southwestern community college district

facilities master plan

april 2013

VISION 2025

SOUTHWESTERN COLLEGE

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Message from the Superintendent / President

Southwestern Community College District

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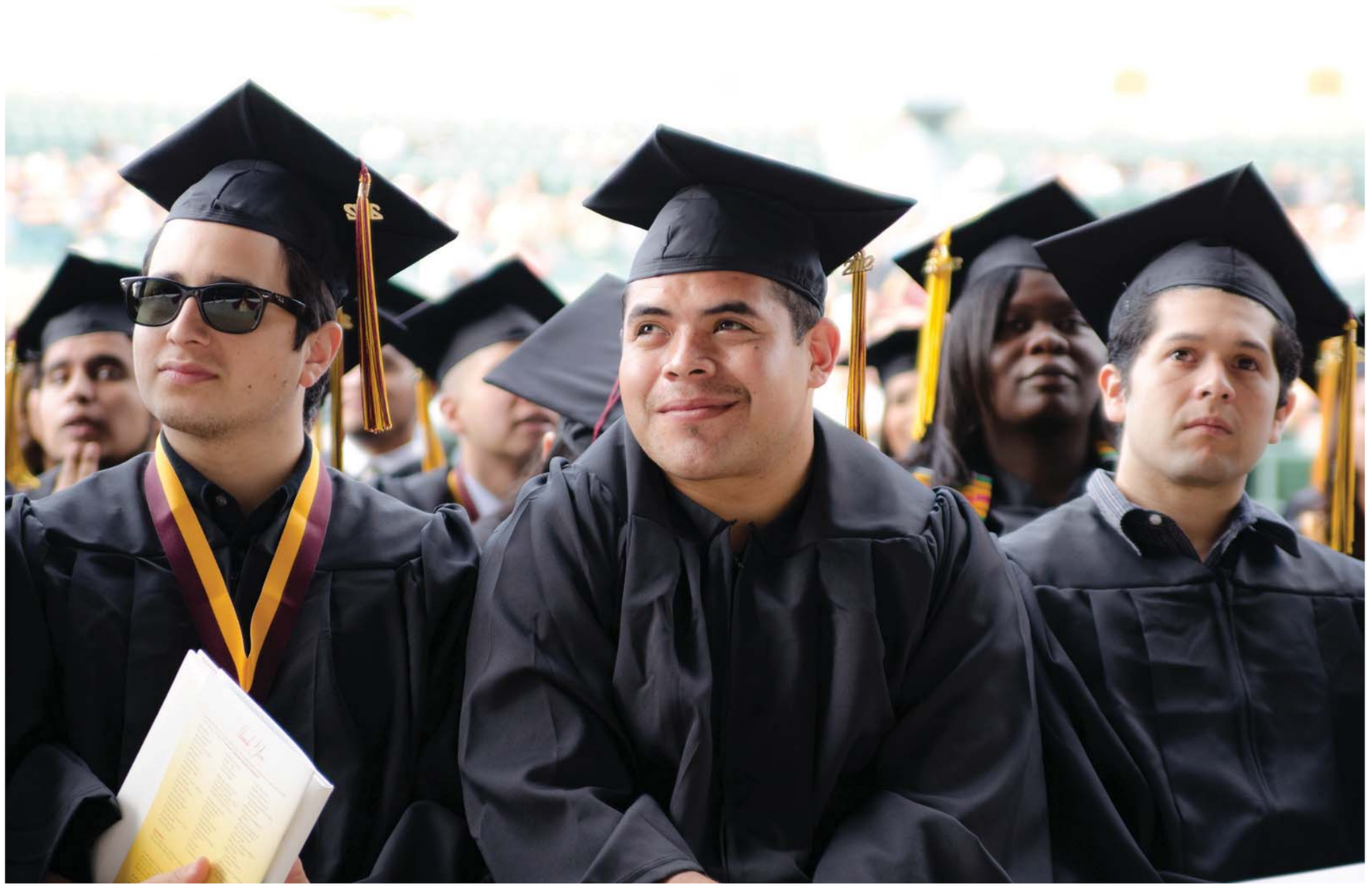


Message From The Superintendent / President

Southwestern College Campuses to Undergo Transformation

It is not often that a community can play an integral part in creating a vision for an institution of higher education. As we accept this new Facilities Master Plan, we are poised to see that vision come to life—a vision that will transform how we welcome students and community onto our campuses.

Nine months in the making, this Facilities Master Plan incorporates all the best and brightest ideas for meeting the educational needs of South County residents for the next 20 years. The plan incorporates career trends and helps us create facilities that will prepare our students for four-year universities and high-paying jobs.

This Facilities Master Plan envisions a newly defined community interface for the Chula Vista Campus with the development of the Corner Lot area, as well as a strengthening of the academic core with newly constructed and intelligently remodeled buildings. The plan includes improvements to each of our Higher Education Centers in National City, San Ysidro, and Otay Mesa. The impact on students and holistic learning serves as the foundation for the entire plan.

The South County community has been a generous supporter of Southwestern College, passing general obligation bonds that help us fulfill our students' educational dreams. In return, we provide an economic engine for South County that provides taxpayers a 7.5% return on their investment in Southwestern College.

There is a renewed sense of excitement at Southwestern College. Not since our founders began construction more than 50 years ago has there been this level of anticipation for what new buildings will rise throughout the college district.

Thank you for your ongoing support of Southwestern College.

Melinda Nish, Ed.D.
Superintendent/President

Southwestern Community College

Southwestern College began offering classes to 1,657 students in 1961, with temporary quarters at Chula Vista High School. Ground-breaking for the present 156-acre Chula Vista campus was held in 1963; by September 1964 initial construction was completed and classes were being held at the new campus on the corner of Otay Lakes Road and H Street in Chula Vista

In 1988, Southwestern College established its Higher Education Center at San Ysidro on the memorial site of the McDonalds tragedy. The College again expanded its off-campus locations in 1998 by establishing the higher Education Center at National City. A new Higher Education Center at Otay Mesa opened its doors in 2007 as a regional center for educational training and development. In 2009, a new state-of-the-art facility replaced the previous San Ysidro site to serve its students and the community.

In addition to its Centers, Southwestern College also provides off-campus classes at several extension sites throughout the District and operates an Aquatic Center in Coronado, in conjunction with the California Department of Boating and Waterways and the California Department of Parks and Recreation. Current enrollments – at all locations – exceeds 20,000 students. More than a half-million students have attended Southwestern College since its opening.

The Western Association of Schools has continuously accredited SWC. The college offers a comprehensive curriculum, preparing students for transfer to four-year colleges or universities and for jobs and career advancements.

Institutional Mission, Vision And Values

Mission Statement

Southwestern Community College District promotes student learning and success by committing to continuous improvement that includes planning, implementation, and evaluation. We serve a diverse community of students by providing a wide range of dynamic and high quality academic programs and comprehensive student services.

The College District provides educational opportunities in the following areas: associates degree and certificate programs; transfer; professional, technical, and career advancement; basic skills; personal enrichment; non-credit adult education; community services; and economic, workforce, and community development.

Vision

Southwestern Community College District builds an exceptional community of learners and leaders who will promote social, educational and economic advancement.

Governing Board Institutional Goals

Goal 1

Ensure a state-of-the-art teaching, learning, and work environment that supports and encourages student success.

Goal 2

Ensure that the College District budget effectively addresses fiscal challenges such that instructional, student support, and operational integrity is maintained. Budget plans will prioritize all locations based on the SCCD focused Mission and will include plans to optimize resources and generate additional revenue.

Goal 3

Continue development of integrated data systems that provide information for measurable student success by supporting efficient college operations, and institutional decision-making. Build a culture of evidence.

Goal 4

Ensure maintenance of full accreditation status and continue to use accreditation standards to guide strategic planning and operations.

Our Values

Priorities Strengthening Our Institution

Physical and Financial Resources

SWC will act in a responsible, accountable and transparent manner in budget and financial matters, and will actively and ethically seek outside sources of funding in order to preserve financial solvency.

SWC will provide that th college's design and infrastructure meets the evolving needs of all students, faculty, staff and community in support of an innovative learning environment.

- Establish and provide financial information systems that are transparent and easily accessible in support of the budget development process.
- Maximize utilization of existing facilities and develop new facilities based on ever-changing student learning needs, emerging technologies, Governing Boards goals and the SWC Strategic Plan.

Chapter 1
Introduction to the Facilities Master Plan (FMP)

Introduction to the Facilities Master Plan (FMP)

Overview

The Facilities Master Plan provides a current perspective for future academic and support services space, buildings and overall college/campus core amenity improvements. As a companion document to the Educational Master Plan, the FMP supports the development of the institution through the year 2025. The recommendations developed in this plan will depend upon and may require additional consideration in future planning. The Plan becomes a framework for campus development and addresses the following objectives.

- Create a functional and usable space/facilities plan based on the EMP that updates the previous assessment for space identified in the 2008 Southwestern Educational and Facilities Master Plan.
- Review and assess the current conditions of the college and the higher education centers related to the academic and support service programs and validate through quantifiable measures, the data to support future space needs for the District
- Obtain qualitative input from the campus/center community in support of the EMP and quantitative data from the research resources in the District.
- Match space needs with the curriculum, create modern teaching facilities and learning environments, and provide modern support services sufficient to serve students needs.
- Provide an overview for infrastructure planning, the development of campus standards and design guidelines, address deferred maintenance and general campus improvements.
- Evaluate traffic circulation and pedestrian way-finding with a goal of enhancing student access and student safety
- Be a resource for decision making in support of the distribution of Measure R Bond monies for current capital projects, as well as providing additional opportunities for state funding.
- Produce a well conceived and well justified plan for capitol outlay projects that are an outcome of a sound master planning process.

Assessment

Planning as a process should be both operational as well as strategic. The process must also incorporate existing planning as well as offering new recommendations based on recent District/College analysis. A planning model was generated to address the District's capacity for generating future Weekly Student Contact Hours (WSCH) and achieved enrollment growth. The model was based on the demographics of the effective service area and the ability of the District to attract new students. It is anticipated that the recommendations developed in this plan will depend upon and require additional consideration in future planning.

- Determine space tolerance thresholds for current buildings on campus and at the centers and to evaluate the types of spaces offered, their capacity for modification (including expansion), and their ability to accommodate future growth of the programs served
- Determine the future space needs of the academic and support services programs and establish a curriculum baseline composed of Weekly Student Contact Hours (WSCH), the number of sections offered, the number of enrolled students per class section, and the distribution of lecture versus laboratory hours. When viewed by discipline, a calculated need was established. Using this analysis, plus the historic trends of previous District growth,

provide a growth factor to be applied to future development of each program of instruction and support services of the institution

- Access the capacity to reuse some existing buildings that were vacated as a result of new construction projects
- Determine the impact on the user-constituency groups. The assessment process focuses on the impacts and possible displacement of personnel and functions, the requirements for any swing space during construction/renovation phases, additional financial implications to the District due to possible secondary effects, and the ultimate impact on students and staff
- Following the assessment, the process assists the District in its decision making related to available options to the building/facility program

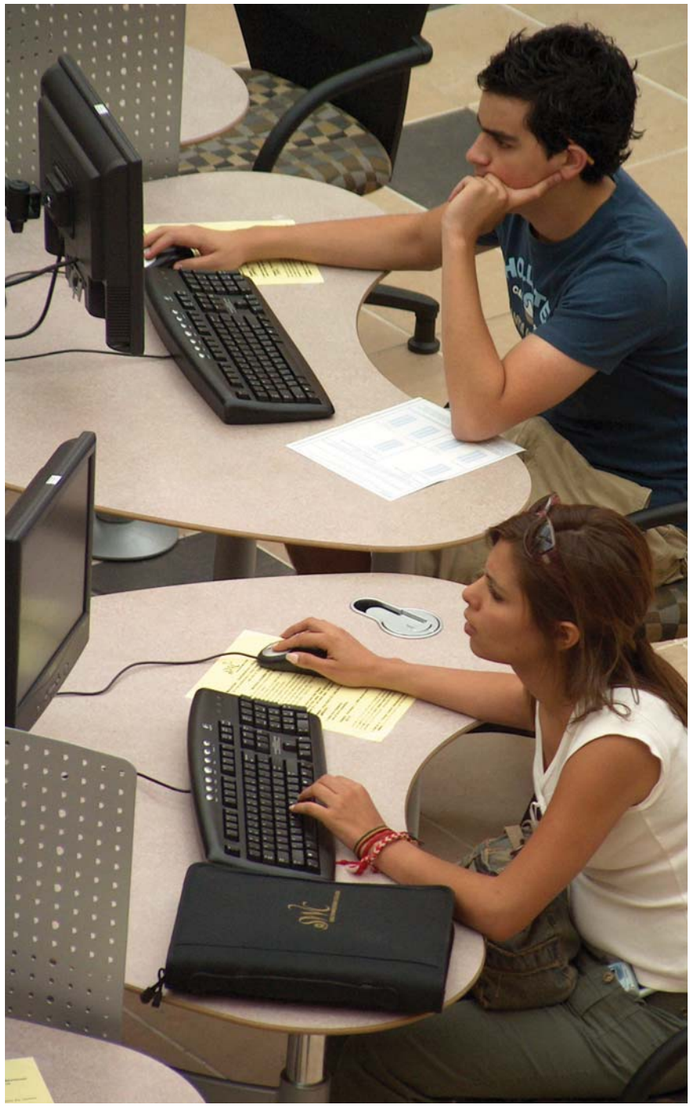
Outcomes

Planning was conducted through a collaborative planning process to update the Facilities Master Plan. Focus group interviews and questionnaires involved capturing the information necessary to evaluate a facilities condition plus the possible growth needs anticipated over the next 10 -15 years. These assumptions became the building blocks of the final “action plan” for facilities development.

- The capacities of the programs of instruction, the evaluation of space needs were viewed from both a quantitative and qualitative perspective
- The building facilities program identifies recommended new construction, renovation for reuse, modernization and possible secondary effects
- Student access and circulation connected to parking on campus along with the impact of pedestrian circulation was assessed and suggested modifications proposed
- Estimated expansion and centralization of support service elements were centralized and the services evaluated to address the development of related new technologies
- New construction projects were proposed to provide opportunities to improve space efficiencies
- Phased sequencing patterns minimized the need for on-campus swing space for interim use
- The scope involved a review of previous projects completed and those projects remaining in the queue.
- The establishment of a direction for additional construction and/or remodeling projects was proposed.
- As part of the process it became necessary to identify key elements in each project and associate them with the discipline/department needs
- In addition to facilities, a series of site improvement projects were identified to enhance the campus environment and integrate campus access, egress and student movement on-campus.

Chapter 2
Linking to the Educational Master Plan (EMP)

Linking to the Educational Master Plan (EMP)



Overview

Linking the Educational Master Plan's goals, strategies, and productivity to space quantification completes the process and balances the current and future curriculum, instructional delivery modes, effective learning environment, and necessary support structures.

While the current and immediate future economic indicators are somewhat uncertain and the district will need to address declining financial support, it is anticipated the District will return to positive growth in the foreseeable future. By 2015, as finances return to the new norm, new student enrollments should begin to expand and the District return to a more positive financial perspective and pattern of growth. Planning must address both long-term and well as meeting short-term goals.

The Facilities Master Plan relied on and was guided by the findings in the Educational Master Plan. Primary among those findings were the following consideration:

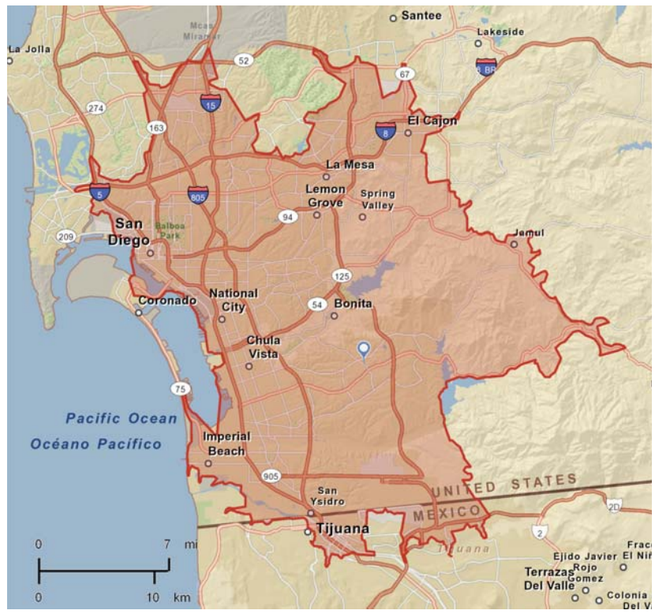
- The characteristics of the District's effective service area
- The District's course and program reviews as well as institutional effectiveness evaluations
- The potential for growth in the area
- The need for additional and/or better configurations of space into the future

Characteristics of the Effective Service Area

Based on an analysis of residential zip codes reported by enrolled students, the vast majority of students live within a drive time of 20-minutes from the Chula Vista campus. This area comprises the effective service area of the college. The key characteristics of this effective service area are noted below:

- The population was 1,179,286 in 2000. It is projected to be 1,341,698 by 2016. The subset of the area that is the official College district area alone will reach approximately 548,000 in 2020 and 701,000 by 2050. That represents a 51% change from the 2008 population of 462,787 in the official district area alone.
- The annual rate of population change is projected at 69%, slightly above the San Diego County projection. The median age projection at 33.5 years is two years younger than the County projected median age in 2016.
- The area for greatest growth is Otay Mesa followed by Barrio Logan, which is outside the official College district area. The Otay Mesa growth depends upon the actual development of San Diego City land in two high-density residential areas described in the updated 2011 Community Plan.
- There are pockets of poverty and unemployment in the district service area, notably in National City, Imperial Beach and Lemon Grove.
- The effective service area was 37% Hispanic in 2000 and is projected to become 47% Hispanic by 2016.
- Approximately 43% of the adult population age 23+ in the effective service area is a high school graduate or less. Around 46% of the adult population in this area has only a high school diploma or some college courses, but they do not have a college degree.
- The California Department of Finance projects an annual 18% decrease in the number of high school graduates between 2009-10 and 2020-21 in San Diego County. However, a gradual increase in graduates is expected to start in 2016-17 and continue to 2020-21.
- In the effective service area 16% of the population in 2010 was in the age range 15 to 24. It is projected that the portion of the population in this age range will drop by only 0.8% by 2016.

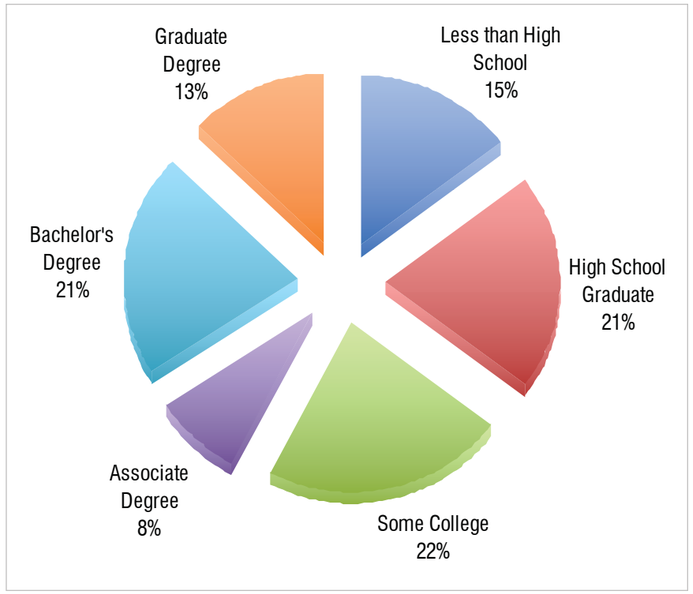
Effective Service Area



Summary

- The rate of population growth will be a potentially strong point for the College going forward. The County is projected annually to grow 0.67%. There will be some new residents who are not familiar with the College or its Higher Education Centers and should be reached with a marketing message. From 2011 to 2016 the population will rise. Approximately 17,200 people per year are projected to enter the county during this period.
- Residents have moderate incomes, comparable to the state median, but many will have to sacrifice in order to attend college.
- The near-term (2014-15 to2016-17) leveling out in high school graduates throughout the county suggests there will not be growing numbers of very young adults to accommodate at the College, but there will remain a steady stream of younger students. Beyond 2018 the projected number of graduates increases sharply suggesting the possibility of much younger student populations in the long term.
- The educational attainment percentages among adults 25 years or older indicates that at least 44% of the adults in the effective service area are candidates for postsecondary education.

Educational Attainment Percentages



Source: Cambridge West Partnership, LLC

Projections

The Educational Master Plan notes that the determinants for Southwestern College largely relied on the demographic characteristics of the effective service area, opportunities to meet educational needs and demand, and the region's high school graduation history. Additionally evaluated in the forecast for growth were the following:

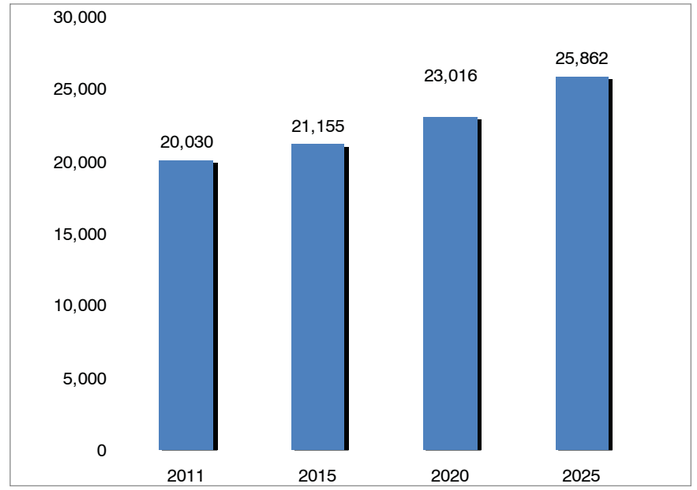
- Past historical trends for headcount and weekly student contact hours (WSCH)
- Strength of the current program of instruction
- The economic vitality of the region and the ability of the area to generate new employment
- The proximity to major transportation infrastructure

Non-quantifiable/intangible factors included:

- Past reputation of the College
- Strength of the educational mission
- Ability to achieve the educational mission
- Capacity to compete in the educational marketplace

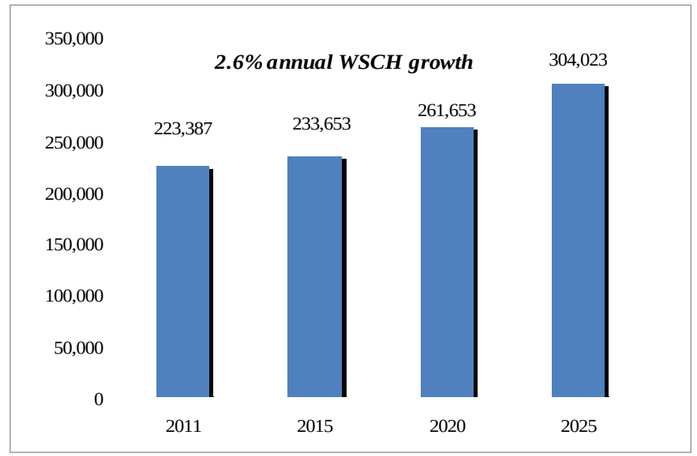
Given these factors, Southwestern College was determined to have the capacity to grow at a sustained rate of 2.1% for unduplicated headcount and 2.57% for WSCH through 2025. The translation of this projected growth, in terms of absolute values, is noted in the accompanying charts.

