	1030	.20*
SBR	1	1700	430	.25	540	.32
EBL	2	3400	360	.11	370	.11
EBT	3	5100	1070	.21*	1310	.26*
EBR	1	1700	140	.08	70	.04
WBL	2	3400	490	.14*	370	.11*
WBT	3	5100	610	.12	1170	.23
WBR	1	1700	290	.17	180	.11
Right Turn Adjustment					SBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.69		.69

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	170	.05*	180	.05*
NBT	4	6800	650	.10	1200	.18
NBR	1	1700	330	.19	610	.36
SBL	2	3400	100	.03	80	.02
SBT	3	5100	1410	.28*	1180	.23*
SBR	1	1700	590	.35	650	.38
EBL	2	3400	360	.11	390	.11
EBT	3	5100	1060	.21*	1290	.25*
EBR	1	1700	150	.09	90	.05
WBL	2	3400	620	.18*	430	.13*
WBT	3	5100	670	.13	1130	.22
WBR	1	1700	80	.05	40	.02
Right Turn Adjustment					SBR	.03*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.77		.74

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	180	.05*	200	.06*
NBT	4	6800	730	.11	1350	.20
NBR	1	1700	340	.20	690	.41
SBL	2	3400	90	.03	70	.02
SBT	3	5100	1570	.31*	1260	.25*
SBR	1	1700	650	.38	640	.38
EBL	2	3400	380	.11	430	.13
EBT	3	5100	1090	.21*	1290	.25*
EBR	1	1700	140	.08	70	.04
WBL	2	3400	690	.20*	460	.14*
WBT	3	5100	630	.12	1130	.22
WBR	1	1700	70	.04	30	.02
Right Turn Adjustment					NBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.82		.76

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	220	.06*	180	.05*
NBT	4	6800	1630	.24	1330	.20
NBR	1	1700	550	.32	1050	.62
SBL	2	3400	80	.02	170	.05
SBT	3	5100	1260	.25*	1800	.35*
SBR	1	1700	480	.28	670	.39
EBL	2	3400	470	.14	430	.13
EBT	3	5100	1110	.22*	1270	.25*
EBR	1	1700	180	.11	80	.05
WBL	2	3400	870	.26*	530	.16*
WBT	3	5100	610	.12	1190	.23
WBR	1	1700	170	.10	60	.04
Right Turn Adjustment					NBR	.15*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.84		1.01

13. The City Dr & Chapman Ave

Year 2020 - with improvements

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	220	.06*	180	.05*
NBT	3.5	8500	1630	{.24}	1330	.26
NBR	1.5		550	{.13}	1050	
SBL	2	3400	80	.02	170	.05
SBT	3	5100	1260	.25*	1800	.35*
SBR	1	1700	480	.28	670	.39
EBL	2	3400	470	.14	430	.13
EBT	3	5100	1110	.22*	1270	.25*
EBR	1	1700	180	.11	80	.05
WBL	2	3400	870	.26*	530	.16*
WBT	3	5100	610	.12	1190	.23
WBR	1	1700	170	.10	60	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.84		.86

14. I-5 SB Ramp on-Ramp & Chapman Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	120	.04*	80	.02*
SBT	0	0	50		1	
SBR	0	0	10		0	
EBL	0	0	0		0	
EBT	3.5	8500	790	.15	1050	.21
EBR	1.5		650	.19	770	.23
WBL	2	3400	190	.06	210	.06
WBT	3	5100	1350	.26*	1720	.34*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.35		.41

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	760	.22*	560	.16*
NBT	0	0	0		0	
NBR	1	1700	110	.06	50	.03
SBL	2	3400	120	.04	80	.02
SBT	0	0	50		10	
SBR	0	0	10		0	
EBL	0	0	0		0	
EBT	3.5	8500	800	{.14}*	1130	{.21}*
EBR	1.5		670		870	
WBL	2	3400	180	.05*	200	.06*
WBT	3	5100	570	.11	1040	.20
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.46		.48

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	810	.24*	560	.16*
NBT	0	0	0		0	
NBR	1	1700	100	.06	50	.03
SBL	2	3400	140	.04	100	.03
SBT	0	0	50		10	
SBR	0	0	10		0	
EBL	0	0	0		0	
EBT	3.5	8500	830	{.14}*	1190	{.22}*
EBR	1.5		690		900	
WBL	2	3400	190	.06*	210	.06*
WBT	3	5100	550	.11	1060	.21
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.49

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	850	.25*	600	.18*
NBT	0	0	0		0	
NBR	1	1700	410	.24	160	.09
SBL	2	3400	250	.07	110	.03
SBT	0	0	50		10	
SBR	0	0	10		0	
EBL	0	0	0		0	
EBT	3.5	8500	1120	{.16}*	1790	{.27}*
EBR	1.5		600		730	
WBL	2	3400	220	.06*	650	.19*
WBT	3	5100	760	.15	1180	.23
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.01*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.69

15. I-5 NB on-Ramp & Chapman Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	910	.18	1130	.22
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	1540	.51*	1930	.65*
WBR	0	0	200		280	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.56		.70

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1030	.20	1260	.25
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	760	.29*	1240	.46*
WBR	0	0	240		340	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.34		.51

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1070	.21	1350	.26
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	740	.29*	1270	.48*
WBR	0	0	240		350	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.34		.53

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1780	.35	2060	.40
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	990	.36*	1820	.66*
WBR	0	0	240		440	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.41		.71

16. SR-57 SB Ramps & Chapman Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		20	{.01}*	190	
NBT	0.5	1700	10	.02	50	.14*
NBR	1	1700	10	.01	160	.09
SBL	0.5		230		220	{.13}*
SBT	0.5	1700	120	.21*	20	.14
SBR	1	1700	280	.16	270	.16
EBL	1	1700	0	.00	10	.01*
EBT	3	5100	900	.21*	1090	.22
EBR	0	0	180		30	
WBL	1	1700	90	.05*	30	.02
WBT	2	3400	670	.20	1170	.34*
WBR	1	1700	120	.07	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.53**		**.67**

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		20	{.01}*	190	
NBT	0.5	1700	10	.02	50	.14*
NBR	1	1700	10	.01	160	.09
SBL	0.5		280		260	{.15}*
SBT	0.5	1700	120	.24*	20	.16
SBR	1	1700	300	.18	280	.16
EBL	1	1700	0	.00	10	.01*
EBT	3	5100	900	.21*	1160	.23
EBR	0	0	180		30	
WBL	1	1700	90	.05*	30	.02
WBT	2	3400	800	.24	1270	.37*
WBR	1	1700	120	.07	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.56**		**.72**

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		20	{.01}*	190	
NBT	0.5	1700	10	.02	50	.14*
NBR	1	1700	10	.01	160	.09
SBL	0.5		320		260	{.15}*
SBT	0.5	1700	120	.26*	20	.16
SBR	1	1700	240	.14	270	.16
EBL	1	1700	0	.00	10	.01*
EBT	3	5100	950	.22*	1250	.25
EBR	0	0	180		30	
WBL	1	1700	90	.05*	30	.02
WBT	2	3400	830	.24	1310	.39*
WBR	1	1700	120	.07	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.59**		**.74**

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		20	{.01}*	190	
NBT	0.5	1700	10	.02	50	.14*
NBR	1	1700	10	.01	160	.09
SBL	0.5		300		300	{.18}*
SBT	0.5	1700	120	.25*	20	.19
SBR	1	1700	420	.25	210	.12
EBL	1	1700	0	.00	10	.01*
EBT	3	5100	1070	.24	1980	.39
EBR	0	0	170		30	
WBL	1	1700	90	.05	30	.02
WBT	2	3400	1150	.34*	1370	.40*
WBR	1	1700	170	.10	180	.11
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.65**		**.78**

17. SR-57 NB Ramps & Chapman Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02*	30	.02*
NBT	0	0	0		0	
NBR	1	1700	100	.06	120	.07
SBL	0	0	0		0	
SBT	1	1700	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1700	0	.00	0	.00
EBT	2	3400	870	.26*	1080	.32
EBR	1	1700	270	.16	390	.23
WBL	0	0	0		0	
WBT	3	5100	840	.21	1340	.32*
WBR	0	0	240		280	
Right Turn Adjustment			NBR	.04*	NBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.37		.44

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	120	.07*	70	.04*
NBT	0	0	0		0	
NBR	1	1700	100	.06	120	.07
SBL	0	0	0		0	
SBT	1	1700	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1700	0	.00	0	.00
EBT	2	3400	930	.27*	1170	.34*
EBR	1	1700	270	.16	400	.24
WBL	0	0	0		0	
WBT	3	5100	900	.23	1400	.33
WBR	0	0	250		300	
Right Turn Adjustment					NBR	.03*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.46

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	120	.07*	70	.04*
NBT	0	0	0		0	
NBR	1	1700	100	.06	120	.07
SBL	0	0	0		0	
SBT	1	1700	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1700	0	.00	0	.00
EBT	2	3400	1000	.29*	1250	.37*
EBR	1	1700	280	.16	420	.25
WBL	0	0	0		0	
WBT	3	5100	920	.24	1440	.35
WBR	0	0	290		340	
Right Turn Adjustment					NBR	.03*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.41		.49

