

MEMORANDUM

TO: Greg Brown,
Santa Monica College

FROM: Netai Basu

DATE: June 28, 2005

RE: Site Access Analysis of SMC Santa Monica Airport Campus **Ref:** 1856

INTRODUCTION

Kaku Associates, Inc. has been retained by Santa Monica College (SMC) to address traffic and parking concerns that have been expressed by the City of Santa Monica relative to the immediate and long-term development and operation of the new Santa Monica College Airport Campus. The 10.4-acre site lies west of Bundy Drive and immediately south of Santa Monica Airport property and was purchased by the College in 2001 for the purpose of creating a new satellite college campus. The data and analysis presented here draws on new information provided by the College and previous analysis of the site that was documented in the *Santa Monica College Bundy Campus Site Access and Circulation Plan* (Kaku Associates, Inc., November 2004).

There are two buildings currently on the site: a four-story building of approximately 64,000 square feet and a two-story building of approximately 30,000 square feet. Early in 2004 the college prepared an Initial Study/Mitigated Negative Declaration for the reuse of the four-story building as an educational facility with 18 classrooms. Site improvements have been undertaken with the object of opening the new campus in Summer 2005. Sixteen classrooms will be available for use in Fall 2005, with an additional two planned for availability by Fall 2007. During Summer 2005, a limited number of classes will be offered for the benefit of local college-bound high school students. The Fall 2005 schedule of classes being offered at the site is posted on the College's website and is summarized in Table 1. This schedule reflects the fact that most college classes occur on Mondays through Thursdays, while Fridays and weekends are much less active. Community Education classes (not for credit) would be held on each day of the week except Fridays, with most occurring on Saturdays.

SMC is currently preparing a master plan to guide the long-term development of the site, which will undergo full environmental review following completion. This would include a full traffic impact study based on new Fall 2005 traffic counts collected during the third week of the semester (the week of September 12). It is planned that the existing two-story building would

be removed and replaced with a more functional two-story building of similar size (with nine classrooms) to be located adjacent to the existing four-story building. Site plans for the immediate reuse of the site and at master plan build-out are presented in Figures 1 and 2. Because access to Airport Avenue is not assured and at the request of City staff, traffic projections were prepared for three site access alternatives. Alternative 1 would allow use of the Bundy Drive access but would prohibit left turns from the site onto northbound Bundy Drive and would allow full access to Airport Avenue at Donald Douglas Loop South. Alternative 2 would only utilize the Bundy Drive access, again with eastbound left turns out of the site prohibited. Alternative 3 would allow inbound traffic only at the Bundy Drive driveway and outbound traffic onto Airport Avenue at Donald Douglas Loop South.

For over a decade, the college has leased space from Santa Monica Airport for use as remote parking for the main campus. This shuttle lot will be displaced in approximately five months (November 2005) by site preparation and construction of Airport Park. The shuttle lot is currently configured with 428 parking spaces. During periods of peak activity early in the semester it is fully utilized and it is estimated that College-related vehicles also occupy approximately 80 additional parking spaces in the surrounding area. The shuttle vehicles are full-sized buses operated by the Big Blue Bus on headways of approximately 15 minutes throughout the day on Mondays through Thursdays and approximately 30 minutes until 3:00 p.m. on Fridays. The shuttle stop is located on the north side of Airport Avenue opposite 3300 Airport Avenue and serves both the shuttle lot and the existing Airport Design Center Campus. In the local vicinity, the shuttle operates in a clockwise loop south on Bundy Drive, west on Airport Avenue and north on 23rd Street.

A previous proposal to develop a parking structure on the new campus to replace this shuttle lot has been abandoned and the College is now actively seeking to identify an alternative site for this function. The intent is to locate a stand-alone shuttle lot separate from any of its satellite campuses. Until such a site is developed, it is anticipated that the portion of the parking supply on the new campus in excess of what is needed to serve on-site uses may serve as remote parking for the main campus.

EXISTING SETTING

To provide information on the existing setting in which the new campus is located, existing operating conditions were evaluated at selected nearby intersections using available base traffic volume data. Weekday peak period (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) manual intersection turning movement counts were collected at the intersections either partly or wholly within Los Angeles, as well as at the intersection of 23rd Street & Ocean Park Boulevard, on Wednesday and Thursday, May 26 and 27, 2004. Base data for the other intersections in Santa Monica was taken from the City's TRAFFIX database. New traffic counts were conducted at the intersection of Donald Douglas Loop South & Airport Avenue on Wednesday October 13, 2004.

1. 23rd Street & Pico Boulevard *
2. 23rd Street & Pearl Street (all-way stop-controlled) *
3. 23rd Street & Ocean Park Boulevard *
4. 23rd Street/Walgrove Avenue & Airport Avenue (two-way stop-controlled) **
5. Walgrove Avenue & Rose Avenue
6. Walgrove Avenue & Palms Boulevard

7. Cloverfield Boulevard & I-10 westbound off-ramp *
8. Cloverfield Boulevard & I-10 eastbound on-ramp *
9. Cloverfield Boulevard & Pico Boulevard *
10. Cloverfield Boulevard & Pearl Street (all-way stop-controlled) *
11. Cloverfield Boulevard & Ocean Park Boulevard *
12. Donald Douglas Loop South & Airport Avenue (all-way stop-controlled) *
13. Bundy Drive & Pico Boulevard
14. Bundy Drive & I-10 eastbound on-ramp
15. Bundy Drive & Ocean Park Boulevard
16. Bundy Drive & National Boulevard
17. Bundy Drive & Airport Avenue **
18. Centinela Avenue & Rose Avenue
19. Centinela Avenue & Palms Boulevard
20. Centinela Avenue & Venice Boulevard

Sixteen of the 20 intersections listed above are controlled by traffic signals. Nine of these intersections are entirely within Santa Monica (marked with a single asterisk “*”), nine are entirely within Los Angeles and two are shared by the Cities of Los Angeles and Santa Monica (marked with a double asterisk “**”).

