
CHAPTER 2: DISTRICT AND COLLEGE MASTER PLANNING

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2.1 Overview

Since 1972, the California Code of Regulations, Title 5, Sections 55402, 55403 and 55404, have required that community college districts maintain educational master plans for each college within a district and for the district as a whole. The regulations do not stipulate the methods college staff use to create master plans or the contents of educational master plans as they relate to facilities. However, there is a need for consistency within the system as well as the need to relate educational master plans with facility needs. In an effort to assist districts with their planning, the following chapter has been created as an advisory and contains suggestions on how best to develop effective master plans.

2.2 Master Plan Elements

The College Master Plan (Master Plan) is defined as a comprehensive planning document encompassing all functions of the college or district. Districts with more than one instructional site should develop Master Plans that identify the relationships of all of their sites as well as development of individual Master Plans for each site. For the purposes of this chapter the use of “college” will apply also to district recommendations for Master Plans. Given the complexities of most communities, the master planning process is not a step-by-step, linear process but a dynamic process consisting of a mixture of methods. Information and ideas are exchanged at every level, combined and recombined, until a particular approach emerges as a good choice.

The preferred approach is developed, often leading to new ideas and combinations, until a feasible plan is constructed and accepted. The plan must be idealistic enough to inspire improvement and change, and realistic enough to be implemented successfully over time. This chapter is intended to serve as an “interim guideline” for the development of the Master Plan.

Common elements of Master Plans:

- Statement of purpose
- Description of the community and regional context
- Analysis of community and regional needs
- Projection and analysis of future enrollment changes and economic trends and workforce development

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- Description of the educational philosophy of the college
 - Brief description of the scope and emphasis of existing educational programs and related services in relationship to the college's purpose and philosophy
 - Identification of the needs of educational programs, student services, other services and activities, justified in terms of the previous information
 - Identification of any potential or existing public/private educational partnerships
 - Formulation of long term educational goals and short term objectives to meet these goals
 - Analysis of resources, available and needed, to implement these objectives
 - Implementation plan including tasks, timelines, and accountability mechanisms
 - Preparation of a campus design
 - Development of a Facilities Master Plan to achieve the goals of the Educational Master Plan
 - Formulation of an implementation and funding plan, subject to periodic evaluation and revision

2.3 Managing the Master Planning Process

Colleges which have developed effective Master Plans have found it essential to be clear in advance about the desired outcome and to have that outcome be one that has immediate appeal to all of those whose cooperation will be needed. Most colleges, or districts, set up an 'master plan committee' to represent each major college constituency, e.g., administration, faculty, student services, students, facilities, finance, and human resources. This committee is responsible for developing a statement of educational philosophy and college priorities satisfying all the constituencies. Working alongside the Academic Senate, the curriculum committee, and/or a committee established specifically to address such issues, the institutional planning committee's main focus is on communal and regional issues and the implications of the educational planning on the overall development of the college during the educational planning process.

In addition, or as a part of the institutional planning committee, many colleges find it essential to create or to maintain a 'community liaison committee' to assist them in the planning process on a periodic or on-going basis. Such a committee typically has

representatives from education, business, government, and service organizations to the extent that their participation is relevant.

Consideration should also be given to utilizing professional planning consultants to facilitate the development of the Master Plan.

Colleges which have been most successful in achieving Master Plans that best meet the foreseeable needs of their communities, are agreeable to all constituents, provide an effective basis for gaining the necessary resources, and are achieved by a process that does not put undue strain on the colleges resources, have found certain elements to be essential to the process:

- They make sure that the requirements of the accrediting commission, of the district, and of the state are each accounted for, as necessary
- They select a team that understands and respects the culture and concepts of higher education, works effectively with its many constituencies, and relates these to sound concepts in fiscal management and capital outlay planning
- They include faculty representatives on the team

It is essential that the roles of the various staff and units involved are clear and that the shared governance provisions of the district are fully honored, especially as these relate to the reliance upon faculty for educational direction of the college. It is this inclusive process that assures each of the following steps:

- 1) Coordination of the work of institutional planning, accreditation, curriculum committee, academic senate and other college wide groups; divisions, and departments; and existing or ad-hoc industry and community advisory committees, representatives or members
- 2) Update the California Environmental Quality Act (CEQA) Environmental Impact Report (EIR) Master Plan for the college
- 3) Analysis of college and community fiscal, demographic, economic, social, and academic projections, opinion surveys and other sources of information regarding the needs, concerns and priorities of the various constituencies
- 4) Integration of local needs and plans with those of the region and the state, including especially those of other segments of public education
- 5) Development of a draft Master Plan including statement of mission, goals, educational plans and plans for related services and facilities
- 6) Concurrence on the final version of the Master Plan, from all constituencies and adoption by the Board of Trustees

The outcome of a master planning effort will vary depending on the college. Some colleges produce general, long range plans, others produce detailed plans with both long- and short-term objectives. Some colleges produce a separate educational master plan and facilities master plan that are related to the other plans required for accreditation; others pull all of the parts together into one document. In any case, a Master Plan adequate to direct and justify the investment by the state and the college of human and material resources, and the expenditure of funds on capital outlay projects, must include at least the following three components, among others:

1) An educational plan that:

- Adequately explains the college's overall purpose, community context, educational philosophy, alternative delivery systems, distance learning, curriculum and educational programs and related support, student services, administrative and categorical programs (such as EOPS, DSPS and matriculation);
- Describes and justifies the intended future of the college; and
- Identifies needs and makes a convincing case for new resources to meet these needs.