Projected Fall Term Headcount, Southwestern College District



Source: Cambridge West Partnership, LLC

Projected Fall Term WSCH, Southwestern College District



Source: Cambridge West Partnership, LLC

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Chapter 3
Future Program of Instruction

Future Program Of Instruction

Phase One: The Baseline

Forecasting the future program of instruction is related to the determination of Weekly Student Contact Hours (WSCH). While curricular content cannot be accurately predicted to 2025, certain assumptions may be made that are pertinent to the long-range forecasting process. It is assumed that the educational mission will remain somewhat consistent with past practice. With an estimate of projected WSCH and projected enrollments, the number of sections that are necessary to support this WSCH can be predicted relationally. Following the forecasting process, the projected WSCH is then correlated with capacity. Capacity is viewed as the necessary and appropriate space identified in the state standards to service the forecasted WSCH. While state standards of capacity are critical to the establishment of predicted space needs, all planning must also address the adequacy of the spaces to create an effective learning environment. This process forms the basis of the forecasting efforts that follow.

The fall 2011 semester was used as a starting point with the program of instruction providing a snapshot in time that served as historical perspective when compared to the previous data and it represented the most complete analysis available at the time. To address the capacities for the future, a planning model was created. This planning model, or “baseline”, provided the foundation from which a future program of instruction could be projected.

This baseline is captured in summary form in the following diagrams. The key elements include the number of sections offered, the total enrollments, the average seats per section, the total WSCH, the full-time equivalent students (FTES), and the total lecture and laboratory hours.

Southwestern College Chula Vista Campus

- 1,603 course offerings, 178,450 WSCH, and 6,001 FTES
- Average section size – 34.33 students
- 77% lecture and 23% laboratory hours
- 81% of Curriculum represents General Education/Transfer
- 1.5% Non-Credit, Continuing Education WSCH
- College produces 80% of District WSCH/FTES

Fall 2011 Baseline Summary

School	Section Numbers	Enrolled Seats	Seats / Section	WSCH	FTES	Lecture Hours	Lab Hours	% Sections	% WSCH
Arts & Communication	206	6,589	31.99	23,013	767	540	383	12.9	12.9
Health, Exercise Science & Applied Tech	284	8,866	31.22	30,424	1,067	483	633	17.7	17.0
Language & Literature	354	9,678	27.34	37,859	1,262	1,355	10	22.1	21.2
Mathematics, Science & Engineering	317	10,808	34.00	42,571	1,419	960	348	19.8	24.0
Social Science, Humaities & Business	408	14,245	34.91	41,958	1,398	11,276	2,912	25.5	23.5
Non-Credit	34	4,852		2,625	88	0	0	2.1	1.4
Total	1,603	55,038	34.33	178,450	6,001	14,614	4,286	100	100

Higher Education Center Otay Mesa

- 167 course offerings, 15,711 WSCH, and 621 FTES
- Average section size – 23.27 students
- 39% lecture and 61% laboratory hours
- Center focus on Health and Safety – produce 40% of center
- WSCH/FTES
- Programs in Associate Degree Nursing, Vocational Nursing,
- Surgical Technology, etc. as well as Administration of Justice,
- Paramedic/EMT, and Fire Technology
- Center produces 7.1% of District WSCH/FTES

Fall 2011 Baseline Summary

School	Section Numbers	Enrolled Seats	Seats Per Section	WSCH	FTES	Lecture Hours	Lab Hours	% % Sections	WSCH
Arts & Communication	2	58	29.00	201	6	4	2	1.2	1.0
Health, Exercise Science & Applied Tech	6	115	19.17	508	17	15	38	3.6	3.0
Language & Literature	8	209	26.13	916	31	34	0	3.8	6.0
Mathematics, Science & Engineering	17	496	29.18	2,169	72	51	39	10.2	14.0
Social Science, Humaities & Business	45	1,207	26.82	4,880	162	124	106	26.9	31.0
Health Occupations	76	1,529	20.12	6,356	212	134	426	45.5	40.0
Other: Insurance/Leadership	13	273	21.00	681	21	36	0	7.8	4.0
Total	167	3,887	23.27	15,711	521	398	611	100	100

Higher Education Center National City

- 184 course offerings, 13,917 WSCH, and 463 FTES
- Average section size – 24.87 students
- 69% lecture and 31% laboratory hours
- Program emphasis on Dental Hygiene and Medical Assisting
- General Education programs produce 69% of Center WSCH and Health Occupations produce 24% WSCH
- Space available for Small Business Operation
- Center produces 6.2% of District WSCH/FTES

Fall 2011 Baseline Summary

School	Section Numbers	Enrolled Seats	Seats Per Section	WSCH	FTES	Lecture Hours	Lab Hours	% % Sections	WSCH
Arts & Communication	9	275	30.56	1,029	34	27	2	4.9	7.4
Health, Exercise Science & Applied Tech	18	336	18.67	878	29	20	7	9.8	6.3
Language & Literature	18	510	28.33	2,156	72	74	0	9.8	15.5
Mathematics, Science & Engineering	28	883	31.54	3,352	112	85	21	15.2	24.1
Social Science, Humaities & Business	39	1,093	28.03	3,079	103	105	11	21.2	22.1
Health Occupations	65	1,270	19.54	3,333	111	79	137	35.3	24.0
Non-Credit	7	210	30.00	90	3	0	0	3.8	0.6
Total	184	4,577	24.87	13,917	463	390	178	100	100

Higher Education Center San Ysidro

- 168 course offerings, 13,783 WSCH, and 459 FTES
- Average section size – 25.81 students
- 84% lecture and 16% laboratory hours
- 80% of instructional hours are General Education offerings
- Program emphasis on General Education/Transfer and Child Development
- Center produces 6.2% of District WSCH/FTES

Fall 2011 Baseline Summary

School	Sections Number	Enrolled Seats	Seats Per Section	WSCH	FTES	Lecture Hours	Lab Hours	% % Sections	WSCH
Arts & Communication	13	330	25.38	1,111	37	28	16	7.7	8.1
Health, Exercise Science & Applied Tech	9	215	23.89	659	22	12	15	5.4	4.8
Language & Literature	50	1,247	24.94	4,870	162	183	8	29.8	35.3
Mathematics, Science & Engineering	18	624	34.67	2,393	80	67	0	10.7	17.4
Social Science, Humaities & Business	78	1,921	24.63	4,750	158	187	50	46.4	34.5
Total	168	4,337	25.81	13,783	459	477	89	100	100

Phase Two: Projections

The projections for future programs of instruction are not intended as parameters for the curriculum and/or actual numbers of sections to be offered in a given term, but rather to provide a perspective of what the current curriculum would look like if extended forward. Whatever the future curriculum becomes, the need for space would be still governed by specific amounts of lecture, laboratory and support service space. Growth for the benchmark years of 2015, 2020 and 2025 was projected at an annual rate of 2.57%.

The space projections make the jump from Weekly Student Contact Hours (WSCH) to the space and facilities necessary to support that WSCH. Starting with the fall 2011 baseline, the capacity to generate WSCH has been converted into State of California standards necessary to service the necessary lecture and laboratory functions. The scope includes a balance between the current space each program occupies and the projected need for programmatic space for the future.

For the purpose of this plan, a factor of 18 assignable square feet (ASF) per student station was used to estimate lecture classroom space need. While the state standard for lecture is currently 15 ASF per student station, this number has proved to be inadequate for both construction and instructional purposes. Due to modern classroom furniture types, technology considerations, teaching modalities and classroom orientation, the more appropriate factor is 18 to 20 ASF.

Tables 2.1 – 2.4 depict projected space needs in assignable square feet (ASF) for the benchmark years 2015, 2020,and 2025. The tables represent a summary of the projected assignable square feet (ASF) capacity for the future program of instruction by “Schools”. While the forecast is presented in summary form, the actual process was conducted at the discipline/program level. The capacity to generate WSCH was used as the key element for identifying the amount of lecture and laboratory space required to support future programs of instruction.

Southwestern College Chula Vista Campus

The summary analysis of space deficit indicates that this campus has an overall shortage of lecture classroom space needs of approximately 33,600 ASF. While the bottom line summary of laboratory classrooms appears adequate, upon examination of the detail by discipline/program, there is a shortage of laboratory spaces in Mathematics, Science & Engineering and Arts & Communication of slightly over 12,000 ASF.

Table 2.1

Southwestern College	Current 2011	Projected 2015	Projected 2020	Projected 2025
FTES	6,001	6,222	7,112	7,663
WSCH Lecture	135,109	144,083	165,184	188,276
WSCH Laboratory	40,717	42,571	48,171	55,672
WSCH Total	**175,826**	**186,654**	**213,355**	**243,948**
ASF Lecture	61,739	73,266	83,204	95,339
ASF Laboratory	108,912	71,825	81,617	93,484
ASF Other	5,440	0	0	0
ASF Total	**176,091**	**145,091**	**164,821**	**188,823**
Number of Sections	1,603	1,654	1,817	2,045
Seats per Section	34	34	35	35

Table 2.1

	Current				Projected								
	Fall Sem 2011				2015			2020			2025		
School	Lec ASF	Lab ASF	Other ASF	Total ASF	Lec ASF	Lab ASF	Total ASF	Lec ASF	Lab ASF	Total ASF	Lec ASF	Lab ASF	Total ASF
Arts & Communication	9,988	27,265	3,940	41,196	7,451	24,134	31,585	8,440	26,634	35,074	9,619	30,730	40,349
Health, Exercise Science & Tech	5,883	38,552	0	44,435	7,447	12,764	20,211	8,690	14,809	23,499	10,164	17,362	27,526
Language & Literature	14,273	5,376	508	20,157	20,764	647	21,411	23,377	777	24,154	26,318	849	27,167
Mathematic, Science & Engineering	13,883	27,663	0	41,546	17,299	26,044	43,343	19,102	29,711	48,813	21,623	33,293	54,916
Social Science, Humanities & Business	15,481	7,225	0	22,706	18,337	4,167	22,504	21,199	4,757	25,956	24,747	5,645	30,392
Child Dev, Library, Stuidy Skills	2,231	2,831	992	6,054	1,968	4,069	6,037	2,396	4,929	7,325	2,868	5,605	8,473
Campus Total	**61,739**	**108,912**	**5,440**	**176,094**	**73,266**	**71,825**	**145,091**	**83,204**	**81,617**	**164,821**	**95,339**	**93,484**	**188,823**

Higher Education Center Otay Mesa

There is no specific space need for lecture classroom space at this time and out to 2025. However, there will be a need for as much as 13,000 ASF in laboratory classrooms closely tied to programs in Safety and Allied Health on campus (Nursing programs – 6,500 ASF, Administration of Justice – 2,000 ASF, Fire Science and EMT – 4,500 ASF).

Table 2.2

Otay Mesa HEC	Current 2011	Projected 2015	Projected 2020	Projected 2025
FTES	522	575	626	728
WSCH Lecture	7,685	8,482	9,070	10,779
WSCH Laboratory	8,026	8,773	9,708	11,046
WSCH Total	**15,711**	**17,255**	**18,778**	**21,825**
ASF Lecture	9,060	4,364	4,671	5,553
ASF Laboratory	10,727	18,779	20,182	23,650
ASF Other	4,970	0	0	0
ASF Total	**24,757**	**23,143**	**24,853**	**29,203**
Number of Sections	168	170	170	178
Seats per Section	23	25	30	34

Table 2.2

	Current				Projected								
	Fall Sem 2011				2015			2020			2025		
School	Lec ASF	Lab ASF	Other ASF	Total ASF	Lec ASF	Lab ASF	Total ASF	Lec ASF	Lab ASF	Total ASF	Lec ASF	Lab ASF	Total ASF
Arts & Communication	0	0	0	0	65	215	280	74	245	319	86	281	367
Health, Exercise Science & Tech	0	1,320	1,470	2,790	289	2,418	2,707	303	2,481	2,784	348	2,851	3,199
Language & Literature	0	0	0	0	560	0	560	629	0	629	647	0	647
Math, Science & Engineering	0	3,745	0	3,745	806	2,451	3,257	851	2,558	3,409	1,026	2,939	3,965
Soc Sci, Humanities & Bus	0	0	0	0	1,292	3,281	4,573	1,432	3,692	5,124	1,682	4,260	5,942
Health Occupations	0	5,000	3,500	8,500	985	10,414	11,399	964	11,206	12,170	1,284	13,319	14,603
Other: Insurance/Leadership				0	367	0	367	418	0	418	480	0	480
General Lecture/Lab	9,060	662		9,722									
Campus Total	**9,060**	**10,727**	**4,970**	**24,757**	**4,364**	**18,779**	**23,143**	**4,671**	**20,182**	**24,853**	**5,553**	**23,650**	**29,203**

Higher Education Center National City

The lecture classrooms at the National City HEC appear adequate through the year 2025. However, there is a deficit of approximately 3,500 ASF in laboratory space to support the current programs in Medical Laboratory Technology and Medical Office Professional.

Table 2.3

National City HEC	Current 2011	Projected 2015	Projected 2020	Projected 2025
FTES	464	490	543	639
WSCH Lecture	10,810	11,597	12,762	14,946
WSCH Laboratory	3,017	3,100	3,417	4,101
WSCH Total	**13,827**	**14,697**	**16,179**	**19,047**
ASF Lecture	9,617	5,969	6,574	7,691
ASF Laboratory	6,588	7,591	8,348	10,022
ASF Other	0	0	0	0
ASF Total	**16,205**	**13,560**	**14,922**	**17,713**
Number of Sections	184	176	190	205
Seats per Section	25	28	30	34

Table 2.3

	Current				Projected								
	Fall Sem 2010				2015			2020			2025		
Location	Lec ASF	Lab ASF	Other ASF	Total ASF	Lec ASF	Lab ASF	Total ASF	Lec ASF	Lab ASF	Total ASF	Lec ASF	Lab ASF	Total ASF
Arts & Communication	0	0	0	0	517	184	701	591	210	801	680	241	921
Health, Exercise Science & Tech	0	1,909	0	1,909	432	1,162	1,594	489	1,195	1,684	587	1,573	2,160
Language & Literature	0	0	0	0	1,224	0	1,224	1,326	0	1,326	1,522	0	1,522
Math, Science & Engineering	0	1,719	0	1,719	1,509	1,337	2,846	1,678	1,334	3,012	1,979	1,754	3,733
Soc Sci, Humanities & Bus	0	0	0	0	1,429	300	1,729	1,567	344	1,911	1,860	395	2,255
Health Occupations	0	2,960	0	2,960	858	4,608	5,466	923	5,265	6,188	1,063	6,059	7,122
General Lecture/Lab	9,617	0	0	9,617									
Campus Total	**9,617**	**6,588**	**0**	**16,205**	**5,969**	**7,591**	**13,560**	**6,574**	**8,348**	**14,922**	**7,691**	**10,022**	**17,713**

Higher Education Center San Ysidro

The San Ysidro HEC space projected need for additional facilities indicates a shortage of 4,000 ASF in lecture classrooms and 3,700 ASF in laboratory space by the year 2025. This will require a new facility that could accommodate an additional 10 lecture classrooms, a larger open computer lab, and significant space to accommodate the expanding Child Development Program.

Table 2.4

San Ysidro HEC	Current 2011	Projected 2015	Projected 2020	Projected 2025
FTES	459	502	550	636
WSCH Lecture	12,045	13,151	14,389	16,666
WSCH Laboratory	1,738	1,897	2,123	2,415
WSCH Total	**13,783**	**15,048**	**16,512**	**19,081**
ASF Lecture	4,548	6,772	7,407	8,582
ASF Laboratory	2,199	4,712	5,240	5,917
ASF Other	2,188	0	0	0
ASF Total	**8,935**	**11,484**	**12,647**	**14,499**
Number of Sections	168	170	170	178
Seats per Section	26	28	30	34

Table 2.4

	Current				Projected								
	Fall Sem 2011				2015			2020			2025		
Location	Lec ASF	Lab ASF	Other ASF	Total ASF	Lec ASF	Lab ASF	Total ASF	Lec ASF	Lab ASF	Total ASF	Lec ASF	Lab ASF	Total ASF
Arts & Communication	0	669	0	669	376	1,109	1,485	430	1,273	1,703	500	1,477	1,977
Health, Exercise Science & Tech	0	820	2,188	3,008	418	1,503	1,921	473	1,573	2,046	544	1,632	2,176
Language & Literature	0	0	0	0	2,669	248	2,917	2,887	283	3,170	3,347	334	3,681
Math, Science & Engineering	0	0	0	0	1,438	0	1,438	1,471	0	1,471	1,690	0	1,690
Soc Sci, Humanities & Bus	0	710	0	710	1,871	1,852	3,723	2,146	2,111	4,257	2,501	2,474	4,975
General Lecture/Lab	4,548	0	0	4,548			0			0			
Campus Total	**4,548**	**2,199**	**2,188**	**8,935**	**6,772**	**4,712**	**11,484**	**7,407**	**5,240**	**12,647**	**8,582**	**5,917**	**14,499**

Chapter 4
Southwestern Community College District Today

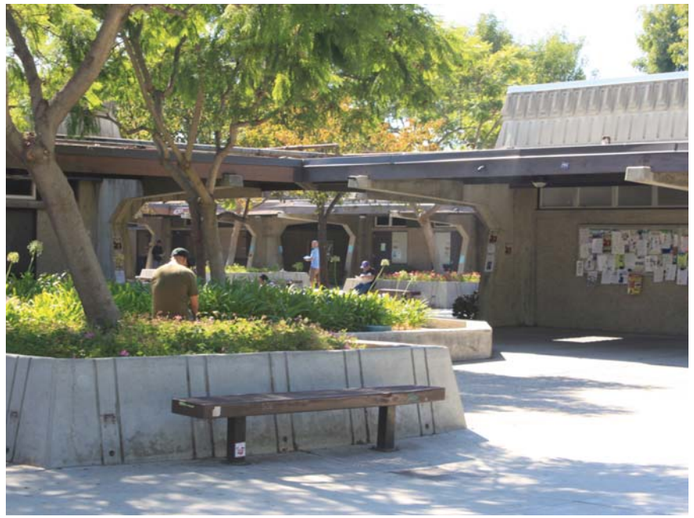
Southwestern Community College District Today

Overview

Southwestern College is comprised of the original 156 acre Chula Vista Campus and three higher education centers in San Ysidro, National City and Otay Mesa.

In addition to the Chula Vista Campus and its Centers, Southwestern College provides educational opportunities at multiple extension sites throughout the District and operates an Aquatic Center in Coronado. These sites are not District owned and are therefore not addressed in the Facilities Master Plan.

- Southwestern College at Chula Vista
- Southwestern College Higher Education Center
- Southwestern College Extension Site



Chula Vista Campus

The SWCC Chula Vista Campus occupies 156 acres at the southwest corner of Otay Lakes Road and H Street in the City of Chula Vista

The northeast edge of the campus fronts Otay Lakes Road which serves as the public or front door to the campus. Limited access is provided from H Street on the northern edge of the campus. The balance of the campus perimeter abuts single family residential neighborhoods to the south and west.

The campus is generally defined by a developed, centralized academic core ringed by a two-way loop road and parking. Separated from the academic core by the ring road are athletic fields and support facilities which occupy a significant portion of the northern and western edges of the campus, and the original CTE (horticulture and automotive) and Maintenance / Operations facilities southwest of the core.

In recent years, as the campus has grown, development has occurred outside of the academic core including administrative offices, temporary classrooms and a Child Development Center. These facilities, together with additional surface parking, occupy the southwest quadrant of the campus.

Approximately 11.5 acres at the north corner of the campus fronting the Otay Lakes Road and H Street intersection, as well as approximately 8.5 acres at the southern edge of the campus abutting adjoining residential neighborhoods, are undeveloped.

The campus site generally slopes from the south to the north with significant grade differences between the academic core and the parking to the south / southeast (approximately 8 - 18 feet) as well as between the academic core and the sports facilities and undeveloped area fronting Otay Lakes Road and H Street (approximately 45 feet). These grade differences create ADA and universal accessibility issues / considerations.

Age & Condition Of Buildings & Infrastructure

Existing Building Stock

The age and condition of campus facilities varies. As indicated in the adjacent table the majority of the original campus buildings were constructed in the mid- sixties and early seventies. By the end of the planning period addressed in this master plan these facilities will be 50 to 60 years of age.

Notable exceptions include the 2002 LRC; 2004 Child Development Center; the 1600 Buildings (modular office and classroom facilities) constructed in 1991; and the 640, 650 and 660 Buildings constructed in 1999.

With the exception of the current Student Services Center (originally the campus Library and repurposed in 2002) and Myan Hall, the original instructional and support buildings are one story, exterior loaded, concrete frame buildings developed in academic clusters and connected by deep, wood framed overhangs and canopies.

While a limited number of the early buildings have been repurposed and / or upgraded as indicated in the adjacent table, the majority of these buildings are in need of extensive renovation and /or replacement of building systems to correct deterioration resulting from deferred maintenance, building systems reaching or exceeding their useful life, and the need to meet current instructional and technology needs.