Existing traffic volumes were increased by 0.8% per year, consistent with the practice of the City of Santa Monica, to represent 2005 conditions. The specific methodologies preferred by each city were utilized to analyze this data and the results are presented in Table 2. As shown, using the City of Santa Monica analysis methodology, three of the 11 intersections located entirely or partly within that city are currently operating at LOS E or F during one of the peak hours. Using the City of Los Angeles’ methodology, eight of the 11 intersections located entirely or partly within that city are currently operating at LOS E or F during one or both peak hours.

PARKING SUPPLY AND DEMAND ESTIMATES

Plans for the development of the site indicate that 609 parking spaces would be provided initially, with 668 spaces provided at master plan build-out, as shown in Figures 1 and 2.

The parking demand estimates presented in Table 3 were prepared on the basis of information provided by the College on the planned schedule of classes and anticipated staffing levels on the campus. The class schedule for Fall 2005 shows that a maximum of 11 classrooms will be in use at the peak time, during which time approximately 30 faculty and staff would also be present. An empirical parking demand rate of 0.72 spaces per person was developed in previous studies of projects on the main SMC campus. Applying this rate to the projected level of activity on-site yields a parking demand estimate of approximately 320 parking spaces in Fall 2005, with nearly 300 parking spaces available for use as remote parking for the main campus if necessary. With full occupancy of the four-story building, planned for Fall 2007, on-site parking demand is projected to rise to 409 spaces, with a surplus of 200 spaces. Upon master plan build-out, anticipated uses on the site are expected to generate a parking demand of 631 spaces (approximately 95% of the projected supply), effectively eliminating the potential for any use of the site as remote parking for the main campus. These calculations are summarized in Table 3 and show that the available parking supply would provide adequate parking for on-site activities at all times.

During the first part of the Fall 2005 semester (until November) the existing shuttle lot would remain available for College use. Utilization of the shuttle lot has been observed to decline as each semester progresses and it is anticipated that the surplus parking on the new campus (approximately 300 spaces) would be sufficient to temporarily replace most of the shuttle lot if an alternative location is not available by that time. If the shuttle parking were temporarily relocated to the new campus, the college would bring additional staff to the site to monitor the flow of traffic and to direct drivers as they arrive on site. With valet service and a "stacked parking" operation at peak times, it is estimated that the site could accommodate approximately 100 additional vehicles, if necessary.

TRIP GENERATION AND TRIP DISTRIBUTION ESTIMATES

Trip generation estimates for the approved and proposed uses on the site were developed from several sources, including data provided by SMC, observations at the existing shuttle lot and trip generation rates contained in *Trip Generation, 7th Edition* (Institute of Transportation Engineers [ITE], 2003). Table 4 presents the trip generation estimates that have been prepared for the interim (Fall 2005, Fall 2007) and ultimate (Fall 2010) use of the new campus.

Estimated trips related to the occupancy of the four-story building were derived from information provided by SMC, including the Fall 2005 class schedule and anticipated staffing levels. This schedule is presented in Table 1 and shows the schedule of classes for each day of the week. For the purpose of developing trip generation estimates, it was assumed that credit classes would be attended by 30 students each and that non-credit classes would be attended by 20 students each. The overall average vehicle ridership (AVR) was assumed to be 1.20, somewhat less than the main campus' AVR of 1.33. It was also assumed that approximately one-quarter of the students attending classes during the middle part of the day (classes beginning between 10:00 a.m. and 5:00 p.m.) would also have attended a previous class and would already be present on the campus.

Trip generation estimates for non-faculty administrative employees were based on ITE rates for office buildings.

Observations were made at the existing shuttle lot to determine the number of peak hour trips (inbound and outbound) that occur per space. On May 27, 2004 the shuttle lot was over half full after 9:00 a.m. On September 22, 2004 it was estimated to exceed its capacity by about 80 spaces at 10:30 a.m. Data collected over two days was averaged to arrive at trip generation rates of 0.62 trips per space in the a.m. peak hour (96% inbound, 4% outbound) and 0.33 trips per space in the p.m. peak hour (38% inbound, 62% outbound). Daily trips were estimated at 4.78 trips per space on the basis of data on daily boardings of the shuttle bus that serves the lot.

In Fall 2005, the existing shuttle lot will remain active while the new campus generates approximately 3,000 additional weekday trips, of which approximately 250 would occur in the a.m. peak hour and 90 would occur in the p.m. peak hour. In Fall 2007 the new campus would have about 200 surplus parking spaces that could potentially be used as remote parking for the main campus. Assuming that they are and taking into consideration the removal of the existing shuttle lot, about 2,040 net new college-related weekday trips would occur, including about 120 in the a.m. peak hour and 20 in the p.m. peak hour. At master plan build-out, the site would generate

approximately 2,770 net new college-related weekday trips, including about 140 in the a.m. peak hour and five in the p.m. peak hour.

It is important to note that the Fall 2007 trip generation estimates presented in Table 4 conservatively assume that surplus parking on the site would be used as remote parking for the main campus; if this were not the case, much less traffic would be generated and total college-related trips would be very similar to what is experienced today due to the shuttle lot. Taking into account the reduction in college-related trips in the vicinity due to the planned relocation of the shuttle lot, traffic related to the new campus would be less than or similar to existing traffic volumes except in the a.m. peak hour at master plan build-out in Fall 2010.