2) A facilities plan that evaluates existing land, infrastructure, facilities and systems in relationship to the colleges' purposes, plans, and needs, specifying the capital outlay projects necessary to meet these needs.

3) A resource plan showing how the human, financial, and material resources will be provided to implement the objectives in the educational and facilities plans.

Well-conceived and well-justified capital outlay projects are one outcome of a sound college master planning process. A proposed capital outlay project must fit within the overall context of a college's Master Plan before funding can be considered. The Chancellor's Office uses the district's Master Plan to justify state project funding to the Board of Governors, the Department of Finance, the Governor's Office, the Legislative Analyst's Office, and the Legislature.

2.4 Components of Master Plans

2.4.1 Statement of Purpose

The college's interpretation of its purpose sets the parameters for master planning. The purpose must fall within the state and California Community Colleges parameters and

any regional agreements with other districts, California State University (CSU), and University of California (UC). The statement of purpose should define the basic service, the service area, and the population to be served.

The purpose may be interpreted broadly or narrowly; and, may be perceived as what the community needs or what the college can best provide. However, it is interpreted, the purpose is the underlying reason for future capital outlay projects and should be stated in the Master Plan and restated in the annual Five-Year Construction Plan and all Final Project Proposals.

2.4.2 Describe the Community and Regional Context

The description of community context is the key to a Final Project Proposal. Funds are provided to higher education for the basic purpose of increasing the skill and education level of all Californians. Education is considered the key to California's economic stability and success. An effective facility project will:

- Provide the means to accommodate a program that is a priority need as identified by a significant or particularly under-served portion of the population,
- Increase or maintain economic opportunity in the area,
- Support the regional cooperation of the other segments of public education, or
- Realize the most efficient use of resources already invested in and unique to the area.

The community context is described by contrasting the history of the community with current circumstances in the community and its likely future, based upon current trends and projections, especially those shaping the educational environment years ahead when the building will come “on-line.” Currently unmet needs and emerging circumstances dictate the types of education that the college must be prepared to provide. The extent to which these emerging circumstances vary from existing and past circumstances dictates the need for changes and additions in programs and facilities.

Characterizations of future circumstances must prove a basis for determining whether the unmet educational needs that generate the demand for new or remodeled facilities will continue, diminish, or increase. State funded capital outlay projects typically take five to eight years to plan, budget, fund, and complete; and, once completed, these projects remain to be used-and maintained for 50 or more years. There must be

reasonable certainty that the project will still be needed when it is completed and well into the expected life cycle of the building.

The description of community context sets the stage by generally establishing that:

- There is a need for a new type of program that requires new facilities or repurposing of existing facilities
- The enrollment in a program(s) and service(s) has grown or will grow beyond the capacity of the existing facilities
- Current facilities, if they exist, have been, or will become, physically or programmatically inadequate
- The driving need for the project is expected to continue well into the future
- The project can support other significant needs should the driving need diminish

A concise but convincing statement of the community context and needs should be written into the Master Plan, the Five-Year Construction Plan, and each Final Project Proposal as the following examples illustrate:

“Our college began forty years ago as a suburban campus for young, transfer students from the local area, but is now in the center of new urban development center with a large commuter population in need of developmental and computer skills for business”

“Our college has a history as a job training center for disadvantaged populations and is now providing support for several immigrant populations and a burgeoning sector of entrepreneurs”

“Our college has traditionally focused on preparing students for certain regional defense industries. Now with those industries gone, the region is in considerable flux and our students need extensive training in platform skills for transitioning into a variety of jobs”

“Our college is well established as the main transfer institution in this region, with strong ties to its nearby UC and CSU colleges, and a long-standing reputation for providing exceptionally well-prepared students in the sciences and performing arts. For us to continue to assure the currency of our students in these disciplines, we are substantially redesigning our core courses in both of these curricular areas with plans to upgrade our facilities wherever necessary to support the update.”

2.4.3 Analyze Community and Regional Needs

Wherever possible, the description of community context should be backed up by data and analysis. Factors to be considered are:

- Demographics
 - Census, Chancellor's Office, county, city or other population studies
 - Population breakdown by age, gender, race/ethnicity, education, vocation, culture, etc.
- Economic and job market forecast
 - Employment statistics
 - Status of major employers in the region
 - Workforce development programs
 - Veterans education programs
 - Job market trends
- Community educational issues
 - Educational level and learning proficiencies in the population
 - Multi-lingual and cultural issue
 - Needs of transfer students
 - Educational access for disadvantaged populations
 - Educational direct and indirect costs
 - Societal educational need e.g., drugs, health, mediation, environment
 - Political educational need e.g., common language, citizen rights, voting
- Educational programs in the community
 - Programs that work with particular segments of the community
 - Benefits from pilot and non-profit programs
 - Other colleges, private, CSU, and UC
 - High school and adult education
- Area community plans
 - Community development plans
 - Planning and zoning
 - Sustainable public economics and services