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	200	.12*	60	.04*
NBT	0	0	0		0	
NBR	1	1700	90	.05	110	.06
SBL	0	0	0		0	
SBT	1	1700	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1700	0	.00	0	.00
EBT	2	3400	1030	.30	1600	.47*
EBR	1	1700	350	.21	820	.48
WBL	0	0	0		0	
WBT	3	5100	1230	.30*	1510	.36
WBR	0	0	320		340	
Right Turn Adjustment					NBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.47		.58

18. City Blvd East & The City Way

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		0		10	
NBT	1	3400	30	.02*	60	.04*
NBR	0.5		30		80	.05
SBL	1	1700	60	.04*	100	.06*
SBT	2	3400	30	.01	90	.03
SBR	1	1700	40	.02	60	.04
EBL	1	1700	10	.01*	50	.03
EBT	1.5	3400	80	.02	190	.06*
EBR	0.5		0		10	
WBL	1	1700	30	.02	140	.08*
WBT	2	3400	130	.04*	150	.04
WBR	1	1700	120	.07	60	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.16		.29

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		0		10	
NBT	1	3400	30	.01*	70	.05*
NBR	0.5		20		80	
SBL	1	1700	60	.04*	110	.06*
SBT	2	3400	30	.01	100	.03
SBR	1	1700	60	.04	100	.06
EBL	1	1700	30	.02*	60	.04
EBT	1.5	3400	100	.03	190	.06*
EBR	0.5		0		10	
WBL	1	1700	30	.02	130	.08*
WBT	2	3400	150	.04*	170	.05
WBR	1	1700	140	.08	60	.04
Right Turn Adjustment			WBR	.01*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.17		.30

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		0		10	
NBT	1	3400	30	.01*	70	.04*
NBR	0.5		20		70	
SBL	1	1700	60	.04*	120	.07*
SBT	2	3400	50	.01	110	.03
SBR	1	1700	50	.03	100	.06
EBL	1	1700	20	.01*	70	.04
EBT	1.5	3400	110	.03	230	.07*
EBR	0.5		0		10	
WBL	1	1700	30	.02	130	.08*
WBT	2	3400	170	.05*	200	.06
WBR	1	1700	140	.08	60	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.16		.31

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		0		10	
NBT	1	3400	60	.03*	70	.05*
NBR	0.5		30		80	
SBL	1	1700	110	.06*	110	.06*
SBT	2	3400	70	.02	130	.04
SBR	1	1700	60	.04	90	.05
EBL	1	1700	20	.01	50	.03
EBT	1.5	3400	220	.06*	240	.07*
EBR	0.5		0		10	
WBL	1	1700	30	.02*	140	.08*
WBT	2	3400	140	.04	240	.07
WBR	1	1700	120	.07	100	.06
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.22		.31

19. The City Dr & The City Way

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	210	.06	90	.03*
NBT	4	6800	660	.13*	970	.15
NBR	0	0	400	.24	30	
SBL	1	1700	560	.33*	50	.03
SBT	4	6800	870	.16	1160	.20*
SBR	0	0	230		220	
EBL	1.5		80	{.02}*	290	.09*
EBT	1	6800	80	{.02}	30	{.04}
EBR	1.5		90		160	
WBL	1	1700	50	.03	170	.10
WBT	0.5	1700	10	.07*	50	.21*
WBR	0.5		110		310	
Right Turn Adjustment			NBR	.06*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.66		.58

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06	80	.02*
NBT	4	6800	960	.19*	1100	.16
NBR	0	0	340	.20	20	
SBL	1	1700	610	.36*	60	.04
SBT	4	6800	930	.18	1490	.25*
SBR	0	0	280		220	
EBL	1.5		80	{.02}*	310	.09*
EBT	1	6800	80	{.02}	30	{.05}
EBR	1.5		90		160	
WBL	1	1700	50	.03	170	.10
WBT	0.5	1700	10	.07*	60	.22*
WBR	0.5		110		310	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.69		.63

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06	80	.02*
NBT	4	6800	1040	.20*	1260	.19
NBR	0	0	330		20	
SBL	1	1700	650	.38*	70	.04
SBT	4	6800	1020	.19	1530	.26*
SBR	0	0	290		250	
EBL	1.5		90	{.03}*	360	.11*
EBT	1	6800	90	{.03}	30	.05
EBR	1.5		90		150	
WBL	1	1700	60	.04	180	.11
WBT	0.5	1700	10	.07*	70	.24*
WBR	0.5		110		330	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.73		.68

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	170	.05	100	.03*
NBT	4	6800	2000	.39*	1280	.19
NBR	0	0	650		20	
SBL	1	1700	750	.44*	110	.06
SBT	4	6800	720	.14	2010	.34*
SBR	0	0	230		280	
EBL	1.5		190	.06*	350	.10*
EBT	1	6800	160	{.09}	30	{.04}
EBR	1.5		100		160	
WBL	1	1700	110	.06	340	.20
WBT	0.5	1700	10	.10*	110	.35*
WBR	0.5		165		490	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				1.04		.87

19. The City Dr & The City Way

Year 2020 - with improvements

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	170	.05	100	.03*
NBT	4	6800	2000	.39*	1280	.19
NBR	0	0	650		20	
SBL	2	3400	750	.22*	110	.03
SBT	4	6800	720	.14	2010	.34*
SBR	0	0	230		280	
EBL	1.5		190	.06*	350	.10*
EBT	1	6800	160	{.09}	30	{.04}
EBR	1.5		100		160	
WBL	1	1700	110	.06	340	.20
WBT	0.5	1700	10	.10*	110	.35*
WBR	0.5		165		490	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.82		.87

20. Lewis St & City Pkwy West

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	10	.01
NBT	2	3400	590	.23*	610	.20*
NBR	0	0	180		80	
SBL	1	1700	110	.06*	60	.04*
SBT	2	3400	570	.18	720	.22
SBR	0	0	50		20	
EBL	0	0	10	{.01}*	60	
EBT	1	1700	0	.01	0	.06*
EBR	0	0	10		50	
WBL	1	1700	10	.01	190	.11*
WBT	1	1700	0	.01*	0	.08
WBR	0	0	10		140	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.36		.46

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	10	.01
NBT	2	3400	630	.26*	630	.21*
NBR	0	0	250		100	
SBL	1	1700	110	.06*	80	.05*
SBT	2	3400	610	.19	790	.24
SBR	0	0	40		10	
EBL	0	0	10		60	
EBT	1	1700	10	.02*	10	.06*
EBR	0	0	10		40	
WBL	1	1700	10	.01*	270	.16*
WBT	1	1700	10	.01	20	.13
WBR	0	0	10		200	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.40		.53

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02	10	.01
NBT	2	3400	670	.27*	710	.24*
NBR	0	0	250		110	
SBL	1	1700	180	.11*	80	.05*
SBT	2	3400	660	.21	820	.24
SBR	0	0	40		10	
EBL	0	0	10	{.01}*	50	{.03}*
EBT	1	1700	10	.02	10	.06
EBR	0	0	10		40	
WBL	1	1700	10	.01	260	.15
WBT	1	1700	20	.02*	20	.19*
WBR	0	0	10		300	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.46		.56

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	10	.01
NBT	2	3400	730	.34*	750	.25*
NBR	0	0	440		110	
SBL	1	1700	110	.06*	90	.05*
SBT	2	3400	610	.19	830	.25
SBR	0	0	40		10	
EBL	0	0	10	{.01}*	60	
EBT	1	1700	10	.02	10	.08*
EBR	0	0	10		60	
WBL	1	1700	10	.01	330	.19*
WBT	1	1700	20	.02*	20	.18
WBR	0	0	10		290	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.48		.62

21. The City Dr & Justice Center Way

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	60	.02	60	.02*
NBT	4	6800	1210	.24*	830	.13
NBR	0	0	460	.27	50	
SBL	1	1700	170	.10*	30	.02
SBT	4	6800	780	.11	1280	.19*
SBR	1	1700	60	.04	180	.11
EBL	1.5		30	{.01}*	80	{.02}*
EBT	0.5	3400	10	.01	0	.02
EBR	2	3400	60	.02	120	.04
WBL	1.5		40		260	
WBT	0.5	3400	10	.01*	30	.09*
WBR	1	1700	30	.02	180	.11
Right Turn Adjustment			NBR	.02*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.43		.37

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	70	.02	130	.04*
NBT	4	6800	1420	.27*	830	.13
NBR	0	0	430		40	
SBL	1	1700	190	.11*	30	.02
SBT	4	6800	790	.12	1560	.23*
SBR	1	1700	90	.05	270	.16
EBL	1.5		60	{.02}*	150	{.05}*
EBT	0.5	3400	10	.02	10	.05
EBR	2	3400	60	.02	120	.04
WBL	1.5		40		240	
WBT	0.5	3400	10	.01*	30	.08*
WBR	1	1700	30	.02	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.46		.45

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	20	.01	40	.01*
NBT	4	6800	1480	.27*	960	.15
NBR	0	0	380		40	
SBL	1	1700	240	.14*	30	.02
SBT	4	6800	870	.13	1610	.24*
SBR	1	1700	80	.05	260	.15
EBL	1.5		60	{.02}*	170	{.05}*
EBT	0.5	3400	10	.02	10	.05
EBR	2	3400	70	.02	120	.04
WBL	1.5		30		230	
WBT	0.5	3400	10	.01*	40	.08*
WBR	1	1700	40	.02	220	.13
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.43

