CHAPTER 5 A VISION FOR THE FUTURE

à T E H H R F NO 5

SOUTHWESTERN COMMUNITY COLLEGE DISTRICT

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.

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- 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
- cess

- 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 fund-

• To involve campus constituencies in the planning pro-

• 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-abouts 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



Parking







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
С	145
D1	379
D2	298
E	400
F	286
G	141
Н	288
I	270
J	454
ĸ	356
L (Parking Structure)	450
М	38
N (New Parking Lot)	525
Total	4909



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 guadrant of the campus a grand "Pedestrian Promenade" leading to and terminating on the "Campus Ouad"
 - 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:

- mingle and socialize.
- and informal interaction.



• 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,

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

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



Pedestrian Gateway 0 Internal Loop Road: Pedestrians, Service, Emergency Vehicles Pedestrian Promenade Pedestrian Spines (E/W & N/S) Pedestrian Bridge Campus Quad

▲ _ _ _ ▲ A-B Section (See Adjacent Page)

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.

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



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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

- 1 Wellness Center / Gymnasium
- 2 Performing Arts and 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



← Wellness Center/Gymnasium

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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
А	Gymnasiums (2)	20,000	28,571
В	Lobby/Ticket	1,600	2,286
С	Locker Rooms	2,800	4,000
D	Office/Office Service	680	971
Е	Special Teaching Labs	6,800	9,714
F	Classrooms (1)	900	1,286
G	Testing Lab	120	171
Н	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



♥ 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

STUDENT UNION COMPLEX ■

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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
А	Auditorium/Theatre/Lobby	23,800	35,626
В	Black Box Theatre	3,900	5,838
С	Theatre Teaching Labs	3,400	5,089
D	Dance Rooms	4,000	5,987
Е	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









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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
А	Life Sciences/Biology (9 labs)	16,900	26,000
В	Physical Sciences; Chemistry, Physics,	16,800	25,846
	Geology, & Other Phys Sciences (9 labs)		
С	Mathematics: 22 lecture	17,600	27,077
D	Mathematics: lab	3,000	4,615
Е	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



PLANETARIUM/EXHIBIT HALL & LARGE LECTURE

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A replacement/new construction is recommended for the ш 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

♥ FINE ARTS/GALLERY

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A new Fine Arts facility and Gallery is recommended to replace ш aging and problem related buildings (710 and 750). These O structures have issues with ventilation, operative exhaust \simeq 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	Department	ASF	GSF
Block			
А	Planetarium/Exhibit Hall	4,018	6,182
В	Large Lecture (2 rms)	3,300	5,077
Totals		7,318	11,258



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



► BUSINESS, CIS & COMMUNICATION

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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
А	Accounting, Business, Legal	14,400	22,154
В	CIS	9,200	14,154
С	Communication	4,200	6,462
D	Support Services: Faculty Office, Mt Rms	2,860	4,400
Е	Administrative Office and School support	950	1,462
F	Other: Technician Office, Lounge, etc.	500	769
Totals		32,110	49,400



\sim 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
А	President's Office/Board of Trustees	4,880	7,508
В	Marketing, Communication, Community	2,050	3,154
	& Government Relations		
С	Vice President Business & Financial Affairs	3,710	5,708
D	Vice President Human Resources	2,870	4,415
Е	Vice President Academic Affairs	1,420	2,185
F	Vice President Student Services	1,420	2,185
G	Dean Instructional Support Services &	2,600	4,000
	Continuing Education		
Н	Institutional Effectiveness & Institutional	1,770	2,723
	Research Grants and Planning		
I	Procurement, Central Services & Risk	1,190	1,831
	anagement		
J	Office Support Services	1,130	1,738
К	Assembly	2,340	3,600
L	Academic Senate	2,250	3,462
М	Mail Room/Communication Center	1,035	1,592
Totals		28,665	44,100

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



o 1600'S Repurposing

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Six buildings comprise this project, buildings 1600, 1620, 1630,