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- Enrollment analysis and projections
 - Capacity of local environment and resources
 - Enrollment analysis and projections
 - Chancellor's Office projections and capacities
 - Current enrollment patterns
 - Analysis of institutional facilities and their relation to regional educational needs

2.4.4 Discuss and Analyze Future Trends and Developments

Discussion, brainstorming or other techniques can be used to discover what types of programs and delivery methods have potential to provide for the educational needs of the community, business, and industry. What kinds of traditional and alternative approaches will improve facilities utilization and access, enrollment, program scope and quality, delivery, learning matriculation, transfer, and employment? Which ones are within the purpose of the college? Which one(s) does the college choose to pursue?

2.4.5 Describe the Educational Mission of the College

The educational approach is the college's interpretation of its purpose and role in meeting the community's need for education. The fundamental purpose might be to “develop core competence applicable to future employment,” “impart knowledge as a base for further education,” “develop natural talent to benefit society,” or “assist every student in reaching their full potential.”

The purpose and context come together into a basic approach for providing education to the community. This approach drives the need for programs and facilities. For example:

“Our college is focusing on employment for disadvantaged students using realistic job settings both on campus and in partnership with local business. Our classrooms are located around the community at work study sites with video links to the instructors on campus.”

“Our college believes that students can best achieve their potential through mentored individual study programs supported by access to extensive video libraries. We use a lot of small conference rooms for mentored study teams in conjunction with state-of-the-art video production capability.”

“Our college emphasizes platforms skills such as problem solving, communication, and collaboration in an open experiential setting. Our rooms are flexible, combining labs with lecture and study areas, open round the clock.”

“Our college is geared to respond quickly to the changing needs of the community. We use a lot of rough, open space with extensive, mobile equipment so instructors can be creative. We provide our more basic courses over the local cable TV channel with study groups and testing on campus.”

“We will be phasing out some of our classroom programs over the next ten years in preparation for the next generation of students, gradually converting 40% of our programs to a more experiential, multi-media approach and 20% to self-guided study with mentors. These goals will be modified each year in response to current trends and resource availability.”

“We are committed to the development of an open, learning community over the next 20 years. Our basic, knowledge based classes, (about 30% of the program), will be converted to video and available over pay cable. Our advanced, analytical classes, (20%), will be smaller, more collaborative, working on-site and at select community sites. These courses will be supported by 24 hour drop-in, supervised labs. Fifty percent of our program will remain more traditional, relying on student-teacher contact and expertise.”

2.4.6 Identify the Needs of Educational Programs & Student Support Systems

Although the evaluation of programs is beyond the scope of the Manual, the identification of the needs of educational programs, student services, and other activities drives facility decisions and must include the information to make those decisions.

At a minimum, the identification of the needs of programs, services, and other activities should include:

- A list of current educational programs (that is, degree, certificate and transfer programs), student services and other activities (library, etc.)
- The expected life span of each educational program and student service/instructional support activity
- The current and projected enrollment (FTES), faculty (FTEF), and staff by educational program
- The learning goal created by each program

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- The learning environment needed for that experience
 - All space, equipment, or systems required for each program and other activity
 - The student services programs

The list of programs and activities should include all functions on and off campus. Every function that uses space, equipment, or systems should be on the list — food service, library, distance learning programs, facilities maintenance, etc. The programs and activities should be described quantitatively in terms of their current and projected life span, weekly student contact hours (WSCH), full time employee, location, and hours of operation.

A consistent method must be established for quickly describing the learning experience. For example:

- Classroom instruction by faculty
- Laboratory instruction by faculty
- Collaboration in student groups
- On campus, self-guided experiential learning
- Community experience
- Accessing information
- Individual contact between students and mentors
- Exercises for individual development (tutoring, etc.)
- Participation in campus lifestyle and activities
- Personalized service sought by individual

A consistent method must be established for quickly describing the learning environment. For example:

- A type of room (e.g., lecture, laboratory, study, office) with certain characteristics (e.g., small, large, quiet, impervious to messes, lots of electronic hookups), and certain equipment (e.g., Bunsen burners, computers, tools, etc.)
- A type of information (e.g., books, tapes, videos, broadcast, online courses, etc.)
- Access to an electronic interaction telecommunication system (e.g., interactive video, student network, virtual reality)

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- Outdoor space (e.g., athletic fields, gardens, amphitheater)
 - Access to a community setting (e.g., field trip, work, service, study abroad)
 - Access to equipment for use at home or several campus locations
 - Access to an open, museum or workshop
 - Some combination of the above

If the information is known, then specific requirements must be included such as:

- A classroom for 50 students,
- A type of technology to be utilized,
- A special type of equipment, etc.