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	40	.01	90	.03*
NBT	4	6800	2720	.48*	1100	.17
NBR	0	0	520		50	
SBL	1	1700	160	.09*	30	.02
SBT	4	6800	720	.11	2210	.33*
SBR	1	1700	60	.04	280	.16
EBL	1.5		60	{.03}*	110	{.04}*
EBT	0.5	3400	30	.03	10	.04
EBR	2	3400	90	.03	140	.04
WBL	1.5		50		320	
WBT	0.5	3400	10	.02*	50	.11*
WBR	1	1700	30	.02	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.67		.56

22. The City Dr & Entertainment Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	60	.02	240	.07*
NBT	4	6800	1720	.25*	870	.13
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	850	.13	1650	.24*
SBR	0	0	30		10	
EBL	2	3400	10	.00	70	.02*
EBT	0	0	0		0	
EBR	2	3400	20	.01	180	.05
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.30		.38

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	90	.03	270	.08*
NBT	4	6800	1910	.28*	920	.14
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	920	.14	1960	.29*
SBR	0	0	20		10	
EBL	2	3400	10	.00	60	.02*
EBT	0	0	0		0	
EBR	2	3400	30	.01	250	.07
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.33		.44

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	10	.00	110	.03*
NBT	4	6800	1820	.27*	920	.14
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	920	.14	1910	.28*
SBR	0	0	40		10	
EBL	2	3400	20	.01*	90	.03*
EBT	0	0	0		0	
EBR	2	3400	10	.00	110	.03
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.33		.39

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	30	.01	120	.04*
NBT	4	6800	3200	.47*	1140	.17
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	810	.12	2620	.39*
SBR	0	0	30		50	
EBL	2	3400	20	.01*	80	.02*
EBT	0	0	0		0	
EBR	2	3400	10	.00	160	.05
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.50

23. Haster St & Lampson Ave

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	140	.08*	180	.11*
NBT	2	3400	420	.15	710	.22
NBR	0	0	80		30	
SBL	1	1700	180	.11	80	.05
SBT	2	3400	820	.25*	710	.24*
SBR	0	0	40		90	
EBL	1	1700	150	.09	140	.08*
EBT	1	1700	610	.36*	150	.09
EBR	1	1700	150	.09	70	.04
WBL	1	1700	80	.05*	160	.09
WBT	1	1700	110	.06	410	.24*
WBR	1	1700	120	.07	90	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.79		.72

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	150	.09*	160	.09*
NBT	2	3400	390	.14	640	.20
NBR	0	0	90		30	
SBL	1	1700	200	.12	80	.05
SBT	2	3400	820	.25*	750	.25*
SBR	0	0	40		100	
EBL	1	1700	150	.09	150	.09*
EBT	1	1700	660	.39*	170	.10
EBR	1	1700	150	.09	80	.05
WBL	1	1700	80	.05*	200	.12
WBT	1	1700	120	.07	500	.29*
WBR	1	1700	120	.07	70	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.77

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	150	.09*	150	.09*
NBT	2	3400	410	.16	620	.19
NBR	0	0	130		20	
SBL	1	1700	250	.15	90	.05
SBT	2	3400	840	.26*	770	.26*
SBR	0	0	40		110	
EBL	1	1700	150	.09	150	.09*
EBT	1	1700	690	.41*	160	.09
EBR	1	1700	150	.09	70	.04
WBL	1	1700	60	.04*	140	.08
WBT	1	1700	120	.07	510	.30*
WBR	1	1700	120	.07	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.85		.79

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	160	.09	110	.06*
NBT	2	3400	530	.24*	680	.21
NBR	0	0	270		20	
SBL	1	1700	310	.18*	90	.05
SBT	2	3400	830	.26	860	.29*
SBR	0	0	40		130	
EBL	1	1700	140	.08	160	.09*
EBT	1	1700	770	.45*	180	.11
EBR	1	1700	150	.09	70	.04
WBL	1	1700	50	.03*	130	.08
WBT	1	1700	120	.07	630	.37*
WBR	1	1700	120	.07	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.95		.86

23. Haster St & Lampson Ave

Year 2020 - with improvements

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	160	.09*	110	.06*
NBT	2	3400	530	.16	680	.20
NBR	1	1700	270	.16	20	.01
SBL	1	1700	310	.18	90	.05
SBT	2	3400	830	.26*	860	.29*
SBR	0	0	40		130	
EBL	1	1700	140	.08	160	.09*
EBT	1	1700	770	.45*	180	.11
EBR	1	1700	150	.09	70	.04
WBL	1	1700	50	.03*	130	.08
WBT	1	1700	120	.07	630	.37*
WBR	1	1700	120	.07	210	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.88		.86

24. Lewis St & Lampson Ave/The Block Dr

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06	250	.15*
NBT	2	3400	390	.14*	410	.13
NBR	0	0	90		30	
SBL	1	1700	120	.07*	90	.05
SBT	2	3400	370	.14	450	.20*
SBR	0	0	110		240	
EBL	1	1700	280	.16	90	.05*
EBT	1	1700	350	.34*	80	.08
EBR	0	0	220		60	
WBL	1	1700	20	.01*	110	.06
WBT	1	1700	40	.02	240	.14*
WBR	1	1700	70	.04	80	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.61		.59

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06	230	.14*
NBT	2	3400	430	.15*	420	.13
NBR	0	0	90		30	
SBL	1	1700	120	.07*	80	.05
SBT	2	3400	390	.15	520	.25*
SBR	0	0	120		320	
EBL	1	1700	340	.20	110	.06*
EBT	1	1700	360	.36*	80	.09
EBR	0	0	250		70	
WBL	1	1700	20	.01*	110	.06
WBT	1	1700	40	.02	330	.19*
WBR	1	1700	70	.04	80	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.64		.69

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06	220	.13*
NBT	2	3400	430	.19*	450	.15
NBR	0	0	210		50	
SBL	1	1700	180	.11*	120	.07
SBT	2	3400	390	.15	520	.24*
SBR	0	0	110		300	
EBL	1	1700	360	.21	120	.07*
EBT	1	1700	470	.42*	90	.09
EBR	0	0	240		60	
WBL	1	1700	20	.01*	180	.11
WBT	1	1700	50	.03	440	.26*
WBR	1	1700	80	.05	120	.07
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		.75

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	110	.06	250	.15*
NBT	2	3400	470	.20*	450	.14
NBR	0	0	200		40	
SBL	1	1700	180	.11*	140	.08
SBT	2	3400	350	.13	570	.27*
SBR	0	0	100		340	
EBL	1	1700	550	.32	120	.07*
EBT	1	1700	550	.49*	100	.10
EBR	0	0	290		70	
WBL	1	1700	20	.01*	210	.12
WBT	1	1700	50	.03	580	.34*
WBR	1	1700	110	.06	140	.08
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.86		.88

25. The City Dr & SR-22 WB Ramps

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	600	.18*	350	.10*
NBT	4	6800	1670	.25	1060	.16
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	800	.12*	1760	.26*
SBR	1	1700	70	.04	70	.04
EBL	2	3400	110	.03*	50	.01*
EBT	0	0	0		0	
EBR	2	3400	440	.13	610	.18
WBL	0	0	10		10	
WBT	1	1700	0	.01*	0	.01*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.09*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.52

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	600	.18*	470	.14*
NBT	4	6800	1900	.28	1120	.17
NBR	0	0	20		10	
SBL	0	0	10		10	
SBT	4	6800	890	.13*	2140	.32*
SBR	1	1700	70	.04	70	.04
EBL	2	3400	110	.03*	50	.01*
EBT	0	0	10		0	
EBR	2	3400	440	.13	600	.18
WBL	0	0	10		10	
WBT	1	1700	0	.01*	10	.02*
WBR	0	0	10		10	
Right Turn Adjustment					EBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.40		.59

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	90	.03*	10	.00
NBT	4	6800	10	.00	10	.00
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	10	.00*	40	.01*
SBR	1	1700	70	.04	10	.01
EBL	2	3400	100	.03*	10	.00
EBT	0	0	0		0	
EBR	2	3400	260	.08	230	.07
WBL	0	0	10		10	
WBT	1	1700	0	.01*	0	.01*
WBR	0	0	0		0	
Right Turn Adjustment			Multi	.05*	EBR	.07*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.17		.14

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	100	.03	10	.00
NBT	4	6800	3070	.45*	1180	.17
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	770	.11	2720	.40*
SBR	1	1700	60	.04	20	.01
EBL	2	3400	100	.03*	60	.02*
EBT	0	0	0		0	
EBR	2	3400	250	.07	270	.08
WBL	0	0	0		10	
WBT	1	1700	0	.00*	0	.01*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.06*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.54

26. The City Dr & SR-22 WB Ramps

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02	120	.07*
NBT	3	5100	1230	.24*	1180	.23
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	5100	970	.19	1640	.32*
SBR	1	1700	280	.16	740	.44
EBL	1.5		1040	.31*	230	.07*
EBT	0	5100	0		0	
EBR	1.5		520	.31	170	{.05}
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.07*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.58

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02	140	.08*
NBT	3	5100	1510	.30*	1370	.27
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	5100	1030	.20	1820	.36*
SBR	1	1700	310	.18	890	.52
EBL	1.5		990	.29*	210	.06*
EBT	0	5100	0		0	
EBR	1.5		520	{.23}	140	{.02}
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.11*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.64		.66