To assess, from a maintenance perspective, the current condition of each building on campus, discussions were held with the campus' maintenance and operations team. Buildings were evaluated by component systems including the building envelope (roof condition, canopy conditions, painting), plumbing systems, mechanical systems age and condition, electrical systems age and capacity, and the need for day to day maintenance. These discussions resulted in the ranking of buildings on a scale of 1 to 5, characterized as follows:

1. The building is in good working condition
2. The building requires minimum improvements (cosmetic)
3. The building requires moderate improvements (system repair)
4. The building requires heavy improvements (replacement of systems)
5. The building has major deficiencies

As depicted in the adjacent diagram, the majority of buildings were ranked as a condition of 3 or higher.

A summary of our analysis indicates the following:

- The majority of buildings will be exceeding 50 years of age by 2025, the planning horizon selected for the Facilities Master Plan
- Due to a lack of maintenance over time the majority of the early campus building are in need of significant renovation and or replacement of building systems. They are in need of "renewal" if they are to continue in service for any significant period.
- The number of older, relatively small, exterior loaded buildings, coupled with significant deferred maintenance issues creates a day to day maintenance burden and cost
- While age of a building may not be a significant factor in the continued use, renovation or repurposing of any specific building, the efficiency of the building envelope, the need to support growth and the need to support current technology and instruction all contribute to renewal costs approaching the cost of replacement, as well as operating costs which will likely exceed those resulting from replacement and consolidation.

Infrastructure

Consistent with the age and condition of facilities much of the infrastructure has reached or surpassed its useful life. The threat to disruption of operations and cost to maintain these systems on a daily basis is a burden to the Campus.

The campus is currently completing a Central Plant adjacent to the Field House and Stadium. A chilled water distribution system has been completed in the northeast half of the existing perimeter road. The plant is capable of serving significantly more load than the currently connected buildings and should be sufficient to meet the needs of the 2025 plan however further analysis is required to confirm this understanding. The central plant equipment is modular. The space within the central plant is sufficient to support an increase in equipment as necessary to operate all buildings within the campus core.

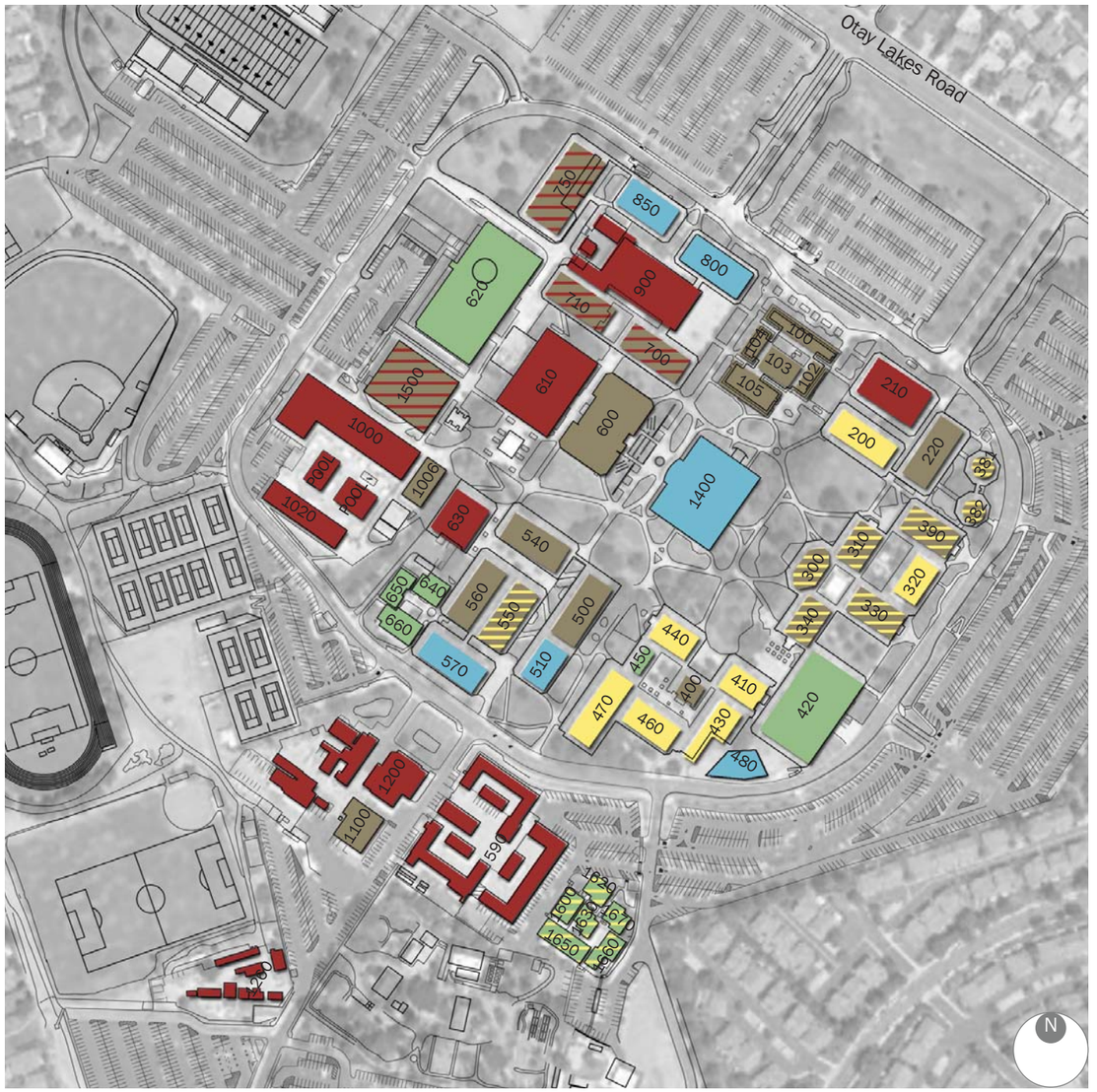
An irrigation lateral extending to the campus from the municipal, non-potable (irrigation) system in Otay Lakes Road has been completed. The system has not been activated or extend to serve the campus core.

Building Number	Building Name	Year Built
100	Administration	1965
102	Staff Lounge	1965
103	Classroom	1965
104	Academic Senate	1965
105	Classroom	1971
200	Business	1965
210	Administration	1978
220	Business	1966
300	Science Lecture	1965
310	Biology	1965
315	Animal Storage	1965
316	Greenhouse	1965
320	Life Science	1981
330	Chemistry	1965
340	Physics	1965
381	Exhibit Hall	1967
382	Planetarium	1967
390	Mathematics	1966
400	Office	1965
410	English	1965
420	Academic Success Center	2002
430	Classroom	1979
440	Language	1965
450	Office	1972
460	Behavior Science	1974
470	Social Science	1974
500	Graphics	1965
510	Classroom	1971
540	Electronics	1965
550	Tech/ Human SVC	1974
560	General Classroom	1974
570	Photography Lab	1978
590	Automotive	1971
600	ASO	1965
610	Student Union	1965
620	Learning Resource Center	2002
630	Bookstore	1981
640	Journalism	1999
650	Resource TR	1999
660	Community Service	1999

Building Number	Building Name	Year Built
700	Art	1965
710	Art Gallery	1969
750	Art	1975
850	Music	1975
900	Auditorium	1969
1000	Physical Ed	1965
1006	Women's - Activity	1969
1100	Warehouse	1978
1200	Maintenance	1965
1250	Auto Maintenance	1968
1400	One Stop SSC	1965
1500	Gymnasium	1965
1600	Classroom (Modular)	1991
1620	Classroom (Modular)	1991
1630	Conference (Modular)	1991
1650	Business Operation (Modular)	1991
1660	Classroom (Modular)	1991
1670	Classroom (Modular)	1991
1680	Classroom (Modular)	1991
1700	Team	1972
1710	Concession	1971
1735	Child Development	1998
1800	Horticulture	1986
1810	Greenhouse	1976
1900	Information Booth	1989
2000	Child Development Center	2004

Condition Ranking

- 1
- 2
- 2.5
- 3
- 3.5
- 4
- 4.5
- 5



Vehicular Access, Circulation & Parking

Vehicular Access and Circulation

Vehicular access to the campus is limited to two major arterials, Otay Lakes Road to the east (4 entries) and H Street (1 entry) to the north. Vehicular access to the southwest edge of the campus through the residential neighborhood from Woodcrest Street is limited to emergency vehicles. Over two thirds of the campus perimeter abuts residential neighborhoods without access.

The Otay Lakes Road entries are generally well distributed. The northern most entry southeast of the Otay Lakes Road and H Street intersection is limited to right-in / right-out movements. The southernmost entry is not signalized. The two primary entries, Elmhurst and Gotham, are signalized. All entries would benefit from enhanced signage and a unified, identifiable landscape and entrance character.

The H Street access is signalized however vehicular approach from the west is abrupt and lacks a right hand deceleration lane. This entry lacks appropriate signage and other forms of college branding.

All vehicular entries terminate on a two-way loop road, which circumnavigates the academic core. Parking generally lies outside the loop road and is bifurcated from the academic core. This leads to significant pedestrian and vehicular conflicts (18 striped crossings) as pedestrians attempt to access the campus from parking, considerably slowing vehicular traffic at peak times. The result is congestion and unsafe pedestrian conditions.

The adjacent diagram depicts the current organization of the Chula Vista Campus in a simplistic way: the parking ( ) sits outside of the vehicular loop ( ) which rings the academic core ( ). Pedestrians → are forced to cross the loop road to gain access to the core.

Parking

With the exception of peak enrollment periods the Chula Vista Campus is very adequately parked. One measure of parking adequacy is the ratio of unduplicated student enrollment to the number of on-campus spaces. Today, there are approximately 4,300 parking spaces on Campus. The 2011 unduplicated enrollment for the Chula Vista Campus is approximately 20,330 students. This equates to a current ratio of approximately 4:1.

On-site parking is generally well distributed relative to the intensity of student use and, with the exception of the new lots to the southwest edge of campus, in relative close proximity to the academic core. The bulk of campus parking is currently located along Otay Lakes Road northeast of the academic core (Lots A, B & O) and along the south perimeter of the campus (Lots C & D). Lots O, A, B, C & D account for over 55% of the campus parking; due to access, ease of entry and proximity to academic space, these parking lots are the most frequently used. Approximately 20% of the available parking is located south and west of the Maintenance and Operations facilities (Lots E, F & G); these lots are the least used primarily due to distance from the academic core and the difficulty / time required to access. The balance of parking, most readily accessed from H Street (Lots H, I, J, K, L, M & N), serves the Library and adjoining athletic facilities and fields.

With the exception of Lot O, all on-campus lots are accessed from the loop road. However, due to congestion, a large number of students access the south lots (Lots C & D) from the southernmost Otay Lakes Road entry and traverse these lots searching for parking. This traffic, combined with the irregular geometry and organization of these lots, results in congestion, pedestrian conflicts and unsafe conditions.

Service

Facilities requiring service vehicle access are distributed in multiple locations on campus. These primarily include Maintenance / Operations and Warehousing, the Time Out Cafe, Automotive Technology, the Book Store, the Cafeteria, Mayan Hall and the Fine Arts Labs.

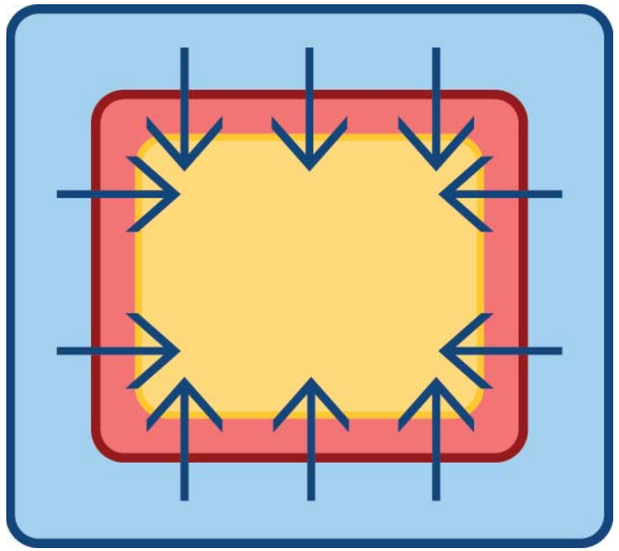
Service vehicles share the loop roadway with general traffic. Access from the loop road to the buildings served is relatively direct and, with the exception of service to the Cafeteria, does not create significant service / pedestrian conflicts, other than the conflicts inherent in the loop road pedestrian crossings previously noted. Service vehicle access to the Cafeteria is problematic in that it crosses the primary north / south pedestrian access to the south side of the Library.

Public Transportation

The Chula Vista Campus includes a well located on-site transit drop off on the east edge of the campus core. The drop-off is sited in close proximity of the public safety office between the Gotham Street and Elmhurst Street entries. The transit stop appears to be heavily used and facilitates easy, accessible, direct access to core of the campus.

Currently four bus routes access the campus: 705A, 707, 709 & 712. Additional drop-offs occur both north and south bound on Otay Lakes Road.

Current Campus Organization



- Arterial Road
- Vehicular Entry
- Transit Drop Off
- Parking
- 2 Way Loop Road
- On Site Vehicular Circulation
- Service Vehicle Access
- (A) Parking Lot (per SWC Campus Map)
- Pedestrian / Vehicular Conflicts
- Striped Pedestrian Crossings

Pedestrian Access & Open Space

Open Space

The academic core of the Chula Vista Campus is visually pleasing, campus like and the landscape is mature.

The early master plan for the campus provided for a series of single story building clusters, organized by academic discipline at the edge of the campus and radiating around the original 2 story library (Building 1400, now Student Services Center) and a centralized, open campus core. Time has done little to change the concept however the campus has grown, programs have expanded, many academic disciplines spill from cluster to cluster, and the library has moved to the north edge of the academic core. The resulting campus retains a sense of open space at its core. This space today is "ornamental" in character and defined by mature trees, well maintained significant turf and planting, and a series of meandering pathways connecting buildings.

While the campus possesses a significant amount of open space few of the "public buildings" at the core of the campus (The Student Center, Student Union / Cafeteria, and Student Services Center) have adjoining open space which adequately supports or encourages formal and / or informal student activities, study or socialization. Missing from the central open space today is a sense of identity, student life and campus energy.

Pedestrian Circulation and Wayfinding

Pedestrian access to the core from adjoin parking is difficult at best and at worst unsafe, due the separation created by the loop road. (see Vehicular Access and Parking for further discussion of this issue)

Pedestrian way finding, the ability to easily and conveniently find your way from parking to your destination, or from one destination or building to the next, is difficult, even for those familiar with the campus. Planning considerations include:

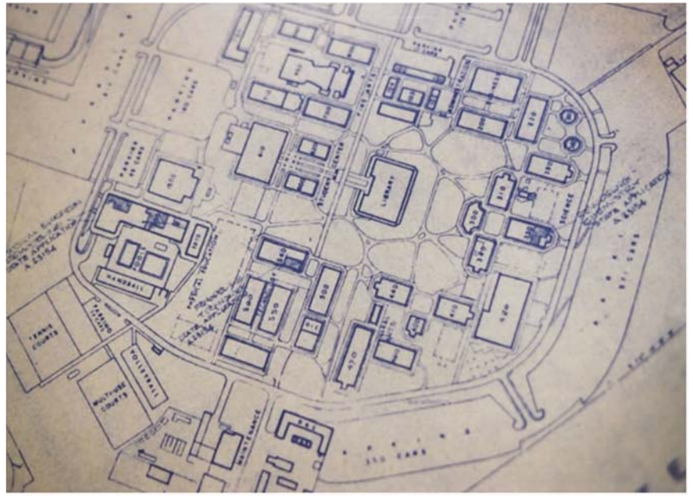
- A lack of consistent, appropriately scaled and located building and pedestrian signage.
- Pedestrian "gateways" from parking to the academic core are poorly defined, do not present a consistent, welcoming / landscape / hardscape character, lack appropriate signage, and generally provide limited vistas (visual access) to the campus core.
- Visual access from parking and pedestrian gateways to the center of campus is limited. The one exception being the East / West pedestrian spine spanning from the transit drop off at the northeast edge of the campus through the academic core to the 500's building cluster on the southwest edge.
- The majority of the buildings on campus are of similar architectural character, size and scale. The sameness of the buildings and adjoining covered walkways, a lack clear, adequate signage and the internalized courtyard all contribute to the difficulty of finding your way from point to point.

Elevation changes across the site create challenges with respect to ADA requirements and universal accessibility. Parking Lots C and D are elevated above the campus core from 10 - 18 feet. The north edge of the academic core is elevated above the undeveloped lot at the corner of the Otay Lakes Road / H Street intersection by more than 40 feet. The grade differences provide a unique opportunity of creating pedestrian bridges to and from the academic core.

Pedestrian access from the campus core to the undeveloped land at the northeast corner of campus and from the academic core to the southwest quadrant of the campus (administrative offices, temporary classrooms, Child Development Center, CTE facilities and Parking Lots G & F) should be should be integrated in future campus planning.

Open, Mature Campus Core

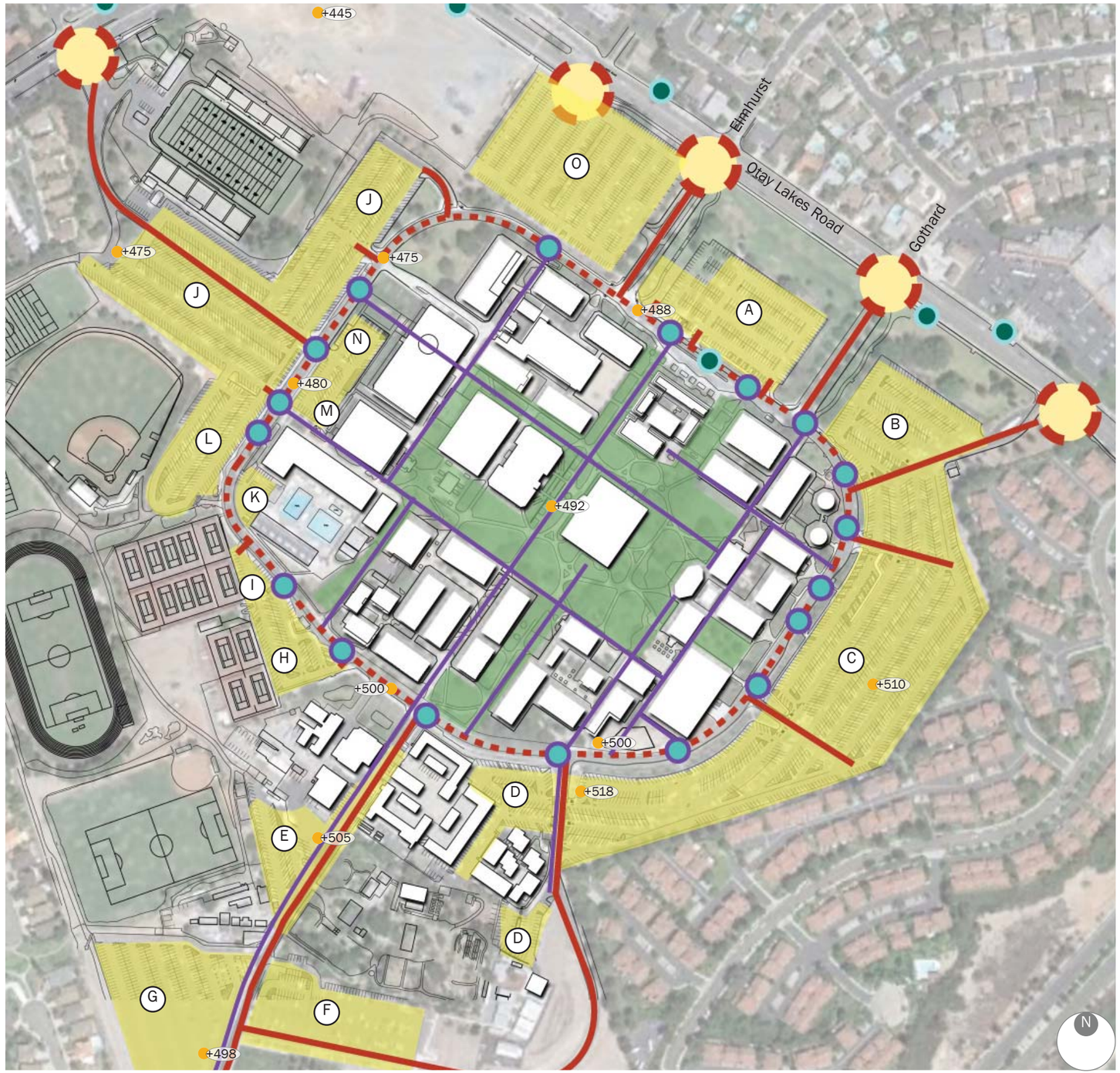
Early Master Plan



East / West Pedestrian Spine

Diagram Key

- Vehicular Entry
- Pedestrian Crosswalk
- Central Open Space
- Pedestrian Circulation
- Parking
- 2 Way Loop Road
- On Site Vehicular Circulation
- Transit Drop Off
- +492 Elevation Point
- (A) Parking Lot (per SWC Campus Map)



Key Consideration For The Future

Based on the findings from the Educational Master Plan, inputs from the college community and on-campus visits, several key considerations were identified as pertinent to the development of the Facilities Master Plan.

Meeting Demands For Growth

Based on the current space inventory and the projected growth approximately 69,800 ASF of additional classroom space will be needed in the District by the year 2025, or whenever 304,023 WSCH is achieved.

Southwestern College's Chula Vista Campus will need approximately 45,600 ASF in combined lecture and laboratory facilities primarily in the Schools of Mathematics, Science and Engineering and Arts & Communication by the year 2025.

The Higher Education Centers at Otay Mesa, National City and San Ysidro have a combined need for an additional 24,200 ASF in combined lecture and laboratory facilities.

Addressing An Aging Campus

Thirty-three academic buildings on campus were constructed between 1965 and 1969. By the year 2025 these buildings will be between 56 to 60 years old. Since that time only six have been modified and only one since the year 2000.

