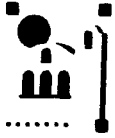
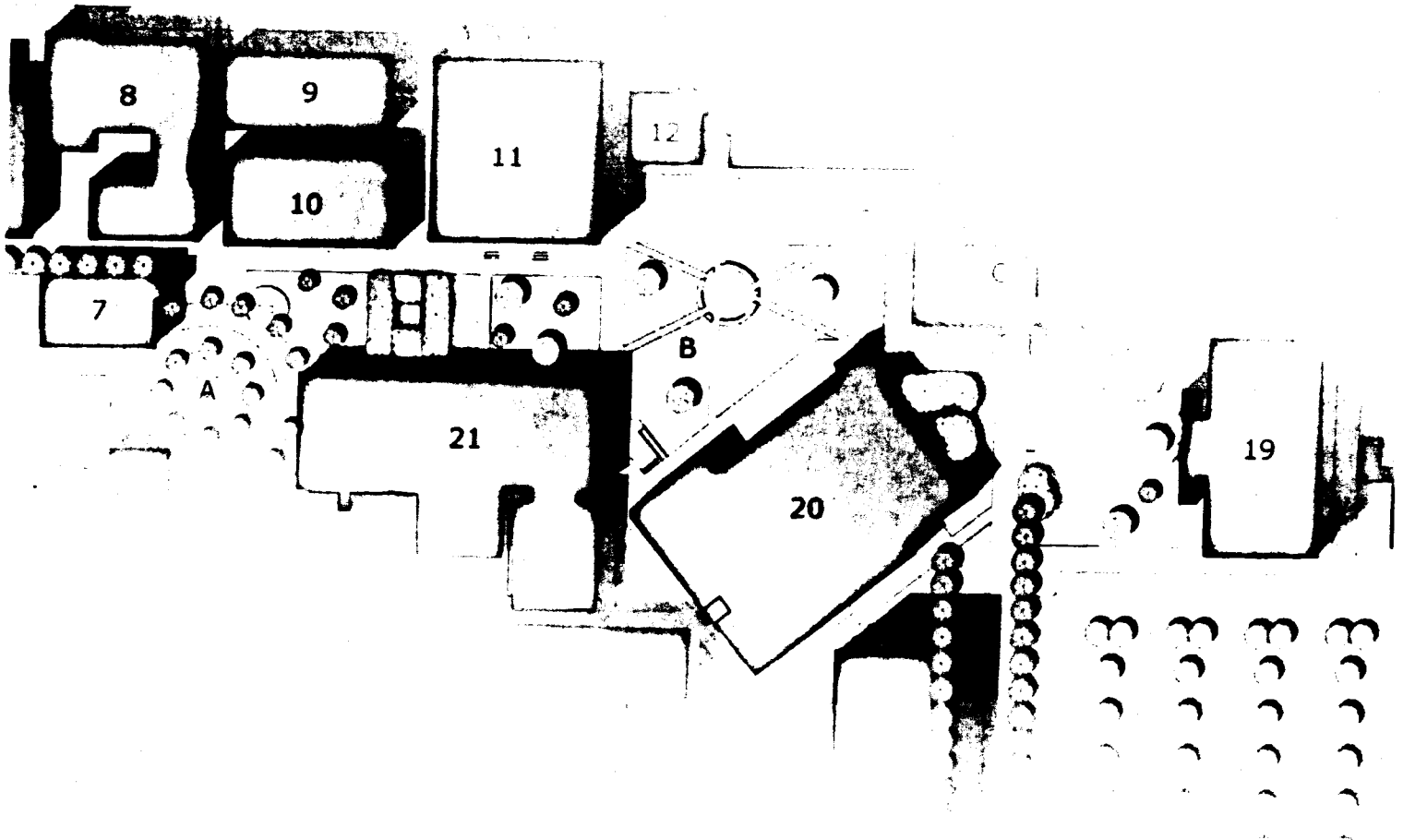


Santa Ana College



Santa Ana College
Facilities Master Plan - Measure "E"

LPA



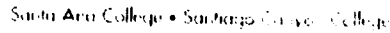
RANCHO SANTIAGO COMMUNITY COLLEGE DISTRICT Santa Ana College Facilities Master Plan

March 2004

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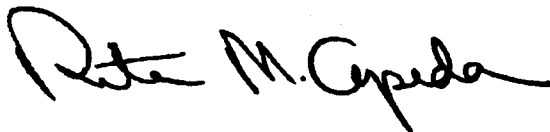
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Letter from the President

Santa Ana College is synonymous with the evolution of Orange County. I am fond of saying that since our founding in 1915, there isn't a single corner of this county we haven't impacted. It is, therefore, all the more fitting that we are able to demonstrate through the Facilities Master Plan the way in which SAC literally reinvents itself and recreates a place for teaching and learning that will continue to serve our county and our state well into the 21st century.

The plan represents the hopes and dreams of students, faculty and staff who live and learn in a "beloved institution." The design is guided by a spirit that creates spaces to learn that are worthy of our learners. It is a representation grounded in tradition but forever forward looking. Informed by the vision of our Educational Master Plan, this plan represents the best the college has to offer through a participatory governance process that enabled all the members of the college community to voice their needs, offer solutions and present approaches within the context of a student-centered philosophy.

Finally, the Santa Ana College Facilities Master Plan represents miracles in an urban setting and the creative approaches that are possible in landlocked urban colleges that nevertheless, preserve the beauty of open spaces. It is at once practical and efficient while being a sanctuary for the community we have served for nearly a century and which we hope to serve well into the millennium.



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I. INTRODUCTION

Purpose

The recently passed bond measure has created an unprecedented opportunity for Santa Ana College to impact the local community. The local voters have entrusted the District to responsibly plan and develop the campus and provide for the education of the future generations in the community. At the same time, the campus has a rich heritage of architecture and development that has withstood the test of time. With great pride the College Construction Coordination Committee has strived to preserve the qualities of the campus and provide a rich new vision for the future with this facilities master plan.

The Facilities Master Plan document is a living document intended to assist in the long term planning and vision of the District and Santa Ana College for the future development of the campus. It documents the current understanding and expectations for the development of the bond expenditures as well as long term needs for the campus. The document addresses two basic elements of the built environment, the "practical" and "poetic". The practical is a tool to assist in the strategic planning and design of future improvements, buildings, utility services, and circulation. The poetic discusses the qualities of the spaces created by the existing buildings and proposed development. Combined the two present the collaborative vision of the College Construction Coordination Committee and the district at this point in time.

The facilities master plan, as a living document, is a momentary document based on existing conditions; proposed bond funded projects, and desired development funded by unknown sources. The parameters for the decisions that were made are based on input from the College Construction Coordination Committee, the district, local planning authorities and the existing educational master plan. Over the years as the facilities master plan is implemented, the programming and detailed planning for each project will enhance and modify this document. Changes in program offerings, the campus leadership and demographics of the local area are all influences that could modify the current plan. This document as a living document should be consistently consulted and updated as development occurs.

Project Goals and Objectives

The initial step with the College Construction Coordination Committee was to develop the vision statements for the facilities master plan. The vision was defined in the following three categories followed by specific statements to assist in clarifying the broader category.

- Provide student spaces for study and gathering
 - The central mall, the urban living room for the students
 - Provide seating spaces to facilitate gathering and sharing
 - Enhance the landscaping; build on the arboretum collection and information
 - Develop acoustic control at the amphitheater
 - Centralize student services to the center of the campus
- Circulation as a means of organization for space and function
 - Capture the qualities of the central mall pedestrian flow
 - Three types of circulation, pedestrian, vehicular and service
 - Provide for "drop off zones"
 - Adjacency of parking to use for students, faculty and adjunct staff
 - Internal versus external building circulation bringing life to a building
- Campus identity through architectural form.
 - Develop the front door entry element / feature
 - Provide for "memorial" opportunities
 - Maintain the urban open space, clustering buildings
 - Improve building signage and directional clues / organization
 - Provide for centralized faculty services and adjunct support
 - Enhance campus security with the built environment and lighting

II. EXECUTIVE SUMMARY

The Facilities Master Plan

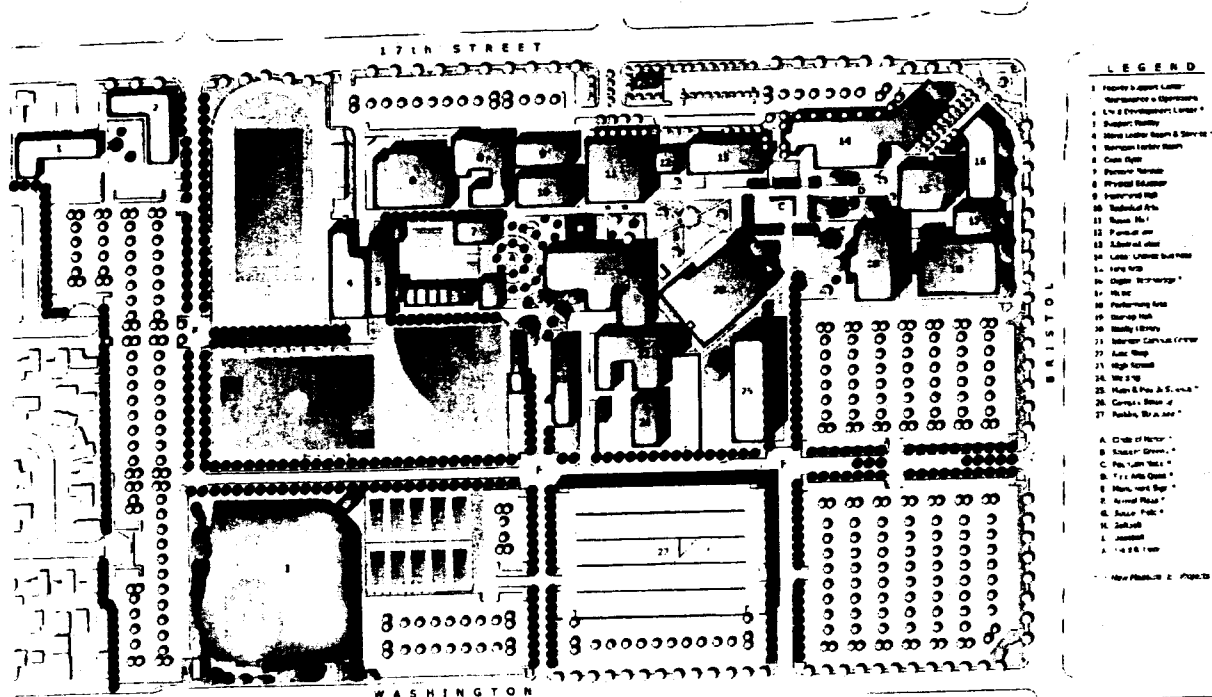
The development of the facilities master plan (FMP) provides for several new structures, increased parking capacity with additional parking lots, and parking structure. The FMP enhances pedestrian and vehicular access around and through the campus, and includes planning and development of the recently acquired properties to the west of College Avenue. (see figure 1)

Proposed structures include; a Child Development Center, Maintenance and Operations Center, Math / Science Building, Digital Technologies, Locker Room Facilities and Theater Arts building. These building were placed to reinforce and create student spaces for study and gathering while reinforcing access points to the existing campus quad. The proposed plan maintains open areas for future development, as funding is available.

The newly acquired land will be utilized as interim parking to facilitate the construction of a new three-level 1,500 car parking structure providing a total of 4,200 spaces within the campus. The existing parking along 17th street is modified to provide greater access, increased visitor spaces and a drop off zone that is free from the main circulation isles. A modified internal "Main Street" serves student parking on the south side of the campus with connections to both Bristol and 17th streets.

The plan provides arrival plazas to clearly define the pedestrian connection from the parking areas to the campus pedestrian circulation system. This will enhance the architectural identity, provide for better way-finding and increase pedestrian / vehicular safety and separation. The arrival plazas are nodes in the circulation system allowing for special features such as "Memorial" opportunities. These areas are planned to have enhanced paving and planting to delineate the spaces.

In combination, these elements provide a comprehensive space to not only increase the student learning and activities, but to enrich the environment of the college and local community.



Santa Ana College, Facilities Master Plan- Measure "E"

(Figure 1) Overall Master Plan

LPA

III. PROCESS

Committees

The facilities master plan was developed as a collaborative effort with the College Construction Coordination Committee and the district over a period of several bi-weekly meetings. The discussions were facilitated by LPA to develop concepts and test ideas discussed with the vision statements that were established in the first meetings. Through the process, as concepts and ideas were developed, the plan was presented to the SAC Academic Senate and also to the campus community via an open invitation forum. Both presentations were well attended followed with a question and answer session. Progress of the process including meeting minutes and drawings were posted on the college's web site to allow access to those interested parties within the college and local community.

Additional input was received and incorporated into the facilities master plan documents and design from the City of Santa Ana Planning Department: OCTA (related to the Centerline project); and LSA, a traffic-engineering consultant.

The College Construction Coordination Committee consisted of:

- John Nixon, Vice president, Academic Affairs
- Kathy Mennealy, Vice president, Continuing Education
- Sara Lundquist, Vice president, Student Services
- Silvia Barajas, Director, Administrative Services
- Sharon Whelan, Dean, Humanities and Social Sciences
- Rick Manzano, President, Academic Senate
- Rhonda Langston, Director Auxiliary Services
- John Nastasi, Skilled Maintenance Work, Classified Employee Representative
- Sean Small, Stage Construction Expert, Classified Employee Representative
- David Perez, Plant Manager
- Mike Mugica, Lead, Skilled Maintenance Worker
- Aracely Mora, Dean Exercise Science
- Maria Surgranes, Associated Dean, Center for Instruction and Media Services
- Peter Bostic, Director, Santa Ana College Foundation
- Randy Simons, Director, ITS
- Curt Childress, Director ITS

The District was represented by the following:

Robert Partridge, Assistant Vice Chancellor,
Facilities Planning & District Support Services
Robert Brown, RSCCD Support Services.

Concepts

The initial meetings with the College Construction Coordination Committee developed the vision statements for the facilities master plan. These statements were developed in a facilitated discussion in which concepts and ideas were expressed by those attending. The ideas and concepts fell into three basic categories. Specific statements that were taken from the discussion then further defined these categories. The collaborative process was then presented, discussed and accepted as the vision statement for the college to be utilized in the development of the plan.

Facilities Master Plan Vision Statements

- Provide student spaces for study and gathering
- Circulation as a means of organization of space and function
- Campus identity through architectural form.

Following the acceptance of these vision statements, bi-weekly meetings were held to confirm the scope of work to be included in the facilities master plan, develop an understanding of the qualities of the campus and items that could be improved through development. LPA utilized discussions with the College Construction Coordination Committee, the physical education department, and the local bond to define the anticipated development to be addressed in the facilities master plan. The development was presented as a list of components and accepted by the College Construction Coordination Committee and the district.

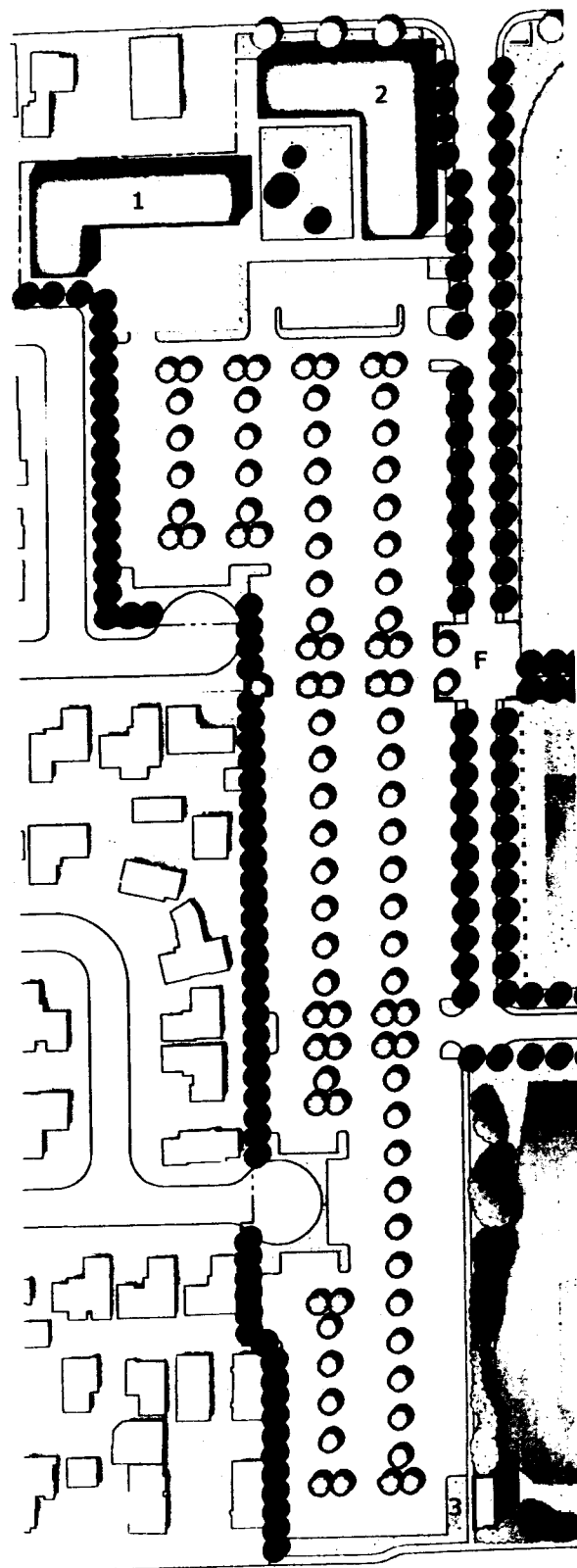
Components

The components of the facilities master plan are both quantitative and qualitative. The quantitative components deal with the specific bond requirements, budgets, and area available to provide parking and buildings. The facilities master plan was developed to specifically address the immediate need to plan and develop the bond-funded projects over the next 15 years and provide for growth on the campus. These projects include:

Acquisition of Land

The acquisition process is nearly complete for the properties to the west side of College Avenue. These properties will need to be vacated and cleared for construction of temporary and permanent parking lots. These lots will serve as swing parking spaces during the implementation and construction of the parking structure. In phased construction the existing day care facility in the church will be utilized as a temporary facility while the new Child Development Center is being designed and constructed. The long-term use of this area is planned as additional athletic fields upon the construction of additional parking structures along Washington Avenue (see figure 2).

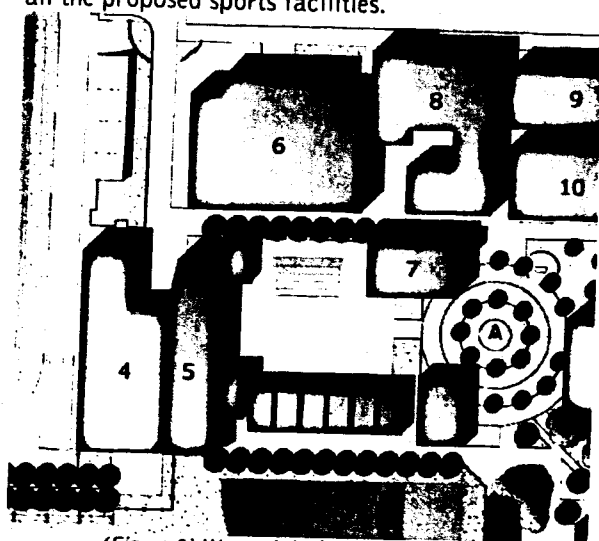
College Avenue is currently a public street with all the existing utilities found in a typical public street. The main sewer line for the college campus connects to the sewer main in College Avenue, which eventually ties into the main in Washington Avenue. It does not appear that the proposed parking lot improvements will interfere with the existing sewer facilities; however, proposed trees should not be placed over the existing main. There is also an existing sewer main that runs northerly, from Martha Lane, up the alley that is west of College Avenue. This sewer main services the existing residences that front onto Meriday Lane. It is located down the center of the alley, approximately ten feet from the property line. This facility will need to remain in place and an easement will need to be recorded to benefit the adjacent property owners. In addition, the property located on the southwesterly corner of 15th Street and the alley appears to have an existing detached garage that faces onto the existing alley. The site plan will need to address providing access to the existing garage.



(Figure 2) Land Acquisition west of College Ave.

New Women's Locker Room

The new locker room facilities (see figure 3) are currently designed and ready to start construction as part of bond funded renovation projects in conjunction with state funding. The location of this facility is centered in the physical education area of the campus to provide more centralized access from all the proposed sports facilities.



(Figure 3) Women's locker room building #4

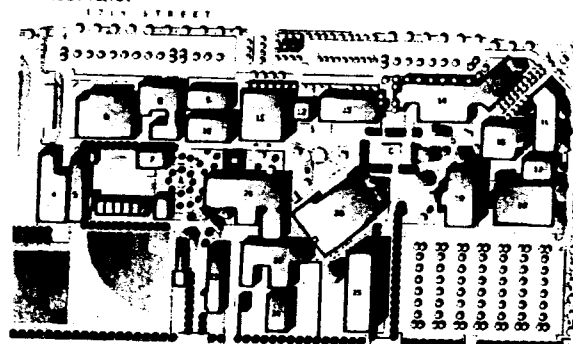
Renovate Campus Infrastructure

The campus utility infrastructure will be modernized and upgraded to support the proposed new buildings and future development of the campus. The utilities serving the proposed new buildings will be centralized and coordinated with the "Main Street" internal vehicular circulation system. Placement of the services in this circulation system will allow the extension of the campus quad area and future buildings to be serviced without disruption or relocation of services as the facilities master plan is implemented.

Renovation of 14 On-Campus Buildings

The renovation of 14 on-campus buildings provides for consolidation of functions, upgraded building services and smart instructional spaces (see figure 4). The central core of the campus will become the student services center and provide for centralized student / faculty support services, mail distribution and printing center. The development of this will provide opportunities for interior and exterior student spaces for study and gathering. Combined with the "Student Green" this will become the urban living room as expressed in the vision statements.