27. The City Dr & SR-22 EB Ramps

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	200	.12*	250	.15*
NBT	3	5100	730	.15	1000	.20
NBR	0	0	10		10	
SBL	1	1700	100	.06	60	.04
SBT	2	3400	1120	.33*	970	.29*
SBR	1	1700	270	.16	780	.46
EBL	1.5		520	{.16}*	270	{.08}*
EBT	0.5	3400	30	.16	10	.08
EBR	1	1700	30	.02	110	.06
WBL	0.5		10		20	
WBT	0.5	1700	10	.01*	50	.04*
WBR	1	1700	10	.01	30	.02
Right Turn Adjustment					SBR	.11*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.67		.72

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	160	.09*	240	.14*
NBT	3	5100	890	.18	1140	.23
NBR	0	0	10		10	
SBL	1	1700	110	.06	60	.04
SBT	2	3400	1090	.32*	1020	.30*
SBR	1	1700	350	.21	870	.51
EBL	1.5		640	{.20}*	360	{.11}*
EBT	0.5	3400	30	.20	10	.11
EBR	1	1700	20	.01	110	.06
WBL	0.5		10		20	
WBT	0.5	1700	10	.01*	50	.04*
WBR	1	1700	10	.01	30	.02
Right Turn Adjustment					SBR	.13*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.67		.77

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	230	.14*	300	.18*
NBT	3	5100	980	.19	1220	.24
NBR	0	0	10		10	
SBL	1	1700	110	.06	60	.04
SBT	2	3400	1170	.34*	1010	.30*
SBR	1	1700	370	.22	960	.56
EBL	1.5		690	{.21}*	410	{.12}*
EBT	0.5	3400	30	.21	10	.12
EBR	1	1700	20	.01	110	.06
WBL	0.5		10		20	
WBT	0.5	1700	10	.01*	50	.04*
WBR	1	1700	10	.01	30	.02
Right Turn Adjustment					SBR	.17*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.75		.86

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	150	.09*	210	.12*
NBT	3	5100	1380	.27	1240	.25
NBR	0	0	10		10	
SBL	1	1700	120	.07	60	.04
SBT	2	3400	1130	.33*	1260	.37*
SBR	1	1700	500	.29	1330	.78
EBL	1.5		1190	{.36}*	580	{.17}*
EBT	0.5	3400	20	.36	10	.17
EBR	1	1700	10	.01	100	.06
WBL	0.5		10		20	
WBT	0.5	1700	10	.01*	50	.04*
WBR	1	1700	20	.01	30	.02
Right Turn Adjustment					SBR	.28*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.84		1.03

28. Haster St & SR-22 WB off-Ramp

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01*	40	.02*
NBT	2	3400	360	.11	890	.26
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1020	.30*	1030	.30*
SBR	0	0	0		0	
EBL	0.5		10		0	
EBT	0	1700	0	.01*	0	
EBR	0.5		10		0	
WBL	1.5		470	.14*	400	.12*
WBT	0	5100	0		10	
WBR	1.5		140		180	.11
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.49

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01*	40	.02*
NBT	2	3400	410	.12	870	.26
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1030	.30*	1080	.32*
SBR	0	0	0		0	
EBL	0.5		10		0	
EBT	0	1700	0	.01*	0	
EBR	0.5		10		0	
WBL	1.5		530	.16*	420	.12*
WBT	0	5100	0		10	
WBR	1.5		90		90	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.51

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01*	40	.02*
NBT	2	3400	440	.13	870	.26
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1020	.30*	1040	.31*
SBR	0	0	0		0	
EBL	0.5		10		0	
EBT	0	1700	0	.01*	0	
EBR	0.5		10		0	
WBL	1.5		530	.16*	470	.14*
WBT	0	5100	0		10	
WBR	1.5		90		30	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.53		.52

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01*	40	.02*
NBT	2	3400	600	.18	830	.24
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1000	.29*	1140	.34*
SBR	0	0	0		0	
EBL	0.5		10		0	
EBT	0	1700	0	.01*	0	
EBR	0.5		10		0	
WBL	1.5		510	.15*	540	.16*
WBT	0	5100	0		10	
WBR	1.5		180	.11	70	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.57

29. Haster St & Garden Grove Blvd

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		660		570	
SBT	0.5	3400	250	.27*	410	.29*
SBR	2	3400	220	.06	500	.15
EBL	1	1700	110	.06	230	.14
EBT	3	5100	1230	.25*	990	.22*
EBR	0	0	20		120	
WBL	1	1700	260	.15*	500	.29*
WBT	2.5	6800	830	.16	840	{.16}
WBR	1.5		150		600	{.14}
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.72		.85

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		690		600	
SBT	0.5	3400	250	.28*	460	.31*
SBR	2	3400	240	.07	490	.14
EBL	1	1700	130	.08	240	.14
EBT	3	5100	1300	.26*	1050	.23*
EBR	0	0	20		120	
WBL	1	1700	280	.16*	530	.31*
WBT	2.5	6800	860	.17	940	{.18}
WBR	1.5		160		590	{.11}
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.75		.90

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		690		620	
SBT	0.5	3400	230	.27*	410	.30*
SBR	2	3400	250	.07	530	.16
EBL	1	1700	160	.09	240	.14
EBT	3	5100	1340	.27*	1130	.25*
EBR	0	0	20		120	
WBL	1	1700	290	.17*	540	.32*
WBT	2.5	6800	900	.18	990	{.19}
WBR	1.5		160		590	{.12}
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.76		.92

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		670		640	
SBT	0.5	3400	200	.26*	460	.32*
SBR	2	3400	240	.07	630	.19
EBL	1	1700	200	.12	240	.14
EBT	3	5100	1470	.29*	1210	.26*
EBR	0	0	20		120	
WBL	1	1700	290	.17*	620	.36*
WBT	2.5	6800	920	.18	1100	{.22}
WBR	1.5		220		540	{.08}
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.77		.99

29. Haster St & Garden Grove Blvd

Year 2020 - with improvements

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		670		640	
SBT	0.5	3400	200	.26*	460	.32*
SBR	2	3400	240	.07	630	.19
EBL	1	1700	200	.12*	240	.14*
EBT	3	5100	1470	.29	1210	.26
EBR	0	0	20		120	
WBL	2	3400	290	.09	620	.18
WBT	1.5	5100	920	.27*	1100	.32*
WBR	1.5		220		540	.32
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.70		.83

30. Fairview St & Garden Grove Blvd

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		490	{.27}*	970	.29*
NBT	1.5	5100	890	.27	470	.28
NBR	1	1700	400	.24	500	.29
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	420	.25*	300	.18*
EBT	1.5	5100	560	{.22}	460	{.17}
EBR	1.5		910		800	
WBL	2	3400	320	.09	630	.19
WBT	2	3400	750	.22*	970	.29*
WBR	1	1700	130	.08	60	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.79		.81

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		520	{.28}*	1010	.30*
NBT	1.5	5100	920	.28	500	.29
NBR	1	1700	500	.29	540	.32
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	410	.24*	310	.18*
EBT	1.5	5100	620	{.24}	480	{.19}
EBR	1.5		970		850	
WBL	2	3400	330	.10	690	.20
WBT	2	3400	770	.23*	1060	.31*
WBR	1	1700	130	.08	60	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.80		.84

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		570	{.29}*	1030	.30*
NBT	1.5	5100	910	.29	490	.29
NBR	1	1700	630	.37	630	.37
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	400	.24*	310	.18*
EBT	1.5	5100	670	{.25}	550	{.21}
EBR	1.5		970		880	
WBL	2	3400	380	.11	720	.21
WBT	2	3400	790	.23*	1090	.32*
WBR	1	1700	130	.08	50	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.81		.85

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		700	{.33}*	1050	{.31}*
NBT	1.5	5100	970	.33	530	.31
NBR	1	1700	700	.41	600	.35
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	450	.26*	360	.21*
EBT	1.5	5100	740	{.25}	530	{.21}
EBR	1.5		970		950	
WBL	2	3400	400	.12	750	.22
WBT	2	3400	780	.23*	1220	.36*
WBR	1	1700	120	.07	50	.03
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.87		.93

30. Fairview St & Garden Grove Blvd

Year 2020 - with improvements

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		700	{.33}*	1050	{.31}*
NBT	1.5	5100	970	.33	530	.31
NBR	1	1700	700	.41	600	.35
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	450	.26*	360	.21*
EBT	1.5	5100	740	{.25}	530	{.21}
EBR	1.5		970		950	
WBL	2	3400	400	.12	750	.22
WBT	3	5100	780	.18*	1220	.25*
WBR	0	0	120		50	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.82		.82

31. Lewis St & Garden Grove Blvd

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	50		50	
NBT	1	1700	20	.05*	50	.06*
NBR	0	0	10		10	
SBL	1	1700	320	.19*	270	.16*
SBT	2	3400	30	.02	110	.06
SBR	0	0	280	.16	540	.32
EBL	1	1700	290	.17*	300	.18*
EBT	2	3400	670	.20	610	.19
EBR	0	0	0		50	
WBL	1	1700	0	.00	10	.01
WBT	2	3400	870	.29*	1070	.48*
WBR	0	0	100		550	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.75		.93