Based on data from the college on the residential ZIP codes of existing students, the following directional distribution pattern was established. It can be seen that, based on this distribution, less than 20% of the total trips would be expected to travel through Santa Monica toward the west and northwest.

- North via I-405 16%
- South via I-405 13%
- East via I-10 26%
- West via I-10 5%
- Northeast via local streets 9%
- Northwest via local streets 12%
- Southeast via local streets 12%
- Southwest via local streets 7%

PROJECTED TRAFFIC CONDITIONS

Projections of future traffic conditions were prepared for Fall 2005 and Fall 2010 and a comparison was made of the three site access alternatives described above. Tables 5 and 6 present projected levels of service at the 20 selected intersections in the vicinity of the new campus.

The 2010 traffic volume projections include three elements: ambient traffic growth, related projects and traffic generated by new uses on the Santa Monica Airport Campus. Ambient traffic growth was estimated at 0.8% per year, consistent with the practice of the City of Santa Monica, for a total of 4.0% from 2005 to 2010. Information on related projects in the vicinity, including Santa Monica Airport Park and the Playa Vista project, was obtained from the Santa Monica TRAFFIX database and from previous traffic studies and was included in the traffic projections. In addition, an adjustment to the existing traffic count data taken in May 2004 was made to account for the fact that it was collected late in the semester when college activity levels are reduced. Traffic generated by the new campus was estimated and assigned as described above.

The overall trip distribution patterns of traffic related to development of the new campus would be similar under each of the access options described in the introduction. Projected operating conditions at the analyzed intersections would be generally similar under Alternatives 1 and 3, each of which would utilize Airport Avenue to access the campus. The primary difference would

be at the intersection of Bundy Drive & Airport Avenue, which would operate slightly worse under Alternative 3 because more college-related traffic would pass through it. Alternative 1 is superior because it would impose the fewest restrictions on drivers accessing the site.

Alternative 2 would provide much poorer access to the campus, as all college-related traffic would be concentrated at a single driveway. This would result in increased delay for vehicles entering and exiting the campus and the potential for increased conflict with through traffic on Bundy Drive. Heavy traffic on Bundy Drive and queues that, during peak periods, extend from nearby signalized intersections to the campus driveway on Bundy Drive would make access to the site difficult at times.

Alternative 2 would also be likely to result in more outbound college-related through traffic in the neighborhoods immediately south and northwest of the campus, due to the lack of access to Airport Avenue. Under Alternatives 1 and 3, vehicles exiting the new campus would be able to utilize the signalized intersection of Bundy Drive & Airport Avenue to travel north and east via the Santa Monica Freeway and surface streets; vehicles destined to the west would also be able to utilize Airport Avenue. Under Alternative 2, however, all vehicles exiting the campus would have to turn south onto Bundy Drive. This would be expected to result in more traffic through the Mar Vista neighborhood south of the campus (on Rose Avenue and Palms Boulevard to Walgrove Avenue) and through the Sunset Park neighborhood northwest of the campus (on 23rd Street and Cloverfield Boulevard) as more drivers would likely utilize the eastbound I-10 on-ramp at Cloverfield Boulevard instead of at Bundy Drive. Some of these diverted drivers would be likely to travel over Airport Avenue to reach Bundy Drive, while others would make U-turns on Bundy Drive or turn east on Palms Boulevard to find alternate routes.

SITE ACCESS IMPROVEMENTS

Direct access to the site is provided at two locations: a driveway on Bundy Drive approximately 500 feet southeast of the intersection of Bundy Drive & Airport Avenue and a driveway on Stewart Street. The final master plan site plan illustrated in Figure 2 would construct a new inbound-only driveway from Bundy Drive to facilitate southbound right turns into the campus. The Stewart Street entrance is gated and for use by emergency vehicles only. The College is currently negotiating with the City to secure access to the site onto Airport Avenue, which was available to the site's previous owners. The College desires to obtain access to the site via the south leg of Donald Douglas Loop South and has offered to fund the cost of realigning and improving the roadway at this location for this purpose.

It does not appear necessary to provide additional lane capacity at Airport Avenue & Donald Douglas Loop South because it is projected to operate at an acceptable level of service (LOS B or better) with a single lane on each approach, nor does it meet traffic signal warrants under any scenario.

While the design of this driveway will ultimately be determined in conjunction with City staff, if allowed, it is proposed that it be constructed as a gentle "S" curve between the existing intersection of Donald Douglas Loop South & Airport Avenue and the recently-constructed curbs within the new campus. This driveway could be configured to provide access only to the new campus, with 35-foot radius curb returns located on the southeast and southwest corners where it meets Airport Avenue. An alternative driveway design under consideration would allow for

outbound access (westbound) from the parking lot behind 3200 Airport Avenue. Currently this driveway provides access primarily to parking lots adjacent to 3100 Airport Avenue to the west and at the rear of 3200 and 3300 Airport Avenue to the east. The City plans to alter these parking lots, each of which will continue to be provided with access to Airport Avenue at other locations.

The City plans to locate a DC-3 aircraft and construct a landscaped seating area to create a visual landmark and visitor amenity in the parking lot southwest of Donald Douglas Loop South & Airport Avenue. The City also plans to close the existing driveway onto Airport Avenue west of 3300 Airport Avenue and consolidate access to parking in this area at an improved driveway between 3300 and 3400 Airport Avenue, serving approximately 100 parking spaces. The two existing driveways to the shuttle lot will be removed and replaced with driveways to Airport Park. The westernmost park driveway will be located approximately 100 feet east of the existing westernmost driveway to the shuttle lot. As there would be over 400 feet between this driveway and Donald Douglas Loop South, it is not anticipated that queues on westbound Airport Avenue would affect this location.