Additional renovations will be incorporated into the way-finding system and architectural elements to reinforce the image of the college by the use of signage, lighting and paving patterns and materials.



(Figure 4) Renovate Campus Infrastructure

Renovate Centennial Education Center

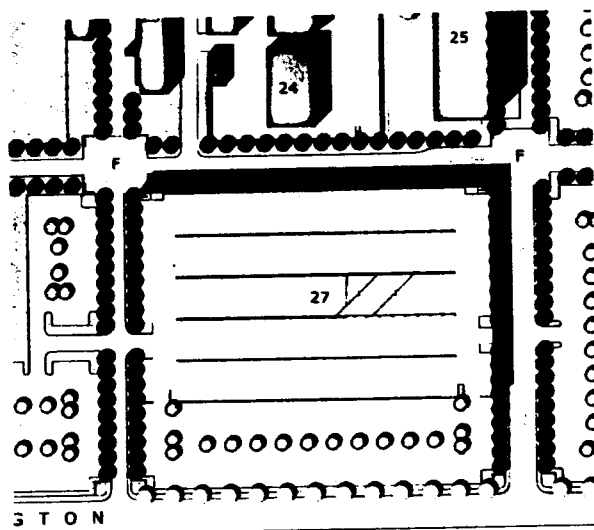
The renovation of the Centennial Education Center is an integral part of the campus although it is not physically on the campus. Its connection to the campus needs to be expressed with common architectural features, materials and landscaping so that the community at large recognizes the facility as part of the main campus.

New Parking Structure

The development of a parking structure (see figure 5) will serve two functions in the facilities master plan. It increases the parking capacity of the campus and allows for development of existing parking into athletic fields and future buildings. The student parking is placed on the south side of the campus along Washington Avenue. The parking structure will be 3 levels with approximately 1,500 spaces. Placement of the structure starts to define the arrival plazas and edge of the proposed "Main Street". The structure is tiered or set back from Washington Avenue to minimize the impact on the local residential property adjacent to the campus. This edge will be developed with landscaping to further enrich the street and reinforce the campus identity to the community. The parking structure will also house a satellite security office to increase the security of the south side of the campus, parking area and structure.

The structure planning should incorporate the future relocation of the Automotive and Mechanical shop spaces into the first floor of the building. Relocation of these functions to the parking structure will provide additional building pads to be developed into additional classroom buildings adjoining the "Urban Living Room". This long term planning will provide further separation of vehicular and pedestrian traffic.

Existing electrical, and storm drain facilities located within the proposed building footprint will need to be modified and/or relocated.



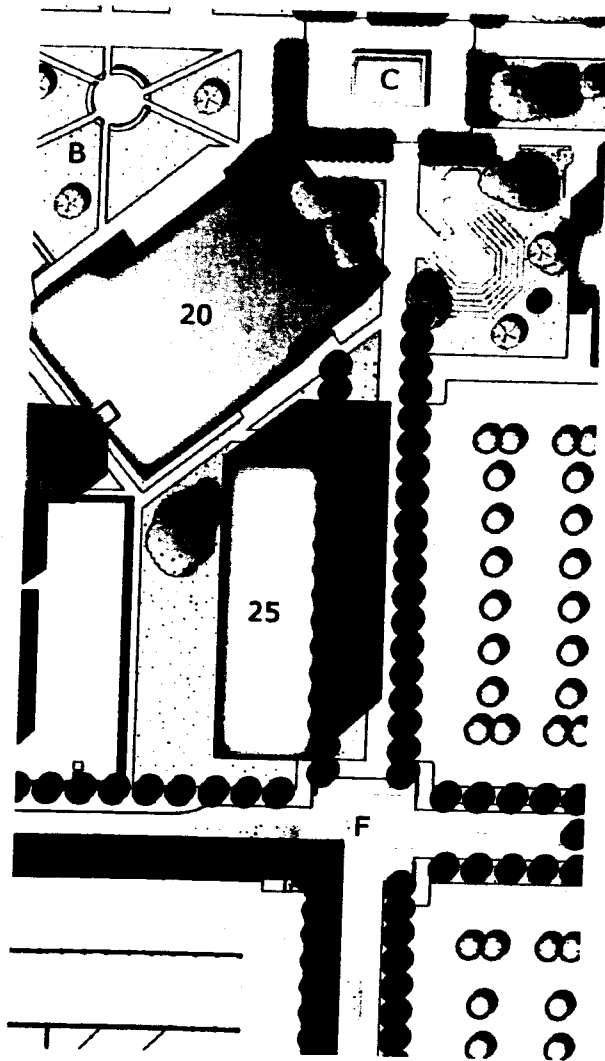
(Figure 5) Parking Structure building #27

As funding and needs develop, the remaining southern parking lots are planned to be parking structures. With the development of the Centerline transit project there are opportunities for a shared use parking facility along Bristol Street. This could be a source of funding for a shared use structure. The facilities master plan allows for development of this parking facility while maintaining the urban open space of the college quad areas and future building pads.

New Math/Science & Health Sciences Building

Prior to the start of construction of the Math / Science and Health Sciences Building, the existing Maintenance, Operations and Warehouse facilities will need to be relocated. The building site will provide an architectural edge to reinforce the pedestrian spine and arrival plaza. Planned as a three or four story building this site will afford the campus additional architectural presence on Bristol Street and balance the size and height of the existing Dunlap Hall building. Further development of the building programs may require the first floor to have direct vehicular support services and a larger ground floor plate. This proposed location (see figure 6) will have direct access to the "Main Street" vehicular circulation core away from any pedestrian conflicts. Existing electrical, water, and storm drain facilities located within the proposed building footprint, will need to be modified and/or relocated. Existing sewer facilities that serve the Nealley Library will need to be relocated and could be extended to serve the proposed building; however, the existing capacity is not known.

As this building is developed and occupied, the vacated space on the campus will allow for the renovation and development of the Central Services core in the facilities master plan.



(Figure 6) Math / Science Building #25

Expansion of Athletic Fields

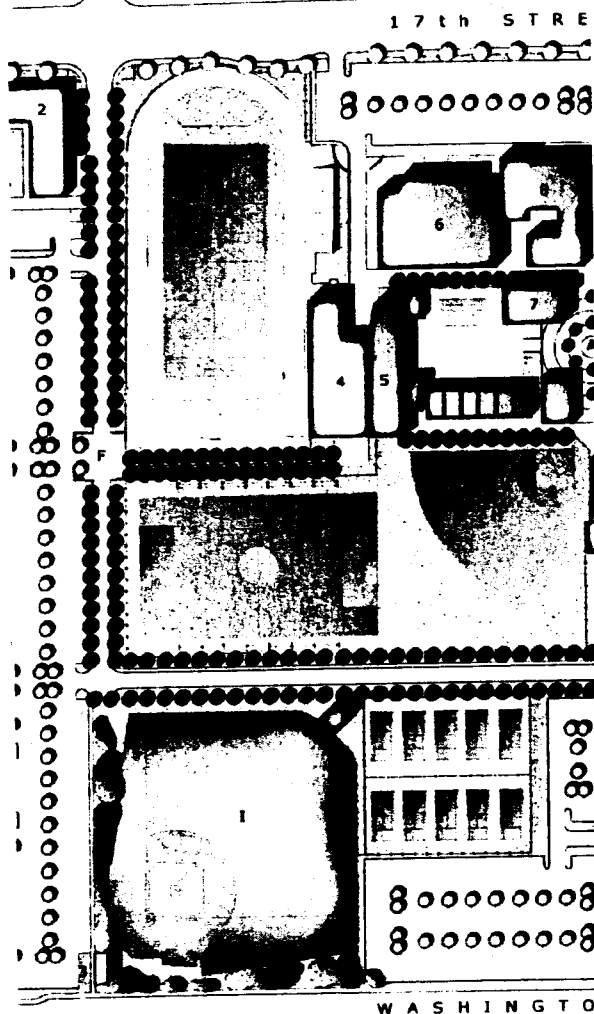
The development of the athletic fields is planned to provide a two-phase long-term concept. The first phase provides the campus with distinct and separate fields for baseball, softball, football and soccer (see figure 7). This phase will allow the college to compete in regulation play by meeting the requirements for equal access. The existing football stadium and baseball fields will receive minor upgrades. A new soccer field with portable bleachers for 300 spectators will be developed adjacent to the football, softball and locker room facilities. If funding is available, the new fields will be surfaced with artificial turf to reduce maintenance costs and enhance the playing conditions for the college. In conjunction with this development an additional support facility will be provided adjacent to the baseball complex complete with announcer booth, concession stand, and public restrooms.

The athletic fields are grouped to the west end of the campus and co-located with the new interim parking to accommodate parking for weekend and evening sporting events. This alleviates excessive street parking during weekends on the local residential community. Fields that require night lighting have been kept internal to the campus to reduce the effects to the residential neighbors.

The second expansion phase slated for unidentified funding sources will expand the athletic fields and football stadium to the west by construction of an additional parking structure with access from 17th Street or by expansion of the parking structure along Washington Avenue. The additional facilities will provide for practice basketball courts, a practice soccer field and dedicated facilities for track events to reduce the annual damage to the football stadium playing surfaces.

Development of these facilities allows for world-class athletic programs to be offered and provides the community with access to the venues for events and tournaments.

Parking Lot 11 is being removed as part of the expansion of the soccer field. The expansion will require modification and/or relocation of existing electrical and landscape irrigation facilities. Some fill material will be required in order to grade the ball field after the pavement is removed. Enough fill material may be available from the footing spoils of the proposed buildings.



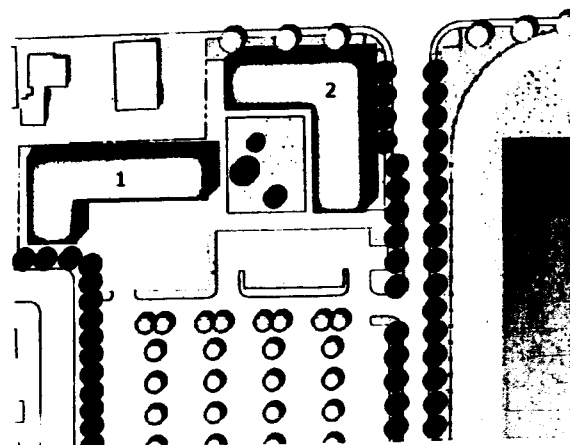
(Figure 7) Athletic Fields

- G. Soccer
- H. Softball
- I. Baseball
- J. Football
- 3. Announcer Booth Concession Stand
- 4. Women's Locker room
- 7. Life Fitness Center.

New Child Development Center

Childcare programs at the college are currently contained in three facilities. The facilities master plan incorporates all three locations into one comprehensive Child Development Center that will serve the college and local day care needs of the community (see figure 8). This facility will be temporarily housed in the existing church property recently purchased as part of the bond funded land acquisition. The use of the existing church day care building will dramatically reduce the temporary location costs and allow development of the western interim parking to expedite the construction of the parking structure.

The location of the new Child Development Center is located along 17th Street and College Avenue to provide the community easy access either by public transit or private vehicle without impacting the student access to the campus. The building and play yards will be developed to enhance the architectural identity of the campus while providing an urban living room for the community's children.



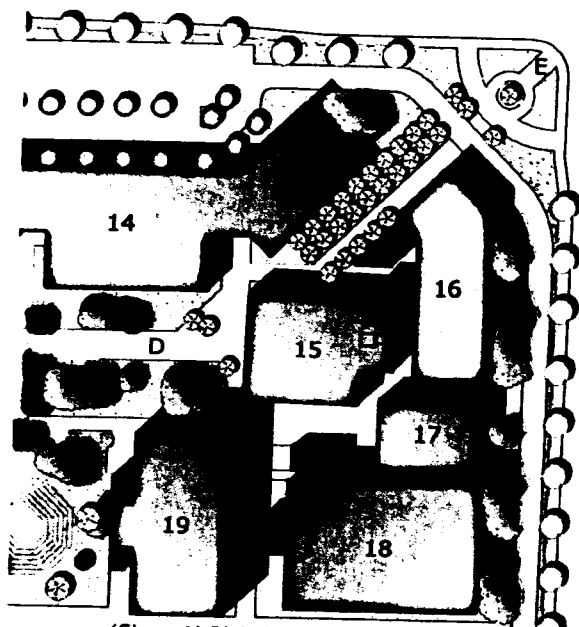
(Figure 8) Child Development Center Building #2

New Digital Technology Building

This facility will bring the campus into the 21st Century and expand the ability for instruction in digital arts. This building as part of the fine arts program is located at the corner to reinforce the campus face along Bristol Street and complement the cluster of arts buildings (see figure 9). The final complement to the arts complex will be a new performing arts center / theater. The digital technology building will be able to support this facility from within the cluster and allow the performing arts center to be constructed along Bristol adjacent to the proposed Centerline rail

station. These two buildings will frame the campus along Bristol and provide a new vision of the future for the campus.

Existing electrical, water, and storm drain facilities located within the proposed building footprint, will need to be modified and/or relocated. Existing sewer facilities that serve the Cesar Chavez Building could be extended to serve the proposed building; however, the existing capacity is not known. Sewer service to this building may require a new connection to the existing sewer main in Bristol Street.



(Figure 9) Digital Technology Building #16

Modernize Library

The modernization of the library building is planned for two phases. The first phase is set to refurbish the interiors of the building combined with an upgrade in lighting and ceiling surfaces. The finishes used will be utilized as part of the campus standards to be applied to the buildings as they are modified through the implementation of the facilities master plan. Phase two of the library modernization will provide increased power and data services as well as some reorganization of the spaces once the digital technologies building is completed. The centralized location of the library building will be enhanced with the addition of the Math / Sciences Building and Central Support Services on each side of the building.

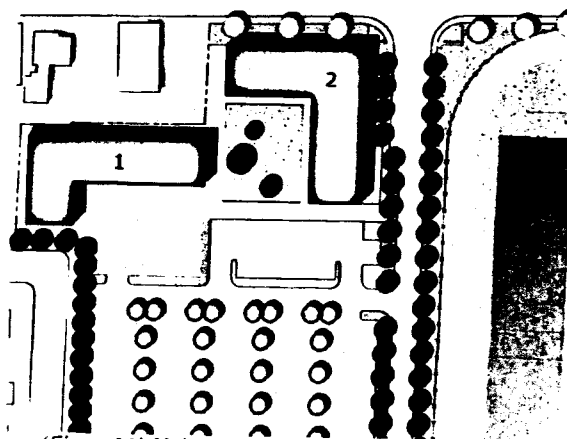
Facilities Support Center Maintenance and Operations Building

The maintenance and operations building is being relocated the northwest corner of the campus along 17th Street (see figure 10). This location will allow direct truck traffic deliveries and reduce the current conflicts between truck and pedestrian traffic patterns. This location will also provide a more direct connection between the facility and the athletic fields. The district is centralizing some of the warehousing functions off site and a smaller warehouse facility will be planned with the maintenance and operations buildings.

Relocation of this facility opens up the center of the campus for additional instructional buildings and is planned as the site for the Math / Sciences Building.

There are several additional off-campus bond-funded projects not addressed in this facilities master plan. Those projects will be built and constructed concurrent with the bond funding, but do have a direct impact on the campus or its facilities master plan at this time.

The qualitative components to the facilities master plan are descriptive and illustrate the types of space created by the plan. These components are critical to providing a cohesive environment full of student spaces that enrich their lives as they learn. The facilities master plan uses the following elements to develop the qualitative components of the facilities master plan.



(Figure 10) Maintenance and Operations Building #1

"Main Street" vehicular circulation system

The main street concept allows traffic circulation to be organized and controlled in one internal street on the campus. This device will be landscaped with plant materials that define its edges and center. Development of the street allows a common core in which to place underground utilities and services to serve the new buildings and improve the existing systems for the campus.

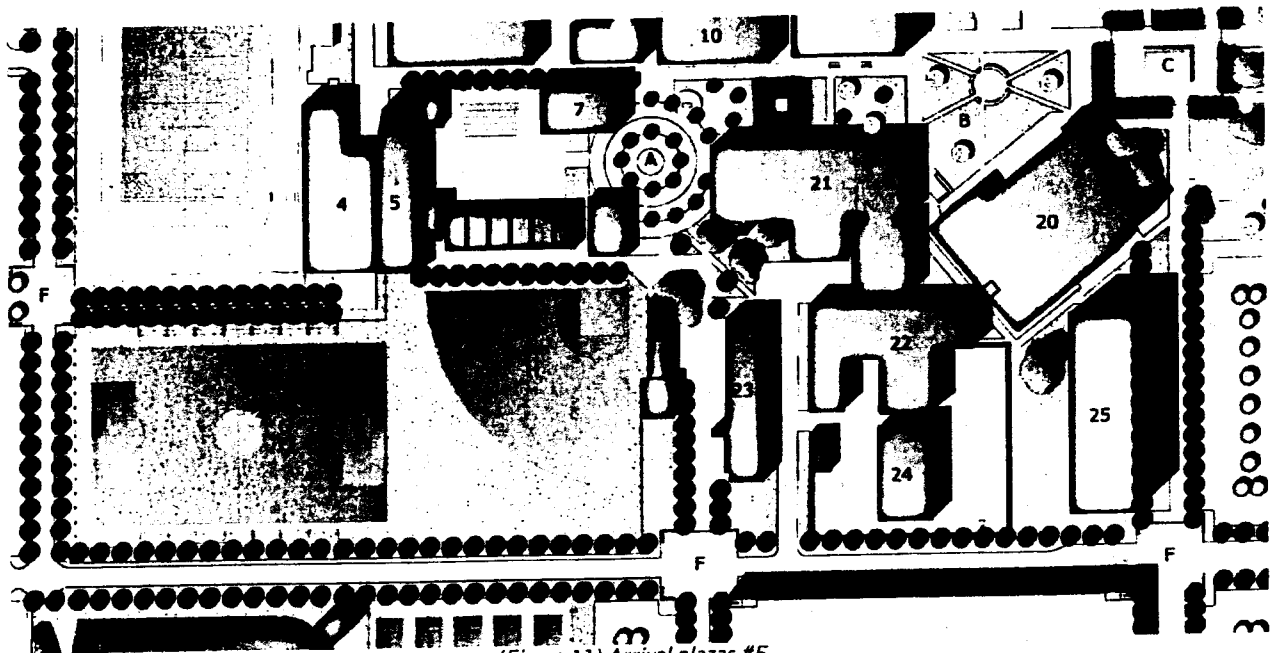
The use of arrival plazas at the points where pedestrians cross the "Main Street" with enhanced paving and raised crosswalks will automatically slow traffic and improve student safety. In addition, the main street will utilize other design elements such as narrowing lanes to naturally control traffic speeds while providing a clear and centralized vehicular circulation system. This street will also allow traffic from the parking structures to disperse on the campus with access to 17th Street, Bristol and Washington reducing the congestion on the local residences and community.

Circulation within the campus and from the community was studied and reviewed by LSA, the traffic engineer. The facilities master plan was developed in conjunction with the Santa Ana Public Works Department and OCTA. The detailed impacts of the circulation system are discussed in the attached traffic analysis in the appendix.

Arrival Plazas

The arrival plazas are intended to address multiple issues and concerns (see figure 11). These plazas are a physical statement with the use of paving and planting of the entry to the campus while on foot. These elements planted with feature trees will signify the start of the pedestrian experience of the campus either as the student is arriving by car or once they have parked, and are on their way to class.

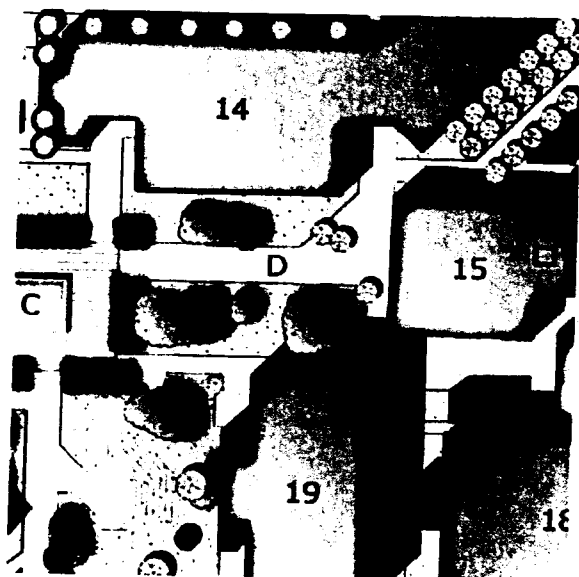
The arrival plazas are connected to the campus urban living room via proposed alleys of trees and landscaping that provide boundaries and emphasis on focal points in the campus. These pedestrian circulation elements will allow the students to prepare themselves for the educational experience as they move in and about the campus. At night these areas will have enhanced lighting to increase safety and security.



(Figure 11) Arrival plazas #F

Fine Arts Quad

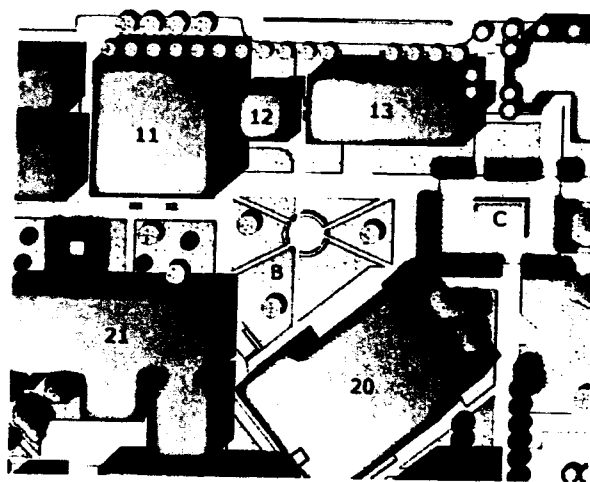
This area outside the fine arts and performance buildings will be organized and planted in such a way as to develop its own character. By creating this room within the urban living room the campus exterior spaces start to develop as part of the way-finding system in the pedestrian element of the facilities master plan. This quad will have exterior seating, enhanced paving patterns, and be the entry statement to the heart of the campus as the students that arrive via public transit enter the campus from 17th and Bristol bus stops. This location also anchors the east west axis of the campus quad (see figure 12). These special areas are places for shade trees and specimen plants to be added to the arboretum.