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	50		50	
NBT	1	1700	20	.05*	50	.06*
NBR	0	0	10		10	
SBL	1	1700	340	.20*	290	.17*
SBT	2	3400	30	.02	110	.06
SBR	0	0	300	.18	610	.36
EBL	1	1700	310	.18*	320	.19*
EBT	2	3400	810	.24	640	.20
EBR	0	0	0		50	
WBL	1	1700	0	.00	10	.01
WBT	2	3400	880	.29*	1160	.49*
WBR	0	0	110		510	
Right Turn Adjustment					SBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.77		.98

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	50		50	
NBT	1	1700	20	.05*	50	.06*
NBR	0	0	10		10	
SBL	1	1700	330	.19*	340	.20*
SBT	2	3400	30	.02	110	.06
SBR	0	0	300	.18	610	.36
EBL	1	1700	390	.23*	350	.21*
EBT	2	3400	910	.27	790	.25
EBR	0	0	0		50	
WBL	1	1700	0	.00	10	.01
WBT	2	3400	960	.31*	1210	.51*
WBR	0	0	110		520	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		1.03

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	50		50	
NBT	1	1700	20	.05*	50	.06*
NBR	0	0	10		10	
SBL	1	1700	360	.21*	340	.20*
SBT	2	3400	30	.02	110	.06
SBR	0	0	260	.15	700	.41
EBL	1	1700	390	.23*	340	.20*
EBT	2	3400	1050	.31	740	.23
EBR	0	0	0		50	
WBL	1	1700	0	.00	10	.01
WBT	2	3400	990	.33*	1290	.54*
WBR	0	0	130		550	
Right Turn Adjustment					SBR	.03*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.87		1.08

31. Lewis St & Garden Grove Blvd

Year 2020 - with improvements

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	50		50	
NBT	1	1700	20	.05*	50	.06*
NBR	0	0	10		10	
SBL	1	1700	360	.21*	340	.20*
SBT	0.5	3400	30	{.02}	110	{.16}
SBR	1.5		260		700	
EBL	1	1700	390	.23*	340	.20*
EBT	2	3400	1050	.31	740	.23
EBR	0	0	0		50	
WBL	1	1700	0	.00	10	.01
WBT	2	3400	990	.29*	1290	.38*
WBR	1	1700	130	.08	550	.32
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.89

32. The City Dr & Garden Grove Blvd

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	490	.14*	570	.17*
SBT	0	0	0		0	
SBR	1	1700	670	.39	530	.31
EBL	1	1700	400	.24*	490	.29*
EBT	2	3400	600	.18	400	.12
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	300	.09*	1100	.32*
WBR	1	1700	540	.32	770	.45
Right Turn Adjustment			Multi	.19*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.83

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	480	.14*	670	.20*
SBT	0	0	0		0	
SBR	1	1700	670	.39	490	.29
EBL	1	1700	420	.25*	520	.31*
EBT	2	3400	730	.21	430	.13
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	320	.09*	1190	.35*
WBR	1	1700	620	.36	870	.51
Right Turn Adjustment			Multi	.22*	WBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.75		.92

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	500	.15*	670	.20*
SBT	0	0	0		0	
SBR	1	1700	730	.43	470	.28
EBL	1	1700	520	.31*	650	.38*
EBT	2	3400	720	.21	480	.14
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	350	.10*	1260	.37*
WBR	1	1700	690	.41	890	.52
Right Turn Adjustment			Multi	.25*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.86		1.00

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	430	.13*	870	.26*
SBT	0	0	0		0	
SBR	1	1700	770	.45	510	.30
EBL	1	1700	600	.35*	640	.38*
EBT	2	3400	800	.24	450	.13
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	360	.11*	1320	.39*
WBR	1	1700	860	.51	860	.51
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.64		1.08

32. The City Dr & Garden Grove Blvd

Year 2020 - with improvements

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	430	.13*	870	.26*
SBT	0	0	0		0	
SBR	1	1700	770	.45	510	.30
EBL	2	3400	600	.18*	640	.19*
EBT	2	3400	800	.24	450	.13
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	360	.11*	1320	.39*
WBR	1	1700	860	.51	860	.51
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.47		.89

33. Fairview St & SR-22 EB off-Ramp

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1650	.49*	1700	.50*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1230	.36	1430	.42
SBR	0	0	0		0	
EBL	1	1700	130	.08*	230	.14*
EBT	0	0	0		0	
EBR	1	1700	70	.04	180	.11
WBL	0	0	0		0	
WBT	1	1700	0	.00*	0	.01*
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.62		.70

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1800	.53*	1800	.53*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1300	.38	1550	.46
SBR	0	0	0		0	
EBL	1	1700	150	.09*	230	.14*
EBT	0	0	0		0	
EBR	1	1700	80	.05	180	.11
WBL	0	0	0		0	
WBT	1	1700	0	.00*	0	.01*
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.67		.73

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	1900	.56*	1890	.56*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1360	.40	1600	.47
SBR	0	0	0		0	
EBL	1	1700	200	.12*	250	.15*
EBT	0	0	0		0	
EBR	1	1700	80	.05	180	.11
WBL	0	0	0		0	
WBT	1	1700	0	.00*	0	.01*
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.73		.77

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3400	2070	.61*	1930	.57*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3400	1380	.41	1700	.50
SBR	0	0	0		0	
EBL	1	1700	290	.17*	250	.15*
EBT	0	0	0		0	
EBR	1	1700	70	.04	190	.11
WBL	0	0	0		0	
WBT	1	1700	0	.00*	0	.01*
WBR	0	0	0		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.78

34. Howell & Katella

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01	90	.05
NBT	1	1700	10	.01*	60	.04*
NBR	1	1700	20	.01	390	.23
SBL	2	3400	330	.10*	450	.13*
SBT	0.5	1700	50	.08	30	.11
SBR	0.5		90		160	
EBL	1	1700	70	.04*	90	.05*
EBT	3	5100	1030	.22	1300	.26
EBR	0	0	80		40	
WBL	2	3400	250	.07	60	.02
WBT	3	5100	1090	.32*	1400	.38*
WBR	0	0	540		560	
Right Turn Adjustment					NBR	.06*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.52		.71

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01	90	.05
NBT	1	1700	10	.01*	60	.04*
NBR	1	1700	20	.01	390	.23
SBL	2	3400	350	.10*	490	.14*
SBT	0.5	1700	50	.08	30	.12
SBR	0.5		90		170	
EBL	1	1700	80	.05*	100	.06*
EBT	3	5100	1050	.23	1700	.34
EBR	0	0	100		40	
WBL	2	3400	250	.07	60	.02
WBT	3	5100	960	.28*	1330	.38*
WBR	0	0	570	.34	610	
Right Turn Adjustment					NBR	.11*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.49		.78

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01	100	.06*
NBT	1	1700	10	.01*	60	.04
NBR	1	1700	20	.01	390	.23
SBL	2	3400	390	.11*	520	.15
SBT	0.5	1700	50	.09	30	.14*
SBR	0.5		100		200	
EBL	1	1700	90	.05*	110	.06*
EBT	3	5100	1360	.29	1890	.38
EBR	0	0	100		40	
WBL	2	3400	250	.07	60	.02
WBT	3	5100	1170	.34*	1550	.43*
WBR	0	0	610	.36	650	
Right Turn Adjustment					NBR	.10*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.56		.84

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	310	.18*
NBT	1	1700	10	.01*	70	.04
NBR	1	1700	70	.04	740	.44
SBL	2	3400	410	.12*	500	.15
SBT	0.5	1700	60	.09	30	.14*
SBR	0.5		100		200	
EBL	1	1700	100	.06*	120	.07
EBT	3	5100	1040	.26	2770	.57*
EBR	0	0	310		150	
WBL	2	3400	590	.17	160	.05*
WBT	3	5100	2180	.54*	1440	.41
WBR	0	0	570		650	
Right Turn Adjustment					NBR	.23*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		1.22

35. Haster & Orangewood

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05*	240	.14*
NBT	2	3400	450	.16	670	.23
NBR	0	0	90		100	
SBL	1	1700	70	.04	120	.07
SBT	2	3400	440	.15*	820	.29*
SBR	0	0	60		160	
EBL	1	1700	230	.14	140	.08*
EBT	2	3400	920	.30*	460	.17
EBR	0	0	90		120	
WBL	1	1700	80	.05*	180	.11
WBT	2	3400	250	.09	700	.23*
WBR	0	0	50		90	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.79

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02	200	.12*
NBT	2	3400	480	.17*	750	.26
NBR	0	0	90		140	
SBL	1	1700	90	.05*	140	.08
SBT	2	3400	490	.16	900	.31*
SBR	0	0	60		170	
EBL	1	1700	250	.15	150	.09*
EBT	2	3400	1010	.33*	530	.19
EBR	0	0	100		120	
WBL	1	1700	80	.05*	190	.11
WBT	2	3400	330	.11	830	.28*
WBR	0	0	60		120	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.65		.85

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	200	.12*
NBT	2	3400	490	.17*	780	.28
NBR	0	0	100		180	
SBL	1	1700	80	.05*	150	.09
SBT	2	3400	550	.18	920	.33*
SBR	0	0	60		190	
EBL	1	1700	250	.15	150	.09*
EBT	2	3400	1070	.35*	550	.20
EBR	0	0	120		120	
WBL	1	1700	90	.05*	190	.11
WBT	2	3400	350	.12	880	.30*
WBR	0	0	60		130	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.67		.89