Between 1970 and 1979 nineteen (19) buildings have been added to the campus, five have been modified in some way. Four of these projects were related to current Bond activity: the ASO (Building 600) in 2000; Building 510 in 2011; the Academic Success Center (Building 420) in 2005; and a Photography remodel of Building 570 in 2011.

Primary Infrastructure Needs

The existing infrastructure has served Southwestern College for over 40 years. Failing infrastructure has been a persistent problem on the campus, particularly over the past ten years. Most mechanical and utility systems are in need of some repair.

Maintain Landscaping & Open Space

Landscaping should be an asset to the campus and to the community in general. As a mature campus, the landscaping is well defined and significant in its distribution. Existing trees should be maintained if feasible.

Address Areas To Support Student Collaboration

The District should continue to focus on providing dispersed spaces on campus for students to gather and communicate, multiple seating and gathering spaces distributed though out the campus.

Supporting The Core Mission Of The District

Consideration was given to insuring that facilities in the future support the core mission of the College/District – i.e. a strong program of transfer/general education, basic skills preparation and workforce preparation. Facilities of the future should ensure that the programs in the sciences, mathematics, language arts, humanities, career technical education, and basic skills are adequately accommodated.

Access, Vehicular Circulation & Student Pathways

Access to the campus, entry points, vehicular circulation and on campus traffic patterns are prime planning considerations. The points of entry and exit, transit drop off, and campus wide signage must be addressed. Consideration should be given to balancing parking with future facility locations. Visibility and signage enhance pedestrian circulation into and throughout the campus. A focus on improved campus zoning and pathways of movement for students within the campus become critical features.

Space Utilization / Distribution Of Space

Whenever possible, space allocations should conform with Title 5 standards and allowances for the key space categories monitored by the state. Even without current state funding, it is in the College's best interest to keep itself in a "funding worthy" position for that time in the future when funding becomes available.

Technology Considerations

Facilities planning is closely linked to and aligned with technology. The association between instruction, support services and technology is impacted by distance learning, classroom and support service needs, and anticipated future technological innovations.

The Maintenance Imperative

Maintenance is imperative to the facilities planning process. Key maintenance issues that need to be addressed as part of the Facilities Master Plan include:

- The adequacy of the current and projected maintenance organizational structure to support new or renovated facilities
- The need to generate an overall comprehensive and long-term plan for maintenance.
- A long-term commitment of funding for maintenance.

Chapter 5
A Vision for the Future

A Vision For The Future

Translating Findings Into Physical Form

Translating the findings from the key considerations for the future into a college/center vision was facilitated via a program of work. Findings from the Educational Master Plan, growth projections for the future, the current campus assessment, key planning assumptions and the current planning efforts provided the shape and form that was to become the program of work.

Following data analysis and the projections for growth in the academic and support services venue, the planning process began. The process involved the assemblage of space into larger building blocks and consideration of their appropriate locations on the campus. The information was based on campus tours, interviews with constituent groups, public presentations, questionnaires, discussions with administrative units, and presentations to appropriate committees.

The Building/Facilities Program was based on several key planning elements and objectives:

- To present a complete program of development that addresses the total needs of the District through 2025.
- To address aging buildings and infrastructure as well as new construction to meet growth projections
- Create a program that is capable of leveraging state funding
- To prioritize and sequence facility projects to minimize the disruption on campus and the need for alternative temporary housing or swing space
- To develop a Building/Facilities Program that has institutional and community support
- To involve campus constituencies in the planning process
- To be sensitive to the Bond program limits

Chula Vista Campus Program of Work

1. Wellness Center / Gymnasium
2. Performing Arts & Cultural Center Complex (PACCC)
3. Student Union Complex
4. Math / Science Building
5. Planetarium / Exhibit Hall / Large Lecture
6. Fine Arts / Gallery
7. Business, CIS & Communications
7a. Administration Building
8. IT / Central Services
9. 1600's Repurposing
10. Journalism
11. Student Services
12. Academic Success Center
13. Building 420 Remodel
14. Security Complex
15. Parking Structure
16. Maintenance & Operations
17. Automotive
18. Fields & Support Structures

- New Construction
- Repurpoused for New Use
- Existing Building

Chula Vista Campus Systems

In developing the Facilities Master Plan, the campus was viewed as an entity with strengths and weakness, with particular goals to be pursued, and with specific outcomes to be achieved. The needs of the "total campus" were considered, not simply buildings. Critical campus systems needed to support current facilities and future improvements were also taken into account. The campus systems included such elements as pedestrian circulation, vehicular circulation and parking, open space, and campus amenities / improvements. Along with facilities (projects), these components coalesce to make the campus a living and working community. Collectively, they support the overall goal of serving students by providing the physical resources that support learning and the overall academic experience. As a mature campus, and based on the significant program of work envisioned through 2025, the Facilities Master Plan described in the following pages builds upon the strengths of the existing campus systems while simultaneously suggesting significant refinement of these systems. The Facilities Master Plan establishes a planning framework for the long term growth and enhancement of the Southwestern College campus.

Respected Landscape Architect, Kevin Lynch, developed a series of words like paths, edges, districts and landmarks to describe the organization of a city, how these elements enable its inhabitants understand the city as a "place", and how these elements facilitate their navigation of that "place" in a way that allows them to enjoy its various components and benefits. These words have become the concepts which planners use to organize small and large scale places, such as a campus, in a way that allows the users and inhabitants of that place to find their way around and enjoy the experience.

For Southwestern College we have used this nomenclature and similar concepts to shape and define the campus as a series of systems intended to support new students, the public, student body, faculty, administration and staff. We believe these planning concepts will aid in creating a unique place for students. A place which supports access, learning, teaching, and socialization in a visually pleasant and socially stimulating environment which is welcoming and easily understood.

Vehicular Access & Circulation & Parking

Creating Vehicular Gateways

The master plan recommends enhancement of existing and new vehicular access points to create "vehicular gateways" including a formalized hierarchy of appropriate signage and a unified, identifiable landscape and entrance character to "brand" the College. Entries to be addressed include:

- *H Street Entry*

  This entry, which is a particularly difficult due to the visually impairing land form west of the entry, should be studied for not only a deceleration lane from the west but for Campus monument identity and landscape character. In addition to general student access this entry should be designed to facilitate public access to sporting events. In this light, turning motions into the campus as well as exiting from the campus onto H Street should be studied further as a part of a campus wide traffic study.

  To enhance on-site traffic flow the alignment and configuration of the on-campus roadway leading from this entry to the core should be adjusted to separate access to parking stalls directly from the roadway.

- *Otay Lakes Road Entries*

  The master plan suggests relocation of the vehicular access to the existing "overflow" lot south of the H Street / Otay Lakes Road intersection to a point where this access would provide for public arrival and drop-off at a shared plaza between the proposed Gym and Performing Arts & Cultural Center Complex (PACCC). This entry is intended as a public gateway to events and to support public access to the culinary arts program.

  The existing primary campus entries at Elmhurst and Gotham would benefit from enhanced signage and a unified, identifiable landscape and entrance character. These entries would continue to support public transit, student drop-off and access to lots A & B as well as a proposed parking structure (L).

  Turning movements to and from the easternmost entry on Otay Lakes Road should be studied. The master plan reflects restriction of this access to right-in and right-out to enhance the free flow of traffic.

Realignment of the Loop Road

To ease traffic congestion, improve traffic flow and enhance student safety by reducing vehicular and pedestrian conflicts, the master plan recommends that the southern half of the internal loop road be shifted / realigned. Rather than bifurcating parking from the academic core, the master plan suggests the realigned loop road be moved to the outside edge of parking.

To access the realigned loop road two round-a-bouts are suggested at the terminus of the H Street entry and the easternmost entry from Otay Lakes Road. The new round-a-bouts would allow quick transition of vehicles to the loop road without pedestrian conflict and without the stopping and starting of vehicular traffic required by a typical T-intersection.

In addition to enhancing traffic flow the realignment of the loop road allows pedestrians to transition safely from their vehicles directly to the campus core without slowing or stopping the flow of vehicular traffic.

The northernmost portion of the existing loop road abutting the northeastern edge of the core would essentially remain in place. It is envision, based on the distribution of parking, that this portion of the loop will be less heavily trafficked. With minor realignment of the northernmost corner of the road the grade difference from the campus core to planned facilities on the north corner of campus will allow for above grade crossing (bridges) of pedestrians.

The internal loop road (abandoned portion of the existing loop road) would remain as a pedestrian street and for service / emergency vehicle traffic.

Existing Loop Road

Realigned Loop Road

Internal Loop Road: Pedestrians, Service, Emergency Vehicles

Vehicular Entries

Transit Drop-Off

Parking

Potential Future Parking

(A) Parking Lot (per Vision 2025)

Parking

As the campus grows additional parking will be required and the distribution of parking relative to the location and density of classrooms and labs (the number of students) in any given quadrant of the campus should be considered.

To minimize parking demand the use of public transportation, carpooling and other alternatives should be rigorously supported and proactively pursued.

To meet parking demand the Master Plan specifically recommends the following:

- Expansion of and improvements to existing parking should be addressed simultaneously with the relocation of the loop road. This work should also be phased with individual building projects to maintain a balance between available parking and parking demand.
- Expand and reconfigure Lots A & B on the east edge of campus to maximize parking. Some portion of Lot A should be dedicated to short term parking to provide ease of student and public access to the proposed Student Services Center on the east edge of the campus core.
- Reconfigure Lot D & E together with the relocation of the perimeter road to maximize parking and improve traffic flow
- Expand and reconfigure parking (Lot I) on the west side of the campus in conjunction with the relocation of the loop road. This is intended to increase parking in proximity of the proposed Math and Science facility (see Program of Work) and improve traffic flow and pedestrian safety.
- Construct a minimum 450 stall parking structure, L, in conjunction with the proposed Performing Arts Complex.
- Develop the balance of the corner lot to provide convenience parking in support of a proposed Wellness Center / Gymnasium (Lot K).
- As the campus grows and the demand for parking increases construct additional parking structure(s) in close proximity of the academic core.
- Simultaneous with the relocation with the Maintenance and Operations facilities and replacement and consolidation of the Automotive Buildings, Lots F, G & H should be reconfigured to support overflow parking. This should include consideration of providing additional parking south of the 1600's Buildings (Lot N).

The adjacent table indicates the approximate number of parking spaces by lot, with a total of approximately 4,900 stalls at build out. This equates to an increase of on-campus parking of approximately 600 stalls. This provides a ratio of unduplicated headcount to parking spaces of 4.5:1. The actual number of stalls required to support enrollment will depend on a number of factors including enrollment distribution and the use / capacity of public transit. To enhance the parking ratio, additional parking structures will be required in the future.

Service Traffic

Facilities requiring service vehicle access are and will continue to be distributed in multiple locations on campus. These primarily include Maintenance / Operations and Warehousing, the Time Out Cafe, Automotive Technology, the proposed Student Union / Book Store and Cafeteria (Student Union Complex), the Fine Arts Labs, and the proposed PACCC.

Based on the location of these facilities service vehicles will continue to share the loop roadway with general traffic. Access from the loop road to these service destinations is relatively direct and should not create significant service / pedestrian conflicts. Service to the Time Out Cafe will require use of the inner loop road.

To resolve the current pedestrian conflict at the south library entry, the master plan recommends that service to the proposed Student Union Complex be provided via extension of a service drive south from the loop road on the west edge of the Library. This will allow unimpeded pedestrian access from the campus core to the Library, and through the Library to the new Field House Building (expected construction completion 2014).

Service access to the Fine Arts Building will occur directly off of the loop road. Service access to the PACCC would occur during non-peak times directly from Otay Lakes Road.

Parking Lot	# Stalls
A (Solar Covered Parking)	485
B (Solar Covered Parking)	394
C	145
D1	379
D2	298
E	400
F	286
G	141
H	288
I	270
J	454
K	356
L (Parking Structure)	450
M	38
N (New Parking Lot)	525
Total	**4909**

- (A) Parking Lot (per Vision 2025)
- On Campus Vehicular Circulation
- Existing Loop Road
- Realigned Loop Road
- Internal Loop Road: Pedestrians, Service, Emergency Vehicles Service Access
- Vehicular Entries
- Parking
- Potential Future Parking
- Solar Covered Parking
- Parking Structure

Pedestrian Access, Circulation & Open Space

Creating a Framework of Pedestrian Circulation

The master plan suggests development of a hierarchy of pedestrian promenades, spines and walkways linking buildings and open space in a direct, clear, visually and physically consistent manner that supports ease of wayfinding and student movement. Suggested improvements include:

- Create “Pedestrian Gateways” to the campus where pedestrian spines and promenades terminate at parking and drop-off zones. These gateways should reflect a consistent landscape / hardscape character and signage program to assist in way-finding and to signify pedestrian entry to the campus.
- Extend, improve and visually define a series of east/west and north/south “Pedestrian Spines” which provide visual access and support physical movement through the camps from edge to edge. These spines are intended to support a high volume of pedestrian traffic as well as facilitate emergency vehicle access to the core of the campus.
- Extend from each quadrant of the campus a grand “Pedestrian Promenade” leading to and terminating on the “Campus Quad”
  - From the administrative facilities at the east quadrant of the campus
  - From the Humanities and Language Arts building complex on the south edge of the campus core and extending south to provide improved pedestrian access to the proposed complex of Community Services Buildings and existing Modular Classrooms
  - From the proposed Math and Sciences courtyard in the north quadrant
  - Linking the PAC / Culinary Arts and Wellness Center /Gym at the northeast edge of campus, through the Arts Garden and Community Exhibit Courtyard to the Campus Quad.
- To assist in pedestrian way finding and visual understanding of the campus, differentiate all new, extended and existing pedestrian spines, promenades and walkways by their width, hardscape and landscape treatment.

Improve accessibility

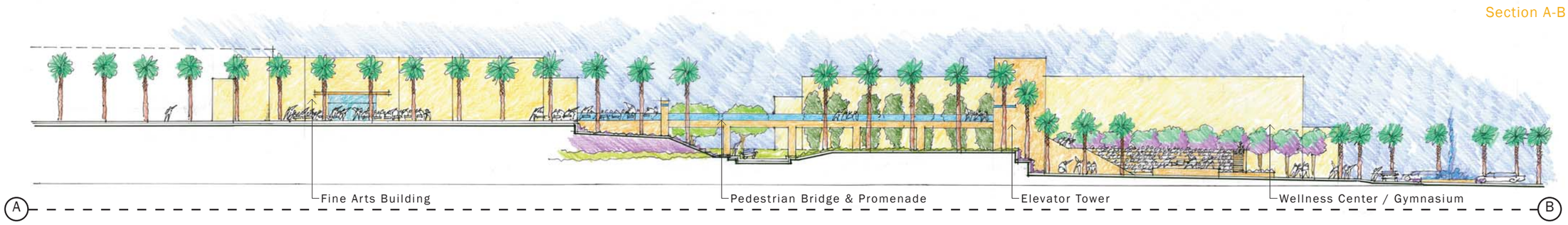
All planned facilities and site improvements should, to the extent possible, support the concept of universal accessibility. This includes the minimization of ramps (walkways exceeding 4.9 %) and thoughtful location of accessible parking and pedestrian drop-offs. Where appropriate the use of bridges and exterior elevators to mitigate accessibility issues created by the sites topography should be considered. Opportunities suggested by the master plan include two bridges from the south parking lots, transitioning across the inner loop road to an elevator tower at the edge of the campus core and at the terminus of a bridge and pedestrian promenade extending from the Campus Quad to the proposed PAC/Culinary Arts Complex and Wellness Center / Gymnasium. (See section below).

Enhance the Urban Character of the Campus

In addition to the pedestrian improvements outlined above, the master plan vision includes:

- Weaving a newer more energetic urban design character / framework into the campus core to facilitate and encourage the creation of spaces which provide opportunities for student, professors, administrators and staff to meet, mingle and socialize.
- Creating pedestrian nodes or plazas at the naturally occurring and significant intersections along the promenades, walkways and paths. These spaces should allow for the placement of campus maps to assist in wayfinding and together with seating, opportunities for meeting friends and informal interaction.
- Development of secondary walkways and paths to connect individual buildings, pedestrian nodes and other points of interest on the campus.
- Establishing a limited and consistent palette of hardscape, landscape, lighting, signage and open space furnishings

Section A-B



A-B Section (See Adjacent Page)

Pedestrian Gateway

Internal Loop Road: Pedestrians, Service, Emergency Vehicles

Pedestrian Promenade

Pedestrian Spines (E/W & N/S)

Pedestrian Bridge

Campus Quad

Open Space

The master plan envisions development of a hierarchy of open spaces, ranging from large, active, formal and informal gathering spaces to smaller, intimate, and purpose built spaces. Major open space features include the following:

1. *Campus Quad* – this is intended to serve as the "town square"; an active space at the heart of the campus for meeting, dining, study and socialization. It will serve as an exterior extension of activities and spaces housed in the Student Union and Academic Success Center.

   A vital and energetic space where informal gathering along with performance, lectures, movies, and music events can be integrated into College life. A place where students want to see and be seen. It is intended as the energy center of the campus. All roads lead to the Campus Quad.

2. *Arts Garden and Community Exhibit Courtyard* – this major east west space spans between the proposed Student Services building to the east and Art Gallery to the northwest. The space is flanked by arts' labs and classrooms and is bisected by a major Pedestrian Promenade connecting the Campus Quad and PAC/ Cultural Center. The space is envisioned as a contemporary, flexible space with planting and pathways defining as series of rooms serving as production and exhibit space for the arts a wide variety of College and Community activities.

3. *Preforming Arts / Cultural Center Plaza* – This plaza serves as a formal public entry to the campus allowing for drop-off and pre-function gatherings for art, theatre, culinary and sports events. Flanked by the proposed PAC/ Cultural Center to the east and the Gymnasium/Wellness Center to the west, the plaza is envisioned as a large, formal, open space providing a public "window" onto the campus; linked visually and physically to the campus via a grand stairway, elevator tower and wide pedestrian bridge spanning the loop road below.

4. *Transportation and Student Services Gateway* – this gateway will serve as a major pedestrian entry to the campus serving as a visual and physical termination to the primary north / south pedestrian spine bisecting the heart of the campus. It will provide a public "window" and formal gateway to the campus from the public transit stop.

5. *Discipline Specific Courtyards and Plazas* – These purpose built open spaces are intended to be developed adjacent to existing and proposed buildings in a manner that supports instruction and service to students as well as provide opportunities for quiet study and informal socialization. They are envisioned as themed to reflect and support the disciplines they serve (i.e. - Math / Science, Bus/CIS, Administration, Humanities and Language Arts, Athletics, etc)

Landscape Recommendations

Planting - From our discussions with campus staff and on-site observations there is an opportunity to simplifying the campus plant palette and in doing so benefit significantly from a reduction in water use. A great deal of the turf is not utilized for campus lounging and open free play. The planning team recommends a study be completed to develop guidelines for reduction of turf areas, to provide a recommended plant palette and to develop a campus landscape master plan. The plant palette should reflect a more drought tolerant selection and recommend plant materials requiring limited trimming and maintenance. The planning palette should be selected to assist in defining and differentiating the primary spines, pedestrian promenades, and walkways to enhance wayfinding.

Irrigation – Further to our discussions with campus staff and review of campus planting we recommend an irrigation master plan be developed concurrent with the campus landscape plan. Key to the development of this plan is establishing a base line of campus water use. A meter should be installed and water use monitored to understand use factors over a full year cycle. Based upon weather statistics and the proposed landscape master plan consultants can determine possible cost savings and how those savings might apply to budgeting a new planting and irrigation system.

1. Campus Quad
2. Arts Garden & Community Exhibit Courtyard
3. Performing Arts / Cultural Center Plaza
4. Transportaion & Student Services Gateway
5. Discipline Specific Courtyards & Plazas

Proposed Building Facilities Program and Campus Renovation

Capacity To Generate WSCH

Translating the findings from the planning elements was initially facilitated via the identification of a program of work. This process involved the assemblage of projected space needs into larger functional building blocks. Findings from the Educational Master Plan, translating WSCH into assignable square feet, current campus assessment, interviews and questionnaires all provided the shape and form of the program of work.

The capacity to generate WSCH was used as the key element for calculating appropriate classroom (lecture and laboratory) space requirements. Added to these numbers was forecasted growth in total headcount enrollments. Projected growth in enrollments and the associated space needs to provide instructional services were augmented through an interview process, questionnaire and assessment of the current facilities. The status, age and condition of the current facilities and those facilities associated with higher levels of technology, became a prime considerations in the process.

Non-Academic Support Space

The space parameters necessary to project support space functions does not operate utilizing the lecture/laboratory calculations. The vast majority of support space is connected to office/office service functions. The dimensions and projections for support services space is largely based on interviews with constituent groups on-campus and the expression of services and functions. Growth in total number of headcount students has the most direct affect of the ability of the District to appropriately serve students.

Chula Vista Campus Program of Work

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8. IT / Central Services
9. 1600's Repurposing
10. Journalism
11. Student Services
12. Academic Success Center
13. Building 420 Remodel
14. Security Complex
15. Parking Structure
16. Maintenance & Operations
17. Automotive
18. Fields & Support Structures

- New Construction
- Repurpoused for New Use
- Existing Building

PROJECT 1

Wellness Center/Gymnasium

A new Wellness Center, Gymnasium and Pool Complex is recommended to replace the current Gymnasium and support structures. The current building is aging and no longer meets the instructional and intercollegiate athletic needs for facilities. The building will house a competitive gymnasium, fitness labs, cardio-workout rooms, training and testing rooms, offices, locker rooms and a classroom.

The placement of this structure is on the corner lot bordered by H Street and Otay Lakes Road. The structure will provide both convenient student and community access. The planned structure is also adjacent to the football stadium/track, and swimming complex. Ample parking will be a distinct advantage resulting from the placement of this facility. Demolition of the previous Gymnasium structures will create an open pad for the construction of the new Math/Science Building and the Planetarium/Exhibit Hall/Large Lecture facility.