The proposed location for a shuttle stop on the new campus is near the entrance to the four-story building. While shuttle buses could enter either from Airport Avenue via the improved driveway or from Bundy Drive, it is noted that nearby residents to the south have expressed the desire that the shuttles continue to be routed only on Airport Avenue. If shuttle buses were to enter the site at the Bundy Drive driveway, it may be necessary to reconstruct the north side of that driveway to accommodate these vehicles. Exiting shuttle buses would be expected to use Airport Avenue, either traveling west to 23rd Street as they do today or east to Bundy Drive and thence north to reach Ocean Park Avenue.

RECOMMENDATION

Based on the discussion and analysis presented above, it is recommended that the City allow access from the new Santa Monica College Airport Campus to Airport Avenue at the intersection of Airport Avenue and Donald Douglas Loop South. The design of an improved driveway at this location should be identified through discussions between the City and the College. This access, together with the campus' access on Bundy Drive, will provide the most efficient movement of vehicular traffic to and from the site.

Following the relocation of the existing shuttle lot function away from the Santa Monica Airport, overall college-related traffic volumes in the vicinity related to use of the four-story building will be less than or similar to what now occurs. Once the ongoing master plan for the long-term development of the campus is completed, that project will be the subject of full environmental analysis.

LIST OF FIGURES AND TABLES

Figure 1 Initial Phase Airport Campus Master Plan

Figure 2 Final Airport Campus Master Plan

Table 1 Fall 2005 Class Schedule

Table 2 Existing Intersection Levels of Service

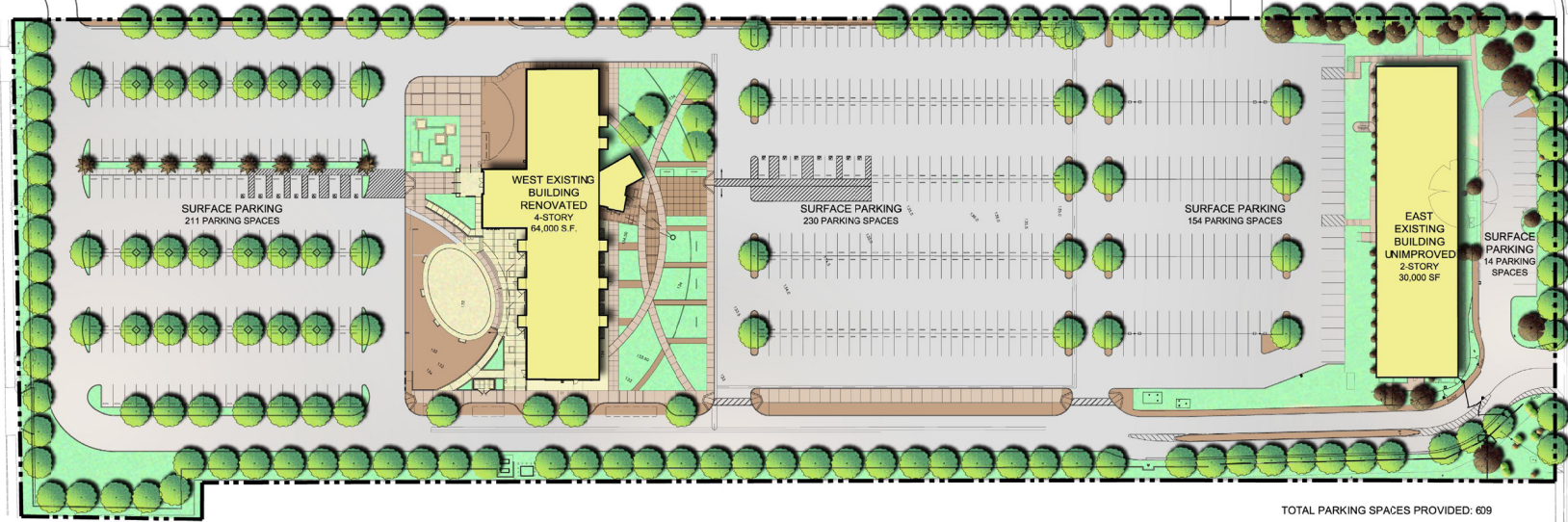
Table 3 Parking Supply and Demand Estimates

Table 4 Trip Generation Estimates for Peak Day

Table 5 Projected Fall 2005 Intersection Levels of Service – Alternatives 1, 2 & 3

Table 6 Projected Fall 2010 Intersection Levels of Service – Alternatives 1, 2 & 3

AIRPORT AVE.



EXISTING PLAN

EXISTING SECTION



INITIAL PHASE AIRPORT CAMPUS MASTERPLAN

SANTA MONICA AIRPORT CAMPUS IMPROVEMENT
 SANTA MONICA COLLEGE / 3137 S. BUNDY DR, LOS ANGELES, CA

© WWCOT 2004 F:\projects\050002-00\1-a-1d\design\conceptual design\050428\SITE PLAN-FROM ELSYE.dwg

FIGURE 1



SCALE: 1/4" = 1'-0" 0 5' 10' 20' 40'