(Figure 12) Fine Arts Plaza #D

Student "Greens"

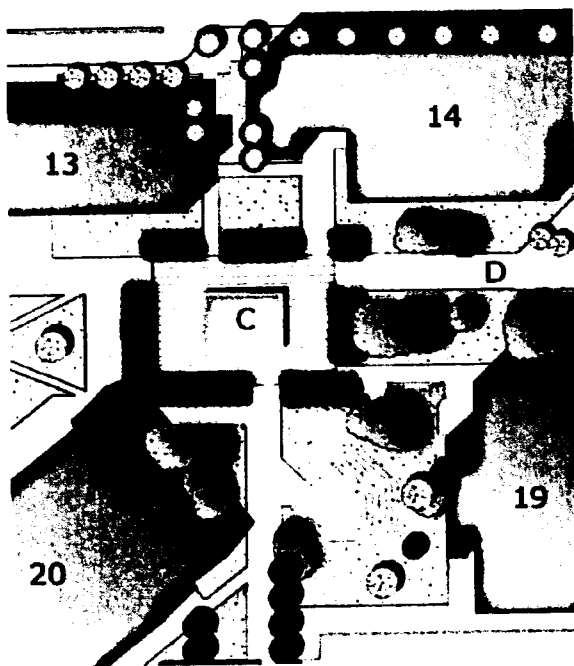
The student greens are intended to be a large-scale gathering place. This area of the urban living room will have large open areas of grass and paving to allow the gathering of student activities throughout the year from a student organization market place to events tailored to specific holidays or special speakers. Placed in the center of the campus adjacent to the centralized student services and faculty support center, this space facilitates movement of large numbers of students while providing a flexible open space for events as they spill out from the buildings (see figure 13). The Circle of Honor to the west and the fountain node to the east formalize the student greens.



(Figure 13) Student Greens #B

Fountain Node

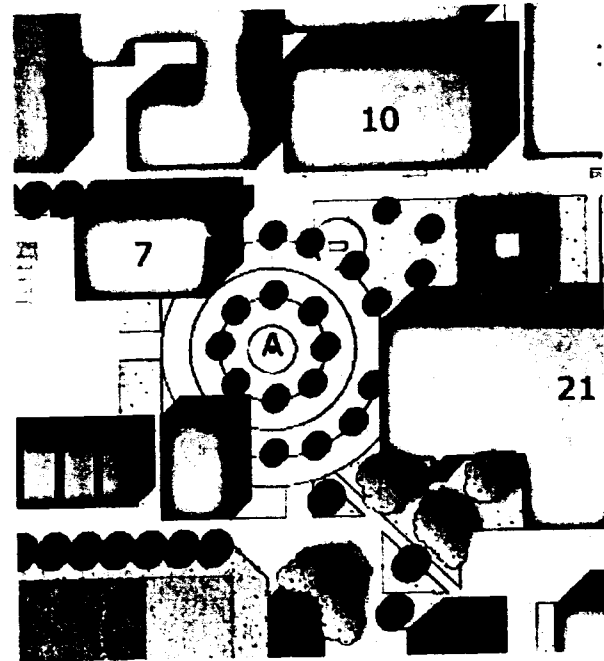
The fountain node utilizes the location of the existing fountain as a terminus for the new arrival plaza and associated pedestrian alley (see figure 14). This feature provides a visual destination from the arrival plaza and signifies the arrival to the main urban living room of the campus. It serves as the eastern terminus of the student greens and start of the fine arts quad. The fountain feature will be revised to have some vertical feature and provide seating around the fountain. Framed by trees and plantings for shade, the sound of the fountain allows for privacy in more intimate conversations and the opportunity for contemplation.



(Figure 14) Fountain Node #C

Circle of Honor

The Circle of Honor provides the terminus of the western end of the student greens. This area with enhanced planting and paving also provides the visual focus of the western pedestrian alley and arrival plaza (see figure 15). The circle located at the heart of the physical education department allows for the naming and honoring of athletic achievements by students. This space would allow for pep rallies and other gatherings in support of the athletic department and designated by shade trees and seating. The Circle of Honor will be provided with a pre-wired public address system to facilitate the use for medium sized public gatherings.

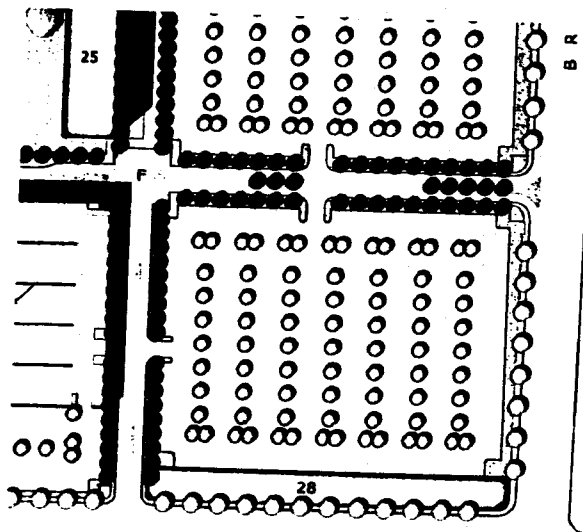


(Figure 15) Circle of Honor #A

Combined, the quantitative and qualitative elements present to the students and local community an environment that is cohesive and demonstrates the level of excellence provided at Santa Ana College. The urban living room provides three distinct spaces for gathering - the existing amphitheater, a performance / public speaking venue; the flexible student greens to allow for campus groups and vendor markets; and the Circle of Honor to provide for smaller group functions and public assemblies. Each of these spaces provides the opportunity to enhance way-finding by becoming a defined destination in the campus public spaces. Each one is connected with similar items such as lighting fixtures, signage and seating elements, but distinctly different through the use of plant materials, shapes and sizes. As these areas are developed, the richness of the arboretum can be enhanced further increasing the value to the students and local community.

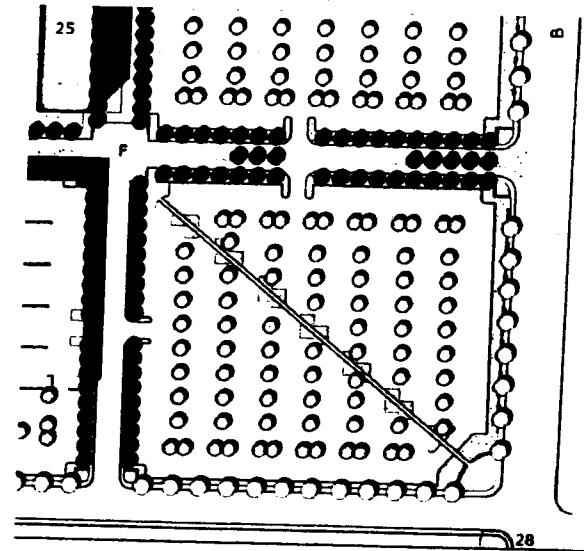
Centerline Rail Station

OCTA presented three options for locations of the Centerline rail station that is planned to serve the campus as a destination point. The service is considered as a spur service with direct service to the main Santa Ana train station terminal. One option places the station directly on the campus property parallel to Washington Avenue in the southeast corner of the property (see figure 16). This option provides direct pedestrian access to the campus via the pedestrian spine that is developed by the new Math / Science Building and proposed parking structure. Parking for approximately 100 stalls would be provided adjacent to the station that would require controlled access. OCTA expressed concerns about this location and its impacts on the intersection, construction costs for Bristol street alignments, and issues raised by local residents.



(Figure 16) Centerline Station Option #1
28 Station Building
F Arrival Plaza

The second option locates the station on the west side of Bristol Ave. just south of Washington Avenue (see figure 17). Pedestrian access for this proposed location would be provided via a diagonal pedestrian path from the arrival plaza to the corner. This spine would be enhanced with paving patterns and landscaping as an extension of the pedestrian circulation system of the campus with a focal point placed at the arrival plaza. To minimize the pedestrian / vehicle conflicts in this parking area and maximize the available spaces; the pedestrian spine would be raised to identify the crossing as vehicles circulate in the parking area.



(Figure 17) Centerline Station Option #1
28 Station Building
F Arrival Plaza

As the Centerline system is developed and funded, the plans can be incorporated into the facilities master plan. The current schedule shows the Centerline project would be constructed within the next 8 years. The spur connection to Santa Ana College is under review and could be constructed at a later date than the main line service to John Wayne Airport. The facilities master plan as proposed in this document accounts for either option and does not propose any construction that would impact or restrict the implementation of the Centerline project at this time.

IV. CAPACITIES

Existing Conditions

The campus currently contains 23 structures with 451,717 assignable square feet on approximately 56 acres. The current student population is 20,936 based on registered student enrollments for fall 2003.

Forecasts

The most current educational master plan indicates an anticipated growth in the student population of the campus to a projected enrollment of 23,000 in the year 2010. This demand will require additional buildings as provided for in the facilities master plan. It is anticipated that the assignable square footage required to support the student population would be approximately 499,884 square feet. This shows that based on the state formulas for space utilization, the campus will have a projected shortage of approximately 48,167 square feet.

Proposed capacities

Review of the proposed capacities can be easily summed up in the following table. It shows the current available capacities and the proposed capacities with a per student ratio. This allows a relative comparison to the existing utilization of the campus for reference. It does not take into account specific divisions and per square-foot usage as noted in the educational master plan. For a more specific breakdown of the types of spaces and TOPS codes the EMP should be referenced.

| Capacity | | Enrollment | Student Ratio |
|----------|-------------------------|-----------------|-----------------------|
| 451,717 | a.s.f. existing | 20,936 students | 21.5 s.f. per student |
| 499,884 | a.s.f. proposed | 23,000 students | 21.7 s.f. per student |
| 3,018 | existing parking spaces | 20,936 students | 7 students per space |
| 4,200 | proposed parking spaces | 23,000 students | 5 students per space |

V. IMPLEMENTATION

Bond Funding

As noted above, the bulk of the projects addressed in this facilities master plan are bond-funded projects. As they are developed it is the intent of the district to apply for and utilize state funding where applicable to stretch the funding sources. Items such as scheduled maintenance, modernization monies and technology upgrades all need to be assessed as the master plan is implemented.

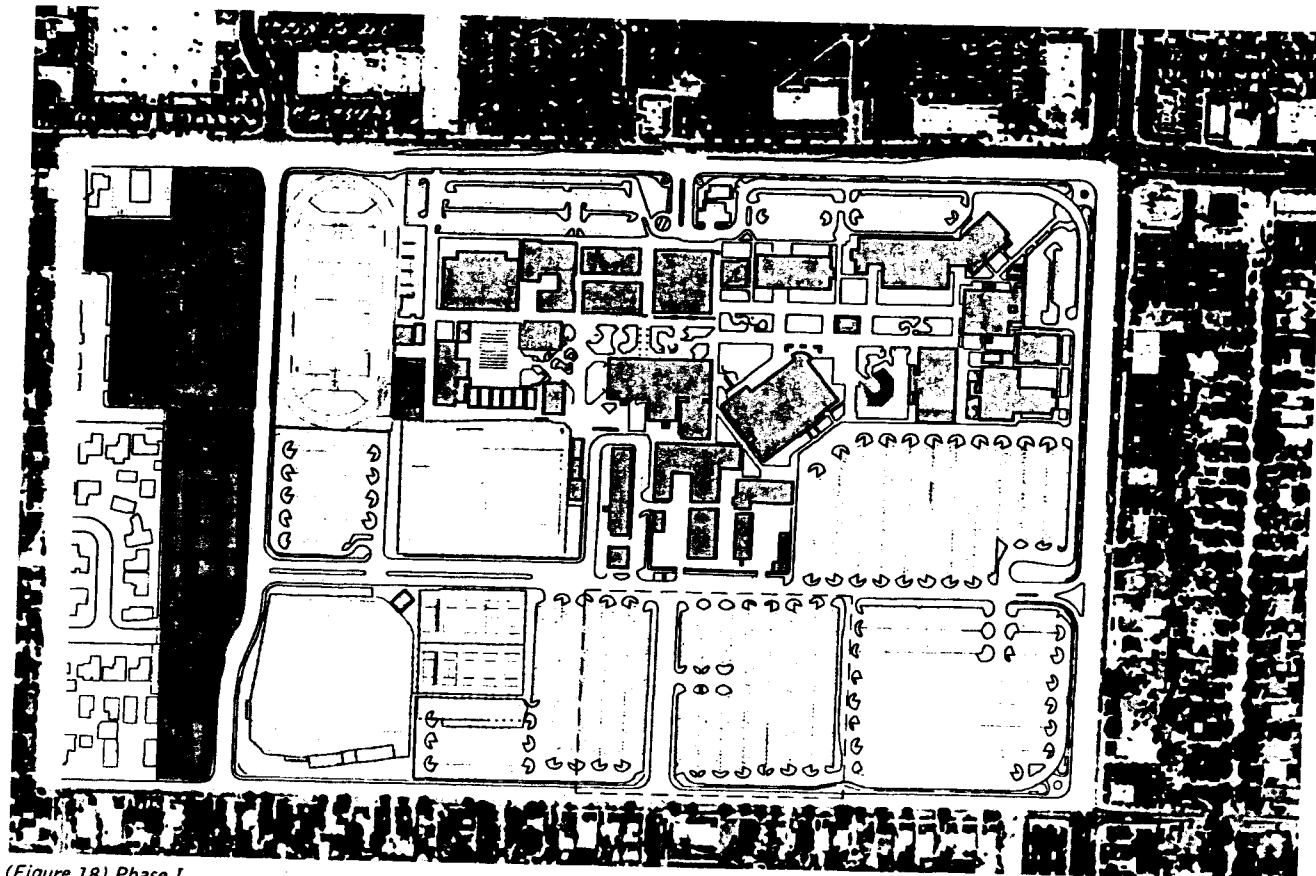
The bond funding is scheduled to be released in increments and will support the long-term implementation of the master plan. Scheduling of the projects and improvements needs to be tied to the release of funding to allow for proper planning and development of infrastructure to avoid wasteful rework. As the work is complete the master plan should be revisited and assessed against the stated goals and vision statements. At the start of each phase, the selected design team should review and understand the intent of the living document prior to proceeding.

Each project should be evaluated to see if additional funding sources are available at the time to allow for expanded scope and use of bond monies.

Phasing

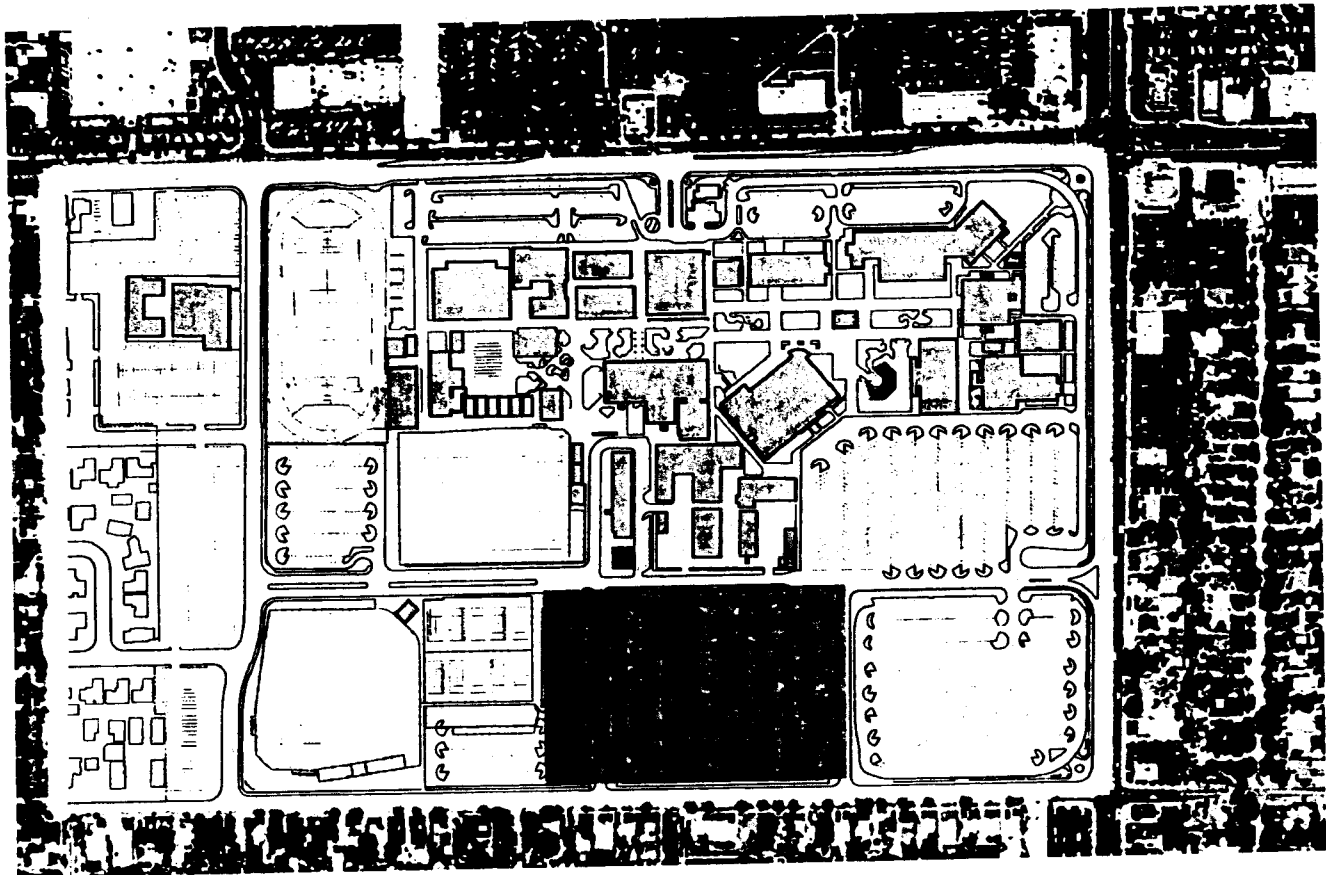
Phasing is affected by both the need to develop in a certain sequence to create space and by the bond monies and opportunities that may not be yet presented. These elements must be reviewed in total to be sure opportunities to capture goals are not lost as funding becomes available.

Phase I: With the purchase of the properties to the west of College Avenue complete, the first phase is to evict the tenants and start the demolition of the existing buildings in preparation of building the new temporary parking lots. Concurrent with this, the children's centers would be consolidated into the existing church daycare center while construction of the new Child Development Center is completed. This will fill an immediate community need for daycare facilities. The women's locker facility currently in construction would be completed (see figure 18).



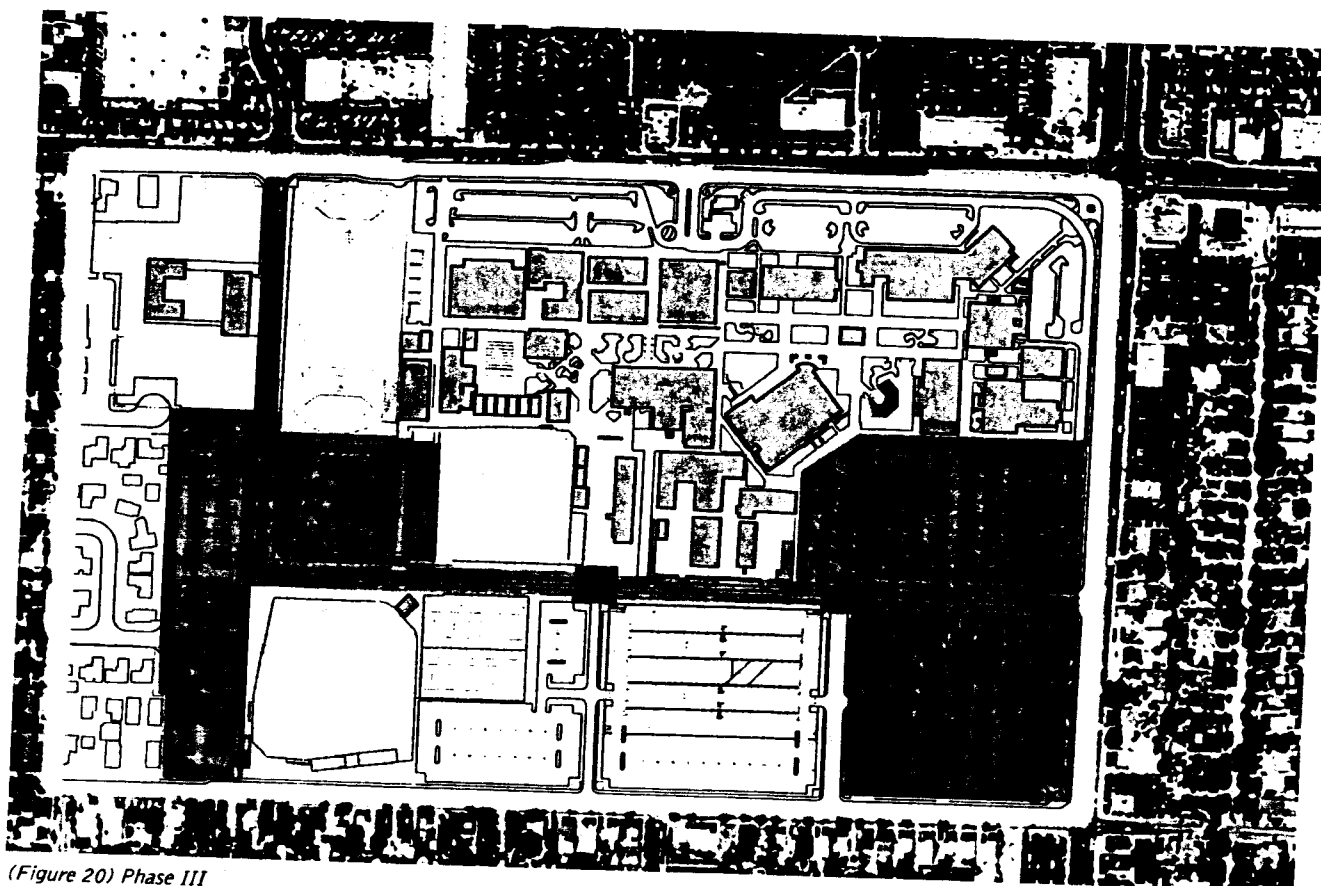
(Figure 18) Phase I

Phase II: Development of the new parking structure can begin as soon as the temporary parking areas are completed (see figure 19). Construction of the parking structures will disrupt the campus and displace parking increasing the distances for students to walk. This work should be done prior to the creation of the "Main Street" interior circulation as well as the arrival plazas. The development of the parking structure should be planned during the summer session to minimize the disruption and potential winter foundation delays. The abandoned daycare center next to the high school could be temporarily utilized as construction offices and demolished upon completion of the parking structure.