Estimated capacity for the new construction; 37,800 ASF, 54,000 GSF

Program Block	Space Use	ASF	GSF
A	Gymnasiums (2)	20,000	28,571
B	Lobby/Ticket	1,600	2,286
C	Locker Rooms	2,800	4,000
D	Office/Office Service	680	971
E	Special Teaching Labs	6,800	9,714
F	Classrooms (1)	900	1,286
G	Testing Lab	120	171
H	Consulting Rm	160	229
I	Lounge	140	200
J	Community Locker Rooms/Toilets	2,400	3,429
K	Other Support Space	2,060	2,943
K	Food Vending Space	140	200
Totals		**37,800**	**54,000**

PROJECT 2

Performing Arts & Cultural Center Complex (PACCC)

A new Performing Arts & Cultural Center Complex (PACCC) is recommended to replace the current Mayan Hall that is almost 50 years old, has never been renovated and has insufficient seating to meet current College needs. The Performing Arts Center is planned to house a 900 seat theatre and lobby, a Black Box theatre, instructional laboratories in Theatre Arts and Music, Dance studios, a Music rehearsal hall along with the Culinary Arts program.

The PACCC as well as the Wellness/Gymnasium buildings are planned for construction on the corner lot of H Street and Otay Lakes Road. These buildings will present an inviting and distinctive campus perspective to the surrounding community as well as serve the students enrolled in these programs with modern facilities.

Estimated capacity for the new construction; 50,300 ASF, 72,529 GSF

Program Block	Space Use	ASF	GSF
A	Auditorium/Theatre/Lobby	23,800	35,626
B	Black Box Theatre	3,900	5,838
C	Theatre Teaching Labs	3,400	5,089
D	Dance Rooms	4,000	5,987
E	Rehearsal Hall	1,500	2,245
F	Office/Office Service	3,500	5,239
G	Culinary Arts	10,200	15,268
Totals		**50,300**	**75,293**

PROJECT 3

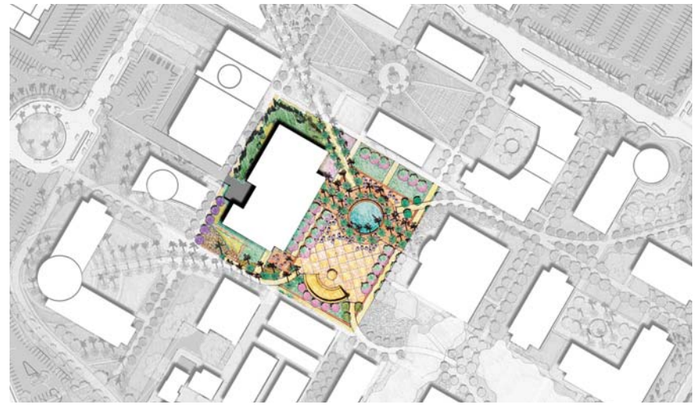
Student Union Complex

A new Student Union Complex including facilities for Student Activities/Student Government, Bookstore and Cafeteria are recommended and merged into one building. The building integrates basic student support services into a single centralized facility.

Its location midpoint is easily accessible from all areas of the campus. The building also has sufficient vendor access for delivery functions. The current Student Union and Cafeteria will be demolished as part of this project. The Bookstore building will be repurposed to serve IT / Central Services.

Estimated capacity for the new construction; 50,770 ASF, 72,529 GSF

Program Block	Space Use	ASF	GSF
A	ASO Student Activities	15,100	21,571
B	Bookstore	12,400	17,714
C	Administrative Support	1,570	2,243
D	Food Service	21,700	31,000
Totals		**50,770**	**72,529**



PROJECT 4

Math/Science Building

A new Math/Science Building is recommended to replace aging facilities, to create a teaching/learning environment that is both current as well as capable of serving students into the future. The new building replaces five individual buildings as well as addresses the projected program needs for both lecture and laboratory classrooms. The building will house Biology, Chemistry, Physics, Geology, Geography and Mathematics. It consolidates and centralizes Mathematics instruction into single location.

Construction of this project will require the demolition of the current gymnasium, swimming pool, offices and dance facilities. This new building placement took advantage of the relocation of the Gymnasium (Project 1) to the corner lot and permits the construction of the Math/Science Building without the additional need for swing space. In addition, the Math/Science programs remain within the primary instructional core.

The impact of this move vacates buildings 310, 320, 330, 340 and 390 (subsequently to be demolished). Additional vacated rooms (461, 463, 563 & 565) previously used by the Mathematics department will be reallocated for use to the School of Social Science, Humanities & Business.

Estimated capacity for the new construction; 59,720 ASF, 91,877 GSF

Program Block	Department	ASF	GSF
A	Life Sciences/Biology (9 labs)	16,900	26,000
B	Physical Sciences; Chemistry,Physics, Geology, & Other Phys Sciences (9 labs)	16,800	25,846
C	Mathematics: 22 lecture	17,600	27,077
D	Mathematics: lab	3,000	4,615
E	Support Services: Faculty Office, Mt Rms	3,420	5,262
F	Administrative Office and School support	1,500	2,308
G	Other: Technician Office, Lounge, etc.	500	769
Totals		**59,720**	**91,877**

PROJECT 5 Planetarium/Exhibit Hall & Large Lecture

A replacement/new construction is recommended for the Planetarium and Exhibit Hall (building's (381 and 382) and the large lecture facilities serving the School of Mathematics, Science and Engineering (300). This building is a complimentary structure to the Math, Science Building. This structure is planned for relocation at approximately the same time-frame as the Math/ Science building is under construction. The Planetarium services the Astronomy program as well as providing a community venue for related functions. The large lecture facility services the Math/Science needs as well as providing large lecture facilities campus-wide.

Placement of this building is proximate to Project 4 and involves the demolition of three buildings (300, 381 & 382). This new building is visible and easily accessible from the perimeter road.

Estimated capacity for the new construction; 7,318 ASF, 11,258 GSF

Program Block	Department	ASF	GSF
A	Planetarium/Exhibit Hall	4,018	6,182
B	Large Lecture (2 rms)	3,300	5,077
Totals		**7,318**	**11,258**

PROJECT 6 Fine Arts/Gallery

A new Fine Arts facility and Gallery is recommended to replace aging and problem related buildings (710 and 750). These structures have issues with ventilation, operative exhaust systems, duct problems as well as the accumulation of paint and plaster sediment in the drains and pipes. Projected space needs also indicate the School qualifies for some growth by 2025. The building will house Drawing, Painting, Sculpture, Airbrush, Graphic-Design, Digital Imaging and Ceramic studios, large lecture rooms and outdoor covered kiln facilities. The Gallery will have two display areas, a reception and meeting room, and other support space.

The building complex will generally occupy a similar location as the two buildings planned for demolition (710 & 750). The placement adjusts the new buildings locations and creates an access corridor to the Performing Arts Complex.

Estimated capacity for the new construction; 25,250 ASF, 38,846 GSF

Program Block	Department	ASF	GSF
A	Ceramics	3,500	5,385
B	Fine Arts Labs (6)	9,000	13,846
C	Piano Lab	1,000	1,538
D	Lecture	3,200	4,923
E	Office/Office Service	1,400	2,154
F	Meeting room	400	615
G	Prep Rms and Sheds	1,300	2,000
H	Gallery	5,450	8,385
I	Covered Kiln Yard 3,000 ASF		
Totals		**25,250**	**38,846**

PROJECT 7

Business, CIS & Communication

A new construction facility for the Business and Computer Information Systems departments is recommended to replace aging facilities, to create a teaching/learning environment that is both current as well as capable of serving students into the future, and to address the projected programs needs. In addition, the Communication Department had need for growth as well as larger classrooms to service their students with improved efficiency and utilization of facilities. This building will house Accounting, Business Administration, Legal/Paralegal, Real Estate, CIS, Computer Literacy and Communication programs.

The building is planned to occupy the demolished 300's building pads, again permitting this activity to occur without the need for supplemental and/or swing space consideration. Communications will vacate rooms 432, 434, and 435 which then transfer to the School of Language and Literature for priority assignment. Upon completion of this project, the 200's are planned for demolition.

Estimated capacity for the new construction; 32,110 ASF, 49,400 GSF

Program Block	Department	ASF	GSF
A	Accounting, Business, Legal	14,400	22,154
B	CIS	9,200	14,154
C	Communication	4,200	6,462
D	Support Services: Faculty Office, Mt Rms	2,860	4,400
E	Administrative Office and School support	950	1,462
F	Other: Technician Office, Lounge, etc.	500	769
Totals		**32,110**	**49,400**

PROJECT 7A

Administration Building

A new Administration Building Complex is recommended to consolidate the widely dispersed departments in this service area. The new construction will facilitate the relocation and centralization of administrative services into a single structure. The building will house the President's Office, the VP's of Business & Finance, Student Services, and Human Resources, in addition to a Board of Trustees meeting room and other support services.

Placement on the campus perimeter permits outside agencies quick and visible access to necessary administrative units. Following new construction, buildings 100's will be demolished.

Estimated capacity for the new construction; 28,665 ASF, 44,100 GSF

Program Block	Space Use	ASF	GSF
A	President's Office/Board of Trustees	4,880	7,508
B	Marketing, Communication, Community & Government Relations	2,050	3,154
C	Vice President Business & Financial Affairs	3,710	5,708
D	Vice President Human Resources	2,870	4,415
E	Vice President Academic Affairs	1,420	2,185
F	Vice President Student Services	1,420	2,185
G	Dean Instructional Support Services & Continuing Education	2,600	4,000
H	Institutional Effectiveness & Institutional Research Grants and Planning	1,770	2,723
I	Procurement, Central Services & Risk anagement	1,190	1,831
J	Office Support Services	1,130	1,738
K	Assembly	2,340	3,600
L	Academic Senate	2,250	3,462
M	Mail Room/Communication Center	1,035	1,592
Totals		**28,665**	**44,100**

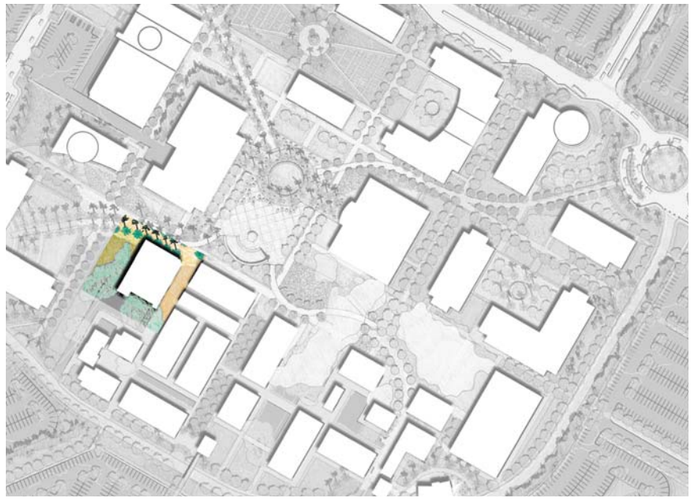
PROJECT 8

IT / Central Services

Upon completion of the new Student Union Complex, building 630 (which previously housed the Bookstore) will be vacated. It is recommendation that this building be repurposed to support the Institutional Technology services on campus. The building will house a Help Desk, provide support for Computer Labs/ Smart Classrooms, Web and Online Access, the Data Warehouse and be the Computer Hardware and Software support.

Estimated capacity for the renovated construction; 6,700 ASF ASF, 10,431 GSF

Program Block	Space Use	ASF	GSF
A	Director & Staff Offices & Workroom	1,600	2,462
B	Computer Server Rooms (2)	1,300	2,000
C	DP/Computer Service	400	615
D	Computer Lab	1,000	1,538
E	Reception/Lobby	300	462
F	Training Room/Meeting Room	2,100	3,231
Totals		**6,700**	**10,308**



PROJECT 9

1600'S REPURPOSING

Six buildings comprise this project, buildings 1600, 1620, 1630, 1650, 1660 and 1670. Three buildings will remain basically as constructed and need only minor upgrades serving the same function as they do now. Three other buildings will need to be repurposed for alternate functions. The complex is proposed to house the continuing Education programs and functions and the Child Development Program. The basic goal is to create new classrooms and support services.

Estimated capacity for the renovated construction; 9,559 ASF, 11,549 GSF

Bldg	Space Use	ASF	GSF
1630	Conference Room, Office Support	1,686	1,956
1650	Repurpose for Continuing Education	3,674	4,384
1660	Repurpose as Classrooms	2,471	2,991
1670	Repurpose as Large Lecture Facility	1,728	2,114
Totals		**9,559**	**11,445**

PROJECT 10

JOURNALISM

The Journalism program services both instruction as well as the production of the College newspaper. The program currently resides in Building 640 (1,971 ASF). It is recommended that when Continuing Education vacates Building 660 (3,353 ASF), that this building be renovated to accommodate the Journalism program. This change will provide Journalism with an instructional classroom as well as sufficient space to produce the newspaper.

Estimated capacity for the renovated construction; 3,353 ASF, 4,276 GSF

Program Block	Space Use	ASF	GSF
A	New Facility, Building 660 - ASF	3,353	4,276
Totals	**New Space**	**3,353**	**4,276**

PROJECT 11

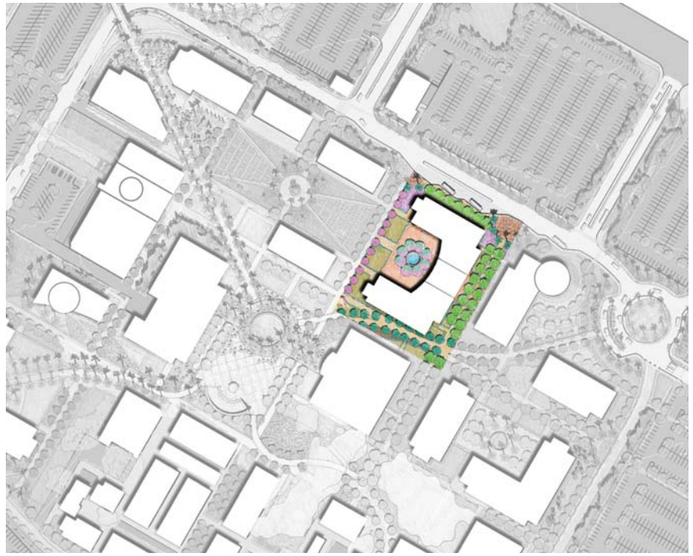
Student Services

A new Student Services building is recommended to be constructed on the Otay Lakes Road side of the campus core. This will establish a Student Services zone of operation that is more visible and accessible. It will become a "Front-Door" for students to the campus. The new building improves access and effectiveness to important student services and further enhances the One-Stop concept.

The new Student Services facility will be constructed on the pad created by the demolition of the 100's buildings. In addition, the new facility replaces the existing 27,595 ASF of student services from Building 1400 with a modern technologically enhanced building of 36,284 ASF that will more efficiently support student success.

Estimated capacity for the new construction; 36,284 ASF, 55,822 GSF

Program Block	Department	ASF	GSF
A	Admissions & Records	5,384	8,283
B	Counseling	5,350	8,231
C	Financial Aid	4,230	6,508
D	Extended Opportunity (EOPS)	2,820	4,338
E	Veterans Services	1,050	1,615
F	Health Services	2,150	3,308
G	International Students	1,080	1,662
H	Assessment Center	2,510	3,862
I	Career & Placement Services	2,820	4,338
J	Transfer Center	1,350	2,077
K	Vice President, Student Services	1,090	1,677
L	DSPS	4,425	6,808
M	Shared Facilities (lounge, etc.)	1,305	2,008
N	Bursar's Office	720	1,108
Totals		**36,284**	**55,822**



PROJECT 12 Academic Success Center (Repurpose Bldg. 1400)

With the relocation and new construction of a Student Services building, this provides the college with an opportunity to repurpose vacated Building 1400, to relocate the Academic Success Center from Building 420, to centralize the functions of the Academic Success Center, and expand the space available for new services. The building will house tutoring functions, Learning Assistance, the Writing Center, the Reading Center and the Math/Science Center.

Repurposing Building 1400 adds approximately 7,000 ASF in new space for the Academic Success Center.

Estimated capacity for the renovated construction; 27,595 ASF, 32,998 GSF

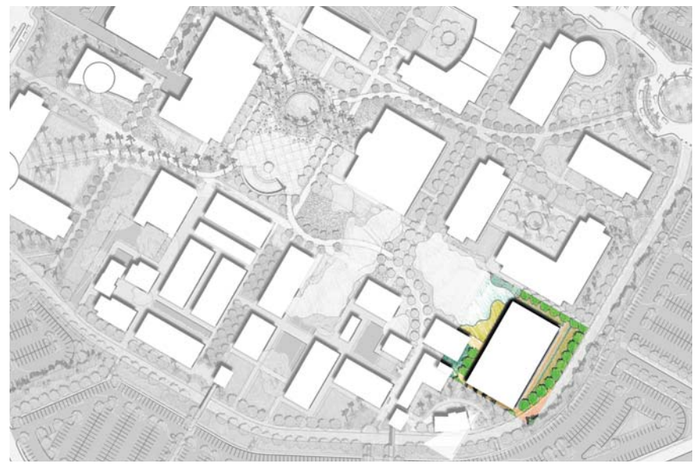
Program Block	Space Use	ASF	GSF
A	New Facility, Building 1400 - ASF	27,595	32,998
B	Old Facility, Building 420 - ASF	20,594	29,714
Totals	**New Space**	**7,001**	**3,284**

PROJECT 13 Language Arts Classrooms (Repurpose Bldg. 420)

The remodel of building 420 will allow the repurposing of this building to classrooms, approximately 21 lecture classrooms and 2 labs are planned for the facility. The remodeled facility will add 23 classrooms for Language and Literature. It will house Reading, World Languages, ESL and English.

Estimated capacity for the renovated construction; 20,594 ASF, 29,714 GSF

Program Block	Space Use	ASF	GSF
A	Reading (6 Rms)	4,500	6,923
B	World Languages (8 Lecture, 1 Lab)	7,200	10,286
C	ESL (3 Lecture, 1 Lab)	3,450	4,929
D	English (4 Rms)	3,000	4,286
E	Office/ Support Space	2,444	3,290
Totals		**20,594**	**29,714**



PROJECT 14

Security Complex

A new Security Complex building is recommended for two possible locations; one option puts the service facility in the parking lot adjacent to the new Student Services building. The second option is in the proposed parking structure, if completed.

Estimated capacity for the new construction; 4,226 ASF, 6,502 GSF

Program Block	Space Use	ASF	GSF
A	Office & Office Service	1,886	2,902
B	Meeting Rooms	424	652
C	Locker Rooms	1,030	1,585
D	Armory/Armory Service	386	594
E	Local Agency	500	769
Totals		**4,226**	**6,502**

PROJECT 16 Maintenance & Operations

It is recommended that several functions currently residing in outlying buildings be centralized into a common facility promoting communication and better efficiency of service. The building would house the Maintenance Office, warehouse, tool storage facility and auto maintenance services. It is recommended that this be a new facility of 22,400 ASF and 32,000 GSF.

PROJECT 15, 17, 18 Projects Subject To Other Considerations

The following projects are dependent upon other projects being acted upon that might have an effect on the need for these projects, their ultimate size, distribution and/or possible location/s.

15: Parking Structure

Size and location/s to be determined.

17: Automotive

This project would only continue forward if the perimeter road were realigned necessitating the relocation of this program.

18: Fields and Support Structures

A plan has been proposed for the location of the athletic fields and locations of their support structures.

Chula Vista Campus: Cost For Program of Work

Campus Total

	Project	Scope of Work	Square Footage Useable	Square Footage Gross	Cost
Building Projects					
1	Wellness Center / Gymnasium	New Construction	37,800	54,000	$23,064,700
2	Preforming Arts & Cultural Center Complex	New Construction	50,300	75,292	$48,111,588
3	Student Union Complex	New Construction	50,770	72,529	$37,076,606
4	Math / Science Bldg	New Construction	59,720	91,877	$48,391,575
5	Planetarium/Exhibit Hall/Large Lecture	New Construction	7,318	11,258	$9,333,585
6	Fine Arts / Gallery	New Construction	25,250	38,846	$16,845,568
7	Business, CIS & Communications	New Construction	32,110	49,400	$22,990,760
7b	Administration Building	New Construction	28,665	44,100	$19,276,110
8	IT/ Central Services	Renovation/Repurpose	6,700	10,431	$5,332,327
9	1600's Repurposing	Renovation/Repurpose	9,559	11,549	$4,109,596
10	Journalism	Renovation	3,353	4,276	$1,664,219
11	Student Services	New Construction	36,284	55,822	$24,935,687
12	Academic Success Center (Repurpose Bldg. 1400)	Renovation/Repurpose	27,595	32,998	$10,516,463
13	Language Arts Classrooms (Repurpose Bldg. 420)	Renovation/Repurpose	20,594	29,714	$10,406,081
14	Security Complex	New Construction	4,226	6,502	$2,895,984
15	Parking Structure	New Construction			$9,907,200
16	Maintenance and Operations	New Construction	22,400	32,000	$7,150,832
17	Automotive	New Construction	17,000	24,285	$13,002,675
18	Fields & Support Structures	New Construction			$8,305,000
	Sub Total		**396,018**	**582,091**	**$323,316,556**
Core Site Amenities					**$70,924,157**
Project Management					**$15,613,477**
	Total Chula Vista Campus				**$409,854,190**

Core Site Amenities

	Project	Cost
Core Site Amenities		
1	Infrastructure-Primary & Secondary	$13,908,000
3	Perimeter Roadway Realignment	$4,751,900
4	Surface Parking Improvements	$10,492,000
5	Inner Roadway Improvements	$1,141,920
6	Ped Circ / Campus Amenities	$16,592,000
7	Demolition / Haz Mat Removal	$4,125,552
8	Interim Use Renovations	$636,291
9	Misc Building Improvements	$6,016,494
10	Solar Installation	$13,260,000
	Total Chula Vista Campus	**$70,924,157**

Campus Development Schedule / Phasing Plan

The program of work was further refined via the creation of a campus development schedule / phasing plan. In this perspective, projects were aligned into a development sequence. The following criteria were used to determine a project's position in the development queue.