Job Number: 050002.00 Date: 05-04-05

3130 Wilshire Blvd., 6th Floor Santa Monica, CA 90403-2349/ 310. 828.0040

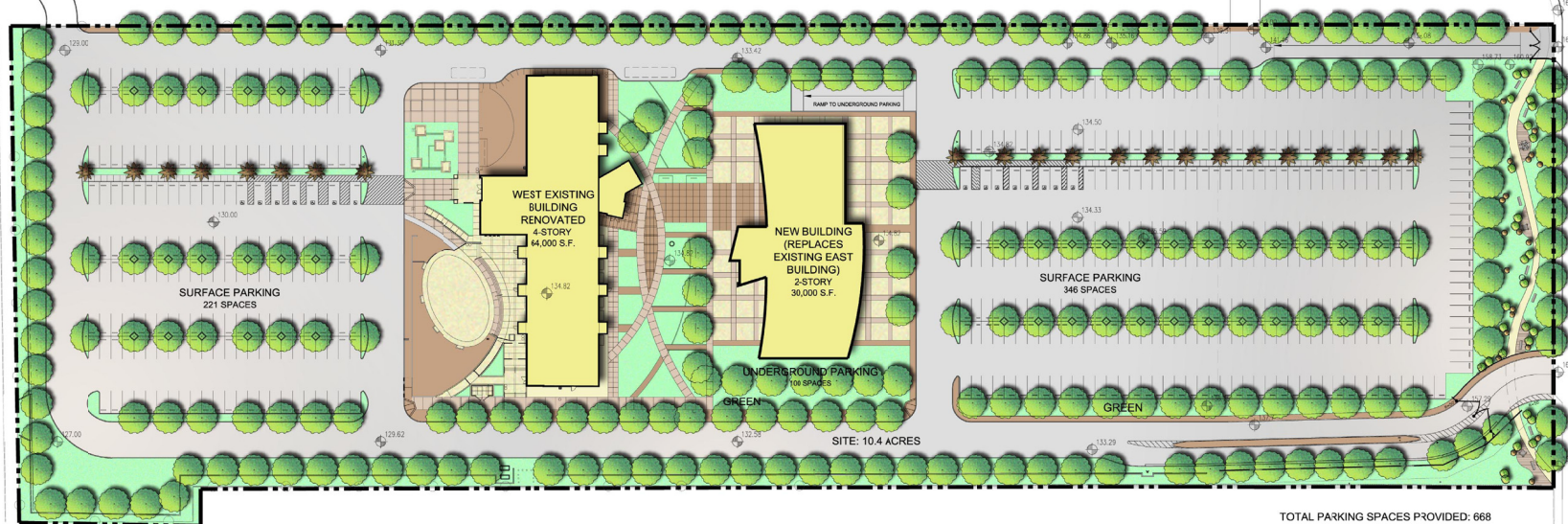
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Wisdom Mark Cohen
 O'Leary Tereszawa

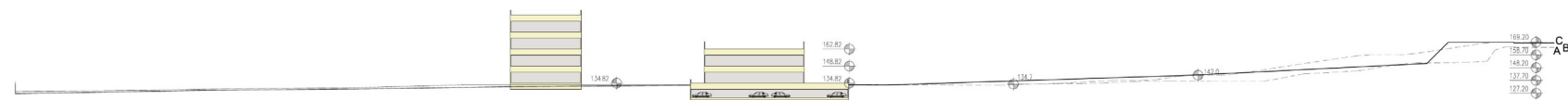
AIRPORT AVE.

S. CENTINELA AVE.



TOTAL PARKING SPACES PROVIDED: 668

PROPOSED PLAN



PROPOSED SECTION



FINAL PHASE AIRPORT CAMPUS MASTERPLAN

SANTA MONICA AIRPORT CAMPUS IMPROVEMENT
SANTA MONICA COLLEGE / 3137 S. BUNDEY DR, LOS ANGELES, CA

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SCALE: 1/40" = 1'-0"



Job Number: 050002.00

Date: 05-04-05

3130 Wilshire Blvd., 6th Floor Santa Monica, CA 90403-2349/ 310. 828.0040

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Widon Wein Cohen
O'Leary Terawata

FIGURE 2

**TABLE 2
EXISTING INTERSECTION LEVEL OF SERVICE**

City of Santa Monica Methodology

Intersection	Peak Hour	Existing		
		Delay	V/C	LOS
1 23rd Street & Pico Boulevard	AM	14	0.689	B
	PM	20	0.935	C
2 23rd Street & Pearl Street [a]	AM	18	0.786	C
	PM	18	0.690	C
3 23rd Street & Ocean Park Boulevard	AM	22	0.847	C
	PM	47	1.055	D
4 23rd Street & Airport Avenue [b]	AM	**	N/A	F
	PM	13	N/A	B
	AM	7	0.844	A
	PM	12	0.934	B
7 Cloverfield Boulevard & I-10 WB off-ramps	AM	34	0.998	C
	PM	22	0.866	C
8 Cloverfield Boulevard & I-10 EB on-ramps	AM	10	0.647	B
	PM	6	0.634	A
9 Cloverfield Boulevard & Pico Boulevard	AM	32	0.822	C
	PM	**	1.037	F
10 Cloverfield Boulevard & Pearl Street [a]	AM	16	0.636	C
	PM	43	1.049	E
11 Cloverfield Boulevard & Ocean Park Boulevard	PM	37	0.769	D
	PM	15	0.620	B
12 Donald Douglas Loop & Airport Avenue [a]	AM	8	0.253	A
	PM	8	0.256	A
17 Bundy Drive & Airport Avenue	AM	25	0.656	C
	PM	9	0.787	A