(Figure 19) Phase II
Construction of parking structure, green
Demolition of existing Day Care Center, red

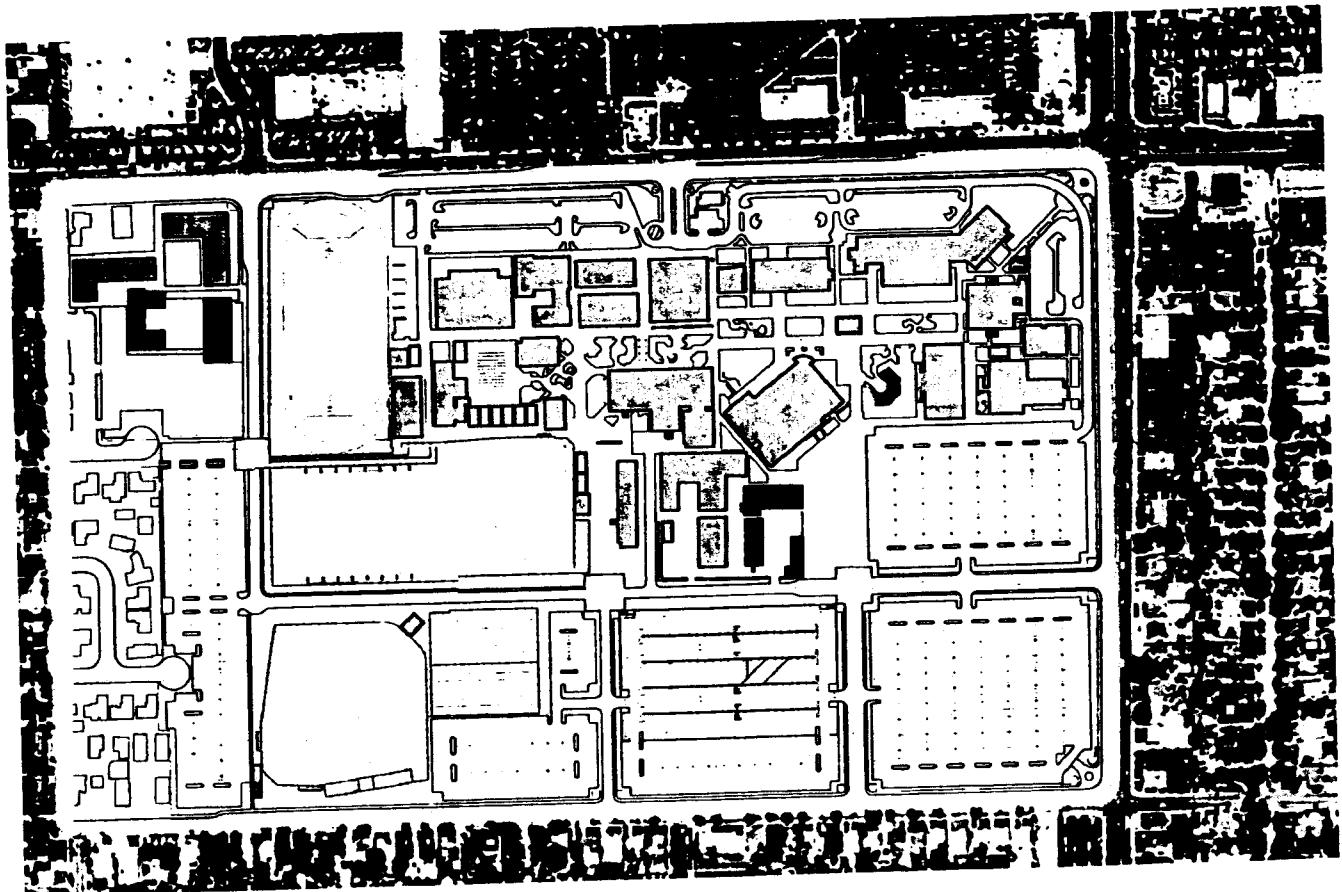
Phase III: Construction of the campus internal vehicular circulation system and surface parking lots. This phase would create the "Main Street" circulation spine and realign the surface parking lots to the final configuration. In addition, this phase would allow the construction of the expanded physical sciences playing fields with the creation of the soccer field and dedicated softball fields. This phase would involve grading and underground utilities and cause disruption to the campus. Due to this impact, the project should be scheduled such that the bulk of grading and paving is done during the summer months and may be required to be done in phased segments. Students would be able to park in the parking structure via the two access points from Washington while the parking along Bristol is completed. With the closure of College Avenue some minor rework of the temporary parking may be required with the installation of dead end turn-arounds in the adjoining neighboring streets.



(Figure 20) Phase III
Construction of "Main Street" and surface parking, green

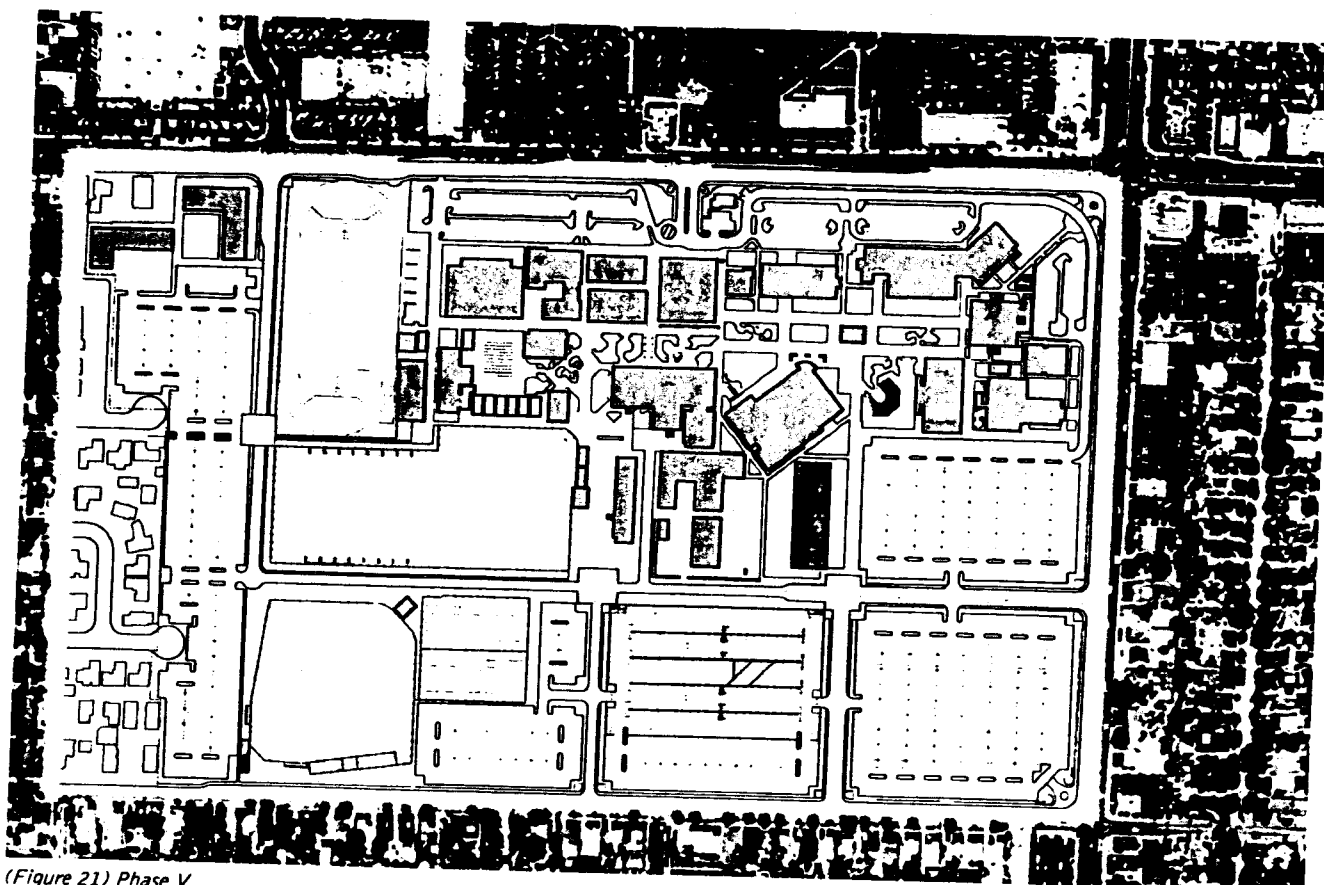
Phase IV: Construct the new Childcare Center and Maintenance and Operations facility (see figure 20). The construction of these facilities would provide minimal disruption to the campus. Construction access could be restricted to 17th Street. Once these facilities are constructed the temporary childcare center in the church site could be demolished as well as the existing Maintenance and Operations buildings. Demolition and grading a pad for the future Math / Science Building could be done during the summer months to minimize noise and dust disruption to the campus.

During this phase planning and design of the Math / Science Building should be in progress to allow the start of the Math / Science Building upon completion of this work.



(Figure 20) Phase IV
Construction of Daycare Center and Maintenance & Operations
building, green
Demolition, red.

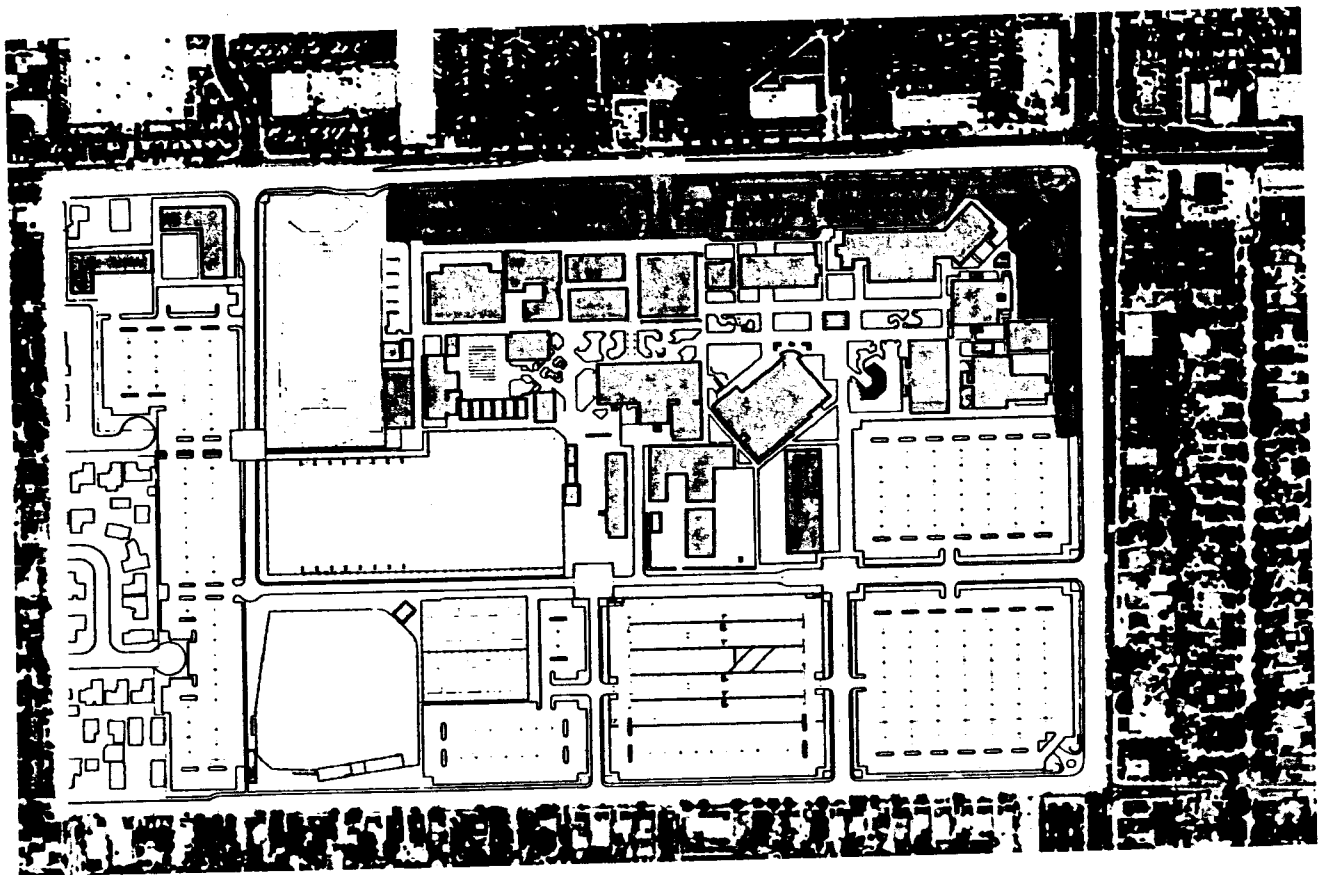
Phase V: This phase would involve construction of the new Math / Science Building and interfaces with the pedestrian spine (see figure 21). Once the building was completed the renovation of several existing campus buildings could be completed as the math and science department vacates the spaces. The reprogramming of buildings would allow the construction of the centralized student and faculty services to the core of the campus. As the buildings are renovated the associated landscape areas adjacent to the building could be developed into the student greens, fine arts plaza and Circle of Honor. The construction of the urban living room spaces should be constructed following the building renovations to allow all required underground services to be upgraded without impacting recent landscaping and paving improvements.



(Figure 21) Phase V
Construction of Math / Science Building, green

Phase VI: The final phase in this project would continue with the renovation of the existing campus buildings with upgrades to lighting, technology and HVAC systems. This work would include the grading and realignment of the faculty and visitor parking lots along 17th Street and the construction of the New Digital Technologies building, providing the final touches to the community side of the campus from 17th and Bristol streets (see figure 22). Displaced faculty parking could be accommodated in the lot directly adjacent to Dunlap Hall and the new Math / Sciences Building.

The phasing as suggested in this facilities master plan suggests a path of planning to minimize the amount of work that is temporary and or reconstruction in a few years due to additional improvements. As a living document the phasing must be constantly evaluated and challenged by the individual projects, the campus needs, and available funding sources. Infrastructure improvements and the addition of state monies as they are awarded will consistently modify the timing and importance of each project. As such, the phasing starts to recognize critical path projects that limit the ability to complete later phases of work.



(Figure 22) Phase VI
Construction of New Digital Technologies Building, green
Construction of faculty / Visitor parking, green

Schedule

The project schedule is being driven by the issuance of Measure E bond monies. The use of the monies is tied to specific bond language to allow for planning, design and construction of the facilities master plan.

The first bond issuance will fund the facilities master plan development from 2003 to 2006. The scope contains several off site projects and includes the acquisition of land, construction of the women's locker room, expansion and renovation of the athletic fields and the design and engineering phases for the new parking structure, the Math / Science Building, campus infrastructure renovation, renovation of the existing campus buildings.

The second bond issuance will fund the facilities master plan development from 2006 to 2011. The scope contains the construction of the parking structure and Math / Sciences Building.

The third bond issuance will fund the facilities master plan development from 2011 to 2014. The scope contains the construction of the Child Development Center and Digital Technologies Building. Renovation of the existing campus buildings and infrastructure services to those buildings would also be included in this issuance. Several off campus project are included in this issuance.

The fourth and final bond issuance will fund the facilities master plan development from 2014 to 2017. The scope contains the completion of the campus renovation projects and the renovation of the library building. Several off campus projects are included in this issuance.

In addition to bond funding, there are opportunities to obtain state funding for building systems maintenance and repair such as HVAC systems and roofing. This funding avenue must follow the state formulated IPP and FPP process. As the facilities master plan is executed, the district will evaluate the renovation projects to assess their probability to obtain these additional funds. This will increase the available money for construction at the same time place time restrictions on the scheduling of work.

The district's goal is to consistently evaluate alternate sources of funding to provide the most value to the campus. This goal will impact the schedule of projects over the duration of the implementation of the facilities master plan. It affords the campus to take advantage of market conditions and opportunities that arise out of sequence.

VI. NEXT STEPS

Guidelines

This document is intended as a living document and guide in making development decisions. In the same manner, to assure that the development is consistent and provides a uniform architectural appearance the college needs to develop standards for materials, landscaping and finishes. These should be developed with the intent of standardized maintenance, uniform application and to develop an architecture that is consistent although varied. This will reinforce the facilities master plan and keep the development consistent although developed by several entities over the years.

Engineering

The facilities master plan represents basic ideas and concepts. As each component is further developed and designed it needs to be evaluated with the proper engineering. The plan provides elements to organize the services and collect pedestrians, vehicles and underground services. Engineering for traffic flows and appropriate speeds, as an example, need to be further defined and developed as the projects are created. This work is currently in progress on a campus-wide basis to address and correct surface drainage issues and inadequate underground utilities. As these systems are developed and understood they need to be overlaid with the facilities master plan schedule and implemented concurrent with it. In some cases as noted above, out of sequence work may be advantageous and result in significant savings. As those opportunities arise, they need to be evaluated and incorporated into the living document and tested against the vision statements.

Programming

It is important to note that the facilities master plan does not address detailed specific requirements for any of the specific buildings or components of the plan. As each project is started a detailed programming effort needs to be conducted with the design team and the building or project user groups. That effort will be utilized to validate the amount of area, types of access required, building orientation, and budget. This process should coordinate with the facilities master plan and utilize the developed standards. This will simplify the process and assure the campus is developed in a cohesive manner even as the leadership or the vision statements change over the years.

VII. APPENDICES



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RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

March 10, 2004

Mr. James Raver
LPA, Inc.
5161 California Avenue, Suite 100
Irvine, CA 92612

Subject: Santa Ana College: Circulation Opportunities and Constraints Analysis

Dear Mr. Raver:

LSA Associates, Inc. (LSA) is pleased to submit this circulation opportunities and constraints analysis for Santa Ana College. This analysis represents our initial review of the draft Master Plan layout. Santa Ana College is located north of Washington Avenue, south of 17th Street, east of College Avenue, and west of Bristol Street in the City of Santa Ana (City). LSA has identified the circulation setting and opportunities and constraints based on the following: (1) field surveys and observations, (2) review of the existing circulation both on campus and on the adjacent public streets, and (3) review of the proposed Master Plan. The Master Plan addresses additional parking proposed on site, as well as the design of the access points into these areas. LSA has previously provided input to the architect on the design of circulation and parking access for the Master Plan. As such, this analysis provides further support for this design.

This analysis also addresses the discussion with the City Engineer (Mr. George Alvarez) and Transportation Manager (Mr. Manuel Gomez) regarding the location of access points along Washington Avenue and the closure of College Avenue as a public street. LSA and LPA met with City staff on February 12, 2004, to present the proposed Master Plan design. City staff requested that additional traffic analyses be prepared to support these issues.

This analysis describes the following: (1) the existing conditions/setting, (2) opportunities and constraints based on the existing condition, (3) the proposed Master plan, and (4) opportunities and constraints based on the Master Plan condition.

EXISTING CONDITIONS/SETTING

1. Santa Ana College currently enrolls approximately 20,000 students with approximately 3,018 parking spaces on the campus (of which approximately 2,396 spaces, or 79 percent, are located in the parking areas on the south end of the campus, adjacent to Washington Avenue).
2. The project site is surrounded by two major arterial highways (Bristol Street and 17th Street), Washington Avenue (which provides direct access to both residents and the college campus), and College Avenue (which also provides access to residential areas and the college campus).