1650, 1660 and 1670. Three buildings will remain basically as

O 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



O 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
А	New Facility, Building 660 - ASF	3,353	4,276
Totals	New Space	3,353	4,276





STUDENT SERVICES

 \vdash

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
DIOCK			
А	Admissions & Records	5,384	8,283
В	Counseling	5,350	8,231
С	Financial Aid	4,230	6,508
D	Extended Opportunity (EOPS)	2,820	4,338
Е	Veterans Services	1,050	1,615
F	Health Services	2,150	3,308
G	International Students	1,080	1,662
Н	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
Μ	Shared Facilities (lounge, etc.)	1,305	2,008
Ν	Bursar's Office	720	1,108
Totals		36,284	55,822



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



$\underset{\leftarrow}{\mathfrak{m}} Language Arts Classrooms (Repurpose Bldg. 420)$

- └ O The remodel of building 420 will allow the repurposing of this building to classrooms, approximately 21 lecture classrooms and ГО 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
А	Reading (6 Rms)	4,500	6,923
В	World Languages (8 Lecture, 1 Lab)	7,200	10,286
С	ESL (3 Lecture, 1 Lab)	3,450	4,929
D	English (4 Rms)	3,000	4,286
Е	Office/ Support Space	2,444	3,290
Totals		20,594	29,714





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
А	Office & Office Service	1,886	2,902
В	Meeting Rooms	424	652
С	Locker Rooms	1,030	1,585
D	Armory/Armory Service	386	594
Е	Local Agency	500	769
Totals		4,226	6,502



♥ MAINTENANCE & OPERATIONS

L 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.



$\overset{\text{OD}}{\rightarrowtail}$ 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.

<u>с</u> 17: Аитомотіve

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

Square Footage				Project		Cost			
	Project	Scope of Work	Useable	Gross	Cost	\rightarrow			COSI
Buildi	na Projects						ore Site Amenities		
Danan							1 Infrastructure-Primary & Secondary	/	\$13,908,000
1	Wellness Center / Gymnasium	New Construction	37,800	54,000	\$23,064,700		3 Perimeter Roadway Realignment		\$4,751,900
2	Preforming Arts & Cultural Center Complex	New Construction	50,300	75,292	\$48,111,588		4 Surface Parking Improvements		\$10,492,000
3	Student Union Complex	New Construction	50,770	72,529	\$37,076,606		5 Inner Roadway Improvements		\$1,141,920
4	Math / Science Bldg	New Construction	59,720	91,877	\$48,391,575		6 Ped Circ / Campus Amenities		\$16,592,000
5	Planetarium/Exhibit Hall/Large Lecture	New Construction	7,318	11,258	\$9,333,585		7 Demolition / Haz Mat Removal		\$4,125,552
6	Fine Arts / Gallery	New Construction	25,250	38,846	\$16,845,568		8 Interim Use Renovations		\$636,291
7	Business, CIS & Communications	New Construction	32,110	49,400	\$22,990,760		9 Misc Building Improvements		\$6,016,494
7b	Administration Building	New Construction	28,665	44,100	\$19,276,110		10 Solar Installation		\$13,260,000
8	IT/ Central Services	Renovation/Repurpose	6,700	10,431	\$5,332,327		Total Chula Vi	sta Campus	\$70,924,157
9	1600's Repurposing	Renovation/Repurpose	9,559	11,549	\$4,109,596			ona oampao	<i>••••,••=</i> •,•••
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 To	tal	396,018	582,091	\$323,316,556				
Core S	Site Amenities				\$70,924,157	\leftarrow			
Project Management				\$15,613,477					
	Total Chula Vista Campus				\$409,854,190				

Core Site Amenities

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.