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	60	.04*	250	.15*
NBT	2	3400	470	.16	830	.30
NBR	0	0	90		200	
SBL	1	1700	90	.05	170	.10
SBT	2	3400	630	.21*	930	.32*
SBR	0	0	70		150	
EBL	1	1700	230	.14	150	.09*
EBT	2	3400	1260	.48*	650	.23
EBR	0	0	360		120	
WBL	1	1700	90	.05*	200	.12
WBT	2	3400	360	.13	1230	.41*
WBR	0	0	70		180	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		1.02

36. Lewis & Orangewood

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03*	170	.10*
NBT	0	0	0		0	
NBR	1	1700	290	.17	240	.14
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1070	.34*	550	.19*
EBR	0	0	80		80	
WBL	1	1700	110	.06*	210	.12*
WBT	2	3400	260	.08	1000	.29
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.09*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.57		.46

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02*	200	.12*
NBT	0	0	0		0	
NBR	1	1700	350	.21	330	.19
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1160	.37*	660	.22*
EBR	0	0	100		100	
WBL	1	1700	120	.07*	270	.16*
WBT	2	3400	360	.11	1150	.34
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.14*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.65		.55

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03*	230	.14*
NBT	0	0	0		0	
NBR	1	1700	370	.22	470	.28
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1240	.39*	720	.24*
EBR	0	0	90		100	
WBL	1	1700	150	.09*	290	.17*
WBT	2	3400	380	.11	1190	.35
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.12*	NBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.61

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	30	.02*	180	.11*
NBT	0	0	0		0	
NBR	1	1700	700	.41	490	.29
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1560	.46*	870	.28*
EBR	0	0	20		90	
WBL	1	1700	130	.08*	400	.24*
WBT	2	3400	410	.12	1630	.48
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.33*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.94		.68

37. Rampart & Orangewood

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		190	.06*	290	{.09}*
NBT	1	5100	0	.05	2	.09
NBR	0.5		90		200	.12
SBL	1	1700	0	.00	0	.00
SBT	1	1700	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1700	0	.00	10	.01
EBT	2	3400	880	.31*	1320	.41*
EBR	0	0	170		90	
WBL	1	1700	140	.08*	70	.04*
WBT	2	3400	850	.25	1210	.36
WBR	1	1700	0	.00	30	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.50**		**.59**

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		170	{.05}*	260	
NBT	1	5100	10	.05	10	.08*
NBR	0.5		80		160	.09
SBL	1	1700	0	.00	130	.08*
SBT	1	1700	0	.00*	0	.02
SBR	0	0	0		30	
EBL	1	1700	20	.01	10	.01
EBT	2	3400	1010	.36*	1350	.43*
EBR	0	0	210		100	
WBL	1	1700	140	.08*	70	.04*
WBT	2	3400	670	.20	1140	.34
WBR	1	1700	100	.06	30	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.54**		**.68**

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		150	{.04}*	250	
NBT	1	5100	0	.04	10	.08*
NBR	0.5		80	.05	170	.10
SBL	1	1700	0	.00	130	.08*
SBT	1	1700	0	.00*	10	.02
SBR	0	0	0		30	
EBL	1	1700	10	.01	10	.01
EBT	2	3400	1090	.38*	1420	.45*
EBR	0	0	210		100	
WBL	1	1700	150	.09*	70	.04*
WBT	2	3400	710	.21	1260	.37
WBR	1	1700	110	.06	30	.02
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.56**		**.70**

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		350	.10*	820	
NBT	1	5100	10	.10	10	.24*
NBR	0.5		160		610	.36
SBL	1	1700	0	.00	120	.07*
SBT	1	1700	0	.00*	10	.02
SBR	0	0	0		30	
EBL	1	1700	30	.02	10	.01
EBT	2	3400	1010	.54*	2150	.74*
EBR	0	0	810		360	
WBL	1	1700	570	.34*	190	.11*
WBT	2	3400	1680	.49	1290	.38
WBR	1	1700	90	.05	30	.02
Right Turn Adjustment					NBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**1.03**		**1.25**

38. Rampart & Chapman

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	40	.02*	40	.02*
SBT	0	0	0		0	
SBR	1	1700	60	.04	60	.04
EBL	1	1700	50	.03*	80	.05*
EBT	2	3400	860	.25	1050	.31
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	1580	.46*	1950	.57*
WBR	1	1700	100	.06	160	.09
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.56**		**.69**

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	40	.02*	40	.02*
SBT	0	0	0		0	
SBR	1	1700	60	.04	60	.04
EBL	1	1700	60	.04*	110	.06*
EBT	2	3400	950	.28	1150	.34
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	870	.26*	1330	.39*
WBR	1	1700	20	.01	80	.05
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.37**		**.52**

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	40	.02*	40	.02*
SBT	0	0	0		0	
SBR	1	1700	70	.04	60	.04
EBL	1	1700	50	.03	110	.06*
EBT	2	3400	1000	.29*	1240	.36
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	860	.25	1380	.41*
WBR	1	1700	10	.01	70	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.36**		**.54**

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	70	.04*	230	.14*
SBT	0	0	0		0	
SBR	1	1700	90	.05	720	.42
EBL	1	1700	590	.35*	260	.15*
EBT	2	3400	1100	.32	1780	.52
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	1060	.31*	1340	.39*
WBR	1	1700	210	.12	120	.07
Right Turn Adjustment					SBR	.17*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.75**		**.90**

39. City Blvd & The Block Dr

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		10	
NBT	1	1700	0	.01*	0	.04*
NBR	0	0	10		50	
SBL	1	1700	60	.04*	340	.20*
SBT	0	0	0		0	
SBR	1	1700	20	.01	90	.05
EBL	1	1700	130	.08*	120	.07*
EBT	2	3400	300	.09	200	.06
EBR	0	0	10		0	
WBL	1	1700	80	.05	10	.01
WBT	2	3400	220	.13*	150	.09*
WBR	0	0	220		240	.14
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.31		.45

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		10	
NBT	1	1700	0	.01*	0	.04*
NBR	0	0	10		50	
SBL	1	1700	60	.04*	340	.20*
SBT	0	0	0		0	
SBR	1	1700	20	.01	100	.06
EBL	1	1700	130	.08*	120	.07*
EBT	2	3400	300	.09	190	.06
EBR	0	0	10		0	
WBL	1	1700	80	.05	10	.01
WBT	2	3400	220	.13*	250	.15*
WBR	0	0	220		260	.15
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.31		.51

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		10	
NBT	1	1700	0	.01*	0	.04*
NBR	0	0	10		50	
SBL	1	1700	140	.08*	570	.34*
SBT	0	0	0		0	
SBR	1	1700	30	.02	80	.05
EBL	1	1700	110	.06*	120	.07*
EBT	2	3400	380	.11	460	.14
EBR	0	0	10		0	
WBL	1	1700	80	.05	10	.01
WBT	2	3400	440	.26*	410	.24*
WBR	0	0	610	.36	540	.32
Right Turn Adjustment			WBR	.04*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.50		.74

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		10	
NBT	1	1700	0	.01*	0	.04*
NBR	0	0	10		50	
SBL	1	1700	140	.08*	630	.37*
SBT	0	0	0		0	
SBR	1	1700	10	.01	90	.05
EBL	1	1700	100	.06*	110	.06*
EBT	2	3400	410	.12	500	.15
EBR	0	0	10		0	
WBL	1	1700	80	.05	10	.01
WBT	2	3400	520	.31*	610	.33*
WBR	0	0	630	.37	510	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.85

40. Manchester & Orangewood

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	430	.13*	550	.16*
SBT	3	5100	320	.08	120	.04
SBR	0	0	110		100	.06
EBL	0	0	0		0	
EBT	3	5100	1160	.23*	720	.14
EBR	1	1700	480	.28	570	.34
WBL	2	3400	10	.00	30	.01
WBT	3	5100	230	.05	940	.18*
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.01*	EBR	.08*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.42		.47

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3400	1060	.31*	680	.20*
SBT	3	5100	270	.07	110	.03
SBR	0	0	110		90	.05
EBL	0	0	0		0	
EBT	3	5100	1730	.34*	820	.16
EBR	1	1700	560	.33	640	.38
WBL	2	3400	40	.01*	370	.11
WBT	3	5100	240	.05	1490	.29*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.07*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.61

41. Anaheim Blvd & Orangewood

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		60	.04*	160	.09*
NBT	3.5	6800	30	.01	220	.04
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3400	120	.04	190	.06*
EBT	3	5100	1470	.29*	1080	.21
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5100	190	.04	810	.16*
WBR	1	1700	420	.25	660	.39
Right Turn Adjustment					WBR	.19*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.38		.55

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		40	.02*	160	.09*
NBT	3.5	6800	40	.01	220	.04
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	2	3400	100	.03	190	.06*
EBT	3	5100	2690	.53*	1300	.25
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	5100	230	.05	1700	.33*
WBR	1	1700	500	.29	1110	.65
Right Turn Adjustment					WBR	.28*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.60		.81

42. I-5 NB Off-Ramp & Chapman

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	760	.45*	680	.40*
NBT	0	0	0		0	
NBR	1	1700	180	.11	40	.02
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	900	.26	1090	.32
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3400	970	.29*	1630	.48*
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.79		.93