3-12-2004-P.LPX430-07 Ken Wilhelm Revised traffic study docx

PLANNING

ENVIRONMENTAL SCIENCES

DESIGN

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3. Washington Avenue is a two-lane roadway with a continuous left-turn lane. On-street parking is permitted on the south side of the street only. The posted speed limit is 25 miles per hour (mph). There are 12 single-family residential driveways that have direct access onto Washington Avenue between Bristol Street and Pacific Avenue and 15 driveways that have direct access onto Washington Avenue between Pacific Avenue and College Avenue.
4. College Avenue is a two-lane road. The posted speed limit is 25 mph. There is access onto College Avenue from three residential driveways between Washington Avenue and Martha Lane. There are no residential driveways between Martha Lane, 15th Street, and 17th Street. On-street parking is permitted on both sides of the street.
5. English Street and Raitt Street are two-lane north/south residential roadways with on-street parking on both sides of the street. The posted speed limit is 25 mph on each road. The intersection of English Street and 17th Street is signalized. As described below, traffic may be diverted on these streets once College Avenue is closed to public access.
6. The campus currently has the following four major access locations: (1) a signalized full-access driveway on 17th Street that primarily provides access for faculty, visitors, and student drop-offs. (2) a right-turn in/out driveway on Bristol Street. (3) a four-way stop-controlled intersection on Washington Avenue (at Pacific Avenue), and (4) a one-way stop-controlled access drive on College Avenue. There is also a one-way out driveway located on 17th Street. The entrance from Washington Avenue is four lanes, while all other access driveways are two lanes.
7. The internal circulation on the campus includes an east-west two-lane road that provides access to the parking areas from Bristol Street, College Avenue, and Washington Avenue, and a two-lane ring road that provides on-site vehicle circulation between the 17th Street entrance and the parking areas on the south end of the site. This ring road provides connectivity for students entering/exiting the campus on 17th Street and the parking areas to the south (because the parking adjacent to 17th Street is primarily for faculty and visitors).
8. Existing traffic counts were conducted by Southland Car Counters on Thursday February 5, 2004, at the major access driveways on the campus site as well as the adjacent signalized intersections. Figure 1 (provided as an attachment) illustrates the peak-hour traffic volumes at the adjacent intersections surrounding the site, as well as daily and peak-hour directional traffic volumes accessing the school site.
9. Daily traffic volumes within the entire surrounding residential community are illustrated in the attached exhibit. These counts (provided by the City) were conducted on January 7, 2003, by the Artesia Pilar Neighborhood Association. It should be noted that the daily traffic volume collected by the neighborhood association is significantly less than the recent count data conducted by LSA. For example, the daily volume along College Avenue as illustrated in the neighborhood association figure is approximately 2,600 vehicles less than the counts conducted by LSA. In addition, the daily volume collected by the neighborhood association on Washington Avenue between College Avenue and Pacific Avenue and between Pacific Avenue and Bristol Street is approximately 4,500 vehicles and 1,600 vehicles less than the recent counts, respectively. This difference may be caused by the following two reasons: (1) the neighborhood counts were conducted in January 2003, while the recent counts were conducted in February 2004 (one year later), and (2) the neighborhood counts were conducted on January 7, when traffic may still have been affected by the holidays and the college campus was in a winter session that is not its typical attendance.

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Constraints

1. The residents that have direct access on Washington Avenue will be impacted the most by the changes proposed on the campus. As described in the Master Plan condition, based on providing two access points along Washington Avenue, the volume along some of these residential units may be reduced. However, the closure of College Avenue may also redirect and increase traffic along this roadway.
2. Several pedestrian/vehicle conflict points exist between the campus buildings and parking areas on the south end of the project site (Parking Areas 6-9). There are no clearly marked pedestrian crossings between the campus and the parking areas. Students cross the internal two-lane road that bisects the parking areas at several points, thus creating potential safety problems. As described below, the proposed Master Plan will alleviate this problem.
3. With direct access from the campus currently at Pacific Avenue, there is potential for "cut-through" traffic and on-street parking by students along this residential road. This constraint has been addressed in the proposed Master Plan, as described below.
4. It is recommended that the right-turn in/out driveway on Bristol Street not be altered in the Master Plan condition. As discussed with City staff, there is no opportunity to signalize this access into the campus because this location is too close to the Bristol Street/Washington Avenue signal, and the residents on the east side of Bristol Street would likely not support it.

MASTER PLAN DESCRIPTION

1. The Santa Ana College campus is expected to increase the student enrollment to approximately 23,000 students in the next few years. A total of approximately 4,200 parking spaces is proposed on site.
2. Implementation of the Master Plan will increase the parking on site by approximately 1,074 parking spaces compared to the existing condition. This includes approximately 600 spaces added on the south end of the campus and 700 spaces added on the west end of the campus.
3. The addition of 600 parking spaces on the south end of the campus has the potential to generate approximately 2,800 daily trips (based on a trip rate of 4.7 trips per parking space determined using the existing data collected on campus). The addition of 700 spaces on the west end of the campus has the potential to generate approximately 3,200 daily trips. The point at which these trips enter/exit the campus may be different from existing conditions, because access to College Avenue will be closed from Washington Avenue.
4. As illustrated in the proposed Master Plan (Figure 2, provided as an attachment), a new parking structure is provided on the south end of the campus (Parking Area 8). In addition, the existing parking areas adjacent to the structure will be redesigned to provide improved circulation, parking layout, and pedestrian channelization.
5. Access into the new parking structure is proposed off of two new entry points from Washington Avenue. Vehicles destined to the campus from Washington Avenue via Bristol Street will likely use the primary entrance, located approximately 550 feet west of Bristol. Vehicles destined to the campus via Washington Avenue from areas west of College Avenue will likely use the driveway located approximately 150 feet west of Pacific Avenue.
6. Access into the parking structure and the adjacent parking areas on campus via Washington Avenue are located midpoint between Washington Avenue and the internal two-lane roadway

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- (approximately 220 feet north of Washington Avenue and approximately 220 feet south of the internal two-lane road). Left-turn lanes are proposed at the parking entrances for adequate storage of vehicles entering the parking area while not impeding through traffic.
7. The parking areas adjacent to the parking structure (Parking Areas 6 and 7) were also redesigned as part of the Master Plan. The result provides a centralized entry/exit into each parking area, rather than multiple access points as exist today.
 8. The campus access onto 17th Street will not change as a result of the Master Plan. However, the parking areas for faculty and visitors will be slightly modified. In particular is the addition of a student drop-off area that will significantly enhance the circulation system compared to the current operation.
 9. The access from College Avenue will be modified as a result of abandoning this roadway as a public street. All vehicles entering College Avenue via 17th Street in the Master Plan condition will be campus related, as there will be no access to the residential community. This will ultimately reduce the volume of traffic on College Avenue compared to the existing condition.
 10. The four-way stop at Washington Avenue/Pacific Avenue will be eliminated as part of the Master Plan. As a result, there will be three "T" intersections on Washington Avenue (two into the college campus and one at Pacific Avenue) within approximately 540 feet. Traffic control at these locations is discussed below.

MASTER PLAN OPPORTUNITIES/CONSTRAINTS

Opportunities

1. The two new campus driveways on Washington Avenue will divide the traffic destined to the campus from Washington Avenue (compared to the single access point currently provided). This will reduce the traffic in between the driveways and benefit the residents on the south side of the street, as all campus-bound vehicles are not concentrated into one access point.
2. The existing driveway into the college campus at Pacific Avenue is eliminated as part of the Master Plan. This should benefit the neighborhood, because the opportunity to "cut through" the community south of the project site as well as students parking on-street would be discouraged.
3. It is recommended that the intersection of Washington Avenue/Pacific Avenue remain stop controlled. This intersection is currently controlled with stop signs, and although the Master Plan will eliminate the fourth leg of the intersection, it is still recommended that it be maintained.
4. The Manual on Uniform Traffic Control Devices (MUTCD, November 2003) states that stop signs should not be used for speed control. Stop signs should be considered when there is a safety concern for pedestrians and bicyclists, and sight distance and accidents are an issue. The need to control left-turn conflicts is also a criterion to be considered. As such, the minor street approaches (i.e., exit lanes) at the two campus driveways on Washington Avenue should be stop controlled, but not Washington Avenue. Left turn conflicts to/from the college campus via Washington Avenue can be accommodated in the continuous left-turn lane provided along Washington Avenue.
5. The access into the parking areas on the two lane internal roadway is provided approximately 300 feet west of the Bristol Street right-turn in/out driveway. The benefit of this design is to channelize not only vehicles in/out of these areas, but pedestrians as well. The existing condition

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allows multiple crossings of pedestrians across the internal two-lane road. The Master Plan condition, however, will concentrate these movements at specific locations, thus reducing potential conflicts along this road. It is recommended that the westbound left-turn pockets and intersection into Parking Area 7 be extended to accommodate the demand and potential left-turn stacking. This will reduce the median illustrated on the plan. In addition, the entrances at all of the parking areas could be enhanced by providing one lane outbound. This will prohibit stacking onto the internal and/or public streets.

6. It is recommended that the left-turn lane into the parking structure via the primary entrance off Washington Avenue be engineered to accommodate the anticipated demand and reduce the potential to stack out onto the public street.
7. It is recommended that the intersection of the internal driveways via Washington Avenue and the internal two-lane road be stop controlled. Pedestrian crossings should be clearly marked at these locations. In addition, stop signs should be included at the intersection of College Avenue and the internal driveway. This intersection will provide an entrance into a parking area for the sports facilities. Pedestrians destined to the ball fields will likely use this intersection, and thus the stop sign will allow for safe pedestrian crossings at this location.
8. LSA reviewed the Supplemental Draft Environmental Impact Statement (EIS) and Revised Draft Environmental Impact Report (EIR) for The CenterLine (dated October 2003). The purpose of this review was to identify significant changes or potential impacts to the circulation system surrounding the college campus as a result of the light rail project. The EIS/EIR did not disclose the future LOS at the Bristol Street/17th Street or Bristol Street/Washington Avenue intersections.

The attached site plan illustrates the proposed alignment of the CenterLine project, including a station proposed on Bristol Street adjacent to the college. This definitely provides an opportunity for students and faculty to use this alternative means of transportation. As this plan illustrates, Bristol Street will be widened (on the east side) to accommodate the CenterLine and three through lanes of travel each way. An acceleration/deceleration lane is proposed at the campus entrance off Bristol Street. The proposed station will include a new traffic signal for southbound traffic on Bristol Street to allow pedestrians to safely cross from the station to the sidewalk adjacent to the campus.

Constraints

1. The access driveway on Bristol Street into the college campus should be maintained as a right-turn in/out driveway in the Master Plan condition. Bristol Street will be widened to three lanes in each direction as part of the City's improvement project; however, there are no feasible means to allow full movements and signalize this intersection. This intersection may require acceleration and deceleration lanes with implementation of the CenterLine project and Bristol Street improvements.
2. It is recommended that the entrance into Parking Area 7 via Washington Avenue be designed to allow vehicles to enter the parking area without immediately having to turn down the parking aisle. This will provide better circulation within the parking area.
3. The Master Plan illustrates the abandonment of College Avenue between Washington Avenue and the internal driveway serving the campus. The result of this would require the cul-de-sac of

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Martha Lane and 15th Street just west of this roadway. City staff suggested that the neighborhood would welcome this improvement. The concern, however, is the redistribution of traffic due to the closure of College Avenue as an access to 17th Street from the surrounding community. The City Engineer (Mr. George Alvarez) stated that a traffic study would be required to adequately address this redistribution issue. Specifically, the effects on the parallel residential streets (Raitt Street and English Street) would have to be analyzed to determine if significant impacts would be created with the closure of College Avenue.

4. Based on the traffic counts conducted, it appears that approximately 44 percent of the 9,765 daily vehicles on College Avenue between the campus driveway and 17th Street access the college campus, while 56 percent are local residents that use this roadway to access 17th Street. It is the 56 percent (or 5,468 daily vehicles) that would potentially be redistributed on Washington Avenue, Raitt Street, and English Street as a result of closing College Avenue.
5. The proposed parking spaces on the west end of the project site will be used for student parking during construction of the parking structure. This assumes, however, that Santa Ana College has secured an agreement with the City on the abandonment of College Avenue and the cul-de-sac of the residential streets to the west (i.e., Martha Lane and 15th Street).
6. The intersection of College Avenue/17th Street may experience congestion during special events (such as football, soccer, baseball, etc.), as there is only one receiving lane into the campus at this location. Detailed intersection design should evaluate the need for a secondary lane into the child care center to alleviate the congestion.

I trust that you will find this information useful as you proceed with the Master Plan for Santa Ana College. I look forward to meeting with you to discuss the results and recommendations of our analysis. If you have any questions please call me at (949) 553-0666.

Sincerely,

LSA ASSOCIATES, INC.



Ken Wilhelm
Associate

Attachments: Existing Count Data
Figure 1: Existing Traffic Volumes
Artesia Pilar Neighborhood Association Traffic Volumes
Figure 2: Master Plan
Level of Service Worksheets
The CenterLine Future Site Plan

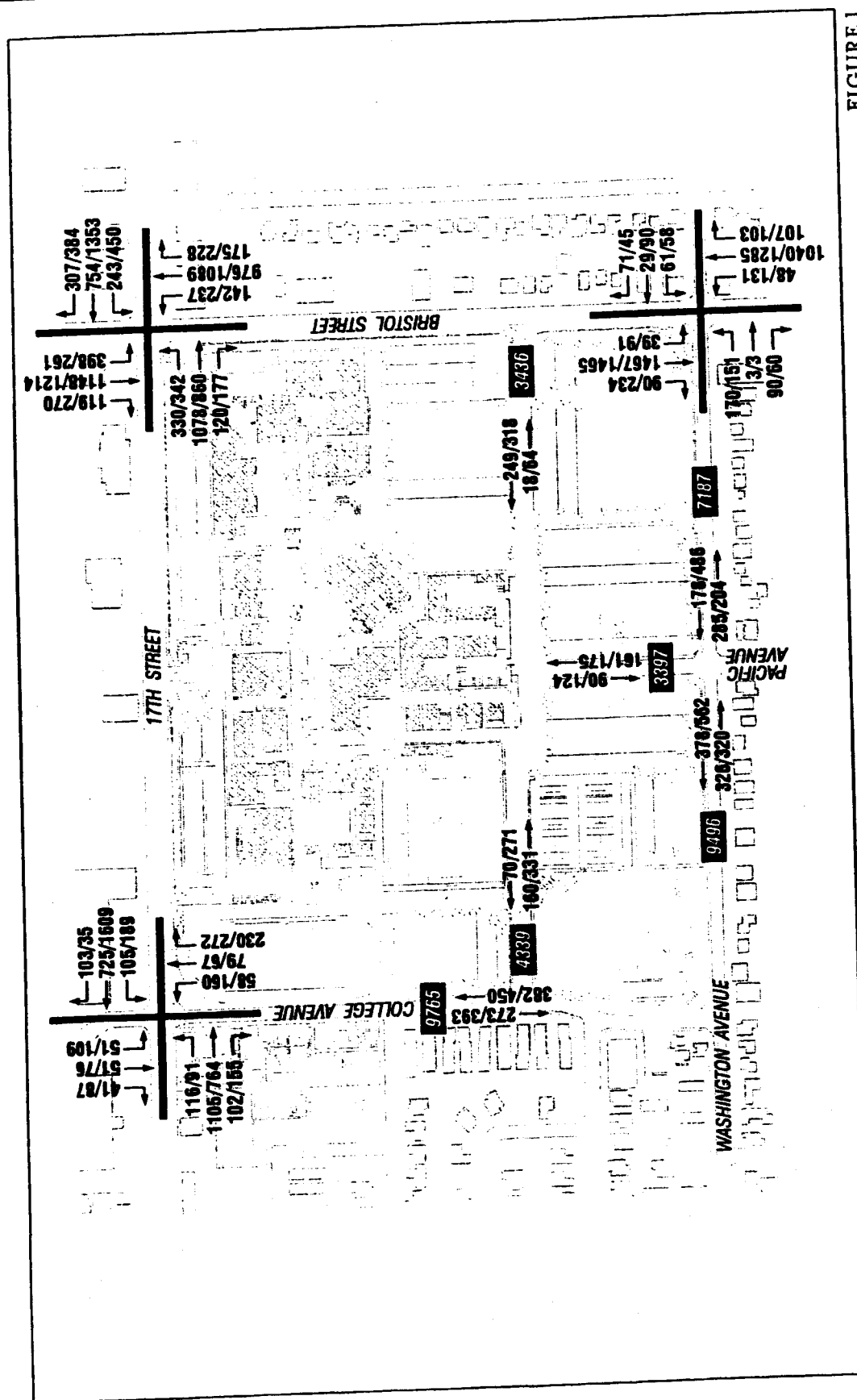


FIGURE 1

Santa Ana College Master Plan Circulation
Existing Traffic Volumes

LSA

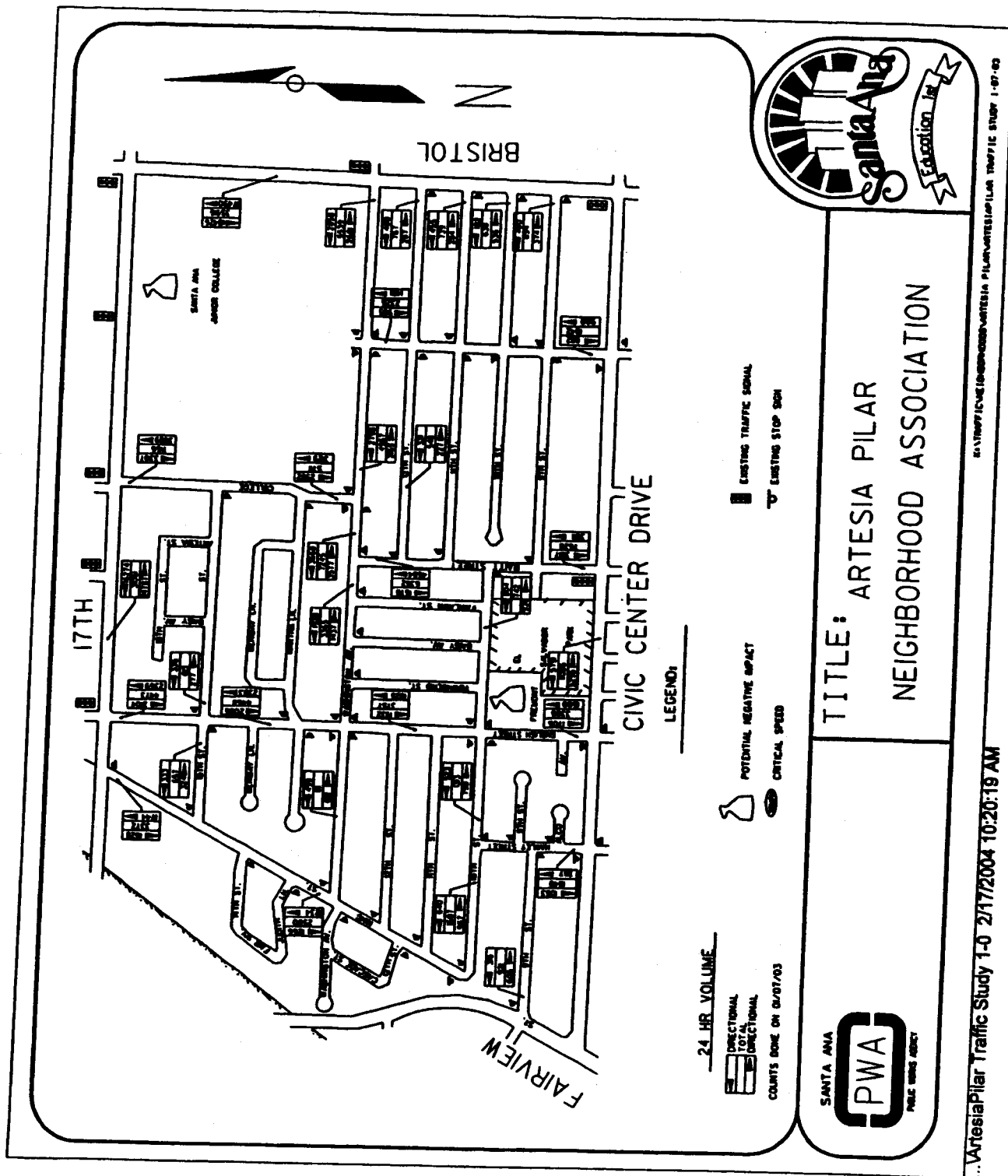
LEGEND

XX/YY - AM/PM Peak Hour Volumes
YYY - Daily Traffic Volumes (ADT)

NO SCALE

SOURCE: LPA

F:\LPX430\Volumes.cdr (2/19/04)



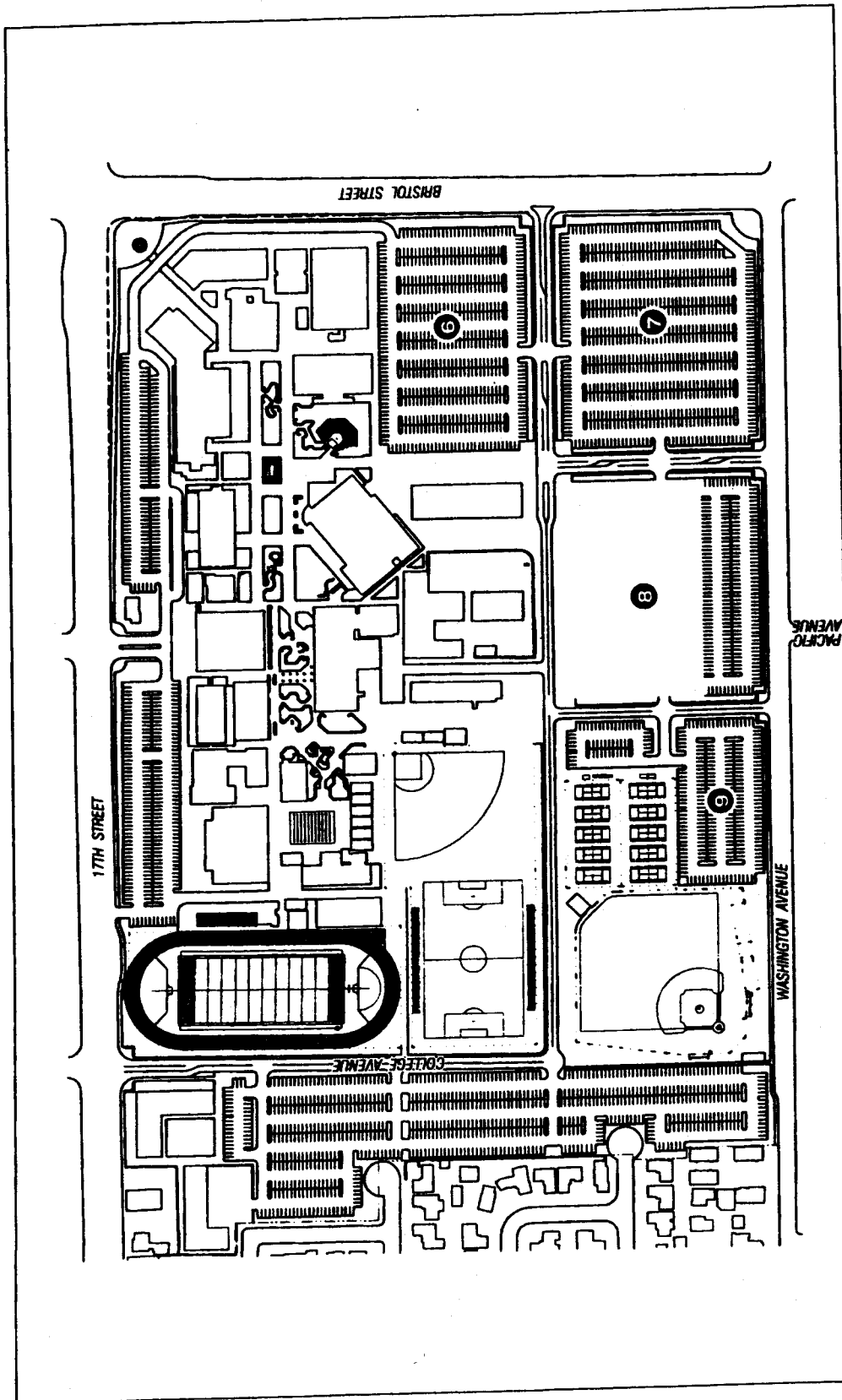
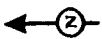