City of Los Angeles Methodology

Intersection	Peak Hour	Existing	
		Delay or V/C	LOS
4 23rd Street & Airport Avenue [b]	AM	**	F
	PM	13	B
	AM	1.135	F
	PM	1.173	F
*5 Walgrove Avenue & Rose Avenue	AM	1.227	F
	PM	1.274	F
*6 Walgrove Avenue & Palms Boulevard	AM	0.757	C
	PM	0.900	D
*13 Bundy Drive & Pico Boulevard	AM	1.016	F
	PM	1.208	F
*14 Bundy Drive & I-10 Freeway EB on-ramp	AM	0.876	D
	PM	0.957	E
*15 Bundy Drive & Ocean Park Boulevard	AM	0.919	E
	PM	1.379	F
*16 Bundy Drive & National Boulevard	AM	0.986	E
	PM	0.875	D
*17 Bundy Drive & Airport Avenue	AM	0.740	C
	PM	0.898	D
*18 Centinela Avenue & Rose Avenue	AM	0.682	B
	PM	0.871	D
*19 Centinela Avenue & Palms Boulevard	AM	0.877	D
	PM	1.062	F
*20 Centinela Avenue & Venice Boulevard	AM	0.983	E
	PM	1.083	F

Notes:

- * Intersection is currently operating under ATSAC system.
- ** Indicates oversaturated conditions. Delay cannot be calculated.
- [a] Intersection is all-way stop controlled. Level of service is based on average vehicular delay in seconds per vehicle.
- [b] Intersection is two-way stop controlled. Level of service is based on average vehicular delay in seconds per vehicle for the most constrained approach. Also analyzed under signalized operations (HCM or CMA Methodology) to determine incremental change in V/C.

**TABLE 3
PARKING SUPPLY AND DEMAND ESTIMATES
SANTA MONICA AIRPORT CAMPUS**

<i>Future Parking Supply</i>	PHASE 1A Fall 2005	PHASE 1B Fall 2007	PHASE 2 Fall 2010
	With Partial Occupancy of 4- Story Building	With Full Occupancy of 4-Story Building	With Master Plan Buildout
East of Existing 2-Story Building	14	14	--
Western End	211	211	346
Central Area	384	384	221
<u>Beneath new 2-Story Building</u>	--	--	101
Total Spaces	609	609	668
<i>Estimated Parking Demand</i>	With Partial Occupancy of 4- Story Building	With Full Occupancy of 4-Story Building	With Master Plan Buildout
Maximum number of students on-site [1]	413	488	788
Maximum number of faculty on-site [2]	16	18	27
Staff [2]	15	32	62
Additional non-faculty staff in the two-story building [3]	<u>0</u>	<u>30</u>	<u>0</u>
Total Peak Persons on Site	444	568	877
Parking Space Demand per Person [4]	0.72	0.72	0.72
Total Estimated Parking Demand for On-Site Uses	320	409	631
Surplus Available for Main Campus Remote Parking	289	200	37

[1] Per Fall 2005 class schedule with up to 11 simultaneous classes with 30 students each; 13 with full occupancy of 4-story building and 21 at Master Plan buildout. Assumes that one quarter of vehicles will remain on site while taking multiple classes.

[2] Per estimates from SMC staff.

[3] Nominal interim use of this building is assumed, per SMC staff.

[4] Source: "Traffic and Parking Study for the Santa Monica College Parking Structure B and Liberal Arts Building Replacement Alternatives" (Kaku Associates, Inc. October 1998).

**TABLE 4
TRIP GENERATION ESTIMATES
SANTA MONICA AIRPORT CAMPUS**

Land Use	Size	Estimated Trip Generation						
		Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			Total	In	Out	Total	In	Out
PHASE 1A Fall 2005)								
<u>Four -Story Building</u>								
up to 16 classrooms in use simultaneously	1,573 students [a] 159 faculty [a] <u>15</u> employees [b]	2,622 318 <u>50</u>	235 16 <u>7</u>	225 16 <u>6</u>	10 0 <u>1</u>	75 8 <u>7</u>	50 2 <u>3</u>	25 6 <u>4</u>
<u>Net New Trips</u>	1,747 total	2,989	258	247	11	90	55	35
PHASE 1B (2007)								
<u>Four -Story Building</u>								
up to 18 classrooms in use simultaneously	1,770 students [a] 179 faculty [a] <u>32</u> employees [b]	2,949 358 <u>106</u>	264 18 <u>15</u>	253 18 <u>13</u>	11 0 <u>2</u>	84 9 <u>15</u>	56 2 <u>5</u>	28 7 <u>10</u>
1,980 total		3,413	297	284	13	108	64	45
<u>Existing Two-Story Building</u>	30 employees	100	14	13	1	14	5	9
<u>Remote Main Campus Parking</u>	200 parking sp. [c]	956	124	119	5	66	25	41
<u>Remove Ex. Shuttle Lot</u>	-508 parking sp. [c]	-2,428	-315	-302	-13	-168	-64	-104
<u>Net New Trips</u>		2,041	121	114	7	20	30	-10
PHASE 2 (2010)								
<u>Four -Story Building</u>								
up to 18 classrooms in use simultaneously	1,770 students [a] 179 faculty [a] <u>32</u> employees [b]	2,949 358 <u>106</u>	264 18 <u>15</u>	253 18 <u>13</u>	11 0 <u>2</u>	84 9 <u>15</u>	56 2 <u>5</u>	28 7 <u>10</u>
1,980 total		3,413	297	284	13	108	64	45
<u>New Two-Story Building</u>	885 students [a] 89 faculty [a] 39 employees [b]	1,475 179 <u>129</u>	132 9 <u>19</u>	127 9 <u>16</u>	5 0 <u>3</u>	42 5 <u>18</u>	28 1 <u>7</u>	14 3 <u>11</u>
1,013 total		1,783	160	152	8	65	36	28
<u>Remove Ex. Shuttle Lot</u>	-508 parking sp. [c]	-2,428	-315	-302	-13	-168	-64	-104
<u>Net New Trips</u>		2,768	142	134	8	5	36	-31