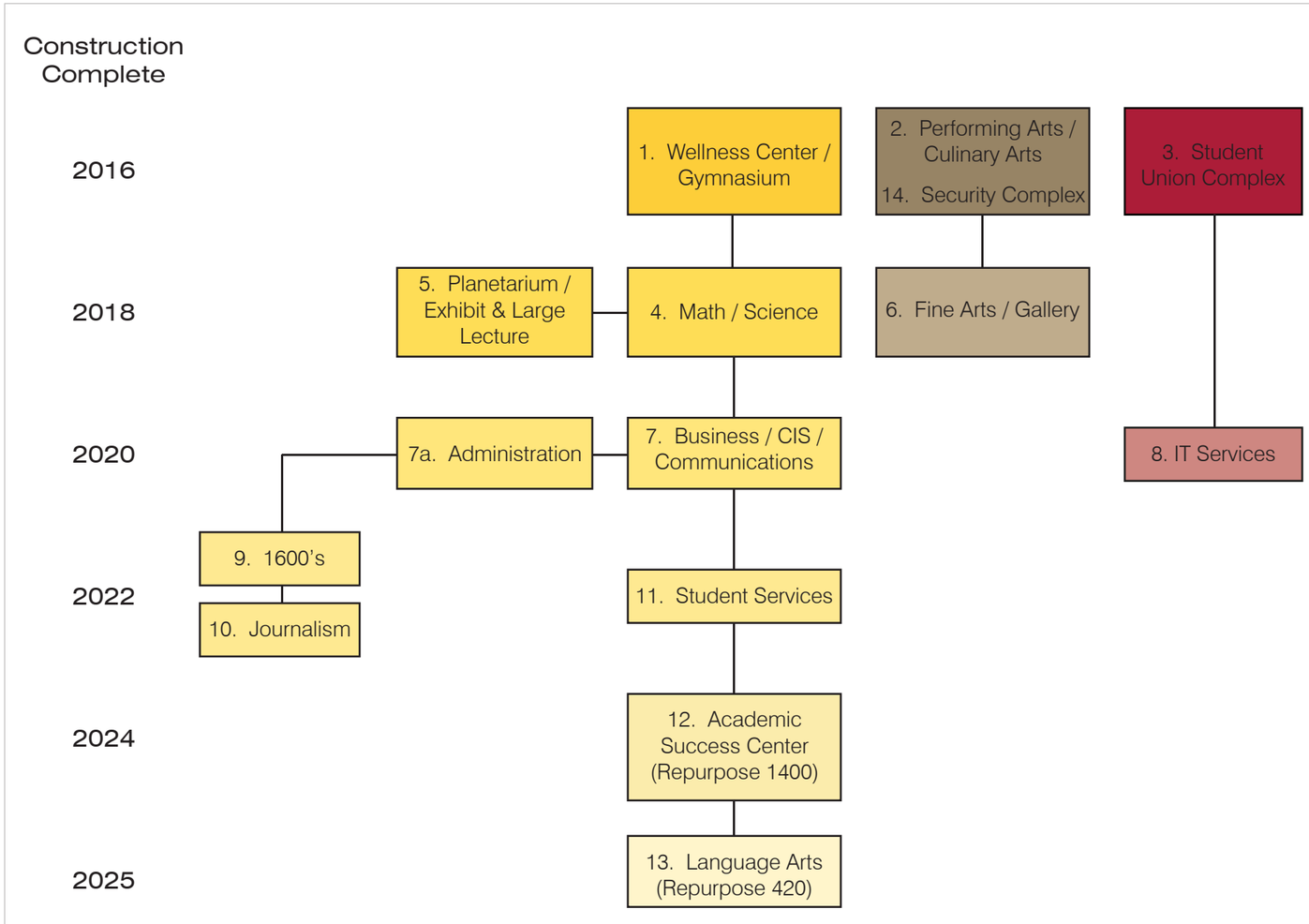
The degree to which a project:

- Rectified a safety and / or health concern that required immediate attention
- Was identified as a "linchpin" project – i.e. a project that facilitated / made possible the completion of other projects in and timely and financially feasible manner
- Addressed an academic program that was currently experiencing space shortages
- Addressed immediate space needs for key student support services
- Remedied academic space needs that are five to ten years downrange (i.e. accommodating disciplines / programs that can manage with existing space but will need space in the near future)
- Met the space requirements of student support services that are five to ten years in the future

Other considerations included:

- Minimizing the disruption to students and not overburdening the campus with construction at any one point in time
- To the extent possible, having construction projects being completed in a given campus zone prior to initiating new projects in another campus zone
- The ability of a project to attract state funds (if any such funds should become available in the future)

Construction Completion / Phasing Plan



Higher Education Center Otay Mesa

Opening its doors in 2007 and located in Otay Mesa, only minutes away from the US-Mexico international border, the center is the largest and most diverse in facilities of the off-campus Higher Education Centers. At 57,588 ASF and 75,415 GSF and with 6 buildings, the center produces 7.1% of the District's WSCH/FTES each year. The Higher Education Center at Otay Mesa is the first center to receive complete center status with the Chancellor's Office. With estimated projected growth to 2025, the center appears to have basically sufficient capacity to meet student demand in general education curriculum. However, with a shift in focus to Health and Safety curriculums and the subsequent expansions in program development, the distribution of space does not meet the current needs of some programs currently at the center. Allied Health has four programs currently serving the District; Associate Degree Nursing, Vocational Nursing, Operating Room Nurse and Surgical Technology. In general, the Nursing programs require a larger Skills lab to serve all programs and a SIM lab to balance out their curriculum and service to students. The Police Academy and Fire Science have need of renovations to exterior spaces to balance their program/curriculum needs. The growth projections indicate that the current Health and Safety programs will continue to be the primary providers of curriculum to 2025. Also, each of these disciplines and programs have significant opportunities for expansion of their curriculums and CTE certificates.

It is recommended that two current instructional facilities be repurposed to meet the Nursing program needs for space and that improvement in the outside/field be modified to meet the needs of the Fire Sciences, Police Academy, First Responders, Paramedic and EMT training programs.

Higher Education Center National City

The Higher Education Center ay National City is approximately 10 miles from the Chula Vista Campus. Established in 1988, a new facility was completed in 2004. This center has 33,974 ASF and 48,248 GSF, second only in size to the HEC at Otay Mesa. Again, like the other HEC's, National City produces approximately 6.2% of the District's WSCH/FTES. This center's facilities are well balanced to serve the community in general education curriculum as well as providing specialized CTE curriculum in Dental Health and Medical Laboratory Technician. Ample support services for students are available at this location as well as some Small Business Operations functions. Projected space needs are primarily to be found in needed laboratory space to service the new Medical Laboratory Technician programs and to balance the Science curriculum in additional Physical and Life Sciences facilities.

A Phase II project for expansion of services at the HEC in National City has been in the planning process since the 2008 Facilities Master Plan. It is recommended that the District proceed with a modified version of the plan. The multi-story structure would be constructed in the current parking lot south of the main building. The facility would house additional Biology and Chemistry labs, laboratory facilities for the Medical Lab Tech program, a new Fitness/Dance Studio and additional square footage for Small Business Development.

Estimated capacity for the new construction; 16,100 ASF, 24,769 GSF

Program Block	Space Use	ASF	GSF
A	Biology Labs	3,600	5,538
B	Chemistry Lab	1,800	2,769
C	Medical Lab Technology	3,200	4,923
D	Dance/Finess Studio	2,000	3,077
E	General Lecture	1,500	2,308
F	Office/Office Service	1,000	1,538
G	Small Business Operations	3,000	4,615
Totals		**16,100**	**24,769**

Higher Education Center San Ysidro

First established in 1988, the HEC at San Ysidro is located only minutes away from the US-Mexico international border. Rebuilt and reopened in 2009 with 12,871 ASF and 19,040 GSF building, it represents the smallest HEC in service/instructional capacity in the District's system. Due to its small size, limited capacity, and high demand for its services to the community, it has become impacted in recent years. While productivity could be improved, the limited site makes it difficult to expand services in the more traditional ways. Even with its small capacity, the HEC at San Ysidro produces 6.2% of the District's WSCH/FTES. Growth projections put this HEC at considerable risk in not being able to meet the growth projections possible at this site. It is therefore recommended that the District construct a parking structure and additional instructional space in the current parking lot across the street and provide a bridge to the main building.

This proposal, Phase II would provide additional instructional space to serve an expanded CIS curriculum, a Media Center, new Biology and Chemistry labs, Dance/Fitness Studio and laboratory facilities to service the Child Development curriculum.

Estimated capacity for the new construction; 16,200 ASF, 24,923 GSF

Program Block	Space Use	ASF	GSF
A	Media-Tutorial Center	2,500	3,846
B	Dance/Fitness Studio	2,000	3,077
C	CIS Lab & Open Lab Area	2,100	3,231
D	Art Lab	1,000	1,538
E	Biology Lab	1,800	2,769
F	Lecture Rms (2)	1,600	2,462
G	Child Development	3,200	4,923
H	Office/Office Service	2,000	3,077
Totals		**16,200**	**24,923**

Higher Education Centers: Cost For Program of Work

Southwestern College Higher Education Center Cost For Program Of Work

	Project	Scope of Work	Square Footage Useable	Square Footage Gross	Cost
Building Projects					
1	National City Phase II	New Construction	16,100	24,769	$16,418,132
2	San Ysidro Phase II	New Construction	16,200	24,923	$19,766,682
3	Otay Mesa Renovation	Renovation/Repurpose	2,500	3,846	$1,294,769
	sub total		**34,800**	**53,538**	**$37,479,582**
Project Management					**$1,445,421**
	Total Higher Ed Centers				**$38,925,003**

SOUTHWESTERN COMMUNITY COLLEGE DISTRICT: COST FOR PROGRAM OF WORK

VISION 2025 COST FOR IMPLEMENTATION

The total (gross) cost to implement the Facilities Master Plan was projected at $449 million as follows

Building Project Costs	$361 million
Core Site Amenities	$ 71 million
Project Management	$ 17 million

"Core Site Amenities" reflects the costs associated with non-building amenities, such as infrastructure, surface parking and vehicular circulation improvements, pedestrian circulation and access improvements, campus wide landscape and pedestrian amenities, demolition and hazardous materials removal and swing space requirements.

All costs are in present-day values. They may escalate either upwards or downwards at the time of implementation.

A breakdown by project, by location is provided in the tables that follow.

Campus / Center		Square Footage Useable	Square Footage Gross	Cost
Building Projects				
Chula Vista Campus	New Construction / Renovati	396,018	582,091	$323,316,556
National City Phase II	New Construction	16,100	24,769	$16,418,132
San Ysidro Phase II	New Construction	16,200	24,923	$19,766,682
Otay Mesa Renovation	Renovation/Repurpose	2,500	3,846	$1,294,769
Sub Total		**430,818**	**635,629**	**$360,796,138**
Core Site Amenities				$70,924,157
Chula Vista Campus				
Sub Total				**$70,924,157**
Project Management				
Chula Vista Campus				$15,613,447
National City Phase II				$629,752
San Ysidro Phase II				$764,050
Otay Mesa Renovation				$51,615
Sub Total				**$17,058,864**
Southwestern CCD Totals				**$448,779,159**

Revenue Resourcing

The plan for finding outside (the District) financial support to augment local funding is based in two primary sources: 1) The state's Capital Outlay Budget Program (COBP); and 2) Joint Venture and Entrepreneurial Activities.

The COBP represents the best possibility for long-term, large-scale financing support for the District's capital construction program. Like most state or federal programs, it comes with caveats and requirements. Projects must pass the review of the State Chancellor's Office for compliancy with capacity-load ratios. Projects must also compete with other colleges throughout the state for funding – all projects are evaluated on a point system. Finally, projects funded through this program must have matching local funds. Matching funds can be anywhere between 0% and 50%, depending on the strength of the project.

The 2025 Facilities Master Plan provides opportunities for creating new sources of revenue through joint venture and entrepreneurial activity. Because these opportunities will have to be developed and cultivated, the full extent of benefit is not known at this time.

State of California Capital Outlay Budget Program (COBP)

Overall, the revenue resourcing program of the COBP is projected to attract approximately $43 million to the District. The "cost to construct" for the District would be under fifty-cents on the dollar.

Other Financing Mechanisms to Support the Plan for Revenue Resourcing

In addition to the state's Capital Outlay Budget Program and joint venture/entrepreneurial opportunities, the District will have other tools available for increasing the revenue side of the equation. The financing vehicles listed below are frequently used by community college institutions. Several of these mechanisms are currently being used by the District.

- *Local Bond Measure:* The District has used this financing option as a means to address its capital construction needs. A local general obligation bond is still, by far, the most successful and reachable of the financing mechanism available to the District for addressing large-scale capital construction needs. Local bond measures are imperative for leveraging state monies and private funds.
- *Leasing of District Owned Land or Buildings:* The District currently has limited leasing revenue resourcing activity at the present time. Leasing provides an excellent means of maintaining property and/or building control while creating a long-term revenue source. Revenues generated from this activity can be used to fund capital construction projects for the District.
- *Student Fees:* Via a campus-wide vote, students can authorize an auxiliary fee for the construction of facilities such as student centers or parking facilities. Generally, a bond is issued for a specific period of time with the source of repayment the fee imposed by the students. When the debt service on the facility has been retired, the fee obligation for students terminates.
- *Formalization of Educational Centers:* Districts can receive an annual stipend from the state for educational centers, provided the center meets the state's criteria for formal recognition. The District has currently prepared documents and submitted the Higher Education Centers at National City and San Ysidro for qualification as formal educational centers. This action could result in a yearly $2 million boost to the District. Action for formal center status has been submitted and has is in process of approval by the California Post-secondary Education Commission (CPEC) and the Board of Governors.
- *Certificates of Participation (COP):* COPs are often used as "bridge financing", with a long-range financing strategy

or objective in place to repay the debt. A COP is a loan the District secures to finance a particular obligation or project. Typically, this obligation is a capital outlay project (buildings and/or equipment, land acquisition, etc.). The District must demonstrate to the lender that it has the financial capability to repay the COP in a timely manner. There are financial limits and necessary approvals the District must achieve to use this program.

- *Scheduled Maintenance Funds:* As available from the state, scheduled maintenance funding has been included as an annual block grant program. It also includes funding for instructional and library equipment. There is a local match required for the use of these funds. It is not typically a large amount of funding but it is an option to solve minor building renovation or maintenance issues.
- *Special Assessment District Funding:* In cooperation with the City and/or County an assessment district could be created to provide new or upgraded infrastructure. The source of repayment is typically the property tax revenue or special assessment levied against the property owners within a prescribed area (district). Special Assessment Districts are often an integral part of a redevelopment project, wherein the project will generate additional property tax revenue that can be used to re-pay the bonds that are issued for the capital improvement.
- *Federal and State Grants:* Federal and State grants are generally obtained through a competitive application process. Most Federal and State Grants to community colleges are in the form of funds for equipment, furniture, program development costs, and/or operational staffing. With current federal stimulus programs, there may be opportunities for the financing of capital construction projects, particularly those that result in job creation. Awards, in this regard, would most likely be given to projects that are “shovel ready”.
- *Fee Based Instructional Programs:* The District has the option to develop a fee-based curriculum and compete with other public and private institutions for students who would not typically attend the traditional, state-funded, public instructional program of a community college. Any excess revenue generated from such activities could be used to fund future capital construction projects.
- *Partnership with other Educational Institutions:* An educational institution that is in need of a facility but does not have funding to construct is a likely candidate for a joint venture project. In this partnership, the District might construct the facility with the provision that debt service on the construction loan would be the responsibility of the partnering educational institution. Both entities would have access to and use the facility for educational purposes.
- *Private Donations:* Private donations provide a means for interested members of the public to contribute to a specific project. Facilities such as libraries, planetariums, or specific academic and academic support buildings (e.g. Biological Sciences, Career Technical Education, etc.) are common examples.

				Total Program of Work		Program Without State Funding		Program With State Funding		
	Project	Scope of Work	Total Project Cost	Projected State $'s Resourced	District $	District $	Unfunded $ D	istrict $	State $	Unfunded $
Chula Vista Campus - Building Projects										
1	Wellness Center / Gymnasium	New Construction	$23,064,700		$23,064,700	$23,064,700		$23,064,700		
2	Performing Arts & Cultural Center Complex	New Construction	$48,111,588		$48,111,588	$48,111,588		$48,111,588		
3	Student Union Complex	New Construction	$37,076,606		$37,076,606	$37,076,606		$37,076,606		
4	Math / Science Bldg	New Construction	$48,391,575		$48,391,575	$48,391,575		$48,391,575		
5	Planetarium/Exhibit Hall/Large Lecture	New Construction	$9,333,585	$4,666,793	$4,666,793	$9,333,585		$4,666,793	$4,666,793	
6	Fine Arts / Gallery	New Construction	$16,845,568	$8,422,784	$8,422,784		$16,845,568	$8,422,784	$8,422,784	
7	Business, CIS & Communications	New Construction	$22,990,760	$11,495,380	$11,495,380	$22,990,760		$11,495,380	$11,495,380	
7b	Administration Building	New Construction	$19,276,110		$19,276,110	$19,276,110		$19,276,110		
8	IT/ Central Services	Renovation/Repurpose	$5,332,327		$5,332,327	$5,332,327		$5,332,327		
9	1600's Repurposing	Renovation/Repurpose	$4,109,596		$4,109,596		$4,109,596	$4,109,596		
10	Journalism	Renovation	$1,664,219		$1,664,219		$1,664,219	$1,664,219		
11	Student Services	New Construction	$24,935,687	$12,467,844	$12,467,844	$24,935,687		$12,467,844	$12,467,844	
12	Academic Success Center	Renovation/Repurpose	$10,516,463	$5,258,231	$5,258,231		$10,516,463	$5,258,231	$5,258,231	
13	Building 420 Remodel	Renovation/Repurpose	$10,406,081	$5,203,040	$5,203,040		$10,406,081			$10,406,081
14	Security Complex	New Construction	$2,895,984		$2,895,984	$2,895,984		$2,895,984		
15	Parking Structure	New Construction	$9,907,200		$9,907,200	$9,907,200		$9,907,200		
16	Maintenance and Operations	New Construction	$7,150,832		$7,150,832		$7,150,832			$7,150,832
17	Automotive	New Construction	$13,002,675	$6,501,337	$6,501,337		$13,002,675			$13,002,675
18	Fields & Support Structures	New Construction	$8,305,000		$8,305,000		$8,305,000			$8,305,000
	sub total		**$323,316,556**	**$54,015,409**	**$269,301,147**	**$251,316,123**	**$72,000,433**	**$242,140,937**	**$42,311,031**	**$38,864,587**
Chula Vista Campus - Core Site Amenities			**$70,924,157**		**$70,924,157**	**$58,082,735**	**$12,841,442**	**$63,992,580**		**$6,931,577**
Chula Vista Campus - Project Management			**$15,613,477**		**$15,613,477**	**$12,565,806**	**$3,047,670**	**$17,422,227**		
	Total Chula Vista Campus		**$409,854,190**	**$54,015,409**	**$355,838,781**	**$321,964,664**	**$87,889,545**	**$323,555,745**	**$42,311,031**	**$43,987,414**
Higher Education Center - Building Projects										
1	National City Phase II	New Construction	$16,418,132		$16,418,132	$16,418,132		$16,418,132		
2	San Ysidro Phase II	New Construction	$19,766,682	$9,883,341	$9,883,341		$19,766,682			$19,766,682
3	Otay Mesa Renovation	Renovation/Repurpose	$1,294,769	$647,385	$647,385	$1,294,769		$647,385	$647,385	
	sub total		**$37,479,582**	**$10,530,725**	**$26,948,857**	**$17,712,901**	**$19,766,682**	**$17,065,516**	**$647,385**	**$19,766,682**
Higher Education Center - Project Management			**$1,445,421**			**$885,645**	**$559,776**	**$885,645**		**$559,776**
	Total Higher Education Center		**$38,925,003**	**$10,530,725**	**$28,394,278**	**$18,598,546**	**$20,326,458**	**$17,951,161**	**$647,385**	**$20,326,458**
SOUTHWESTERN CCCD TOTALS			**$448,779,193**	**$64,546,134**	**$384,233,059**	**$340,563,210**	**$108,216,003**	**$341,506,906**	**$42,958,416**	**$64,313,872**

Chapter 6
Delivery of the Program

Delivery Of The Program

Project Delivery Method

How the project will be designed and constructed, or the project delivery method, is one of the most important decisions made by every owner embarking on a construction project. With a variety of delivery methods in use today across the design and construction industry, it is possible to tailor a delivery method that best meets the unique needs of each project.

Several fundamental project considerations are directly impacted by the delivery method selected. These considerations include the need to adhere to a realistic budget, a schedule that accurately presents the performance period, a responsive and efficient design process that leads to a quality set of documents, a thorough risk assessment followed by the proper allocation of risk by the owner, and a recognition of the level of expertise within the owner's organization or available to it.

Each of these project delivery methods carries a different level of risk for the owner. Generally, the level of control retained by the owner correlates with the level of risk, and those levels typically have an inverse relationship to the risk and control levels of the contractor.

None of these delivery methods is right for every project. For each situation, there will be advantages and disadvantages in the use of any specific method. The owner needs to carefully assess its particular project requirements, goals, and potential challenges and find the delivery method that offers the best opportunity for success.

Construction Management (CM) is a discipline uniquely tailored to the planning, design, and construction process of capital projects. Agency Construction Management is a management process whereby the owner utilizes a construction manager (CM) as its principal agent to advise on or manage the process over the life of the project, or during specific phases of the project. The use of agency construction management, whether through an in-house resource to the owner or from a third-party firm, has proven effective regardless of the chosen contract form or project delivery method.

Whether provided through owner staffing or a third-party firm, the CM should be engaged as early in the project as possible to guide and assist the owner through all phases of delivering the project. In fact, the CM can be an invaluable source of advice and counsel to the owner when choosing the optimum delivery method for a project. The CM may also act as the owner's representative to the rest of the project team, being the point of contact for the designer, contractor, and other specialty consultants engaged in the project by the owner.

Every construction project or program is unique, and for each, there is an optimum project delivery method. It requires expertise and experience to select the right delivery method for a particular situation.

Considerations in Selecting A Delivery Method

Owner's Requirements and Risk Considerations

An owner has several areas of concern when embarking on a construction program or project. It is necessary to choose an overall project delivery and contracting strategy that effectively and efficiently delivers the project. The following are some of the key considerations that will influence the selection of the project delivery method for a project:

Budget

Determining a realistic budget before design to evaluate project feasibility, to secure financing, to evaluate risk, and as a tool to choose from among alternative designs or site locations is a primary need. Once the budget is determined, the owner requires that the project be completed at or near the established budget figure. Owners must decide how quickly they need to establish final project costs and with what risk level of exceeding this cost.