2.4.7 Formulate Long-Term Goals

The time frame for the Master Plan should be as long term as possible. State funded capital outlay projects normally take 5 to 8 years to complete, longer if funding is not readily available. Phased infrastructure and systems projects may have to be implemented over 10 or 15 years. The facilities and systems themselves need to be relevant over their life span, perhaps 50 years or longer. The Master Plan is of greater value to the institution when it is comprehensive and considers the long-term educational goals and the life cycle of the facility.

Long-term goals allow more time for fund-raising campaigns and developing financing and support for large capital outlay projects that do not qualify for state funding.

A long-term educational goals approach is also helpful in applying for state capital outlay funds. A consistent approach over a period of years, gradually improving the campus, has a lot of credibility. Credibility remains high even if circumstances change and the approach must be modified, so long as the modifications make sense within the larger context.

2.4.8 Define Short-Term Objectives

The inclusion of shorter-term strategic objectives helps define and support capital outlay projects. For example:

“The campus needs grounds, pathways, and lighting improvements to increase night enrollments by 20% over the next two years and better utilize existing facilities.”

“Our rural campus has aged and lost its appeal for our increasing suburban population. Landscaping, lighting and parking are needed to attract and accommodate an increase of 5000 students by 2020.”

“To insure that our students can compete in a highly technological job market, we are instituting a five year plan to upgrade all our equipment and telecommunications.”

“Science enrollment is expected to increase by 50% over the next 8 years, requiring retrofit of the horticultural building by 2023 and an addition of 20% to the science capacity by 2027”

“With advancing technology and limited resources, the district is instituting systems to serve students with a variety of new accessible computer equipment and telecommunications.”

2.4.9 Analyze Resources

From the point of view of capital outlay projects, the evaluation of resources includes:

- Forecasting feasible local, district and state funding sources for capital outlay projects
- Setting appropriation amounts and schedules for the projects
- Projecting future staff and operations costs for building projects (Total Cost of Ownership)
- Determining downstream operations or capital outlay savings for cost efficiency projects

2.4.10 Develop the Implementation Plan

The timetables and accountabilities associated with the Master Plan may be part of an administrative plan for implementation of the Master Plan. It is important that an administrator be responsible for following through with specific dates for reports or accomplishments. This is particularly important for capital outlay projects which must be started many years before they are completed and become available for classes.

2.4.11 Identify Facilities Needs

Typically, colleges combine their most intensive evaluation and planning efforts with the preparation for accreditation self-studies and in response to the recommendations of accreditation teams. Capital outlay plans and proposals that are responding to the self-study and/or recommendations of accreditation teams should be emphasized when seeking state funding.

Campus facilities must function well to enable and/or support the college's educational programs. Facilities are capital assets representing years of growth and investment. As such, they need to be properly maintained and upgraded over time. The facilities evaluation analyzes:

- 1) Capacity
- 2) Condition
- 3) Adequacy
- 4) Cost efficiency of existing assets and sets forth objectives for keeping them functioning at an optimum level over the next few years

Districts have been participating in a facilities condition assessment program conducted by the Foundation for Community Colleges since 2002. The assessment data is contained in the FUSION database and reports the condition of all buildings listed in the districts inventory. Analysis of this data can assist in developing the priorities for the Facilities Master Plan.

2.4.11.1 Capacity

“Capacity,” for the purposes of the state capital outlay program and this manual, is the term used to express the level of enrollment that can be accommodated by a specific amount of space.

California adopted space standards in the California Code of Regulations, (Title 5 Sections 57020 through 57033) for higher education in 1955. These standards are based upon facility space capacity allocations in existence at that time and are updated from time to time (*California Community Colleges Board of Governor's Policy on Utilization and Space Standards*). For a more in depth description of how space is treated in the California Community Colleges see the [California Community Colleges Space Inventory Handbook](#).

Determining capacity is a slightly complicated process. First, enrollment is divided by programs. This is then translated into “**weekly student contact hours**” (**WSCH**) — the average number of hours of student instruction conducted in a week in a primary term of an academic year (**WSCH = FTES x 15 hrs x 35 weeks; FTES = 1 student attending 15 hrs/week for 35 weeks.**). Space is defined in terms of “**assignable square feet**” (**ASF**) and is inventoried by room and categorized according to an established taxonomy of programs (TOP). Capacity, then, is determined by a ratio of WSCH to space — a number of ASF per 100 WSCH. For example, 235 ASF of biology laboratory space is the standard amount allotted for every 100 WSCH of biology laboratory enrollment. If the campus has less space available for a program than the standard allotment for every 100 WSCH for any TOP code of space, a capital outlay project may be justified for that specific TOP program.

WSCH and ASF are analyzed by the program and the space standards set for each of the major categories of space (classroom, laboratory, office, library, and AV/TV). This analysis occurs annually and is used to determine whether there is an overall need for space (i.e., larger campus), only a programmatic need for a particular usage of space (i.e., science lab space), or no current need for additional space. This analysis is presented as capacity load ratios (Cap Loads) in FUSION and is used by the state to justify district growth projects.

2.4.11.2 Condition

The condition of existing facilities is a major indicator of facility needs. Campuses and buildings age; and, facilities and infrastructure have reached the end of their useful life-cycle spans. Capital outlay funds are used for demolition, utility systems, building replacement and reconstruction.