43. The City Dr & Medical Center Dr

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03*	80	.05
NBT	4	6800	730	.12	1440	.22*
NBR	0	0	70		50	
SBL	1	1700	200	.12	80	.05*
SBT	4	6800	1560	.24*	1290	.20
SBR	0	0	100		100	
EBL	1	1700	100	.06*	90	.05*
EBT	1	1700	0	.03	0	.04
EBR	0	0	50		60	
WBL	1	1700	50	.03	80	.05
WBT	0.5	1700	10	.09*	10	.09*
WBR	0.5		150		150	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.47		.46

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	210	.12*	100	.06*
NBT	4	6800	880	.14	1570	.24
NBR	0	0	70		50	
SBL	1	1700	210	.12	90	.05
SBT	4	6800	1700	.29*	1480	.24*
SBR	0	0	260		130	
EBL	1	1700	130	.08*	280	.16*
EBT	0	0	0		0	
EBR	1	1700	70	.04	210	.12
WBL	1	1700	50	.03	80	.05
WBT	1	1700	10	.09*	10	.09*
WBR	0	0	150		140	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.63		.60

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	190	.11*	90	.05
NBT	4	6800	970	.15	1800	.27*
NBR	0	0	70		50	
SBL	1	1700	260	.15	100	.06*
SBT	4	6800	1850	.31*	1550	.25
SBR	0	0	270		140	
EBL	1	1700	130	.08*	290	.17*
EBT	0	0	0		0	
EBR	1	1700	70	.04	200	.12
WBL	1	1700	50	.03	80	.05
WBT	1	1700	10	.09*	10	.09*
WBR	0	0	150		150	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.64		.64

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	210	.12	100	.06*
NBT	4	6800	2020	.31*	1870	.28
NBR	0	0	70		50	
SBL	1	1700	470	.28*	150	.09
SBT	4	6800	1580	.27	2100	.33*
SBR	0	0	240		160	
EBL	1	1700	140	.08*	280	.16*
EBT	0	0	0		0	
EBR	1	1700	70	.04	200	.12
WBL	1	1700	40	.02	80	.05
WBT	1	1700	10	.11*	10	.13*
WBR	0	0	180		210	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.83		.73

44. The City Dr & Orange Cndr

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06*	150	.04*
NBT	4	6800	940	.14	1180	.17
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	1170	.17*	1460	.21*
SBR	1	1700	200	.12	150	.09
EBL	2	3400	10	.00	20	.01*
EBT	0	0	0		0	
EBR	2	3400	200	.06	250	.07
WBL	0	0	0		0	
WBT	1	1700	0	.00*	0	.00*
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.01*	EBR	.03*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .29 .34

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	190	.06	140	.04
NBT	4	6800	1750	.26*	2010	.30*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	1310	.19	1690	.25
SBR	1	1700	210	.12	160	.09
EBL	1	1700	10	.01*	20	.01*
EBT	0	0	0		0	
EBR	1	1700	200	.12	250	.15
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.06*	EBR	.10*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .38 .46

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	190	.06*	140	.04
NBT	4	6800	1750	.26	2140	.31*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	4	6800	1480	.22*	1770	.26
SBR	1	1700	210	.12	160	.09
EBL	1	1700	10	.01*	20	.01*
EBT	0	0	0		0	
EBR	1	1700	200	.12	250	.15
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.06*	EBR	.10*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .40 .47

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	420	.12	170	.05*
NBT	4	6800	2590	.48*	2150	.34
NBR	0	0	670		180	
SBL	2	3400	690	.20*	230	.07
SBT	4	6800	1240	.18	2710	.40*
SBR	1	1700	380	.22	220	.13
EBL	1	1700	20	.01	50	.03
EBT	0	0	10		10	
EBR	1	1700	260	.15	450	.26
WBL	2	3400	90	.03*	620	.18*
WBT	1	1700	10	.01	10	.01
WBR	1	1700	120	.07	710	.42
Right Turn Adjustment					Multi	.41*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION .76 1.09

45. SR-22 WB Ramps & The Block Dr

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	970	.29*	670	.20*
NBT	0	0	0		0	
NBR	2	3400	520	.15	190	.06
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	180	.05*	280	.08*
EBR	2	3400	160	.05	930	.27
WBL	2	3400	140	.04*	370	.11*
WBT	2	3400	220	.06	430	.13
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.43		.48

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	920	.27*	750	.22*
NBT	0	0	0		0	
NBR	2	3400	700	.21	170	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	350	.10*	380	.11*
EBR	2	3400	190	.06	1080	.32
WBL	2	3400	140	.04*	430	.13*
WBT	2	3400	240	.07	480	.14
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.46		.55

46. N. Stadium & Katella

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01	10	.01
NBT	0.5	3400	10	.01*	10	.01*
NBR	1.5		20		20	
SBL	1	1700	80	.05*	200	.12*
SBT	1	1700	0	.00	0	.00
SBR	1	1700	60	.04	150	.09
EBL	1	1700	50	.03*	60	.04*
EBT	3	5100	1080	.21	1210	.24
EBR	0	0	10		10	
WBL	1	1700	10	.01	10	.01
WBT	3	5100	1030	.20*	1440	.28*
WBR	1	1700	150	.09	200	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.34		.50

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01*	40	.02*
NBT	1	1700	10	.01	20	.01
NBR	1	1700	20	.01	200	.12
SBL	2	3400	80	.02	210	.06
SBT	0.5	1700	0	.04*	10	.08*
SBR	0.5		60		130	
EBL	1	1700	60	.04*	60	.04*
EBT	3	5100	1120	.22	1430	.29
EBR	0	0	10		50	
WBL	2	3400	10	.00	90	.03
WBT	3	5100	940	.21*	1310	.29*
WBR	0	0	120		180	
Right Turn Adjustment					NBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.35		.53

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	10	.00	40	.01
NBT	0.5	3400	10	.01*	20	{.05}*
NBR	1.5		20		200	
SBL	1	1700	80	.05*	210	.12*
SBT	1	1700	0	.00	10	.01
SBR	1	1700	60	.04	130	.08
EBL	1	1700	60	.04	60	.04*
EBT	3	5100	1450	.28*	1620	.32
EBR	1	1700	10	.01	50	.03
WBL	2	3400	10	.00	90	.03
WBT	3	5100	1150	.23	1560	.31*
WBR	1	1700	120	.07	180	.11
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.57

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	20	.01	90	.03
NBT	0.5	3400	10	{.01}*	20	{.16}*
NBR	1.5		150		590	
SBL	1	1700	90	.05*	240	.14*
SBT	1	1700	0	.00	10	.01
SBR	1	1700	50	.03	120	.07
EBL	1	1700	40	.02*	40	.02
EBT	3	5100	1220	.24	2160	.42*
EBR	1	1700	90	.05	50	.03
WBL	2	3400	200	.06	160	.05*
WBT	3	5100	1930	.38*	1570	.31
WBR	1	1700	160	.09	200	.12
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.51		.82

47. State College & Entrance

Existing Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	790	.15	1870	.37*
NBR	0	0	0		0	
SBL	2	3400	0	.00	0	.00
SBT	3	5100	1620	.32*	1480	.29
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	0	.00	0	.00
WBT	0	0	0		0	
WBR	1	1700	0	.00	0	.00
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.37		.42

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1180	.23	2200	.47*
NBR	0	0	10		200	
SBL	1	1700	10	.01	60	.04*
SBT	3	5100	1660	.33*	1540	.30
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	10	.01*	160	.09*
WBT	0	0	0		0	
WBR	1	1700	10	.01	70	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.65

Year 2010

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1250	.25	2410	.51*
NBR	0	0	10		200	
SBL	1	1700	10	.01	60	.04*
SBT	3	5100	1920	.38*	1610	.32
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	10	.01*	160	.09*
WBT	0	0	0		0	
WBR	1	1700	10	.01	70	.04
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.44		.69

Year 2020

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	3	5100	1500	.33	3460	.73*
NBR	0	0	200		260	
SBL	1	1700	70	.04	130	.08*
SBT	3	5100	3220	.63*	2050	.40
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1700	0	.00	220	.13*
WBT	0	0	0		0	
WBR	1	1700	50	.03	170	.10
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.99

48. UCIMC Drive Way & Chapman

Year 2005

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	1	1700	80	.05	270	.16
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	5100	1460	.29	1730	.34*
EBR	1	1700	0	.00	0	.00
WBL	0	0	0		0	
WBT	3	5100	1500	.29*	1380	.27
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.05*	NBR	.16*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.39		.55

APPENDIX C

LAND USE DATA FROM OTHER SOURCES

The WOCSTM area has complete or partial land use data from three traffic models.

The material contained in this appendix summarizes land use data from these data sources. The applicable zones are shown in Figure C-1, and the following discusses each database.

1. City of Orange - The City of Orange traffic model has six zones in the WOCSTM area. Existing data is for 1991, and the long-range represents buildout of the City's General Plan according to forecasts produced in 1991. Table C-1 summarizes the data.

2. City of Anaheim - The City of Anaheim traffic model has five zones in the WOCSTM study area. Existing data is for 1992, and the long-range represents buildout of the City's General Plan. Table C-2 summarizes the data.