Design

Of foremost importance to the owner is that the desired facility function as envisioned while successfully fulfilling the needs of the owner and users. Therefore, the design team should be well qualified in the type of facility being designed. In addition, the owner must ensure that the program needs are clearly conveyed to the design team. Since the design of the facility must be buildable and design intent must be properly communicated, the owner requires that the design documents are constructible, complete, clear and coordinated. The documents should properly incorporate unique features of the site to include subsurface conditions, interfaces with adjoining properties, access, and other characteristics. Owners must decide how much control they need to have over the design elements of a project.

Schedule

The owner has similar needs in the area of scheduling. The dates of design commencement, construction completion and ultimately the operation of a new facility can be critical, either in terms of generating revenue from the facility, or in terms of providing needed functional space by a particular deadline. Therefore, a realistic assessment of project duration and sequencing needs to be performed early in the planning process. The schedule must then be monitored and updated throughout the design, construction and pre-occupancy phases to achieve the desired goal. An owner must decide how critical it is to minimize schedule duration for a project.

Risk Assessment
In construction, issues of risk are closely tied to the status of the local construction market, on-site safety, the schedule and the budget. The owner requires an understanding of the risks involved in construction, and should make a conscientious decision regarding allocation of these risks among project participants, so that all areas of exposure are properly understood. In considering risk allocation, the owner should strive to assign risks to those parties that can best exercise control over those aspects. For example, it would typically be problematic to require that the contractor correct problems due to design errors or changes at no extra cost since a contractor generally has little control over the cause or magnitude of such errors or changes. An owner must decide how much project risk they are comfortable in assuming.

Owner's Level of Expertise:
The owner's familiarity with the construction process and level of in-house management capability has a large influence over the amount of outside assistance required during the process, and may guide the owner in determining the appropriate project delivery method. An owner must make an assessment of its ability to properly perform under the various delivery methods.

Project Delivery Methods Available to Owners

A project delivery method is a system designed to achieve the satisfactory completion of a construction project from conception to occupancy. A project delivery method may employ any one or more contracting formats to achieve the delivery.

Because of financial, organizational and time constraints, various project delivery methods have evolved to fit particular project and owner needs. Most delivery methods used today are variations of four methods: Design-Bid-Build, Multiple Primes, Construction Management At Risk, and Design-Build.

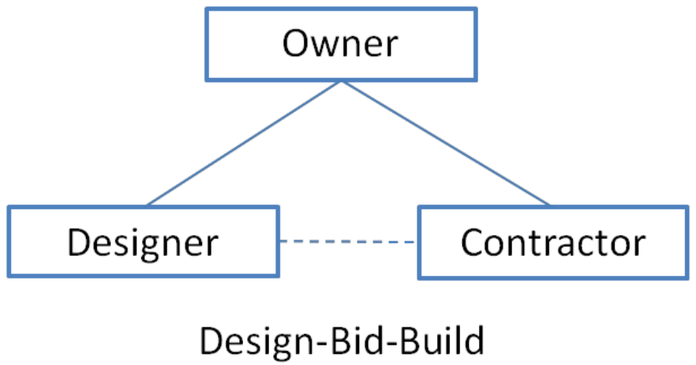
- *Design-Bid-Build (DBB)* – The traditional U.S. project delivery method, which typically involves three sequential project phases: The design phase, which requires the services of a designer who will design the project; the bid phase, when a contractor is procured; and a build or construction phase, when the project is built by the contractor. This sequence usually leads to the sealed bid, fixed price contract. A common variation is:
- *Multiple Primes* – An owner contracts directly with separate trade contractors for specific and designated elements of the work, rather than with a single general or prime contractor.
- *Construction Management At Risk (CMAR) (also called CM at Risk and CM/GC)* – A delivery method that entails a commitment by the CMR for construction performance to deliver the project within a defined schedule and price, either fixed or a Guaranteed Maximum Price (GMP). The CMR acts as consultant to the owner in the development and design phases, but as the legal equivalent of a general contractor during the construction phase.
- *Design-Build (DB)* – A project delivery method which combines architectural and engineering design services with construction performance under one contract.

Project Delivery Methods

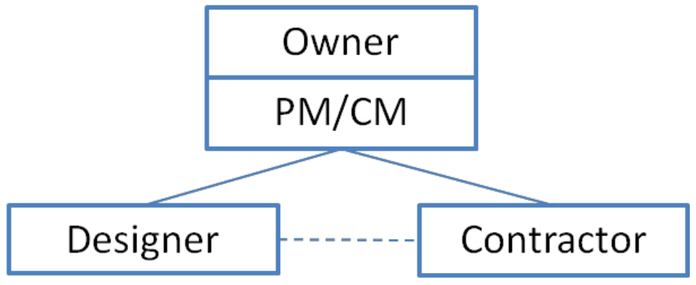
Design-Bid-Build (DBB)

Description
The Design-Bid-Build system remains the most frequently used delivery method for construction projects. Using this method, the owner engages a designer to prepare the design of the project, including construction drawings, and specifications. The designer may also provide additional services including environmental investigation, permitting, right-of-way purchase documents, hearings for public approval, and submissions for project funding.

Once completed, the bid package, including the design and bidder's information packet, is presented to interested contractors, who prepare and submit their bids for the work. The owner will select a contractor, usually based on the lowest responsive and responsible bid (for most all public work), or some hybrid of price and technical merit. The selected general contractor will then execute contracts with subcontractors to construct various specialty items. The contractor is responsible for constructing the facility in accordance with the contract documents. The designer typically maintains limited oversight of the work and responds to questions about the design on behalf of the owner. If a CM is not involved in the process, the designer may also assist the owner in administering the construction contract, including determination of project progress, for validation of interim payments made to the general contractor.



Design-Bid-Build



Design-Bid-Build
With PM/CM

Risk Analysis

The DBB delivery method has been the standard delivery method for many years. This method gives the owner reliable price information for the project before construction starts. With proper design oversight and budgeting of the total project, costs are somewhat predictable for the owner once the bids are received. In DBB, the owner has more control over the design content, relative to other delivery methods.

However, this method typically involves a longer time period to execute, in that construction may not begin until the design and procurement phases are complete. DBB is prone to creating more adversarial relationships between all parties when issues develop, as there is no contractual relationship between the contractor and the designer and no opportunity for collaboration during the design phase.

Advantages:

- This method is widely applicable, well understood, and has well-established and clearly defined roles for the parties involved.
- This method is the most common approach for public owners having to comply with local, state or federal procurement statutes.
- The owner has a significant amount of control over the end product, particularly since the facility's features are fully determined and specified prior to selection of the contractor.

Disadvantages:

- The process may have a longer duration when compared to other delivery methods since all design work must be completed prior to solicitation of the construction contract.
- The designer may have limited ability to assess scheduling and cost ramifications as the design is developed, which can lead to a more costly final product.
- The owner generally faces exposure to contractor change orders and claims over design and constructability issues since the owner accepts liability for design in its contract with the contractor.
- This traditional approach, in some cases, may promote more adversarial relationships rather than cooperation or coordination among the contractor, the designer and the owner.
- If the owner uses the fixed price bidding and compensation method, the contractor may pursue a least-cost approach to completing the project and the owner may receive less scope or lesser quality than expected for the price, requiring increased oversight and quality review by the owner. If the owner uses the unit price bidding and compensation method, the contractor may pursue an increased-scope approach to maximize revenue from the contract, while providing the owner more scope than expected.
- The absence of construction input into the project design may limit the effectiveness and constructability of the design. Important design decisions affecting both the types of materials specified and the means and methods of construction may be made without full consideration from a construction perspective.
- Technological and programmatic obsolescence can be a problem for very large, long lasting project. The owner may be at a disadvantage negotiating programmatic and technological changes in a DBB vehicle.

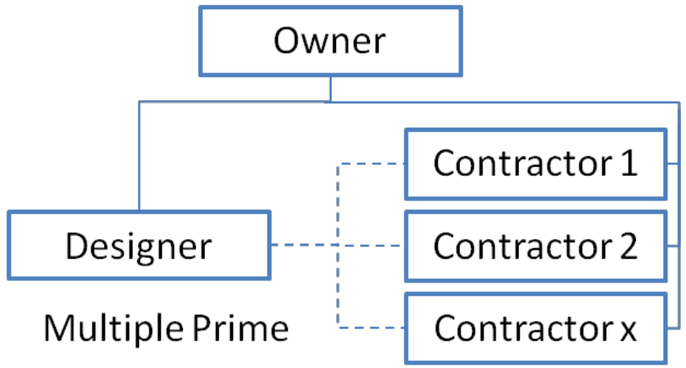
Multiple-Prime Contracting

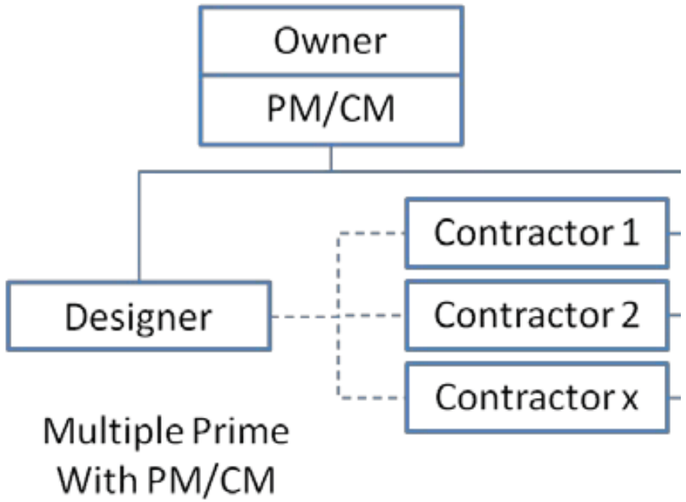
Description

An important variation of Design-Bid-Build is multiple prime contracting, in which the owner holds separate contracts with contractors of various construction work disciplines, such as general construction, earthwork, structural, mechanical, and electrical. In this system, the owner, or its CM, manages the overall schedule and budget

This system, which some owners are required to use, gained favor in part as another method of "fast-tracking" construction. Work in each construction discipline is bid separately, allowing the flexibility of awarding construction contracts on the first portions of the project as soon as the respective aspect of design is completed. This fast-track approach can be a highly desirable feature of this method of procurement when time of performance is critical.

Furthermore, the delivery system allows the owner to have more control over the project schedule, since the owner sets the timeline for bidding individual portions of the work. For example, if an initial phase of construction (such as foundation construction) is delayed, the owner may reduce liability for delays by postponing the bidding of follow-on work. Another advantage of this system is that the owner has the potential to realize savings by directly procuring major material items, such as structural steel or major mechanical equipment, and avoiding contractor mark-ups.





Risk Analysis

The very nature of this delivery system causes its primary disadvantages. To work properly, there is a need for increased coordination in the development of the separate bidding and contract packages for each separate prime, leading to the potential that work scope will be omitted or duplicated. Additionally, the final cost of the project is not known until the final prime contract is procured. In addition, there have been numerous cases when this method did not work well due to the absence of overall authority and coordination among the prime contractors once construction was underway. The problems primarily arise from lack of coordination and contractor delay issues. While the general construction prime contractor is often given contractual responsibility to coordinate the work among trades, including schedule, this contractor generally lacks the direct contractual authority to dictate the schedule of another prime contractor.

Advantages:

- The ability to "fast-track" early components of construction prior to full completion of design.
- Disadvantages:
- No central point of contractor coordination and responsibility for all trades. By default, the owner assumes this responsibility.
- Potential for numerous claims between various contractors.

Construction Management at Risk (CMAR)

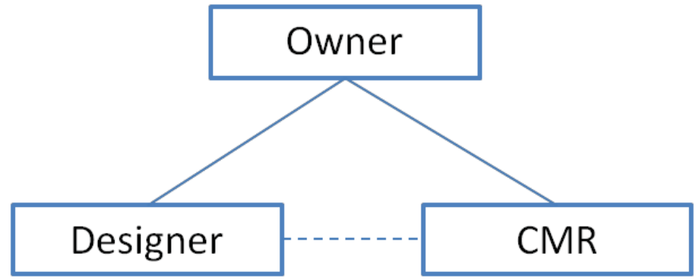
Description

This delivery system is similar in many ways to the Design-Bid-Build system, in that the Construction Manager at Risk (CMR) acts as a general contractor during construction. That is, the CMR holds the risk of construction performance and guarantees completion of the project for a negotiated price which is usually established when the design is somewhere between 50 percent and 90 percent developed. However, in this scenario, the CMR also provides advisory professional management assistance to the owner prior to construction, offering schedule, budget and constructability advice during the project planning and design phases. Thus, instead of a traditional general contractor, the owner deals with a hybrid construction manager/general contractor.

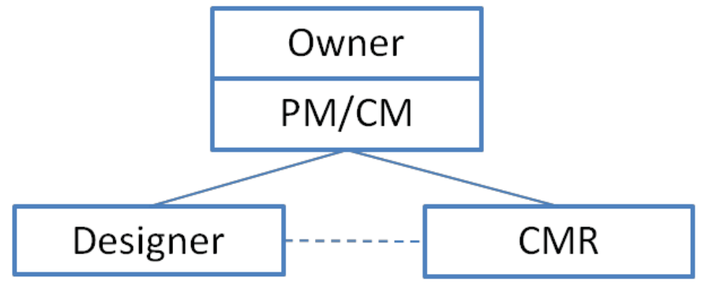
In addition to providing the owner with the benefit of pre-construction services which may result in advantageous changes to the project, the Construction Management at Risk scenario offers the opportunity to begin construction prior to completion of the design. The CMR can bid and subcontract portions of the work with an approved design at any time, often while design of unrelated portions is still not complete. In this circumstance, the CMR and owner often negotiate a guaranteed maximum price (GMP) based on a partially completed design, which includes the CMR's estimate of the cost for the remaining design features. Furthermore, CMR may allow performance specifications or reduced specifications to be used, since the CMR's input can lead to early agreement on preferred materials, equipment types and other project features.

Risk Analysis

The primary disadvantages cited in the CMAR system involve the contractual relationship among designer, CMR and owner once the price is fixed. The CMR then converts from a professional advisory role of the construction manager to the contractual role of the general contractor. At that time, tensions over construction quality, the completeness of the design, and impacts to schedule and budget can arise. Interests and stake holding can become similar to the design-bid-build system, and adversarial relationships may result. While the established GMP is supposed to address the remaining unfinished aspects of the design, this can in fact increase disputes over assumptions of what remaining design features could have been anticipated at the time of the negotiated bid.



Construction Management at Risk



Construction Management at Risk With PM/CM

One mitigating approach to this problem is for the CMR to open its books and share with the owner its subcontractor bids, ensuring transparency in the process. The CMR may further assume risk by taking some responsibility for design errors discovered during construction, if it was involved in the review of the design prior to establishing the GMP. In addition, arrangements can be made regarding risk sharing and profit sharing if there are over-runs or under-runs in the GMP.

Advantages:

- The owner gains the benefit of having the opportunity to incorporate a contractor's perspective and input to planning and design decisions.
- The ability to "fast-track" early components of construction prior to full completion of design
- Disadvantages:
- A premium is placed on the proper selection of the CMR, based on the CMR's particular skills and experience, to provide the best value to the owner.
- While the CMR provides the owner with professional advisory management assistance during design, this same assistance is not present during the construction phase, as the CMR is in an "at-risk" position during construction.

Design-Build (DB)

Description

The design-build (DB) project delivery system has grown in popularity, and is seen by some in the industry as a solution for addressing the limitations of other methods. For an owner, the primary benefit is the simplicity of having one party responsible for the design and construction of the project. While the other delivery systems often give rise to disputes among various project participants, with the owner acting as referee (or party ultimately to blame), in DB many of these disputes become internal DB team issues which may not affect the owner.

Under this system, the owner contracts with a DB team, which can be a joint venture of a contractor and a designer, a contractor with a designer as a subconsultant, a designer-led team with a contractor as a subcontracted entity, or a single firm capable of performing both design and construction. Since contractors are most comfortable in the role of risking corporate capital in performing projects, they usually are the lead members of this sort of team. One variation of the typical DB team structure, known as fee-paid developer, involves the owner engaging a developer, which then selects its own designer and contractor partners. However formulated, the DB team performs the complete design of the facility, usually based on a preliminary scope or design presented by the owner.

At some point early in the process, through a prescribed process, the DB team will establish a fixed price to complete the design and construction of the facility. Once underway, the DB team is then responsible for construction of the project, and for all coordination between design and construction.

Risk Analysis

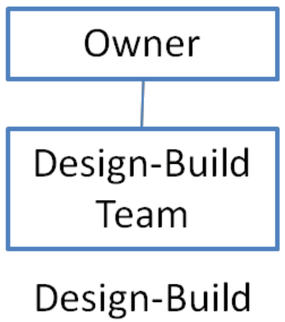
Since the design-build team is working together from the outset, DB offers the opportunity to save time and money. However, the advantages of the system are offset by a significant loss of control and involvement by the owner and other stakeholders. Accordingly, it is difficult for the owner to verify that it is receiving the best value for its money without having a great deal of transparency in the DB team.

The primary caution for an owner considering DB is that the owner should carefully consider the level of involvement it requires for a successful project. First, the owner needs to recognize the effort and completeness that must be behind its initial scope/preliminary design which forms the basis of its contract with the design-builder. Often, the owner will require additional consultants to help it develop the scope or preliminary design, in the role of a traditional design firm.

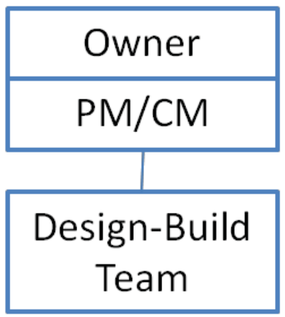
Owners with highly specialized program needs may not find it advantageous to turn over responsibility to an outside DB team without ensuring adequate levels of oversight and communication. For example, a government owner constructed a high-technology research facility involving highly specialized equipment using the DB delivery method. During project development, the DB team made several key design and equipment selection decisions without full involvement of the owner, resulting in an unsatisfactory facility that required costly changes before the facility could be used as intended.

With this lesson in mind, DB is best suited to conventional projects for which project requirements can be clearly defined and for which expertise is widely available. For example, an office facility might be a project ideally suited for DB. In a project of this type, the owner is not assuming undue risk in conceding control over the project, and may benefit from the advantages of DB.

Another primary consideration of the owner is proper selection of the DB team. Since the owner selects a team that has been created prior to selection, it may be difficult for the owner to maintain the proper balance of design expertise, financial capability, construction experience, and experience in DB team roles. In particular, the owner should strongly favor DB teams with a successful track record working together on previous similar projects in the same DB roles. More so than in any other delivery system, the success of a DB project may hinge on the initial selection process.



Design-Build



Design-Build With PM/CM

Advantages:

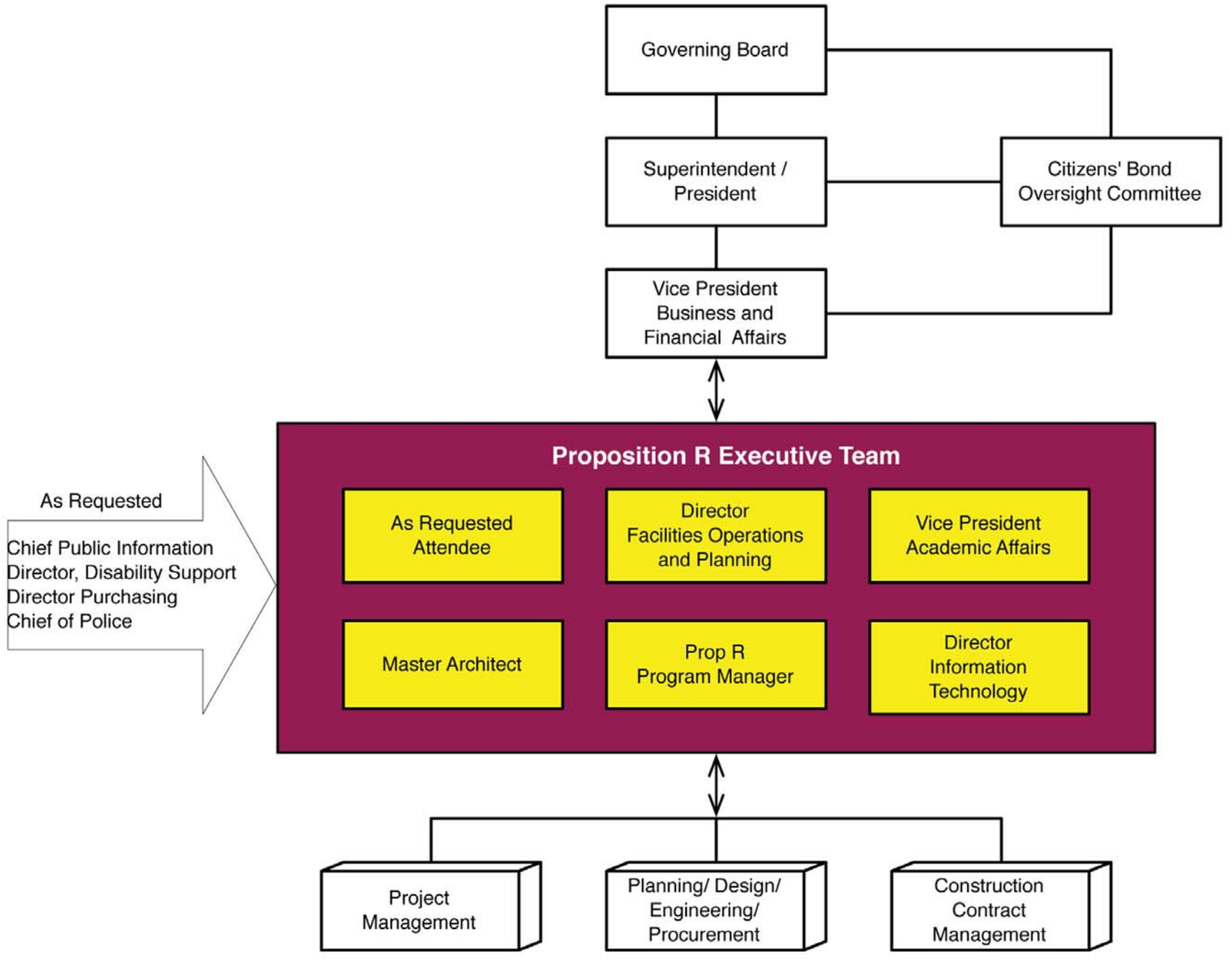
- DB can produce a project more quickly than a conventional DBB.
- There is a single point of accountability for design and construction.
- Cost efficiencies can be achieved since the contractor and designer are working together throughout the entire process.
- Change orders would typically arise primarily from owner changes.