Program	Space Use	ASF	GSF
Block			
А	Biology Labs	3,600	5,538
В	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

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



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	Space Use	ASF	GSF
Block			
A	Media-Tutorial Center	2,500	3,846
В	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
Н	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

		Square				
	Project	Scope of Work	Useable	Gross	Cost	
Buildi	ng 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					
Project Management					\$1,445,421	
Total Higher Ed Centers						

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 Core Site Amenities Project Management \$361 million\$ 71 million\$ 17 million

"Core Site Amenities" reflects the costs associated with nonbuilding 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.

		Square	Footage			
Campus / Center		Useable	Gross	Cost		
Building Projects						
Chula Vista Campus	New Construction / Renovation	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						
Southw	estern 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, largescale 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.

Southwestern Community College District: Alternatives for Implementation of Proposition R

			Total Program of Work			It State Funding	
			Total Project	Projected State	District \$	District \$	Unfunded \$ D
	Project	Scope of Work	Cost	\$'s Resourced			
Chula	Vista Campus - Building Projects						
1	Wellness Center / Gymnasium	New Construction	\$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	
3	Student Union Complex	New Construction	\$37,076,606		\$37,076,606	\$37,076,606	
4	Math / Science Bldg	New Construction	\$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	
6	Fine Arts / Gallery	New Construction	\$16,845,568	\$8,422,784	\$8,422,784		\$16,845,568
7	Business, CIS & Communications	New Construction	\$22,990,760	\$11,495,380	\$11,495,380	\$22,990,760	
7b	Administration Building	New Construction	\$19,276,110		\$19,276,110	\$19,276,110	
8	IT/ Central Services	Renovation/Repurpose	\$5,332,327		\$5,332,327	\$5,332,327	
9	1600's Repurposing	Renovation/Repurpose	\$4,109,596		\$4,109,596		\$4,109,596
10	Journalism	Renovation	\$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	Academic Success Center	Renovation/Repurpose	\$10,516,463	\$5,258,231	\$5,258,231		\$10,516,463
13	Building 420 Remodel	Renovation/Repurpose	\$10,406,081	\$5,203,040	\$5,203,040		\$10,406,081
14	Security Complex	New Construction	\$2,895,984		\$2,895,984	\$2,895,984	
15	Parking Structure	New Construction	\$9,907,200		\$9,907,200	\$9,907,200	
16	Maintenance and Operations	New Construction	\$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
18	Fields & Support Structures	New Construction	\$8,305,000		\$8,305,000		\$8,305,000
	sub t	otal	\$323,316,556	\$54,015,409	\$269,301,147	\$251,316,123	\$72,000,433
Chula	Vista Campus - Core Site Amenities		\$70,924,157		\$70,924,157	\$58,082,735	\$12,841,442
Chula	Vista Campus - Project Management		\$15,613,477		\$15,613,477	\$12,565,806	\$3,047,670
	Total Chula Vista Cam	pus	\$409,854,190	\$54,015,409	\$355,838,781	\$321,964,664	\$87,889,545
Highe	r Education Center - Building Projects						
1	National City Phase II	New Construction	\$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
3	Otay Mesa Renovation	Renovation/Repurpose	\$1,294,769	\$647,385	\$647,385	\$1,294,769	
	sub t	otal	\$37,479,582	\$10,530,725	\$26,948,857	\$17,712,901	\$19,766,682
Highe	r Education Center - Project Management		\$1,445,421			\$885,645	\$559,776
	Total Higher Education Ce	nter	\$38,925,003	\$10,530,725	\$28,394,278	\$18,598,546	\$20,326,458
SOUT	HWESTERN CCCD TOTALS		\$448,779,193	\$64,546,134	\$384,233,059	\$340,563,210	\$108,216,003