Notes:

- a. Trip generation rates based on published SMC Santa Monica Airport Campus Fall 2005 schedule and extrapolated for Phases 1B and 2 based on anticipated increase in the number of classrooms.
- b. Source: Institute of Transportation Engineers (ITE) Land Use 710, *Trip Generation, Seventh Edition*, 2003.
- c. Peak hour trip generation based on driveway counts taken May 27 and September 22 2004; daily rate based on 1,800 typical daily boardings and total SMC parking supply in the vicinity (428 shuttle spaces, approximately 80 spillover shuttle spaces and 239 spaces at existing Airport Campus).

**TABLE 5
PROJECTED FALL 2005 INTERSECTION LEVEL OF SERVICE
ALTERNATIVES 1, 2 & 3**

City of Santa Monica Methodology

Intersection	Peak Hour	Phase 1A (Fall 2005)								
		Alternative 1			Alternative 2			Alternative 3		
		Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS
1 23rd Street & Pico Boulevard	AM	14	0.694	B	14	0.696	B	14	0.694	B
	PM	20	0.936	B	21	0.936	C	20	0.936	B
2 23rd Street & Pearl Street [a]	AM	18	0.789	C	18	0.794	C	18	0.789	C
	PM	18	0.694	C	19	0.701	C	18	0.694	C
3 23rd Street & Ocean Park Boulevard	AM	22	0.852	C	25	0.905	C	22	0.852	C
	PM	47	1.056	D	49	1.065	D	47	1.056	D
4 23rd Street & Airport Avenue [b]	AM	**	N/A	F	**	N/A	F	**	N/A	F
	PM	13	N/A	B	13	N/A	B	13	N/A	B
	AM	7	0.845	A	7	0.847	A	7	0.845	A
	PM	12	0.935	B	12	0.933	B	12	0.935	B
7 Cloverfield Boulevard & I-10 WB off-ramps	AM	34	0.998	C	33	0.998	C	34	0.998	C
	PM	22	0.866	C	22	0.866	C	22	0.866	C
8 Cloverfield Boulevard & I-10 EB on-ramps	AM	10	0.647	A	10	0.647	A	10	0.647	A
	PM	6	0.634	A	6	0.634	A	6	0.634	A
9 Cloverfield Boulevard & Pico Boulevard	AM	32	0.822	C	32	0.823	C	32	0.822	C
	PM	**	1.037	F	**	1.044	F	**	1.037	F
10 Cloverfield Boulevard & Pearl Street [a]	AM	16	0.636	C	18	0.722	C	16	0.636	C
	PM	43	1.049	E	46	1.067	E	43	1.049	E
11 Cloverfield Boulevard & Ocean Park Boulevard	PM	37	0.769	D	37	0.770	D	37	0.769	D
	PM	15	0.620	B	15	0.621	B	15	0.620	B
12 Donald Douglas Loop & Airport Avenue [a]	AM	10	0.428	A	9	0.326	A	9	0.271	A
	PM	9	0.272	A	8	0.284	A	8	0.272	A
17 Bundy Drive & Airport Avenue	AM	24	0.629	C	31	0.678	C	29	0.651	C
	PM	11	0.829	B	10	0.818	A	11	0.834	B

City of Los Angeles Methodology

Intersection	Peak Hour	Phase 1A (Fall 2005)								
		Alternative 1			Alternative 2			Alternative 3		
		Delay or V/C	LOS		Delay or V/C	LOS		Delay or V/C	LOS	
4 23rd Street & Airport Avenue [b]	AM	**	F		**	F		**	F	
	PM	13	B		13	B		13	B	
	AM	1.154	F		1.185	F		1.150	F	
	PM	1.174	F		1.172	F		1.174	F	
*5 Walgrove Avenue & Rose Avenue	AM	1.235	F		1.234	F		1.231	F	
	PM	1.276	F		1.280	F		1.276	F	
*6 Walgrove Avenue & Palms Boulevard	AM	0.761	C		0.761	C		0.761	C	
	PM	0.901	E		0.913	E		0.901	E	
*13 Bundy Drive & Pico Boulevard	AM	1.033	F		1.033	F		1.033	F	
	PM	1.214	F		1.214	F		1.214	F	
*14 Bundy Drive & I-10 Freeway EB on-ramp	AM	0.877	D		0.876	D		0.877	D	
	PM	0.959	E		0.958	E		0.959	E	
*15 Bundy Drive & Ocean Park Boulevard	AM	0.963	E		0.946	E		0.963	E	
	PM	1.391	F		1.387	F		1.391	F	
*16 Bundy Drive & National Boulevard	AM	0.988	E		0.987	E		0.988	E	
	PM	0.883	D		0.877	D		0.883	D	
*17 Bundy Drive & Airport Avenue	AM	0.745	C		0.741	C		0.745	C	
	PM	0.933	E		0.905	E		0.925	E	
*18 Centinela Avenue & Rose Avenue	AM	0.705	C		0.709	C		0.708	C	
	PM	0.875	D		0.887	D		0.875	D	
*19 Centinela Avenue & Palms Boulevard	AM	0.901	E		0.903	E		0.905	E	
	PM	1.066	F		1.072	F		1.067	F	
*20 Centinela Avenue & Venice Boulevard	AM	0.996	E		0.996	E		0.996	E	
	PM	1.084	F		1.084	F		1.084	F	

Notes:

- * Intersection is currently operating under ATSAC system.
- ** Indicates oversaturated conditions. Delay cannot be calculated.
- [a] Intersection is all-way stop controlled. Level of service is based on average vehicular delay in seconds per vehicle
- [b] Intersection is two-way stop controlled. Level of service is based on average vehicular delay in seconds per vehicle for the most constrained approach. Also analyzed under signalized operations (HCM or CMA Methodology) to determine incremental change in V/C.