FIGURE 2

LSA

LEGEND

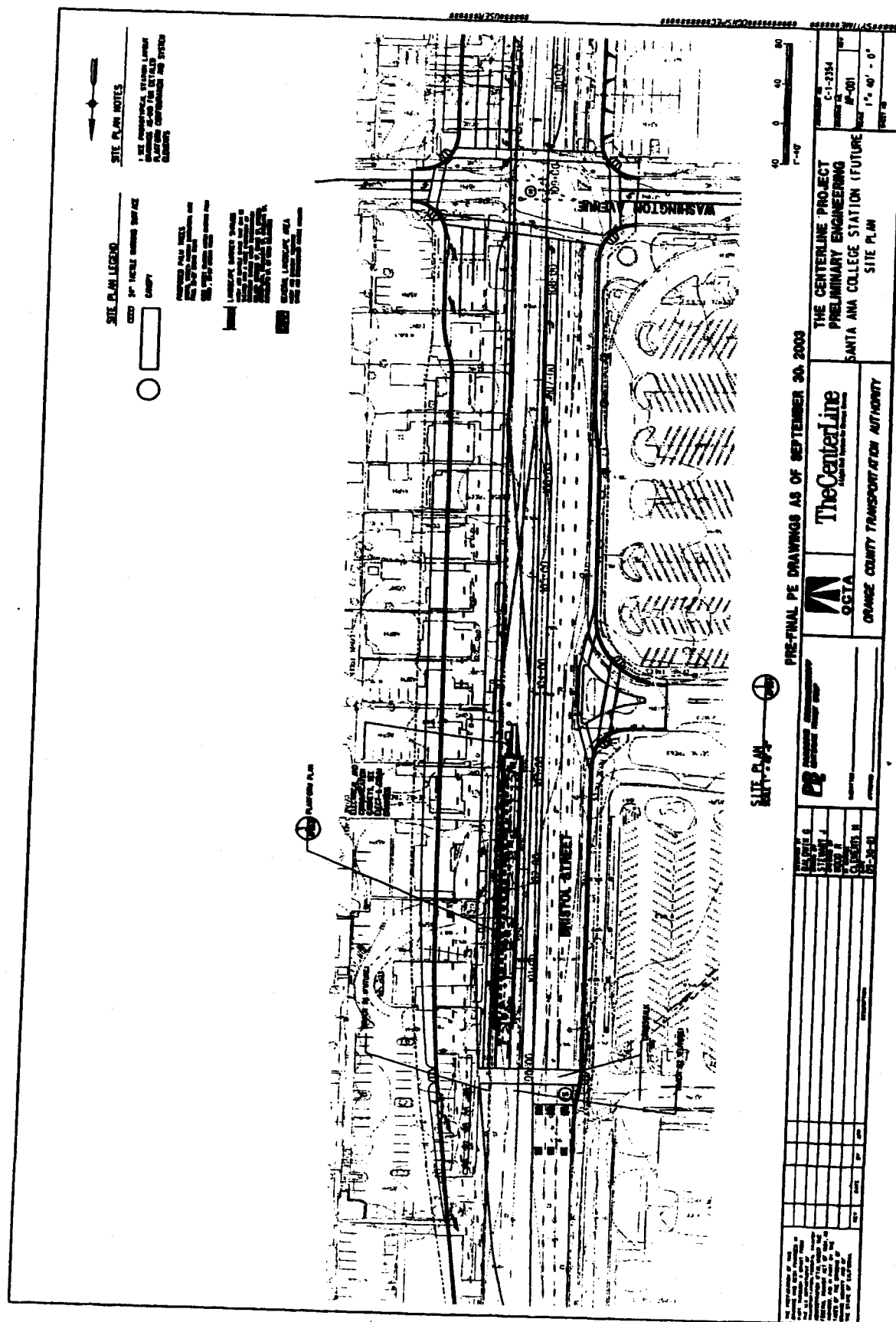
8 - Parking Area



NO SCALE
SOURCE: LPA

I:\LPX430\Master Plan.cdr (2/25/04)

Santa Ana College Master Plan Circulation
Master Plan



INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.:1
NORTH/SOUTH: Bristol Street
EAST/WEST: 17th Street

| Move- ment | EXISTING CONDITIONS | | | | | |
|------------------------------|---------------------|----------|--------|-------|-----------|--------|
| | Lane | Capacity | Volume | | V/C Ratio | |
| | | | AM | PM | AM | PM |
| NBL | 2 | 3,400 | 142 | 237 | 0.04 | 0.07 |
| NBT | 2 | 3,400 | 976 | 1,089 | 0.29 * | 0.32 * |
| NBR | 1 U | 1,700 | 175 | 228 | 0.00 | 0.00 |
| SBL | 2 | 3,400 | 398 | 261 | 0.12 * | 0.08 * |
| SBT | 3 | 5,100 | 1,148 | 1,214 | 0.25 | 0.29 |
| SBR | 0 | 0 | 119 | 270 | 0.00 | 0.00 |
| EBL | 2 | 3,400 | 330 | 342 | 0.10 | 0.10 * |
| EBT | 3 | 5,100 | 1,078 | 860 | 0.23 * | 0.20 |
| EBR | 0 | 0 | 120 | 177 | 0.00 | 0.00 |
| WBL | 2 | 3,400 | 243 | 450 | 0.07 * | 0.13 |
| WBT | 3 | 5,100 | 754 | 1,353 | 0.15 | 0.27 * |
| WBR | 1 U | 1,700 | 307 | 384 | 0.00 | 0.00 |
| N/S Critical Movements | | | | | 0.41 | 0.40 |
| E/W Critical Movements | | | | | 0.30 | 0.37 |
| Right Turn Critical Movement | | | | | 0.00 | 0.00 |
| Clearance Interval | | | | | 0.05 | 0.05 |
| ICU | | | | | 0.76 | 0.82 |
| Level of Service (LOS) | | | | | C | D |

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

LSA ASSOCIATES, INC.

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.:2
NORTH/SOUTH: Bristol Street
EAST/WEST: Washington Avenue

| Move- ment | EXISTING CONDITIONS | | | | | |
|------------------------------|---------------------|----------|--------|-------|-----------|--------|
| | Lane | Capacity | Volume | | V/C Ratio | |
| | | | AM | PM | AM | PM |
| NBL | 1 | 1,700 | 48 | 131 | 0.03 * | 0.08 * |
| NBT | 2 | 3,400 | 1,040 | 1,285 | 0.34 | 0.41 |
| NBR | 0 | 0 | 107 | 103 | 0.00 | 0.00 |
| SBL | 1 | 1,700 | 39 | 91 | 0.02 | 0.05 |
| SBT | 2 | 3,400 | 1,467 | 1,465 | 0.43 * | 0.43 * |
| SBR | 1 U | 1,700 | 90 | 234 | 0.00 | 0.00 |
| EBL | 1 | 1,700 | 170 | 151 | 0.10 * | 0.09 * |
| EBT | 0 | 0 | 0 | 0 | 0.00 | 0.00 |
| EBR | 1 U | 1,700 | 90 | 60 | 0.00 | 0.00 |
| WBL | 1 | 1,700 | 61 | 58 | 0.04 | 0.03 |
| WBT | 1 | 1,700 | 29 | 90 | 0.06 * | 0.08 * |
| WBR | 0 | 0 | 71 | 45 | 0.00 | 0.00 |
| N/S Critical Movements | | | | | 0.46 | 0.51 |
| E/W Critical Movements | | | | | 0.16 | 0.17 |
| Right Turn Critical Movement | | | | | 0.00 | 0.00 |
| Clearance Interval | | | | | 0.05 | 0.05 |
| ICU | | | | | 0.67 | 0.73 |
| Level of Service (LOS) | | | | | B | C |

Notes: ICU - Intersection Capacity Utilization

V/C - Volume to Capacity Ratio

Right Turn Conditions:

- P - Protected right turn movement
- U - Unprotected right turn movement
- N - No right turn on red
- F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO.:3
NORTH/SOUTH: College Avenue
EAST/WEST: 17th Street

| Move- ment | EXISTING CONDITIONS | | | | | |
|------------------------------|---------------------|----------|--------|-------|-----------|--------|
| | Lane | Capacity | Volume | | V/C Ratio | |
| | | | AM | PM | AM | PM |
| NBL | 1 | 1,700 | 58 | 160 | 0.03 | 0.09 |
| NBT | 1 | 1,700 | 79 | 67 | 0.18 * | 0.20 * |
| NBR | 0 | 0 | 230 | 272 | 0.00 | 0.00 |
| SBL | 1 | 1,700 | 51 | 109 | 0.03 * | 0.06 * |
| SBT | 1 | 1,700 | 51 | 76 | 0.03 | 0.04 |
| SBR | 1 U | 1,700 | 41 | 87 | 0.00 | 0.00 |
| EBL | 1 | 1,700 | 116 | 91 | 0.07 | 0.05 * |
| EBT | 3 | 5,100 | 1,105 | 764 | 0.24 * | 0.18 |
| EBR | 0 | 0 | 102 | 155 | 0.00 | 0.00 |
| WBL | 1 | 1,700 | 105 | 189 | 0.06 * | 0.11 |
| WBT | 3 | 5,100 | 725 | 1,609 | 0.16 | 0.32 * |
| WBR | 0 | 0 | 103 | 35 | 0.00 | 0.00 |
| N/S Critical Movements | | | | | 0.21 | 0.26 |
| E/W Critical Movements | | | | | 0.30 | 0.37 |
| Right Turn Critical Movement | | | | | 0.00 | 0.00 |
| Clearance Interval | | | | | 0.05 | 0.05 |
| ICU | | | | | 0.56 | 0.68 |
| Level of Service (LOS) | | | | | A | B |

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, February 05, 2004

City: Santa Ana

Project #: 04-1106-001

Location: College Ave. btwn. 15th St. & Campus Dwy.

| AM Period | NB | SB | EB | WB | PM Period | NB | SB | EB | WB |
|---------------------|-------------|-------------|----------|----------|-------------|-------------|-------------|----------|-------------|
| 12:00-12:15 | 5 | 4 | | | 12:00-12:15 | 101 | 62 | | |
| 12:15-12:30 | 2 | 4 | | | 12:15-12:30 | 105 | 59 | | |
| 12:30-12:45 | 7 | 3 | | | 12:30-12:45 | 87 | 52 | | |
| 12:45-1:00 | 1 | 15 | 2 | 13 | 12:45-1:00 | 83 | 376 | 52 | 225 |
| | | | | | | | | | 601 |
| 1:00-1:15 | 3 | 1 | | | 1:00-1:15 | 75 | 48 | | |
| 1:15-1:30 | 4 | 0 | | | 1:15-1:30 | 78 | 55 | | |
| 1:30-1:45 | 3 | 2 | | | 1:30-1:45 | 63 | 58 | | |
| 1:45-2:00 | 3 | 13 | 3 | 6 | 1:45-2:00 | 68 | 284 | 62 | 223 |
| | | | | | | | | | 507 |
| 2:00-2:15 | 1 | 1 | | | 2:00-2:15 | 58 | 71 | | |
| 2:15-2:30 | 3 | 1 | | | 2:15-2:30 | 96 | 45 | | |
| 2:30-2:45 | 3 | 2 | | | 2:30-2:45 | 86 | 46 | | |
| 2:45-3:00 | 1 | 8 | 1 | 5 | 2:45-3:00 | 98 | 338 | 83 | 245 |
| | | | | | | | | | 583 |
| 3:00-3:15 | 1 | 0 | | | 3:00-3:15 | 87 | 67 | | |
| 3:15-3:30 | 3 | 1 | | | 3:15-3:30 | 109 | 59 | | |
| 3:30-3:45 | 0 | 0 | | | 3:30-3:45 | 102 | 53 | | |
| 3:45-4:00 | 1 | 5 | 1 | 2 | 3:45-4:00 | 101 | 399 | 46 | 225 |
| | | | | | | | | | 624 |
| 4:00-4:15 | 0 | 1 | | | 4:00-4:15 | 140 | 74 | | |
| 4:15-4:30 | 6 | 1 | | | 4:15-4:30 | 114 | 91 | | |
| 4:30-4:45 | 4 | 2 | | | 4:30-4:45 | 101 | 86 | | |
| 4:45-5:00 | 7 | 17 | 1 | 5 | 4:45-5:00 | 112 | 467 | 91 | 342 |
| | | | | | | | | | 809 |
| 5:00-5:15 | 7 | 2 | | | 5:00-5:15 | 114 | 82 | | |
| 5:15-5:30 | 11 | 12 | | | 5:15-5:30 | 87 | 107 | | |
| 5:30-5:45 | 22 | 7 | | | 5:30-5:45 | 139 | 90 | | |
| 5:45-6:00 | 33 | 73 | 7 | 28 | 5:45-6:00 | 110 | 450 | 114 | 393 |
| | | | | | | | | | 843 |
| 6:00-6:15 | 21 | 15 | | | 6:00-6:15 | 137 | 113 | | |
| 6:15-6:30 | 22 | 7 | | | 6:15-6:30 | 133 | 101 | | |
| 6:30-6:45 | 30 | 14 | | | 6:30-6:45 | 132 | 134 | | |
| 6:45-7:00 | 47 | 120 | 14 | 50 | 6:45-7:00 | 97 | 499 | 147 | 495 |
| | | | | | | | | | 994 |
| 7:00-7:15 | 51 | 22 | | | 7:00-7:15 | 131 | 115 | | |
| 7:15-7:30 | 75 | 55 | | | 7:15-7:30 | 80 | 65 | | |
| 7:30-7:45 | 102 | 64 | | | 7:30-7:45 | 86 | 43 | | |
| 7:45-8:00 | 109 | 337 | 74 | 215 | 7:45-8:00 | 84 | 381 | 60 | 283 |
| | | | | | | | | | 664 |
| 8:00-8:15 | 94 | 75 | | | 8:00-8:15 | 78 | 46 | | |
| 8:15-8:30 | 77 | 60 | | | 8:15-8:30 | 59 | 40 | | |
| 8:30-8:45 | 63 | 52 | | | 8:30-8:45 | 65 | 40 | | |
| 8:45-9:00 | 62 | 296 | 80 | 267 | 8:45-9:00 | 89 | 291 | 34 | 160 |
| | | | | | | | | | 451 |
| 9:00-9:15 | 51 | 75 | | | 9:00-9:15 | 113 | 36 | | |
| 9:15-9:30 | 30 | 48 | | | 9:15-9:30 | 106 | 38 | | |
| 9:30-9:45 | 48 | 36 | | | 9:30-9:45 | 99 | 33 | | |
| 9:45-10:00 | 45 | 174 | 36 | 195 | 9:45-10:00 | 185 | 503 | 16 | 123 |
| | | | | | | | | | 626 |
| 10:00-10:15 | 56 | 42 | | | 10:00-10:15 | 131 | 22 | | |
| 10:15-10:30 | 49 | 51 | | | 10:15-10:30 | 48 | 9 | | |
| 10:30-10:45 | 49 | 40 | | | 10:30-10:45 | 17 | 11 | | |
| 10:45-11:00 | 48 | 202 | 44 | 177 | 10:45-11:00 | 10 | 206 | 10 | 52 |
| | | | | | | | | | 258 |
| 11:00-11:15 | 76 | 45 | | | 11:00-11:15 | 4 | 8 | | |
| 11:15-11:30 | 83 | 52 | | | 11:15-11:30 | 7 | 6 | | |
| 11:30-11:45 | 75 | 53 | | | 11:30-11:45 | 8 | 4 | | |
| 11:45-12:00 | 86 | 320 | 67 | 217 | 11:45-12:00 | 3 | 22 | 5 | 23 |
| | | | | | | | | | 45 |
| Total Vol. | 1580 | 1180 | 0 | 0 | 2760 | 4216 | 2789 | 0 | 0 |
| Daily Totals | | | | | | 5796 | 3969 | 0 | 0 |
| | | | | | | | | | 9765 |

Average Daily Traffic Volumes
Prepared by: Southland Car Counters

| Volumes for: Thursday, February 05, 2004 | | | | | City: Santa Ana | | | | | Project #: 04-1106-002 | | | | |
|---|----|----|----|------|-----------------|------|-----|-----|-----|------------------------|------|------|--|--|
| Location: Washington Ave. btwn. Pacific Ave.(dwy.) & College Ave. | | | | | | | | | | | | | | |
| AM Period | NB | SB | EB | WB | PM Period | NB | SB | EB | WB | | | | | |
| 12:00-12:15 | | | 2 | 14 | 12:00-12:15 | | | 24 | 76 | | | | | |
| 12:15-12:30 | | | 4 | 9 | 12:15-12:30 | | | 26 | 103 | | | | | |
| 12:30-12:45 | | | 3 | 13 | 12:30-12:45 | | | 49 | 77 | | | | | |
| 12:45-1:00 | | | 1 | 10 | 5 | 41 | 51 | 21 | 120 | 75 | 331 | 451 | | |
| 1:00-1:15 | | | 0 | 3 | 1:00-1:15 | | | 32 | 92 | | | | | |
| 1:15-1:30 | | | 2 | 7 | 1:15-1:30 | | | 34 | 83 | | | | | |
| 1:30-1:45 | | | 1 | 7 | 1:30-1:45 | | | 50 | 98 | | | | | |
| 1:45-2:00 | | | 1 | 4 | 3 | 20 | 24 | 38 | 154 | 94 | 367 | 521 | | |
| 2:00-2:15 | | | 0 | 2 | 2:00-2:15 | | | 34 | 78 | | | | | |
| 2:15-2:30 | | | 1 | 2 | 2:15-2:30 | | | 33 | 80 | | | | | |
| 2:30-2:45 | | | 2 | 6 | 2:30-2:45 | | | 30 | 90 | | | | | |
| 2:45-3:00 | | | 1 | 4 | 5 | 15 | 19 | 63 | 160 | 105 | 353 | 513 | | |
| 3:00-3:15 | | | 2 | 6 | 3:00-3:15 | | | 61 | 102 | | | | | |
| 3:15-3:30 | | | 1 | 3 | 3:15-3:30 | | | 48 | 137 | | | | | |
| 3:30-3:45 | | | 2 | 5 | 3:30-3:45 | | | 58 | 125 | | | | | |
| 3:45-4:00 | | | 2 | 7 | 4 | 18 | 25 | 44 | 211 | 127 | 491 | 702 | | |
| 4:00-4:15 | | | 2 | 3 | 4:00-4:15 | | | 53 | 131 | | | | | |
| 4:15-4:30 | | | 0 | 1 | 4:15-4:30 | | | 79 | 108 | | | | | |
| 4:30-4:45 | | | 4 | 6 | 4:30-4:45 | | | 71 | 112 | | | | | |
| 4:45-5:00 | | | 18 | 24 | 13 | 23 | 47 | 78 | 281 | 155 | 506 | 787 | | |
| 5:00-5:15 | | | 10 | 18 | 5:00-5:15 | | | 77 | 134 | | | | | |
| 5:15-5:30 | | | 24 | 19 | 5:15-5:30 | | | 86 | 131 | | | | | |
| 5:30-5:45 | | | 11 | 19 | 5:30-5:45 | | | 78 | 141 | | | | | |
| 5:45-6:00 | | | 49 | 94 | 20 | 76 | 170 | 79 | 320 | 156 | 562 | 882 | | |
| 6:00-6:15 | | | 42 | 27 | 6:00-6:15 | | | 96 | 156 | | | | | |
| 6:15-6:30 | | | 40 | 22 | 6:15-6:30 | | | 84 | 164 | | | | | |
| 6:30-6:45 | | | 41 | 21 | 6:30-6:45 | | | 93 | 159 | | | | | |
| 6:45-7:00 | | | 64 | 187 | 35 | 105 | 292 | 100 | 373 | 169 | 648 | 1021 | | |
| 7:00-7:15 | | | 44 | 44 | 7:00-7:15 | | | 77 | 157 | | | | | |
| 7:15-7:30 | | | 85 | 65 | 7:15-7:30 | | | 42 | 103 | | | | | |
| 7:30-7:45 | | | 83 | 90 | 7:30-7:45 | | | 45 | 82 | | | | | |
| 7:45-8:00 | | | 93 | 305 | 95 | 294 | 599 | 60 | 224 | 64 | 406 | 630 | | |
| 8:00-8:15 | | | 70 | 108 | 8:00-8:15 | | | 38 | 80 | | | | | |
| 8:15-8:30 | | | 80 | 85 | 8:15-8:30 | | | 29 | 63 | | | | | |
| 8:30-8:45 | | | 45 | 53 | 8:30-8:45 | | | 25 | 52 | | | | | |
| 8:45-9:00 | | | 37 | 232 | 62 | 308 | 540 | 31 | 123 | 48 | 243 | 366 | | |
| 9:00-9:15 | | | 55 | 54 | 9:00-9:15 | | | 30 | 71 | | | | | |
| 9:15-9:30 | | | 43 | 62 | 9:15-9:30 | | | 42 | 69 | | | | | |
| 9:30-9:45 | | | 20 | 57 | 9:30-9:45 | | | 34 | 67 | | | | | |
| 9:45-10:00 | | | 22 | 140 | 50 | 223 | 363 | 27 | 133 | 92 | 299 | 432 | | |
| 10:00-10:15 | | | 24 | 61 | 10:00-10:15 | | | 27 | 83 | | | | | |
| 10:15-10:30 | | | 26 | 51 | 10:15-10:30 | | | 19 | 55 | | | | | |
| 10:30-10:45 | | | 35 | 72 | 10:30-10:45 | | | 17 | 34 | | | | | |
| 10:45-11:00 | | | 25 | 110 | 72 | 256 | 366 | 10 | 73 | 25 | 197 | 270 | | |
| 11:00-11:15 | | | 28 | 69 | 11:00-11:15 | | | 11 | 27 | | | | | |
| 11:15-11:30 | | | 27 | 55 | 11:15-11:30 | | | 10 | 14 | | | | | |
| 11:30-11:45 | | | 23 | 54 | 11:30-11:45 | | | 0 | 3 | | | | | |
| 11:45-12:00 | | | 29 | 107 | 67 | 245 | 352 | 1 | 22 | 7 | 51 | 73 | | |
| Total Vol. | 0 | 0 | | 1224 | 1624 | 2848 | | 0 | 0 | 2194 | 4454 | 6648 | | |
| Daily Totals | | | | | | | | 0 | 0 | 3418 | 6078 | 9496 | | |