Demands from aging are compounded by changes in facilities codes and regulations. Regulation changes for asbestos, PCBs, seismic retrofit, Americans with Disabilities Act (ADA) access, etc., require constant addition or change to facilities and in many cases shorten the effective life span of a facility. Demands go beyond the capability of operations and maintenance departments and require phased capital outlay improvement projects.

2.4.11.3 Adequacy

When the initial space standards were developed in 1955, a “standard” classroom, lab, or workshop with basic equipment was considered sufficient. Now, with technological

changes and instructional delivery systems rapidly evolving, facilities must be designed to evolve with them to permit optimum effectiveness over the long term. Designs must be educationally adequate for the specific learning outcomes that they are to enable.

Facilities must evolve right along with curriculum and instructional methods and student services delivery and modalities and services. This evolution of space must have sufficient flexibility designed into it that it can adapt to changes in program technology and delivery as well as supplanting of programs in the designated space.

The effectiveness of educational and service delivery methods and learning environments must be factored in. As programs and course curricula are increasingly developed around more varied and appropriate learning experiences, facilities must be able to support these experiences. If the facility cannot support the required educational delivery method, it is inadequate. In the short-term this means the educational program is compromised. In the long-term, the facility must be changed, the program must be changed or the program must be abandoned in favor of one that can be taught effectively by contemporary standards.

2.4.11.4 Cost Efficiency

With a broader definition of capital outlay, new possibilities arise with regard to cost efficiencies. It may be appropriate to provide the funds for a one-time capital outlay project, if there is an ongoing reduction in operations cost or financial risk. It also may be appropriate to provide funds for installation of an electronic delivery system in lieu of building construction.

The most obvious example of cost efficient projects is energy conservation projects. Improving lighting, fans, and controls, or refitting the central plant for thermal storage or cogeneration can reduce utility costs to produce a 'payback' of the project cost in a few years. For every year of operation after the payback of the up-front construction costs, there is a clear reduction in annual operating cost.

This same reasoning might be applied to a project which provides a video production studio for distance learning at home in lieu of incurring the continuing costs of on-campus facilities, staff, and operations; or a campus security project in lieu of increased insurance and liability.

The addition of 'cost efficiency' as a category of need to capacity, condition, and adequacy allows for greater innovation to cope with the reduction in both operations and

capital outlay funding and to make more effective use of public funds overall. However, cost efficiency must be applied to a technology with demonstrated cost savings.

2.4.12 Source Information for Evaluation of Facility Needs

The base document for the analysis of facility needs is the Space Inventory. The inventory lists the building, its construction type, year constructed, gross square footage, condition, and ownership. The rooms in the building are then listed by number in terms of program, use, assignable square feet, and number of stations. The condition of the building is described in terms of conformance to the current building code, extent of the need for renovation, and the need for demolition or termination of the space. The need for renovation is a judgment call by the college.

The college maintenance and operations Master Plan, scheduled maintenance, and energy assessment reports contain additional information used to evaluate facilities. If these documents with the Space Inventory provide all the necessary information then no further work is needed. Often, however, these documents are not inclusive of all the facilities on the campus. The inventory process is described in detail in the Space Inventory Handbook.

To fully analyze the condition, capacity, and adequacy of existing capital assets, it is helpful to consider facilities as systems (not in priority order):

- The use and health of the natural land systems, e.g., soil, drainage, and natural reserves
- The age, condition, and capacity of utilities, e.g., water, gas, electric, central heating and cooling, energy and water conservation, sewer, waste, telecommunications, lighting, and security
- The age, condition, and adequacy of the transportation systems, e.g., roads, pathways, parking, loading areas, emergency access, handicap access, construction staging, and evacuation area
- The age and condition of landscaping and sprinkler systems as they relate to campus appearance, noise reduction, shade, outdoor activities, etc.
- The effectiveness of health and safety systems, e.g., security, fire, disaster preparedness, emergency communications, hazardous materials containment and removal
- The need for maintenance and operations areas, e.g., workshops, storage, and service yards

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- More detailed analysis of building conditions in relation to new safety and environmental regulations, changing climatic conditions and seismic safety
 - Equipment repair and replacement schedules for both educational equipment and building systems equipment e.g., heating, ventilation and air conditioning (HVAC), steam, air, water, and waste (Review of FUSION assessment data)
 - The need for telecommunications and information technology systems upgrades. This includes building, local area and wide area networks
 - The consideration of centralized, interactive service systems and office

The capacity of existing land, buildings, equipment, and systems is determined by state space standards, by building code occupancy classification, or by common usage figures or by common sense. A more detailed discussion of capacity is included in the Five-Year Construction Plan section of this manual and in Chapter 4 of this Manual.

Evaluating the adequacy of a building or space as a learning environment is difficult. Feedback is needed from faculty who use that space to determine whether a particular space is too noisy, or cold, or lacking hookups for equipment, in need of better equipment, or requiring remodeling due to changes in delivery methods or technology.

Evaluation of cost efficiency is done by reviewing the operations budget for areas where conservation might be effective and by reviewing future enrollment increases to see where other options such as an electronic educational delivery system might be substituted for a building project.