Disadvantages:

- Less design control and involvement by the owner and stakeholders.
- Owner must be highly responsive in its decision making to take full advantage of the speed of DB.
- The owner does not receive the benefit of the checks and balances that exist when it contracts separately with a designer and a general contractor.
- May be problematic when there is a requirement for multiple agency design approvals.
- May be inappropriate if the owner is looking for an unusual or iconic design.

Organization Of The Proposition R Executive Team

The following diagram depicts the suggested organization and reporting structure for delivery of the Proposition R Bond Program. The recommended Executive Team would remain unchanged regardless of the Project Delivery Method selected for any discrete project.



RECOMMENDATIONS

The following recommendations are offered relative to the implementation of the Southwestern College Facilities Master Plan. The recommendations are intended to outline additional studies, analysis and documentation which the planning team believes will assist the College in orderly implementation of the Master Plan.

Infrastructure Considerations / Needs

It is recommended that the College develop a utility / infrastructure master plan for the Chula Vista Campus addressing the replacement and / or upgrade of aging or insufficient infrastructure. This would include:

- Increasing the effectiveness and efficiency of the central plant by maximizing the connected load
- Extension of the irrigation loop
- Identification of dry and wet utility needs and improvements necessary to support the individual projects
- Coordination of the proposed solar field(s) with other site improvements

Parking & Traffic

The Facilities Master Plan provides recommendations for rerouting of on-campus vehicles, improvements to the H Street and Otay Lakes Road entrances as well as reconfiguration of parking to facilitate the movement of vehicles and enhance pedestrian safety. The planning team recommend the College retain a traffic consultant to validate the Facilities Master Plan recommendations and provide detailed recommendations to support the individual design teams assigned to specific projects.

Technology Considerations / Needs

All facilities planning efforts should be closely linked to and aligned with technology. It is recommended the College develop a Technology Mater Plan establishing infrastructure needs and minimum building standards as well as resolving current deficiencies and addressing future desires and demands.

Sustainability Guidelines

It is recommended that the College develop and adopt a Policy or Guidelines for Sustainable Building Practices establishing goals for energy efficiency and management of resources based on the implementation of best practices in all modernization and new construction of campus facilities. All future new construction, remodeling, renovation, and repair projects should be designed with consideration of optimum energy utilization, low life cycle operating costs, and compliance with all applicable energy codes and regulations

This policy should be consistent with the California Community Colleges Board of Governors' Energy and Sustainability Policy, which sets minimum performance goals and design standards for energy efficiency, energy independence, and physical plant management. In addition to meeting current codified requirements the policy should evaluate and establish the College's interest and intent to implement sustainable building practices that will facilitate compliance with pending government mandates.

The specific goals of this policy would typical address:

- Design for energy efficiency and sustainability in all capital projects and renovation projects;
- Minimizing the use of non-renewable energy sources on behalf of the College's built environment by implementing conservation measures that will reduce energy consumption as well as creating a portfolio of local renewable energy;
- Adoption of water conservation measures in buildings, landscaping, and processes;
- Promoting systems designed for optimization of energy, water, and other natural resources;
- Promoting the use of materials and systems with reduced environmental impacts;
- Reduction of greenhouse gas emissions;
- Selection of durable systems and finishes with long life cycles that minimize maintenance and replacement;
- Flexibility / adaptability of buildings, spaces and systems to future needs;
- Providing healthy and humane indoor environmental quality for occupants; and
- Implementing procedures that monitor, trend, and report operational performance as compared to optimal design and operating parameters.

Campus Standards & Design Guidelines

It is recommended that the College develop and document Design Standards and Guidelines to provide consistent design guidance to the design teams retained for individual projects. At a minimum the standards and guidelines should address the following:

- Architectural and landscape design guidelines establishing the character and design intent for the campus and centers including massing, color and material pallets
- Standardization of items which lend consistency to the visual character of the campuses
- Functional design and performance criteria for typical space types
- Standardization of MEP and other systems to promote energy and resource efficiency
- Standardization of architectural and MEP products and systems where beneficial in terms of performance, main-

tenance or stocking of replacement parts / materials, etc.

Other considerations may include the establishment of minimum standards for CAD or BIM documentation to facilitate the College's management and operation of its capital assets.

It is recommended that the standards be organized to allow for periodic updating and provided in a format which can be readily and easily distributed by the College to individual design teams.

Signage & Graphics

It is recommended the College retain consultants to prepare a signage and graphics master plan addressing way finding, information and branding of the College and its Centers. This should include the location and design of campus entry monumentation, directional signage, building and room identification signage as well as standards for informational signage

Precinct Planning

The planning team recommends the College develop detailed specific or "precinct" plans addressing the opportunities and constraints relative to the development of related projects within a given area of the campus. The intent of the precinct plans is to establish detailed design criteria needed to allow the College to coordinate and insure that multiple projects within a specific precinct can be developed in the least costly manner, prevent redundancy of work, cause the least impact on the campus and facilitate the seamless integration of adjoining projects and or projects which may follow.

The planning efforts should address in detail the following:

- Establishment of all building pad elevations and grading considerations within the precinct
- Routing and sizing of utilities within the precinct in coordination with a utility master plan
- Parking if applicable
- Vehicle circulation including service considerations and emergency vehicle access
- Pedestrian circulation including accessibility and the relationship of individual projects to the recommendations of the master plan
- Coordination of hardscape and landscape improvements between adjoining projects

Feasibility Studies / Programming (Enterprise Facilities)

The Performing Arts / Culinary Complex and Wellness Center / Gymnasium are, in addition to meeting academic needs, envisioned as containing market driven components. The planning team recommends the College prepare a marketing and feasibility study to establish the market demand and financial viability off operating and maintaining these expanded facilities. The study should be completed simultaneous with or in advance of the programming efforts for these facilities. Consideration may also be given to including community supported conferencing / meeting facilities in conjunction with these and / or the Student Union facility

EIR Update

The campus should evaluate the 2025 Facilities Master Plan recommendations in light of the current EIR and amend or update the EIR prior to the implementation of any projects not currently reflected in the most recent EIR.

PHASE I
SWC
SOUTHWESTERN COL

Chapter 7
Total Cost Of Ownership

Total Cost Of Ownership

Facilities Total Cost of Ownership (TCO) Program

The total cost of ownership (TCO) approach to facilities management is accounting for and understanding all of the costs associated with owning and occupying a facility over the entire lifecycle. This is more than just identifying when to replace a piece of equipment or component of the building. It balances the annual operating expense of operations and maintenance with the capital expenditures necessary to replace specific components. In short, it allows management to understand the impact that each category of building costs and how it will impact other areas. This approach allows financial and facilities executives to optimize the value that can be derived from facilities while controlling costs.

Facilities costs fall broadly into two categories:

Building related expenses: These are the expenses incurred in construction, maintenance and renewal of the facility to its original state. They are costs that are traditionally incurred by the facilities management department's operating budget. These can cover various levels of service, depending on the building occupants' requirements.

Program related expenses: These are the expenses that are incurred through the occupation and use of the facility. These expenses are not necessarily paid by the facilities department. They may be departmental expenses which are paid by the building occupants' operating budgets or by the institution. However, these expenses often relate to, or impact the costs of the building operation, upkeep or renewal.

In the *Building related expenses* category there are five very distinct categories of costs. These costs are:

1. *Acquisition (purchase, lease, or construction).* These are the costs incurred to obtain or completely restore the facility.
2. *Utilities:* This is the cost to provide heating, ventilation, air condition, water and sewer services to the occupants of the building. This could include the cost of technology, such as telephone, computer hookups and Internet service.
3. *Daily Maintenance:* This is the daily cleaning, trash removal, litter control, grounds and landscaping and other routine maintenance that is performed daily to keep the building operational.
4. *Periodic Maintenance:* This is the critical maintenance (occasional breakage repair), preventive maintenance and other activities which are performed to keep the facility in good operating order.
5. *Capital Renewal:* These are the repairs and replacements which are done to bring the facility back to its original condition. These activities can be replacement of key building systems or building components such as roofs, HVAC systems, etc.

There is a similar list of activities and facilities related costs that come under the heading of the Program related expenses – that are derived from the activities occurring within the building. These can be more wide ranging – depending on type of activities that are housed in the facility. Example categories are:

1. *Specialty Equipment:* This is usually equipment that is moved in after construction of the facility (e.g. specialty laboratory equipment to support research grants) – but, may require specific modifications to the building.
2. *Operational Activities:* This could be the provision of mail services, commissary, building security or other services which are necessary to support building occupants. Different building activities may require a special menu of support services.
3. *Remodel, Renovation, or Adaption:* This is building reconstruction which is beyond what is required for capital renewal. This could be construction to update décor, make changes to accommodate new building activities or to adapt for changing uses. It can also be building modifications to meet new code requirements which have been implemented.

These various activities are funded by a combination of operating and capital budget accounts. To have the optimum and most effective facility TCO, there needs to be a very close understanding of each of the costs that are being charged against the various funding sources. This goes beyond identifying the replacement of equipment or building components at end of their life cycle. In fact, if the maintenance and operations (including utility costs) of equipment is rising, it may be very cost effective to replace the equipment with more energy efficient equipment that could also have a lower maintenance cost. In other words, well targeted capital expenditures can become an investment that will reduce annual operating costs.

A successful TCO program is only possible if management is able to track all of the various facilities costs, monitor their trends, and understand how they relate to each other. This knowledge makes it possible to reduce the total amount that is spent on the facility over its entire lifecycle.

TCO Calculations and Rationale

Building Related Expenses

1. *Acquisition* the calculated first costs will be the budget costs including the FF&E (Furniture, Fixtures, and Equipment) and possibly pro-rated infrastructure related costs.
2. *Utilities* The operating costs of the new mechanical, electrical, and plumbing systems should not be greater than those in the existing buildings and should be noticeably lower if well managed. In the absence of design and construction standards addressing such things as systems sustainability initiatives, average costs for comparable campuses will be applied.
3. *Daily and Periodic Maintenance* Regardless of current funding and staffing levels along with the efficiency and effectiveness of managing those resources, there are well established benchmarks for estimating preferable maintenance cost allocations. Since the TCO model will be applied to new and renovated facilities, the operating costs that best preserve those capital investments will be utilized.
4. *Capital Renewal* This component will be addressed as a re-investment reserve allocation based on comparable industry established data in the form of a percentage of current replacement value required to avoid an accumulation of capital renewal and deferred maintenance backlog.
5. *Other*

Rationale

The TCO calculation table can be applied as a template for the pilot and future projects. The assumption for the life of the facilities is that they will continue to be operated and maintained until such time that a decision is made to deconstruct or entirely replace them. For the sake of this calculation, it will be assumed that they will exist in perpetuity and amortized over 75 years. If and when a decision to demolish were to occur, the approach to adjusting the TCO would be to stop setting aside a reserve or performing capital renewal projects and performing minimal routine maintenance to the extent that the facility begins the process of “demolition by neglect”.

The calculation for annual operating costs includes utilities plus daily and periodic maintenance.

Program Related Expenses

Given the function of the pilot program buildings, it is unlikely that there will be any significant program changes over the life of those facilities. Should program related alteration and improvement projects occur, they would be considered to be independent of the initial TCO calculations

Southwestern CCD 2011-12 Opperating Cost Data

	$ Spent	GSF	Per GSF
Building Maintenance	$1,857,010	769,485	$2.41
Custodial	$2,112,329	769,485	$2.75
Grounds	$762,248	769,485	$0.99
Utilities	$1,922,364	769,485	$2.50
Other	$165,806	769,485	$0.22
Total	**$6,819,757**		**$8.86**

Specific Institutional Examples

Ratios and Measures	Fac Admn Total Cost/ GSF-GSM	Custod Total Cost/ GSF-GSM	Engy Total Cost/ GSF- GSM wo Purch Util	Engy Total Cost/ GSF- GSM w Purch Util	Grnds Total Cost/ Acre/ Hectare	Maint Total Cost/ GSF-GSM	Othr Total Cost/ GSF-GSM	AFOE / GSF-GSM	AFOE + PU / GSF-GSM
Cal Poly St Univ	$0.55	$1.67	$0.16	$2.14	$4,366	$1.88		$4.64	$6.62
Cal St Univ/Fresno	$0.15	$1.12	$0.04	$2.91	$5,533	$2.04		$7.15	$10.01
Cal St Univ/Sacramento	$0.51	$0.95	$0.18	$2.13	$1,202	$2.02		$4.31	$6.26
Cal St Univ/Stanislaus	$0.46	$1.37	$0.99	$3.43	$3,591	$1.89	$0.08	$6.31	$8.75
Average									**$7.91**

Data Source: APPA Facilties Performance Indicators Database - 2011-12 FY Data.

Project Name	New GSF	Existing GSF	Net GSF	Project Cost	Operating Cost $8.86	Capital Renewal Cost 0.015	First Cost 75 Years	Total Cost Of Ownership
Gym/Wellness center	54,000	48,132	5,868	$23,064,700	$51,990	$345,971	$307,529	$705,490
Performing Arts Complex	75,292	43,238	32,054	$48,111,588	$283,998	$721,674	$641,488	$1,647,160
Student Union Complex	72,529	52,736	19,793	$37,076,606	$175,366	$556,149	$494,355	$1,225,870
Math & Science	91,877	39,655	52,222	$48,391,575	$462,687	$725,874	$645,221	$1,833,782
Planetarium/ Exhibit Hall	11,258	3,318	7,940	$9,333,585	$70,348	$140,004	$124,448	$334,800
Fine Arts/Gallery	38,846	22,289	16,557	$16,845,568	$146,695	$252,684	$224,608	$623,986
Business/CIS/COM	49,400	17,280	32,120	$22,990,760	$284,583	$344,861	$306,543	$935,988
Administartion	44,100	24,864	19,236	$19,276,110	$170,431	$289,142	$257,015	$716,587
Student Services	55,822	32,998	22,824	$24,935,687	$202,221	$374,035	$332,476	$908,732
National City Phase II	24,769	-	24,769	$16,418,132	$219,453	$246,272	$218,908	$684,634
San Ysidro Phase II	24,923	-	24,923	$19,766,682	$220,818	$296,500	$263,556	$780,874
Total	**542,816**	**284,510**	**258,306**	**$286,210,993**	**$2,288,591**	**$4,293,165**	**$3,816,147**	**$10,397,903**

The Op. Cost/Year = $7.91 x GSF using the APPA FPI data but SWCCD data is $ 8.86 and used higher cost data
Capital Renewal = $.015 x CRV with 1.5% of current replacement value per year as an established standard
First Cost is amortized over anticipated life of facility estimated as 75 years
These calculations do not factor in inflation adjustments

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BOOKS

Chapter 8
Appendices

Appendices

A. Glossary Of Terms

The Glossary that follows includes the definition of the key words or terms used in the Facilities Master Plan.

ASF: The sum of the floor area within the outside walls of a room or space, usable for student or staff stations, "assignable square feet".

Capacity to Load Ratio (AKA "Cap Load(s)":

1. The relationship between the space available for utilization (square footage that is usable) and the efficiency level at which the space is currently being utilized.
2. The state measures five areas for Capacity Load: Lecture, Laboratory, Office, Library, and AV/TV.
3. The Space Inventory – Report 17 provides the basis for this calculation. It records the usable square footage by "type" available at the college or center

FTES: Shall mean "full-time equivalent students"

GSF (gross square feet): The sum of the floor areas of the building within the outside of the exterior walls (ASF plus non-usable space), "gross square feet", the buildings footprint.

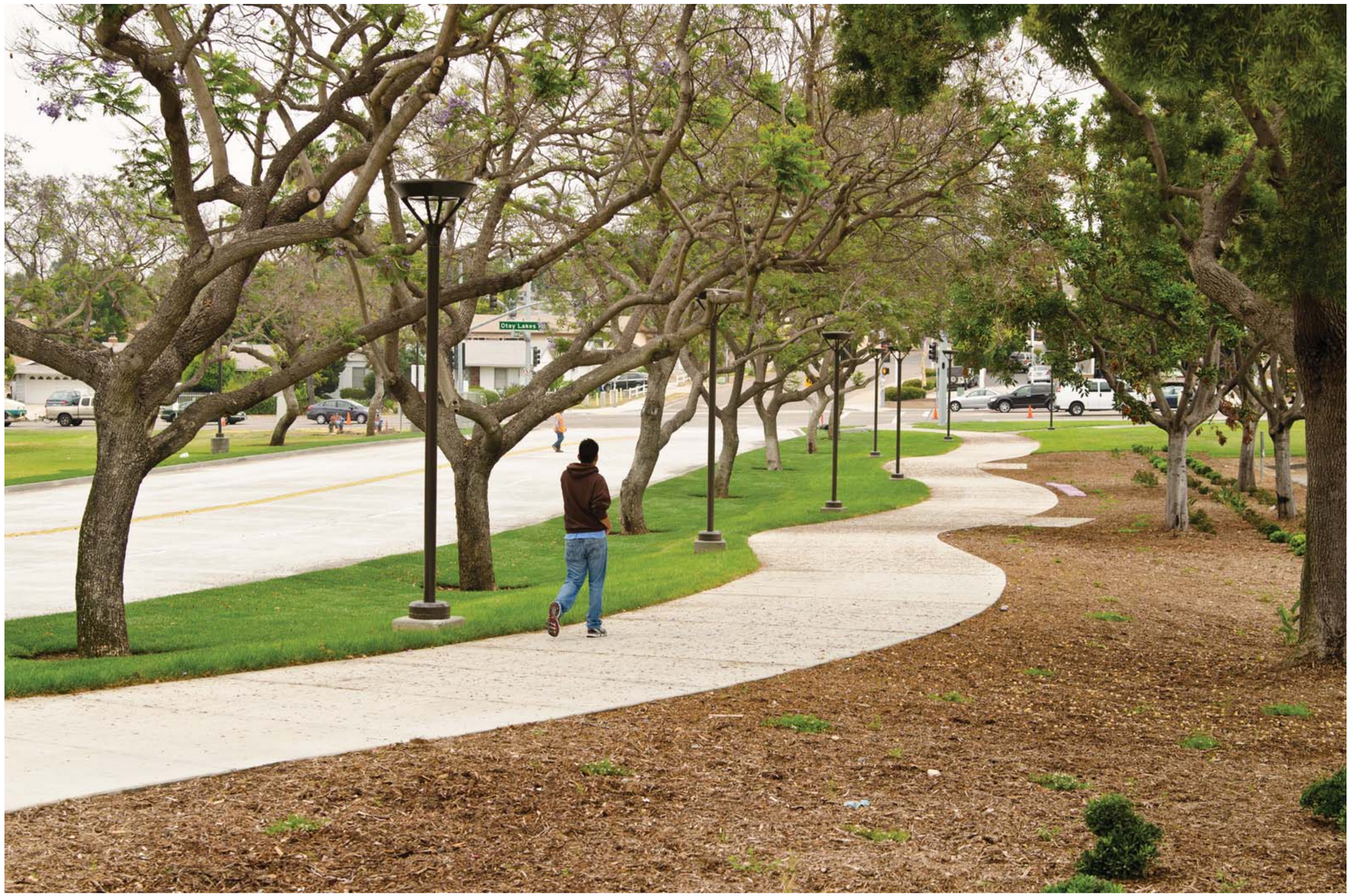
Room Type: identifies the room by use or function (i.e. lecture, lab, office, meeting room, etc.)

Space Inventory (or "Report 17"): A statistical legal record of the gross square footage and the assignable (i.e. usable) square footage of a college or center.

Title 5: Shall mean the standards identified in the California Code of Regulations in Title 5, Chapter 8, Sections 57025 to 57030 and Sections 57021 and 57022 that relate to room capacities and/or room utilization.

TOP Code: Room/spaces are assigned a particular use and function, a specific discipline or service. This 4 digit numeric code identifies the "type" of use that supports that particular room. Typically used to identify laboratory uses and functions.

WSCH: Shall mean "weekly student contact hours". It also includes all credit and non-credit hours including daily student contact hours 9DSCH), positive attendance and independent studies – all of which are ultimately converted to the weekly students contact hours (WSCH).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Governing Board

Humberto Peraza, Jr., Governing Board President
Terri Valladolid, Governing Board Vice President
Norma L. Hernandez, Governing Board Member
Tim Nader, Governing Board Member
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Steven Crow, Vice President for Business & Financial Affairs
Albert Roman, D.P.A., Vice President for Human Resources
Angelica Suarez, Ph.D., Vice President for Student Affairs
Kathy Tyner, Vice President for Academic Affairs

Shared Consultation Council Membership (SCC)

Albert Roman, D.P.A.
Alfredo Alvarez,
Angelica Suarez, Ph.D.
Beatrice Zamora-Aguilar
Ben Seaberry, Ed.D.
Bruce MacNintch
Chris Hayashi, Ed.D.
Tammy Ray
Diana Kelly, Ph.D.
Elizabeth Negrete
Eric Maag
Heather MacNintch
Janelle Williams
John Brown
Jose Hernandez
Josue I. Gonzalez
Kathy Tyner
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Linda Gilstrap
Linda Hensley
Malia Flood, Ph.D.
Melinda Nish, Ed.D.
Mia McClellan
Michael Cash
Michele Fenlon
Mink Stavenga, D.B.A.
Patti Blevins
Paul Norris
Randy Beach
Rebecca Wolniewicz, Ph.D.
Silvia Cornejo
Silvia Lugo
Steven Crow
Steven Detsch
Susan Brenner
Victor Castillo
Victoria Lopez

Institutional Facilities Committee Membership (IFC)

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Bruce Boman
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Torrance Carrington
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