**TABLE 6
PROJECTED FALL 2010 INTERSECTION LEVEL OF SERVICE
ALTERNATIVES 1, 2 & 3**

City of Santa Monica Methodology

Intersection	Peak Hour	Phase 2 (Fall 2010)								
		Alternative 1			Alternative 2			Alternative 3		
		Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS
1 23rd Street & Pico Boulevard	AM	19	0.835	B	19	0.838	B	19	0.838	B
	PM	57	1.095	E	59	1.102	E	57	1.102	E
2 23rd Street & Pearl Street [a]	AM	45	1.054	E	46	1.059	E	45	1.059	E
	PM	**	1.080	F	**	1.088	F	**	1.088	F
3 23rd Street & Ocean Park Boulevard	AM	65	1.114	E	80	1.097	E	65	1.097	E
	PM	**	1.329	F	**	1.331	F	**	1.331	F
4 23rd Street & Airport Avenue [b]	AM	**	N/A	F	**	N/A	F	**	N/A	F
	PM	18	N/A	C	19	N/A	C	18	N/A	C
	AM	**	1.011	F	23	1.013	C	23	1.013	C
	PM	48	1.120	D	**	1.115	F	48	1.115	D
7 Cloverfield Boulevard & I-10 WB off-ramps	AM	**	1.281	F	**	1.281	F	**	1.281	F
	PM	73	1.129	E	73	1.129	E	73	1.129	E
8 Cloverfield Boulevard & I-10 EB on-ramps	AM	13	0.800	B	13	0.800	B	13	0.800	B
	PM	11	0.866	B	11	0.866	B	11	0.866	B
9 Cloverfield Boulevard & Pico Boulevard	AM	**	0.977	F	**	0.978	F	**	0.978	F
	PM	**	1.374	F	**	1.391	F	**	1.391	F
10 Cloverfield Boulevard & Pearl Street [a]	AM	22	0.797	C	30	0.774	D	22	0.774	C
	PM	**	1.283	F	**	1.274	F	**	1.274	F
11 Cloverfield Boulevard & Ocean Park Boulevard	PM	71	0.877	E	70	0.877	E	71	0.877	E
	PM	22	0.756	C	22	0.757	C	22	0.757	C
12 Donald Douglas Loop & Airport Avenue [a]	AM	11	0.579	B	9	0.278	A	9	0.278	A
	PM	9	0.338	A	9	0.327	A	9	0.327	A
17 Bundy Drive & Airport Avenue	AM	49	0.727	D	66	0.748	E	62	0.748	E
	PM	14	0.910	B	12	0.892	B	14	0.892	B

City of Los Angeles Methodology

Intersection	Peak Hour	Phase 2 (Fall 2010)					
		Alternative 1		Alternative 2		Alternative 3	
		Delay or V/C	LOS	Delay or V/C	LOS	Delay or V/C	LOS
4 23rd Street & Airport Avenue [b]	AM	**	F	**	F	**	F
	PM	18	C	19	C	18	C
	AM	1.368	F	1.415	F	1.363	F
	PM	1.406	F	1.403	F	1.406	F
*5 Walgrove Avenue & Rose Avenue	AM	1.471	F	1.469	F	1.465	F
	PM	1.553	F	1.559	F	1.553	F
*6 Walgrove Avenue & Palms Boulevard	AM	0.974	E	0.974	E	0.974	E
	PM	1.127	F	1.145	F	1.127	F
*13 Bundy Drive & Pico Boulevard	AM	1.215	F	1.215	F	1.215	F
	PM	1.609	F	1.609	F	1.609	F
*14 Bundy Drive & I-10 Freeway EB on-ramp	AM	1.092	F	1.091	F	1.092	F
	PM	1.495	F	1.494	F	1.495	F
*15 Bundy Drive & Ocean Park Boulevard	AM	1.108	F	1.082	F	1.108	F
	PM	1.565	F	1.559	F	1.565	F
*16 Bundy Drive & National Boulevard	AM	1.140	F	1.138	F	1.140	F
	PM	0.999	E	0.992	E	0.999	E
*17 Bundy Drive & Airport Avenue	AM	0.882	D	0.875	D	0.882	D
	PM	1.046	F	1.005	F	1.034	F
*18 Centinela Avenue & Rose Avenue	AM	0.826	D	0.831	D	0.830	D
	PM	0.988	E	1.005	F	0.988	E
*19 Centinela Avenue & Palms Boulevard	AM	1.028	F	1.030	F	1.034	F
	PM	1.183	F	1.192	F	1.185	F
*20 Centinela Avenue & Venice Boulevard	AM	1.202	F	1.202	F	1.202	F
	PM	1.222	F	1.222	F	1.222	F

Notes:

- * Intersection is currently operating under ATSAC system.
- ** Indicates oversaturated conditions. Delay cannot be calculated.
- [a] Intersection is all-way stop controlled. Level of service is based on average vehicular delay in seconds per vehicle.
- [b] Intersection is two-way stop controlled. Level of service is based on average vehicular delay in seconds per vehicle for the most constrained approach. Also analyzed under signalized operations (HCM or CMA Methodology) to determine incremental change in V/C.