Progr	am With State Fun	ding
istrict \$	State \$	Unfunded \$
\$23,064,700		
\$48,111,588		
\$37,076,606		
\$48,391,575		
\$4,666,793	\$4,666,793	
\$8,422,784	\$8,422,784	
\$11,495,380	\$11,495,380	
\$19,276,110		
\$5,332,327		
\$4,109,596		
\$1,664,219		
\$12,467,844	\$12,467,844	
\$5,258,231	\$5,258,231	
		\$10,406,081
\$2,895,984		
\$9,907,200		
		\$7,150,832
		\$13,002,675
¢040 140 027	¢40 211 021	\$8,305,000
\$242,140,937	\$42,311,031	\$30,004,507
\$03,992,500 \$17,400,007		\$0,931,577
\$17,422,227		
\$323,555,745	\$42,311,031	\$43,987,414
\$16,418,132		
		\$19,766,682
\$647,385	\$647,385	
\$17,065,516	\$647,385	\$19,766,682
\$885,645		\$559,776
\$17,951,161	\$647,385	\$20,326,458
\$341,506,906	\$42,958,416	\$64,313,872



CHAPTER 6 Delivery of the Program

R 5 E HL F 0 R E I (T)

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

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.

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

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 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.

- owner.

 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

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:

- Disadvantages:
- responsibility.
- tors.

• The ability to "fast-track" early components of construction prior to full completion of design.

• No central point of contractor coordination and responsibility for all trades. By default, the owner assumes this

Potential for numerous claims between various contrac-

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 preconstruction 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



Construction Management at Risk



Construction Management at Risk With PM/CM

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.

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.

Advantages:

- tional DBB.
- construction.
- process.
- changes.

• DB can produce a project more quickly than a conven-

• There is a single point of accountability for design and

 Cost efficiencies can be achieved since the contractor and designer are working together throughout the entire

Change orders would typically arise primarily from owner

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.



Governing Board

Superintendent /

President

Vice President

Business and

Financial Affairs



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 improve-• ments 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;

- environmental impacts;
- •
- Selection of durable systems and finishes with long life cycles that minimize maintenance and replacement;
- to future needs;
- ity for occupants; and
- 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
- space types
- Standardization of architectural and MEP products and systems where beneficial in terms of performance, main-

• Promoting systems designed for optimization of energy, water, and other natural resources:

- Promoting the use of materials and systems with reduced
 - Reduction of greenhouse gas emissions;
- Flexibility / adaptability of buildings, spaces and systems
- Providing healthy and humane indoor environmental qual-
- Implementing procedures that monitor, trend, and report operational performance as compared to optimal design

- Standardization of items which lend consistency to the visual character of the campuses
- Functional design and performance criteria for typical
 - Standardization of MEP and other systems to promote energy and resource efficiency

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.

Delivery of the Program 79



CHAPTER 7 Total Cost Of Ownership

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SOUTHWESTERN COMMUNITY COLLEGE DISTRICT

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.
- 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.

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

Building Maintenance
Custodial
Grounds
Utilities
Other
Total

5. Other

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
Cal Poly St Univ	\$0.55	\$1.67	\$0.16	\$2.14	\$4,366	\$1.88	
Cal St Univ/Fresno	\$0.15	\$1.12	\$0.04	\$2.91	\$5,533	\$2.04	
Cal St Univ/Sacramento	\$0.51	\$0.95	\$0.18	\$2.13	\$1,202	\$2.02	
Cal St Univ/Stanislaus	\$0.46	\$1.37	\$0.99	\$3.43	\$3,591	\$1.89	\$0.08
Average							

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

Southwestern CCD 2011-12 Opperating Cost Data

\$ Spent	GSF	Per GSF
\$1,857,010	769,485	\$2.41
\$2,112,329	769,485	\$2.75
\$762,248	769,485	\$0.99
\$1,922,364	769,485	\$2.50
\$165,806	769,485	\$0.22
\$6,819,757		\$8.86

Specific Institutional Examples

AFOE / GSF-GSM	AFOE + PU / GSF- GSM
\$4.64	\$6.62
\$7.15	\$10.01
\$4.31	\$6.26
\$6.31	\$8.75
	\$7.91

Southwestern CCD 2025 Program of Work Total Cost Of Ownership

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







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 nonusable 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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Appendices

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B. ACKNOWLEDGEMENTS

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