Specific factors that must be considered when evaluating facilities are (not in priority order):

- Structural and seismic stability
- Changes in building code
- American's With Disabilities Act (ADA)
- Energy and water conservation
- Use of hazardous materials
- Use of indoor volatile organic compounds
- Use of regulated compounds, refrigerants, etc.
- Adequate protection of fiber optics systems and components

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- Use of telecommunications infrastructures
 - Increased electrical infrastructure loads
 - Increased utility costs and fees
 - Storm water discharge
 - Replacement of underground tanks
 - Removal of hazardous substances, including asbestos
 - Total cost of ownership review
 - Consideration of security issues

When the evaluation of existing facilities is complete, it provides the information to determine:

- The operations and maintenance budget including deferred/scheduled maintenance and special repairs, architectural barrier removal, and hazardous substances removal
- Methods for more efficient allocation and utilization of existing facilities
- Identification of the need for capital outlay improvements
- Definition and scope of individual capital outlay projects

In addition, the information is useful for preparation of the Five-Year Construction Plan, the Space Inventory, deferred/scheduled maintenance plans, preventive maintenance programs, insurance forms, and other reports.

2.4.13 Prepare a Campus Design

The Master Plan often includes a revised design for the campus that shows how the capital outlay objectives can be achieved. The need for a design depends on the numbers of new facilities and systems that are proposed. If a campus is going to remain physically the same, with emphasis on improving programs and equipment, a redesign is not necessary.

If there are changes in land use, roadways, open space, and buildings proposed in the Master Plan, a design is needed to see how well they might fit together into an overall plan of the campus. The design process will confirm the feasibility and cost of the improvements and help to determine the best way to proceed with capital projects.

The design begins with the preparation of a current land use plan which includes topography, active slopes, soils, drainage, vegetation, flood plains, natural reserves, environmental analysis, and existing improvements. The environmental analysis must include all the factors required by the California Environmental Quality Act (CEQA).

2.4.14 Campus Physical Systems

Building massing and circulation patterns are studied to establish an overall campus build-out plan based on maximum enrollment. This is coordinated with all the campus physical systems and possible capital outlay projects:

Natural systems

- Land: topology, soils, seismic, drainage
- Ecosystem: creeks, wetlands, wildlife, plant life
- Micro-climates: wind, air quality

Examples of projects: habitat restoration, impact mitigation, erosion control, natural preserves, environmental classrooms

Utility systems

- Water, gas, electric
- Central plant, cogeneration, photovoltaic, heating, cooling
- Energy and water conservation
- Sewer, drainage, toxic waste
- Telephone, TV, telecommunications
- Lighting, security, warning systems

Examples of projects: cogeneration plants, solar panel fields, electrical capacity upgrade, telecommunications infrastructure, energy conserving lighting, variable speed fans, energy management systems, thermal storage

Transportation systems

- Public access: roads, parking, bus, shuttle, light rail, bicycles, pedestrians, wheeled pedestrians, disabled
- Staff access if different

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- Service access: roads, parking, loading areas, garbage removal, maintenance and construction staging
 - Emergency and security access: fire roads, evacuation routes

Examples of projects: ADA improvements, signs, parking structures, storage yard

Landscape systems

- Campus atmosphere: greenery, entrances, plazas, sculptures
- Environment: shade, noise reduction, wind breaks, way finding, lighting
- Activities: signing, gathering, forums, sports, drama, sculpture, outdoor classrooms

Examples of projects: drought resistant planting, sprinkler systems, athletic fields

Health and safety systems

- Toxins removal: asbestos, fume hoods, drains, neutralization, storage, underground tanks
- Emergency: phones, lighting, warnings
- Seismic: building upgrades, warnings, evacuation areas
- Fire: sprinklers, access
- Security: building locking

Examples of projects: seismic upgrade, tank replacement, hazardous chemicals storage building

Maintenance and operation systems

- Workshops, service yards, custodial rooms, rolling stock storage, vehicle access

Examples of projects: maintenance building, central warehouse building

Building systems

- Lecture classrooms, labs, studios, shops, offices, support services

Examples of projects: new buildings, additions, renovations, multi-building upgrades

Equipment systems

- Building systems equipment e.g., steam, water, gases, educational equipment

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- Support equipment
 - Service equipment

Telecommunication systems (detailed telecommunication plans should be developed)

- Computer networks within buildings
- Television, broadcast, interactive and conference studios

Examples of projects: Local area networks, wide area network connections such as microwave and satellite up and down links (internet, CSU/CCC statewide network)

A campus design includes all the campus systems and brings them together into a series of campus plans. Often these become part of the published Master Plan showing future building sites and possibly footprints of future buildings with perspectives of building designs. If the plan is used for fund-raising or redevelopment considerations, the costs of the buildings and fund raising goals may also be included.

Before publishing land use plans, proposed sites and buildings, the college must check the feasibility of funding, environmental regulation, surrounding area general plan, community reaction, and any other factors that might be crucial. Any phasing must be compatible with funding priorities and schedules.