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, February 05, 2004

City: Santa Ana

Project #: 04-1106-003

Location: Washington Ave. btwn. Pacific Ave.(dwy.) & Bristol St.

| AM Period | NB | SB | EB | WB | PM Period | NB | SB | EB | WB |
|--------------|----|----|------|------|-------------|----|----|------|------|
| 12:00-12:15 | | | 1 | 6 | 12:00-12:15 | | | 54 | 43 |
| 12:15-12:30 | | | 6 | 4 | 12:15-12:30 | | | 53 | 52 |
| 12:30-12:45 | | | 2 | 9 | 12:30-12:45 | | | 49 | 46 |
| 12:45-1:00 | | | 1 | 10 | 12:45-1:00 | | | 36 | 192 |
| 1:00-1:15 | | | 0 | 2 | 1:00-1:15 | | | 40 | 49 |
| 1:15-1:30 | | | 3 | 9 | 1:15-1:30 | | | 47 | 33 |
| 1:30-1:45 | | | 1 | 4 | 1:30-1:45 | | | 44 | 43 |
| 1:45-2:00 | | | 1 | 5 | 1:45-2:00 | | | 31 | 162 |
| 2:00-2:15 | | | 1 | 2 | 2:00-2:15 | | | 49 | 44 |
| 2:15-2:30 | | | 3 | 1 | 2:15-2:30 | | | 46 | 48 |
| 2:30-2:45 | | | 2 | 4 | 2:30-2:45 | | | 52 | 48 |
| 2:45-3:00 | | | 1 | 7 | 2:45-3:00 | | | 74 | 221 |
| 3:00-3:15 | | | 2 | 5 | 3:00-3:15 | | | 58 | 74 |
| 3:15-3:30 | | | 2 | 3 | 3:15-3:30 | | | 38 | 76 |
| 3:30-3:45 | | | 3 | 0 | 3:30-3:45 | | | 50 | 85 |
| 3:45-4:00 | | | 1 | 8 | 3:45-4:00 | | | 46 | 192 |
| 4:00-4:15 | | | 2 | 0 | 4:00-4:15 | | | 63 | 86 |
| 4:15-4:30 | | | 1 | 1 | 4:15-4:30 | | | 64 | 90 |
| 4:30-4:45 | | | 7 | 4 | 4:30-4:45 | | | 46 | 94 |
| 4:45-5:00 | | | 12 | 22 | 4:45-5:00 | | | 59 | 232 |
| 5:00-5:15 | | | 17 | 2 | 5:00-5:15 | | | 52 | 108 |
| 5:15-5:30 | | | 17 | 8 | 5:15-5:30 | | | 50 | 119 |
| 5:30-5:45 | | | 29 | 10 | 5:30-5:45 | | | 45 | 136 |
| 5:45-6:00 | | | 40 | 103 | 5:45-6:00 | | | 57 | 204 |
| 6:00-6:15 | | | 36 | 17 | 6:00-6:15 | | | 71 | 124 |
| 6:15-6:30 | | | 27 | 12 | 6:15-6:30 | | | 68 | 100 |
| 6:30-6:45 | | | 34 | 10 | 6:30-6:45 | | | 59 | 102 |
| 6:45-7:00 | | | 44 | 141 | 6:45-7:00 | | | 72 | 270 |
| 7:00-7:15 | | | 36 | 34 | 7:00-7:15 | | | 84 | 82 |
| 7:15-7:30 | | | 77 | 34 | 7:15-7:30 | | | 54 | 52 |
| 7:30-7:45 | | | 64 | 34 | 7:30-7:45 | | | 43 | 52 |
| 7:45-8:00 | | | 79 | 256 | 7:45-8:00 | | | 45 | 226 |
| 8:00-8:15 | | | 65 | 48 | 8:00-8:15 | | | 50 | 47 |
| 8:15-8:30 | | | 42 | 42 | 8:15-8:30 | | | 38 | 35 |
| 8:30-8:45 | | | 38 | 41 | 8:30-8:45 | | | 50 | 22 |
| 8:45-9:00 | | | 35 | 180 | 8:45-9:00 | | | 44 | 182 |
| 9:00-9:15 | | | 41 | 49 | 9:00-9:15 | | | 89 | 30 |
| 9:15-9:30 | | | 28 | 33 | 9:15-9:30 | | | 57 | 27 |
| 9:30-9:45 | | | 26 | 27 | 9:30-9:45 | | | 63 | 42 |
| 9:45-10:00 | | | 32 | 127 | 9:45-10:00 | | | 112 | 321 |
| 10:00-10:15 | | | 33 | 28 | 10:00-10:15 | | | 65 | 27 |
| 10:15-10:30 | | | 33 | 32 | 10:15-10:30 | | | 40 | 27 |
| 10:30-10:45 | | | 37 | 31 | 10:30-10:45 | | | 16 | 18 |
| 10:45-11:00 | | | 34 | 137 | 10:45-11:00 | | | 9 | 130 |
| 11:00-11:15 | | | 35 | 38 | 11:00-11:15 | | | 11 | 11 |
| 11:15-11:30 | | | 53 | 24 | 11:15-11:30 | | | 8 | 12 |
| 11:30-11:45 | | | 41 | 33 | 11:30-11:45 | | | 6 | 5 |
| 11:45-12:00 | | | 39 | 168 | 11:45-12:00 | | | 6 | 31 |
| Total Vol. | 0 | 0 | 1164 | 907 | | 0 | 0 | 2363 | 2753 |
| Daily Totals | | | | 2071 | | 0 | 0 | 3527 | 5116 |
| | | | | | | | | | 7187 |

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Project #: 04-1106-004

Volumes for: Thursday, February 05, 2004

City: Santa Ana

Location: Campus Dwy. E/o College Ave

| AM Period | NB | SB | EB | WB | PM Period | NB | SB | EB | WB |
|--------------|----|----|-----|-----|-------------|----|----|------|------|
| 12:00-12:15 | | | 0 | 0 | 12:00-12:15 | | | 23 | 46 |
| 12:15-12:30 | | | 0 | 0 | 12:15-12:30 | | | 22 | 29 |
| 12:30-12:45 | | | 0 | 0 | 12:30-12:45 | | | 15 | 28 |
| 12:45-1:00 | | | 0 | 0 | 12:45-1:00 | | | 9 | 69 |
| 1:00-1:15 | | | 0 | 0 | 1:00-1:15 | | | 17 | 36 |
| 1:15-1:30 | | | 0 | 0 | 1:15-1:30 | | | 22 | 38 |
| 1:30-1:45 | | | 0 | 0 | 1:30-1:45 | | | 7 | 45 |
| 1:45-2:00 | | | 0 | 0 | 1:45-2:00 | | | 5 | 51 |
| 2:00-2:15 | | | 0 | 0 | 2:00-2:15 | | | 10 | 51 |
| 2:15-2:30 | | | 0 | 0 | 2:15-2:30 | | | 7 | 29 |
| 2:30-2:45 | | | 0 | 0 | 2:30-2:45 | | | 8 | 44 |
| 2:45-3:00 | | | 0 | 0 | 2:45-3:00 | | | 6 | 31 |
| 3:00-3:15 | | | 0 | 0 | 3:00-3:15 | | | 9 | 39 |
| 3:15-3:30 | | | 1 | 1 | 3:15-3:30 | | | 11 | 18 |
| 3:30-3:45 | | | 1 | 1 | 3:30-3:45 | | | 25 | 16 |
| 3:45-4:00 | | | 2 | 4 | 3:45-4:00 | | | 24 | 69 |
| 4:00-4:15 | | | 1 | 2 | 4:00-4:15 | | | 56 | 73 |
| 4:15-4:30 | | | 2 | 0 | 4:15-4:30 | | | 74 | 61 |
| 4:30-4:45 | | | 6 | 0 | 4:30-4:45 | | | 58 | 54 |
| 4:45-5:00 | | | 6 | 15 | 4:45-5:00 | | | 78 | 266 |
| 5:00-5:15 | | | 7 | 1 | 5:00-5:15 | | | 128 | 79 |
| 5:15-5:30 | | | 10 | 8 | 5:15-5:30 | | | 67 | 84 |
| 5:30-5:45 | | | 9 | 12 | 5:30-5:45 | | | 21 | 39 |
| 5:45-6:00 | | | 23 | 49 | 5:45-6:00 | | | 11 | 227 |
| 6:00-6:15 | | | 63 | 15 | 6:00-6:15 | | | 4 | 39 |
| 6:15-6:30 | | | 56 | 14 | 6:15-6:30 | | | 6 | 46 |
| 6:30-6:45 | | | 25 | 25 | 6:30-6:45 | | | 4 | 31 |
| 6:45-7:00 | | | 44 | 188 | 6:45-7:00 | | | 6 | 20 |
| 7:00-7:15 | | | 71 | 16 | 7:00-7:15 | | | 3 | 70 |
| 7:15-7:30 | | | 51 | 8 | 7:15-7:30 | | | 9 | 135 |
| 7:30-7:45 | | | 21 | 18 | 7:30-7:45 | | | 5 | 100 |
| 7:45-8:00 | | | 17 | 160 | 7:45-8:00 | | | 6 | 23 |
| 8:00-8:15 | | | 23 | 15 | 8:00-8:15 | | | 7 | 206 |
| 8:15-8:30 | | | 23 | 16 | 8:15-8:30 | | | 2 | 133 |
| 8:30-8:45 | | | 18 | 14 | 8:30-8:45 | | | 2 | 32 |
| 8:45-9:00 | | | 26 | 90 | 8:45-9:00 | | | 1 | 12 |
| 9:00-9:15 | | | 30 | 23 | 9:00-9:15 | | | 2 | 3 |
| 9:15-9:30 | | | 36 | 46 | 9:15-9:30 | | | 0 | 0 |
| 9:30-9:45 | | | 21 | 47 | 9:30-9:45 | | | 0 | 0 |
| 9:45-10:00 | | | 27 | 114 | 9:45-10:00 | | | 0 | 2 |
| 10:00-10:15 | | | 30 | 64 | 10:00-10:15 | | | 0 | 0 |
| 10:15-10:30 | | | 33 | 71 | 10:15-10:30 | | | 0 | 0 |
| 10:30-10:45 | | | 15 | 62 | 10:30-10:45 | | | 0 | 0 |
| 10:45-11:00 | | | 10 | 88 | 10:45-11:00 | | | 0 | 0 |
| 11:00-11:15 | | | 19 | 34 | 11:00-11:15 | | | 0 | 0 |
| 11:15-11:30 | | | 23 | 43 | 11:15-11:30 | | | 0 | 0 |
| 11:30-11:45 | | | 18 | 36 | 11:30-11:45 | | | 0 | 0 |
| 11:45-12:00 | | | 9 | 69 | 11:45-12:00 | | | 0 | 0 |
| Total Vol. | 0 | 0 | 777 | 803 | 1580 | 0 | 0 | 770 | 1989 |
| Daily Totals | | | | | | 0 | 0 | 1547 | 2792 |

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, February 05, 2004

City: Santa Ana

Project #: 04-1106-005

Location: Campus Dwy. N/O Washington Ave/Pacific Ave

| AM Period | NB | SB | EB | WB | PM Period | NB | SB | EB | WB |
|--------------|-----|-----|----|-----|-------------|------|------|-----|------|
| 12:00-12:15 | 0 | 0 | | | 12:00-12:15 | 24 | 48 | | |
| 12:15-12:30 | 0 | 0 | | | 12:15-12:30 | 16 | 45 | | |
| 12:30-12:45 | 0 | 0 | | | 12:30-12:45 | 18 | 23 | | |
| 12:45-1:00 | 0 | 0 | 0 | 0 | 12:45-1:00 | 9 | 67 | 20 | 136 |
| | | | | | | | | | 203 |
| 1:00-1:15 | 0 | 0 | | | 1:00-1:15 | 13 | 26 | | |
| 1:15-1:30 | 0 | 0 | | | 1:15-1:30 | 7 | 18 | | |
| 1:30-1:45 | 0 | 0 | | | 1:30-1:45 | 14 | 20 | | |
| 1:45-2:00 | 0 | 0 | 0 | 0 | 1:45-2:00 | 11 | 45 | 20 | 84 |
| | | | | | | | | | 129 |
| 2:00-2:15 | 0 | 0 | | | 2:00-2:15 | 12 | 15 | | |
| 2:15-2:30 | 0 | 0 | | | 2:15-2:30 | 14 | 15 | | |
| 2:30-2:45 | 0 | 0 | | | 2:30-2:45 | 13 | 32 | | |
| 2:45-3:00 | 0 | 0 | 0 | 0 | 2:45-3:00 | 15 | 54 | 28 | 90 |
| | | | | | | | | | 144 |
| 3:00-3:15 | 0 | 0 | | | 3:00-3:15 | 14 | 20 | | |
| 3:15-3:30 | 0 | 0 | | | 3:15-3:30 | 13 | 18 | | |
| 3:30-3:45 | 0 | 0 | | | 3:30-3:45 | 13 | 11 | | |
| 3:45-4:00 | 0 | 0 | 0 | 0 | 3:45-4:00 | 10 | 50 | 17 | 66 |
| | | | | | | | | | 116 |
| 4:00-4:15 | 0 | 0 | | | 4:00-4:15 | 5 | 15 | | |
| 4:15-4:30 | 0 | 0 | | | 4:15-4:30 | 9 | 22 | | |
| 4:30-4:45 | 0 | 0 | | | 4:30-4:45 | 13 | 12 | | |
| 4:45-5:00 | 0 | 0 | 0 | 0 | 4:45-5:00 | 3 | 30 | 14 | 63 |
| | | | | | | | | | 93 |
| 5:00-5:15 | 1 | 2 | | | 5:00-5:15 | 12 | 8 | | |
| 5:15-5:30 | 1 | 0 | | | 5:15-5:30 | 47 | 45 | | |
| 5:30-5:45 | 1 | 3 | | | 5:30-5:45 | 47 | 33 | | |
| 5:45-6:00 | 2 | 5 | 1 | 6 | 5:45-6:00 | 69 | 175 | 38 | 124 |
| | | | | 11 | | | | | 299 |
| 6:00-6:15 | 3 | 1 | | | 6:00-6:15 | 76 | 55 | | |
| 6:15-6:30 | 2 | 2 | | | 6:15-6:30 | 65 | 46 | | |
| 6:30-6:45 | 1 | 2 | | | 6:30-6:45 | 82 | 55 | | |
| 6:45-7:00 | 1 | 7 | 1 | 6 | 6:45-7:00 | 124 | 347 | 79 | 235 |
| | | | | 13 | | | | | 582 |
| 7:00-7:15 | 9 | 3 | | | 7:00-7:15 | 70 | 90 | | |
| 7:15-7:30 | 10 | 5 | | | 7:15-7:30 | 22 | 46 | | |
| 7:30-7:45 | 28 | 14 | | | 7:30-7:45 | 10 | 20 | | |
| 7:45-8:00 | 50 | 97 | 37 | 59 | 7:45-8:00 | 4 | 106 | 18 | 174 |
| | | | | 156 | | | | | 280 |
| 8:00-8:15 | 56 | 30 | | | 8:00-8:15 | 8 | 46 | | |
| 8:15-8:30 | 27 | 9 | | | 8:15-8:30 | 3 | 24 | | |
| 8:30-8:45 | 28 | 12 | | | 8:30-8:45 | 4 | 42 | | |
| 8:45-9:00 | 63 | 174 | 24 | 75 | 8:45-9:00 | 9 | 24 | 50 | 162 |
| | | | | 249 | | | | | 186 |
| 9:00-9:15 | 62 | 27 | | | 9:00-9:15 | 10 | 83 | | |
| 9:15-9:30 | 18 | 11 | | | 9:15-9:30 | 5 | 56 | | |
| 9:30-9:45 | 19 | 18 | | | 9:30-9:45 | 8 | 63 | | |
| 9:45-10:00 | 16 | 115 | 11 | 67 | 9:45-10:00 | 8 | 31 | 129 | 331 |
| | | | | 182 | | | | | 362 |
| 10:00-10:15 | 13 | 12 | | | 10:00-10:15 | 7 | 83 | | |
| 10:15-10:30 | 13 | 8 | | | 10:15-10:30 | 0 | 25 | | |
| 10:30-10:45 | 16 | 11 | | | 10:30-10:45 | 1 | 11 | | |
| 10:45-11:00 | 20 | 62 | 18 | 49 | 10:45-11:00 | 0 | 8 | 2 | 121 |
| | | | | 111 | | | | | 129 |
| 11:00-11:15 | 15 | 18 | | | 11:00-11:15 | 2 | 1 | | |
| 11:15-11:30 | 15 | 30 | | | 11:15-11:30 | 0 | 0 | | |
| 11:30-11:45 | 12 | 20 | | | 11:30-11:45 | 0 | 0 | | |
| 11:45-12:00 | 16 | 58 | 23 | 91 | 11:45-12:00 | 0 | 2 | 0 | 1 |
| | | | | 149 | | | | | 3 |
| Total Vol. | 518 | 353 | 0 | 0 | 871 | 939 | 1587 | 0 | 0 |
| Daily Totals | | | | | | 1457 | 1940 | 0 | 0 |
| | | | | | | | | 0 | 3397 |

Average Daily Traffic Volumes
 Prepared by: Southland Car Counters

Project #: 04-1106-006

Volumes for: Thursday, February 05, 2004

City: Santa Ana

Location: Campus Dwy. W/o Bristol St

| AM Period | NB | SB | EB | WB | PM Period | NB | SB | EB | WB |
|--------------|----|----|-----|-----|-------------|----|----|------|------|
| 12:00-12:15 | | | 0 | 0 | 12:00-12:15 | | | 36 | 37 |
| 12:15-12:30 | | | 0 | 0 | 12:15-12:30 | | | 48 | 27 |
| 12:30-12:45 | | | 0 | 0 | 12:30-12:45 | | | 21 | 31 |
| 12:45-1:00 | | | 0 | 0 | 12:45-1:00 | | | 13 | 118 |
| 1:00-1:15 | | | 0 | 0 | 1:00-1:15 | | | 18 | 24 |
| 1:15-1:30 | | | 0 | 0 | 1:15-1:30 | | | 17 | 21 |
| 1:30-1:45 | | | 0 | 0 | 1:30-1:45 | | | 13 | 17 |
| 1:45-2:00 | | | 0 | 0 | 1:45-2:00 | | | 9 | 57 |
| 2:00-2:15 | | | 0 | 0 | 2:00-2:15 | | | 7 | 20 |
| 2:15-2:30 | | | 0 | 0 | 2:15-2:30 | | | 16 | 24 |
| 2:30-2:45 | | | 0 | 0 | 2:30-2:45 | | | 8 | 15 |
| 2:45-3:00 | | | 0 | 0 | 2:45-3:00 | | | 8 | 39 |
| 3:00-3:15 | | | 0 | 0 | 3:00-3:15 | | | 11 | 20 |
| 3:15-3:30 | | | 0 | 0 | 3:15-3:30 | | | 25 | 10 |
| 3:30-3:45 | | | 0 | 0 | 3:30-3:45 | | | 10 | 19 |
| 3:45-4:00 | | | 0 | 0 | 3:45-4:00 | | | 11 | 57 |
| 4:00-4:15 | | | 0 | 0 | 4:00-4:15 | | | 11 | 9 |
| 4:15-4:30 | | | 0 | 0 | 4:15-4:30 | | | 9 | 18 |
| 4:30-4:45 | | | 0 | 0 | 4:30-4:45 | | | 10 | 10 |
| 4:45-5:00 | | | 0 | 0 | 4:45-5:00 | | | 4 | 34 |
| 5:00-5:15 | | | 0 | 0 | 5:00-5:15 | | | 14 | 78 |
| 5:15-5:30 | | | 2 | 1 | 5:15-5:30 | | | 15 | 58 |
| 5:30-5:45 | | | 2 | 2 | 5:30-5:45 | | | 12 | 79 |
| 5:45-6:00 | | | 0 | 4 | 5:45-6:00 | | | 23 | 64 |
| 6:00-6:15 | | | 0 | 1 | 6:00-6:15 | | | 32 | 129 |
| 6:15-6:30 | | | 0 | 2 | 6:15-6:30 | | | 15 | 135 |
| 6:30-6:45 | | | 0 | 3 | 6:30-6:45 | | | 18 | 146 |
| 6:45-7:00 | | | 2 | 2 | 6:45-7:00 | | | 25 | 90 |
| 7:00-7:15 | | | 1 | 11 | 7:00-7:15 | | | 30 | 116 |
| 7:15-7:30 | | | 2 | 19 | 7:15-7:30 | | | 19 | 40 |
| 7:30-7:45 | | | 1 | 26 | 7:30-7:45 | | | 15 | 15 |
| 7:45-8:00 | | | 11 | 15 | 7:45-8:00 | | | 18 | 82 |
| 8:00-8:15 | | | 7 | 52 | 8:00-8:15 | | | 38 | 14 |
| 8:15-8:30 | | | 2 | 39 | 8:15-8:30 | | | 12 | 4 |
| 8:30-8:45 | | | 3 | 63 | 8:30-8:45 | | | 22 | 7 |
| 8:45-9:00 | | | 6 | 18 | 8:45-9:00 | | | 26 | 98 |
| 9:00-9:15 | | | 8 | 78 | 9:00-9:15 | | | 39 | 11 |
| 9:15-9:30 | | | 9 | 37 | 9:15-9:30 | | | 35 | 13 |
| 9:30-9:45 | | | 9 | 32 | 9:30-9:45 | | | 62 | 8 |
| 9:45-10:00 | | | 5 | 31 | 9:45-10:00 | | | 73 | 209 |
| 10:00-10:15 | | | 7 | 25 | 10:00-10:15 | | | 59 | 6 |
| 10:15-10:30 | | | 11 | 22 | 10:15-10:30 | | | 14 | 3 |
| 10:30-10:45 | | | 11 | 22 | 10:30-10:45 | | | 5 | 0 |
| 10:45-11:00 | | | 8 | 37 | 10:45-11:00 | | | 6 | 84 |
| 11:00-11:15 | | | 17 | 44 | 11:00-11:15 | | | 1 | 0 |
| 11:15-11:30 | | | 37 | 16 | 11:15-11:30 | | | 0 | 0 |
| 11:30-11:45 | | | 21 | 16 | 11:30-11:45 | | | 0 | 0 |
| 11:45-12:00 | | | 25 | 100 | 11:45-12:00 | | | 0 | 1 |
| Total Vol. | 0 | 0 | 207 | 727 | | 0 | 0 | 933 | 1569 |
| Daily Totals | | | | 934 | | 0 | 0 | 1140 | 2296 |
| | | | | | | | | | 3436 |

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Bristol

DATE: 2/5/2004

LOCATION: City of Santa Ana

E-W STREET: 17th St.