3. OCTAM/OCP-96 - There are five OCTAM zones in the WOCSTM area, and OCP-96 data for these is summarized in Table C-3.

Table C-1

LAND USE AND TRIP GENERATION SUMMARY - ORANGE

ZONE	LAND USE CATEGORY	UNITS	EXISTING AMOUNT	EXISTING ADT	LONG-RANGE AMOUNT	LONG-RANGE ADT
109	6. Single-Family Residential	DU	16	160	--	--
	7. Multi-Family Residential	DU	52	416	--	--
	9. General Commercial	TSF	--	--	469	32,830
	11. Office	TSF	--	--	3,711	48,243
	17. Retail Employment	EMP	188	2,472	--	--
	18. Total Employment	EMP	2,467	5,921	--	--
	SUB-TOTAL			8,969		81,073
110	1. Res - Low	DU	75	750	--	--
	2. Res - Medium	DU	65	559	256	2,202
	5. Mobile Home	DU	203	688	--	--
	9. General Commercial	TSF	197	13,790	572	40,044
	11. Office	TSF	1,190	15,470	3,033	39,429
	13. Industrial	TSF	520	3,624	45	314
	16. Hotel	ROOM	188	2,256	--	--
	27. Com. Recreation	ACRE	6	240	--	--
	SUB-TOTAL			37,377		81,989
114	1. Res - Low	DU	67	670	61	610
	3. Res - Med-High	DU	--	--	12	85
	4. Res - High/Apt.	DU	12	76	--	--
	9. General Commercial	TSF	29	2,016	148	10,390
	11. Office	TSF	28	359	886	11,512
	16. Hotel	ROOM	130	1,560	--	--
	22. Fire Station	ACRE	--	--	1	26
	23. Cemetary	ACRE	20	83	--	--
	SUB-TOTAL			4,764		22,623
115	2. Res - Medium	DU	--	--	443	3,810
	3. Res - Med-High	DU	--	--	2	14
	4. Res - High/Apt.	DU	440	2,772	--	--
	9. General Commercial	TSF	20	1,400	400	28,000
	10. Regional Commercial	TSF	620	21,700	628	21,991
	11. Office	TSF	1,225	15,925	3,150	40,950
	16. Hotel	ROOM	460	5,520	460	5,520
	SUB-TOTAL			47,317		100,285
116	9. General Commercial	TSF	52	3,629	52	3,629
	11. Office	TSF	131	1,699	131	1,699
	12. Medical Office	TSF	63	2,161	63	2,161
	19. Hospital	BED	496	5,828	496	5,828
	29. County Facil. (SG)	UNIT	650	6,500	650	6,500
	SUB-TOTAL			19,817		19,817

(Continued)

Table C-1 (cont)
LAND USE AND TRIP GENERATION SUMMARY - ORANGE

ZONE	LAND USE CATEGORY	UNITS	EXISTING AMOUNT	EXISTING ADT	LONG-RANGE AMOUNT	LONG-RANGE ADT
117	2. Res - Medium	DU	208	1,789	--	--
	3. Res - Med-High	DU	--	--	828	5,879
	4. Res - High/Apt.	DU	620	3,906	--	--
	9. General Commercial	TSF	10	700	11	770
	11. Office	TSF	150	1,950	1,000	13,000
	SUB-TOTAL			8,345		19,649
TOTAL	1. Res - Low	DU	142	1,420	61	610
	2. Res - Medium	DU	273	2,348	699	6,012
	3. Res - Med-High	DU	--	--	842	5,978
	4. Res - High/Apt.	DU	1,072	6,754	--	--
	5. Mobile Home	DU	203	688	--	--
	6. Single-Family Residential	DU	16	160	--	--
	7. Multi-Family Residential	DU	52	416	--	--
	9. General Commercial	TSF	308	21,535	1,652	115,663
	10. Regional Commercial	TSF	620	21,700	628	21,991
	11. Office	TSF	2,723	35,403	11,910	154,833
	12. Medical Office	TSF	63	2,161	63	2,161
	13. Industrial	TSF	520	3,624	45	314
	16. Hotel	ROOM	778	9,336	460	5,520
	17. Retail Employment	EMP	188	2,472	--	--
	18. Total Employment	EMP	2,467	5,921	--	--
	19. Hospital	BED	496	5,828	496	5,828
	22. Fire Station	ACRE	--	--	1	26
	23. Cemetery	ACRE	20	83	--	--
	27. Com. Recreation	ACRE	6	240	--	--
	29. County Facil. (SG)	UNIT	650	6,500	650	6,500
	TOTAL			126,589		325,436

Table C-2

LAND USE AND TRIP GENERATION SUMMARY - ANAHEIM

ZONE	LAND USE CATEGORY	UNITS	EXISTING AMOUNT	EXISTING ADT	LONG-RANGE AMOUNT	LONG-RANGE ADT
152	1. Low Density Residential	DU	184	1,757	184	1,757
	2. Medium Density Residential	DU	29	232	162	1,298
	3. High Density Residential	DU	213	1,378	332	2,148
	5. Neighborhood Commercial	TSF	3	247	4	297
	20. Church/Meeting Hall	TSF	7	65	7	65
	23. Park	ACRE	7	15	7	15
	SUB-TOTAL			3,694		5,580
272	5. Neighborhood Commercial	TSF	7	574	8	689
	7. Regional Commercial	TSF	4	141	10	352
	9. General Industrial	TSF	789	5,501	1,931	13,453
	10. Hotel	ROOM	133	1,257	325	3,072
	17. Post Office	TSF	4	342	4	342
	SUB-TOTAL			7,815		17,908
273	5. Neighborhood Commercial	TSF	5	424	4	339
	8. Professional Office	TSF	383	5,876	315	4,833
	9. General Industrial	TSF	537	3,741	441	3,072
	10. Hotel	ROOM	--	--	400	3,780
	18. Government Office	TSF	18	860	18	860
	SUB-TOTAL			10,901		12,884
306	5. Neighborhood Commercial	TSF	1	97	3	291
	8. Professional Office	TSF	240	3,675	594	9,101
	SUB-TOTAL			3,772		9,392
310	5. Neighborhood Commercial	TSF	2	132	68	5,516
	8. Professional Office	TSF	--	--	80	1,225
	10. Hotel	ROOM	--	--	150	1,417
	SUB-TOTAL			132		8,158
311	5. Neighborhood Commercial	TSF	2	132	3	234
	8. Professional Office	TSF	21	329	38	583
	9. General Industrial	TSF	87	610	155	1,081
	29. Anaheim Stadium	ACRE	36	2,000	36	2,000
	Sportstown	SG	--	--	900	28,457
	SUB-TOTAL			3,071		32,355

(Continued)

Table C-2 (cont)
LAND USE AND TRIP GENERATION SUMMARY - ANAHEIM

ZONE	LAND USE CATEGORY	UNITS	EXISTING AMOUNT	EXISTING ADT	LONG-RANGE AMOUNT	LONG-RANGE ADT
TOTAL	1. Low Density Residential	DU	184	1,757	184	1,757
	2. Medium Density Residential	DU	29	232	162	1,298
	3. High Density Residential	DU	213	1,378	332	2,148
	5. Neighborhood Commercial	TSF	20	1,606	90	7,366
	7. Regional Commercial	TSF	4	141	10	352
	8. Professional Office	TSF	644	9,880	1,027	15,742
	9. General Industrial	TSF	1,413	9,852	2,527	17,606
	10. Hotel	ROOM	133	1,257	875	8,269
	17. Post Office	TSF	4	342	4	342
	18. Government Office	TSF	18	860	18	860
	20. Church/Meeting Hall	TSF	7	65	7	65
	23. Park	ACRE	7	15	7	15
	29. Anaheim Stadium	ACRE	36	2,000	36	2,000
	Sportstown	SG	-	-	900	28,457
	TOTAL			29,385		86,277

Table C-3

LAND USE SUMMARY - OCP-96

ZONE	LAND USE CATEGORY	UNITS	1995	2020
1817	1. Single-Family Residential	DU	493	509
	2. Multi-Family Residential	DU	1,089	1,135
	3. Retail Employment	Emp	134	140
	4. Total Employment	Emp	1,305	1,348
1818	1. Single-Family Residential	DU	325	336
	2. Multi-Family Residential	DU	577	601
	3. Retail Employment	Emp	60	62
	4. Total Employment	Emp	704	735
1842	1. Single-Family Residential	DU	65	70
	2. Multi-Family Residential	DU	857	929
	3. Retail Employment	Emp	1,710	1,908
	4. Total Employment	Emp	9,255	12,232
1843	1. Single-Family Residential	DU	6	6
	2. Multi-Family Residential	DU	819	844
	3. Retail Employment	Emp	98	127
	4. Total Employment	Emp	1,014	1,286
1844	3. Retail Employment	Emp	115	128
	4. Total Employment	Emp	1,814	2,332
1845	3. Retail Employment	Emp	3,023	6,944
	4. Total Employment	Emp	14,884	34,193
1846	3. Retail Employment	Emp	311	715
	4. Total Employment	Emp	961	2,209
1847	1. Single-Family Residential	DU	1	1
	2. Multi-Family Residential	DU	205	211
	3. Retail Employment	Emp	477	971
	4. Total Employment	Emp	7,285	11,360
TOTAL	1. Single-Family Residential	DU	890	922
	2. Multi-Family Residential	DU	3,547	3,720
	3. Retail Employment	Emp	5,928	10,995
	4. Total Employment	Emp	37,222	65,695