2.4.15 Master Plan Environmental Impact Reports

If a land use plan is developed as part of the master planning process, the college should do an environmental study of the plan. If the plan is for a new campus or a large undeveloped portion of an existing campus, then an environmental impact study or report is required as part of CEQA. If the district is considering seeking the passage of a local GO Bond, then a Master Plan EIR covering the full campus and all proposed changes *is highly recommended*.

2.4.16 Implement Methods for Periodic Evaluation and Revision

The Master Plan should be reviewed annually to determine if its goals and stated objectives should be changed. For those plans that are more visionary, there may be no changes to the written plan; however, related plans might have to be revised. For those plans that list specific objectives with timetables, a revision will probably be required every year or two.

It is important that changes be made in the facility Master Plan as circumstances change. These changes should be reflected in the Five-Year Construction Plan, which is updated annually, and submitted to the Chancellor's Office on July 1 of each year. Going ahead with a project which is no longer needed, or letting needs sit without indicating their presence, works against future district applications for capital outlay funds and is an inefficient use of state and local bond funds. The former indicates lack of accountability and the later indicates poor planning and makes future requests seem unnecessary.

Similarly, Master Plans and Five-Year Construction Plans that never change become suspect over time as changes take place in education in California communities. Annual updates may be needed to explain why the community needs are not changing.

Annual updates will have greater credibility if they are based on some kind of empirical feedback process. For example, the college might have an annual community survey or internal evaluation. The annual Space Inventory update is part of that feedback loop for facilities (see the Space Inventory Handbook for details). It might be supplemented by various facilities systems reviews or some other management reports.

The following reports may supplement the Master Plan on an annual basis:

- Technology Plan
- Staffing Plan
- Program Review
- Energy Assessment Plan
- Financing Plan
- Space Inventory
- Space Utilization Plan
- Deferred/Scheduled Maintenance Plan
- Maintenance and Operations Plan

2.5 Time Frame for the Master Plan

The time frame for the comprehensive Master Plan depends upon how the plan is conceived. A “visionary” Master Plan will cover a long time frame, at a very general level, setting a broad context for a series of more specific plans that are regularly

updated. In this case, the working documents are the Space Inventory, Deferred/Scheduled Maintenance Plan, Five-Year Construction Plan, and Energy Assessment Plan. On the other hand, where the Master Plan itself is the working document for the entire campus, it may address a shorter time frame, be more detailed, and itself need to be updated more frequently.

In many ways, the Master Plan is more useful as a long-range umbrella document. From a facilities perspective, keeping in mind that buildings take upwards of 10 to 17 years to plan, budget, and build, and building life spans are 50 years or longer, master planning tends to be more long-range in nature. If the Master Plan is done as a long-term document, it must reference other documents that provide the shorter-term objectives that insure implementation.

2.5.1 Coordination with Statewide and Regional Master Plans

There is a growing recognition that regional planning is a necessary component in increasing efficiency, reducing costs and facilitating student progress, especially between segments and in relationship to employer needs. The impetus for regionalization is evident in the expectation that colleges and schools in a given region will share facilities as fully as possible, especially those that involve investment in specialized and expensive equipment. If these kinds of projects are presented for funding without regional planning, the project may be delayed while the project is coordinated with other segments or entities in the region.

Typical projects that fall into this category are:

- Radio and television production and broadcasting
- Extensive multi-media computer and learning resource centers
- Projects in support of specialized regional programs
- Projects for development of new centers or colleges

Since funding is limited, these kinds of projects should not be duplicated within a region or area. The plan must indicate the best location for the project and explain any agreements for joint use by community college districts or other education entities in the region.

Moreover, the regional plan should explain the project's position in the higher education community, K-12 middle school needs, any telecommunication network linkages, distance education agreements, or other factors relevant to a regional approach.

Any project that can be shown to be a cost-efficient solution to significant need within several districts is more likely to become part of a statewide plan.

2.6 Suggested Methods of Master Planning

The Master Planning process includes many critical components and a detailed discussion is beyond the scope of this manual. However, to aid districts in understanding the master planning process, two methods of master planning are discussed below to provide a sense of how processes can be designed and how they can influence the results, particularly with regard to capital outlay improvements. Both are presented with emphasis on the components that influence the definition and justification of capital projects; and, both work for either new Master Plans or revisions to existing Master Plans. Both methods have their advantages and disadvantages, and districts often combine them in an effort to address the concerns of their various constituencies.

For convenience, the methods are titled “Master Planning Method A” and “Master Planning Method B” and are presented in a step-by-step thought progression. The differences between the two methods are primarily ones of starting points, assumptions, emphasis and sequence rather than content.

Master Planning Method A emphasizes the college — its purpose, capabilities, and resources — and is organized around its structures, i.e., the units of organization. Facilities and related support systems are viewed as physical support for the educational program. This method works best when the college and community support the current college’s vision and mission statements. Method A may be easier to understand and to plan.