DAY: THURSDAY

PROJECT# 04-1105-001

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|-----------------|------------|------------|-----------|------------|------------|-----------|-----------|------------|-----------|-----------|------------|-----------|----------------|
| LANES: | NL 2 | NT 2 | NR 1 | SL 2 | ST 3 | SR 0 | EL 2 | ET 3 | ER 0 | WL 2 | WT 3 | WR 1 | TOTAL |
| 6:00 AM | | | | | | | | | | | | | |
| 6:15 AM | | | | | | | | | | | | | |
| 6:30 AM | | | | | | | | | | | | | |
| 6:45 AM | | | | | | | | | | | | | |
| 7:00 AM | 10 | 191 | 22 | 94 | 291 | 35 | 28 | 200 | 24 | 54 | 122 | 73 | 1144 |
| 7:15 AM | 46 | 279 | 19 | 120 | 344 | 27 | 86 | 264 | 28 | 41 | 145 | 87 | 1486 |
| 7:30 AM | 33 | 237 | 36 | 102 | 319 | 20 | 102 | 300 | 33 | 72 | 195 | 114 | 1563 |
| 7:45 AM | 36 | 274 | 62 | 108 | 286 | 31 | 93 | 262 | 31 | 63 | 203 | 56 | 1505 |
| 8:00 AM | 27 | 186 | 58 | 68 | 199 | 41 | 49 | 252 | 28 | 67 | 211 | 50 | 1236 |
| 8:15 AM | 25 | 194 | 24 | 76 | 253 | 40 | 58 | 209 | 22 | 39 | 143 | 42 | 1125 |
| 8:30 AM | 21 | 128 | 55 | 70 | 229 | 50 | 48 | 246 | 36 | 47 | 147 | 43 | 1120 |
| 8:45 AM | 33 | 192 | 63 | 73 | 225 | 41 | 34 | 166 | 27 | 60 | 132 | 33 | 1079 |
| 9:00 AM | | | | | | | | | | | | | |
| 9:15 AM | | | | | | | | | | | | | |
| 9:30 AM | | | | | | | | | | | | | |
| 9:45 AM | | | | | | | | | | | | | |
| 10:00 AM | | | | | | | | | | | | | |
| 10:15 AM | | | | | | | | | | | | | |
| 10:30 AM | | | | | | | | | | | | | |
| 10:45 AM | | | | | | | | | | | | | |
| 11:00 AM | | | | | | | | | | | | | |
| 11:15 AM | | | | | | | | | | | | | |
| 11:30 AM | | | | | | | | | | | | | |
| 11:45 AM | | | | | | | | | | | | | |
| TOTAL VOLUMES = | NL 231 | NT 1681 | NR 339 | SL 711 | ST 2146 | SR 285 | EL 498 | ET 1899 | ER 229 | WL 443 | WT 1298 | WR 498 | TOTAL 10258 |

AM Peak Hr Begins at: 715 AM

| | | | | | | | | | | | | | |
|------------------|------------|-----|-----|-------|------|-----|-------|------|-----|-------|-----|-----|-------|
| PEAK VOLUMES = | 142 | 976 | 175 | 398 | 1148 | 119 | 330 | 1078 | 120 | 243 | 754 | 307 | 5790 |
| PEAK HR. FACTOR: | 0.869 | | | 0.848 | | | 0.878 | | | 0.856 | | | 0.926 |
| CONTROL: | Signalized | | | | | | | | | | | | |

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Bristol

DATE: 2/5/2004

LOCATION: City of Santa Ana

E-W STREET: 17th St.

DAY: THURSDAY

PROJECT# 04-1105-001

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---------|------------|---------|---------|------------|---------|---------|-----------|---------|---------|-----------|---------|---------|-------|
| LANES: | NL 2 | NT 2 | NR 1 | SL 2 | ST 3 | SR 0 | EL 2 | ET 3 | ER 0 | WL 2 | WT 3 | WR 1 | TOTAL |
| 1:00 PM | | | | | | | | | | | | | |
| 1:15 PM | | | | | | | | | | | | | |
| 1:30 PM | | | | | | | | | | | | | |
| 1:45 PM | | | | | | | | | | | | | |
| 2:00 PM | | | | | | | | | | | | | |
| 2:15 PM | | | | | | | | | | | | | |
| 2:30 PM | | | | | | | | | | | | | |
| 2:45 PM | | | | | | | | | | | | | |
| 3:00 PM | | | | | | | | | | | | | |
| 3:15 PM | | | | | | | | | | | | | |
| 3:30 PM | | | | | | | | | | | | | |
| 3:45 PM | | | | | | | | | | | | | |
| 4:00 PM | 44 | 229 | 79 | 59 | 277 | 66 | 69 | 201 | 40 | 90 | 331 | 87 | 1572 |
| 4:15 PM | 45 | 264 | 81 | 57 | 308 | 62 | 79 | 170 | 38 | 90 | 274 | 91 | 1559 |
| 4:30 PM | 58 | 242 | 60 | 67 | 287 | 50 | 81 | 245 | 40 | 91 | 322 | 97 | 1640 |
| 4:45 PM | 57 | 283 | 54 | 82 | 338 | 59 | 61 | 175 | 30 | 97 | 285 | 93 | 1614 |
| 5:00 PM | 53 | 260 | 67 | 68 | 265 | 58 | 79 | 211 | 48 | 120 | 357 | 107 | 1693 |
| 5:15 PM | 69 | 284 | 67 | 62 | 332 | 67 | 85 | 203 | 50 | 104 | 324 | 94 | 1741 |
| 5:30 PM | 58 | 245 | 52 | 65 | 287 | 63 | 78 | 249 | 36 | 116 | 372 | 96 | 1717 |
| 5:45 PM | 57 | 300 | 42 | 66 | 330 | 82 | 100 | 197 | 43 | 110 | 300 | 87 | 1714 |
| 6:00 PM | | | | | | | | | | | | | |
| 6:15 PM | | | | | | | | | | | | | |
| 6:30 PM | | | | | | | | | | | | | |
| 6:45 PM | | | | | | | | | | | | | |

| TOTAL VOLUMES = | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|-----------------|-----|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-------|
| | 441 | 2107 | 502 | 526 | 2424 | 507 | 632 | 1651 | 325 | 818 | 2565 | 752 | 13250 |

PM Peak Hr Begins at: 500 PM

| PEAK VOLUMES = | 237 | 1089 | 228 | 261 | 1214 | 270 | 342 | 860 | 177 | 450 | 1353 | 384 | 6865 |
|------------------|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|-------|-----|-------|
| PEAK HR. FACTOR: | | 0.925 | | | 0.913 | | | 0.950 | | | 0.936 | | 0.986 |

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Bristol

DATE: 2/5/2004

LOCATION: City of Santa Ana

E-W STREET: Washington Blvd

DAY: THURSDAY

PROJECT# 04-1105-002

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|-----------------|------------|------------|-----------|------------|------------|-----------|-----------|---------|-----------|-----------|----------|-----------|---------------|
| LANES: | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| 6:00 AM | | | | | | | | | | | | | |
| 6:15 AM | | | | | | | | | | | | | |
| 6:30 AM | | | | | | | | | | | | | |
| 6:45 AM | | | | | | | | | | | | | |
| 7:00 AM | 5 | 219 | 19 | 6 | 345 | 23 | 35 | 1 | 21 | 9 | 7 | 16 | 706 |
| 7:15 AM | 6 | 302 | 26 | 7 | 353 | 21 | 53 | 1 | 18 | 15 | 4 | 15 | 821 |
| 7:30 AM | 20 | 267 | 25 | 8 | 402 | 27 | 39 | 1 | 31 | 16 | 12 | 16 | 864 |
| 7:45 AM | 17 | 252 | 37 | 18 | 367 | 19 | 43 | 0 | 20 | 21 | 6 | 24 | 824 |
| 8:00 AM | 19 | 211 | 13 | 4 | 265 | 19 | 32 | 1 | 13 | 15 | 11 | 17 | 620 |
| 8:15 AM | 14 | 245 | 15 | 10 | 263 | 14 | 25 | 0 | 15 | 9 | 6 | 13 | 629 |
| 8:30 AM | 17 | 192 | 9 | 5 | 246 | 23 | 33 | 0 | 11 | 9 | 12 | 14 | 571 |
| 8:45 AM | 29 | 233 | 11 | 9 | 289 | 9 | 30 | 1 | 13 | 7 | 15 | 8 | 654 |
| 9:00 AM | | | | | | | | | | | | | |
| 9:15 AM | | | | | | | | | | | | | |
| 9:30 AM | | | | | | | | | | | | | |
| 9:45 AM | | | | | | | | | | | | | |
| 10:00 AM | | | | | | | | | | | | | |
| 10:15 AM | | | | | | | | | | | | | |
| 10:30 AM | | | | | | | | | | | | | |
| 10:45 AM | | | | | | | | | | | | | |
| 11:00 AM | | | | | | | | | | | | | |
| 11:15 AM | | | | | | | | | | | | | |
| 11:30 AM | | | | | | | | | | | | | |
| 11:45 AM | | | | | | | | | | | | | |
| TOTAL VOLUMES = | NL 127 | NT 1921 | NR 155 | SL 67 | ST 2530 | SR 155 | EL 290 | ET 5 | ER 142 | WL 101 | WT 73 | WR 123 | TOTAL 5689 |

AM Peak Hr Begins at: 700 AM

| | | | | | | | | | | | | | |
|------------------|-------------|-------|-----|----|-------|----|-----|-------|----|----|-------|----|-------|
| PEAK VOLUMES = | 48 | 1040 | 107 | 39 | 1467 | 90 | 170 | 3 | 90 | 61 | 29 | 71 | 3215 |
| PEAK HR. FACTOR: | | 0.894 | | | 0.913 | | | 0.913 | | | 0.789 | | 0.930 |
| CONTROL: | Signalized; | | | | | | | | | | | | |

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Bristol

DATE: 2/5/2004

LOCATION: City of Santa Ana

E-W STREET: Washington Blvd

DAY: THURSDAY

PROJECT# 04-1105-002

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---------|------------|-----|----|------------|-----|----|-----------|----|----|-----------|----|----|-------|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | | | | | | | | | | | | | |
| 1:00 PM | | | | | | | | | | | | | |
| 1:15 PM | | | | | | | | | | | | | |
| 1:30 PM | | | | | | | | | | | | | |
| 1:45 PM | | | | | | | | | | | | | |
| 2:00 PM | | | | | | | | | | | | | |
| 2:15 PM | | | | | | | | | | | | | |
| 2:30 PM | | | | | | | | | | | | | |
| 2:45 PM | | | | | | | | | | | | | |
| 3:00 PM | | | | | | | | | | | | | |
| 3:15 PM | | | | | | | | | | | | | |
| 3:30 PM | | | | | | | | | | | | | |
| 3:45 PM | | | | | | | | | | | | | |
| 4:00 PM | 13 | 330 | 17 | 17 | 332 | 53 | 46 | 1 | 7 | 19 | 14 | 11 | 860 |
| 4:15 PM | 17 | 294 | 18 | 10 | 371 | 47 | 35 | 1 | 20 | 8 | 38 | 21 | 880 |
| 4:30 PM | 25 | 279 | 17 | 16 | 312 | 47 | 49 | 0 | 15 | 11 | 19 | 8 | 798 |
| 4:45 PM | 29 | 324 | 27 | 17 | 383 | 48 | 43 | 3 | 8 | 17 | 41 | 14 | 954 |
| 5:00 PM | 29 | 274 | 25 | 16 | 362 | 54 | 39 | 1 | 17 | 22 | 24 | 7 | 870 |
| 5:15 PM | 34 | 338 | 27 | 28 | 364 | 66 | 30 | 0 | 9 | 12 | 22 | 15 | 945 |
| 5:30 PM | 29 | 317 | 32 | 23 | 328 | 59 | 41 | 0 | 16 | 12 | 34 | 17 | 908 |
| 5:45 PM | 39 | 356 | 19 | 24 | 411 | 55 | 41 | 2 | 18 | 12 | 10 | 6 | 993 |
| 6:00 PM | | | | | | | | | | | | | |
| 6:15 PM | | | | | | | | | | | | | |
| 6:30 PM | | | | | | | | | | | | | |
| 6:45 PM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|-----------|-----|------|-----|-----|------|-----|-----|----|-----|-----|-----|----|-------|
| VOLUMES = | 215 | 2512 | 182 | 151 | 2863 | 429 | 324 | 8 | 110 | 113 | 202 | 99 | 7208 |

PM Peak Hr Begins at: 500 PM

| PEAK | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|-----------|-------|------|-----|-------|------|-----|-------|----|----|-------|----|----|-------|
| VOLUMES = | 131 | 1285 | 103 | 91 | 1465 | 234 | 151 | 3 | 60 | 58 | 90 | 45 | 3716 |
| PEAK HR. | | | | | | | | | | | | | |
| FACTOR: | 0.917 | | | 0.913 | | | 0.877 | | | 0.766 | | | 0.936 |

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: College Ave.

DATE: 2/5/2004

LOCATION: City of Santa Ana

E-W STREET: 17th St.

DAY: THURSDAY

PROJECT# 04-1105-003

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|--------------------|------------|-----------|-----------|------------|----------|----------|-----------|------------|-----------|-----------|------------|-----------|---------------|
| LANES: | NL 1 | NT 1 | NR 0 | SL 1 | ST 1 | SR 1 | EL 1 | ET 3 | ER 0 | WL 1 | WT 3 | WR 0 | TOTAL |
| 6:00 AM | | | | | | | | | | | | | |
| 6:15 AM | | | | | | | | | | | | | |
| 6:30 AM | | | | | | | | | | | | | |
| 6:45 AM | | | | | | | | | | | | | |
| 7:00 AM | 7 | 18 | 32 | 4 | 3 | 6 | 12 | 229 | 21 | 16 | 136 | 14 | 498 |
| 7:15 AM | 22 | 26 | 50 | 13 | 18 | 9 | 25 | 249 | 12 | 34 | 142 | 7 | 607 |
| 7:30 AM | 11 | 24 | 70 | 10 | 17 | 18 | 48 | 310 | 26 | 28 | 197 | 21 | 780 |
| 7:45 AM | 13 | 13 | 58 | 13 | 9 | 5 | 23 | 275 | 34 | 23 | 205 | 33 | 704 |
| 8:00 AM | 12 | 16 | 52 | 15 | 7 | 9 | 20 | 271 | 30 | 20 | 181 | 42 | 675 |
| 8:15 AM | 18 | 11 | 47 | 21 | 6 | 11 | 23 | 229 | 24 | 13 | 156 | 29 | 588 |
| 8:30 AM | 7 | 6 | 40 | 20 | 4 | 15 | 22 | 262 | 44 | 14 | 167 | 27 | 628 |
| 8:45 AM | 6 | 5 | 46 | 21 | 2 | 15 | 30 | 209 | 54 | 21 | 145 | 13 | 567 |
| 9:00 AM | | | | | | | | | | | | | |
| 9:15 AM | | | | | | | | | | | | | |
| 9:30 AM | | | | | | | | | | | | | |
| 9:45 AM | | | | | | | | | | | | | |
| 10:00 AM | | | | | | | | | | | | | |
| 10:15 AM | | | | | | | | | | | | | |
| 10:30 AM | | | | | | | | | | | | | |
| 10:45 AM | | | | | | | | | | | | | |
| 11:00 AM | | | | | | | | | | | | | |
| 11:15 AM | | | | | | | | | | | | | |
| 11:30 AM | | | | | | | | | | | | | |
| 11:45 AM | | | | | | | | | | | | | |
| TOTAL VOLUMES = | NL 96 | NT 119 | NR 395 | SL 117 | ST 66 | SR 88 | EL 203 | ET 2034 | ER 245 | WL 169 | WT 1329 | WR 186 | TOTAL 5047 |

AM Peak Hr Begins at: 715 AM

| | | | | | | | | | | | | | |
|---------------------|-------|----|-----|-------|----|----|-------|------|-----|-------|-----|-----|-------|
| PEAK VOLUMES = | 58 | 79 | 230 | 51 | 51 | 41 | 116 | 1105 | 102 | 105 | 725 | 103 | 2766 |
| PEAK HR. FACTOR: | 0.874 | | | 0.794 | | | 0.861 | | | 0.894 | | | 0.887 |

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: College Ave.

DATE: 2/5/2004

LOCATION: City of Santa Ana

E-W STREET: 17th St.

DAY: THURSDAY

PROJECT# 04-1105-003

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | TOTAL |
|-----------------|------------|-----------|-----------|------------|-----------|-----------|-----------|------------|-----------|-----------|------------|----------|---------------|
| LANES: | NL 1 | NT 1 | NR 0 | SL 1 | ST 1 | SR 1 | EL 1 | ET 3 | ER 0 | WL 1 | WT 3 | WR 0 | |
| 1:00 PM | | | | | | | | | | | | | |
| 1:15 PM | | | | | | | | | | | | | |
| 1:30 PM | | | | | | | | | | | | | |
| 1:45 PM | | | | | | | | | | | | | |
| 2:00 PM | | | | | | | | | | | | | |
| 2:15 PM | | | | | | | | | | | | | |
| 2:30 PM | | | | | | | | | | | | | |
| 2:45 PM | | | | | | | | | | | | | |
| 3:00 PM | | | | | | | | | | | | | |
| 3:15 PM | | | | | | | | | | | | | |
| 3:30 PM | | | | | | | | | | | | | |
| 3:45 PM | | | | | | | | | | | | | |
| 4:00 PM | 35 | 16 | 49 | 18 | 15 | 13 | 28 | 280 | 37 | 50 | 381 | 11 | 933 |
| 4:15 PM | 21 | 13 | 70 | 23 | 17 | 22 | 16 | 227 | 25 | 40 | 334 | 6 | 814 |
| 4:30 PM | 44 | 19 | 51 | 40 | 12 | 21 | 23 | 236 | 35 | 36 | 321 | 15 | 853 |
| 4:45 PM | 25 | 14 | 75 | 34 | 1 | 23 | 19 | 266 | 45 | 44 | 334 | 10 | 890 |
| 5:00 PM | 45 | 23 | 62 | 40 | 30 | 32 | 25 | 30 | 36 | 35 | 435 | 11 | 804 |
| 5:15 PM | 42 | 15 | 78 | 19 | 22 | 21 | 13 | 224 | 40 | 52 | 415 | 9 | 950 |
| 5:30 PM | 46 | 15 | 65 | 32 | 15 | 24 | 28 | 280 | 36 | 45 | 367 | 10 | 963 |
| 5:45 PM | 27 | 14 | 67 | 18 | 9 | 10 | 25 | 230 | 43 | 57 | 392 | 5 | 897 |
| 6:00 PM | | | | | | | | | | | | | |
| 6:15 PM | | | | | | | | | | | | | |
| 6:30 PM | | | | | | | | | | | | | |
| 6:45 PM | | | | | | | | | | | | | |
| TOTAL VOLUMES = | NL 285 | NT 129 | NR 517 | SL 224 | ST 121 | SR 166 | EL 177 | ET 1773 | ER 297 | WL 359 | WT 2979 | WR 77 | TOTAL 7104 |

PM Peak Hr Begins at: 500 PM

| | | | | | | | | | | | | | |
|------------------|-------------|-------|-----|-----|-------|----|----|-------|-----|-----|-------|----|-------|
| PEAK VOLUMES = | 160 | 67 | 272 | 109 | 76 | 87 | 91 | 764 | 155 | 189 | 1609 | 35 | 3614 |
| PEAK HR. FACTOR: | | 0.924 | | | 0.667 | | | 0.734 | | | 0.953 | | 0.938 |
| CONTROL: | Signalized; | | | | | | | | | | | | |