In Master Planning Method B, facilities and related student support systems are viewed as educational delivery systems and the current mission and structure of the college is taken less for granted. Method B emphasizes the community — its strengths and needs. Method B may place less stock in the historic relationship of the college to the community, and more in the potential of the college to serve in new and unprecedented ways, for populations or needs not previously associated with the colleges operations. Such an approach is especially appropriate to the rural or urban college whose role, or

potential, as the center of inspiration and development in the community will be far greater than in other settings. For the college whose community is changing rapidly or suffering greatly, the need to look deeper at how they might serve is paramount. Similarly, for the college that has lost its way, gone stale or is no longer animated by its old sense of mission, Method B may prove the preferable method.

While the choice of method primarily reflects the college's 'culture' and the style of leadership, Method A might be more suitable for the college that is well established while Method B, which requires additional resources of time and creativity, is typically more suitable for a college that has not previously undergone the Master Planning process.

As long as the method used by a college is consistent with principles of shared governance and fiscal responsibility and results in an educationally defensible plan that fully justifies the capital outlays requested, no particular planning method is required by the Chancellor's Office and both methods could be considered. The success of any method is dependent on broad, multi-level participation at the college — from the top down and from the bottom up. The more transparent the process, the more possibilities will be explored and the greater will be the opportunity to achieve an innovative, responsive and balanced plan that all stakeholders strongly support.

2.7 Mastering Planning Method A

Master Planning A is conventional and has the advantage of being well understood. The educational plan precedes and drives the facilities plan. The resulting facilities plan can be easily used to identify capital outlay projects and produce the Five-Year Construction Plan.

The word “program” is used broadly here to include basic skills, student services, and all other college activities.

The steps in master planning Method A are:

1) Developing the Educational Plan

- Alignment with state, California Community Colleges (Board of Governors), and regional educational policy and objectives
- Definition or validation of the college educational philosophy and mission
- Analysis of the current program scope and quality in relation to the mission

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- Discussion of ways to improve programs (e.g., program review, program delivery)
 - Survey community and college needs and demands for current and proposed programs
 - Demographic study and forecast
 - Economic and job market forecast
 - Area college and university plans
 - Area community plans
 - Project future enrollment in current and proposed programs
 - Develop program objectives including:
 - A list of current and proposed programs with projected life spans
 - Objectives for reduction, conversion, and phase out of programs
 - Objectives for improving, expanding, and adding programs
 - Provide the information necessary to develop the facilities plan:
 - The learning experience and environment associated with every program
 - Any specific educational delivery systems required by program
 - Any comments about the programmatic adequacy of current facilities
 - Level of support/student service needs
 - Provide the information necessary to develop the resource plan
 - Possible revisions in staff associated with program revisions
 - Any special costs associated with revisions in programs
 - The resource plan is reasonable, affordable, and prudent

2) Developing the Facilities Plan

- Inventory all owned facilities e.g., site, buildings, equipment, systems
- Evaluate the physical condition and projected life span of all facilities
- Incorporate all offsite outreach centers and their associated programs
- Research new and upcoming regulations and trends affecting facilities
- Prepare a plan to correct current and upcoming physical and regulatory deficiencies

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- Identify physical and regulatory deficiencies that require facility and system improvements
 - Evaluate the program use and adequacy of facilities
 - Evaluate the capacity and utilization of facilities
 - Review the educational plan for changes in programs and program requirements.
 - Prepare a plan to improve assignment, adequacy, and utilization
 - Identify inadequacies and capacity deficiencies that require facility/system improvements
 - Combine the lists of facility and educational delivery system and evaluate physical, financial feasibility
 - Prepare a physical design of the campus
 - Propose a prioritized list of projects showing time frames and magnitude of cost

3) Developing the Resource Plan

- Evaluate current and future human, financial, and material resources
- Review the feasibility of program changes in the education plan
- Review the feasibility of capital outlay projects in the facilities plan
- Show proposed district, state and alternative funding sources and schedules for capital outlay projects
- Indicate project feasibility in terms of downstream operational funding

4) Combining the plans into the comprehensive plan

- Reconcile any conflicts between the educational, facilities, and resource plans
- Prepare a description of purpose, community context, and educational approach
- Describe long term goals
- Describe shorter term objectives
- Set timetable and accountabilities for the objectives
- Produce the Master Plan document

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- Review and approve the Master Plan document (approval procedures should include the educational program and academic senate representatives, faculty staff and college/district management)

5) Follow through

- Monitor objectives, timetables, and accountabilities
- Make program improvements and changes within the context of the plan
- Plan and develop the Five-Year Construction Plan, Final Project Proposals, and Initial Project Proposals within the context of the plan
- Prepare annual feedback and revisions

2.8 Master Planning Method B

The Master Planning B is a systems-based method. The educational program and educational delivery system are integral with one another, established based on community focus and need. The word “need” is used broadly to mean need, desire, want, or demand.

The steps in master planning Method B are:

1) Setting the planning parameters

- Alignment with state, California Community Colleges (Board of Governors), and regional educational policy and objectives
- Definition of the service area(s)
- Definition of the service population

2) Determining the community “need” for education and support needs

- Demographics
- Economics and job market analysis
- Analysis of community educational issues and benefits
- Evaluate college role in any community Educational Master Plan
- Community input

3) Establishing a collaborative approach to meet community need

- Meeting with other districts, CSU, UC and private colleges
- Meeting with vocational schools and training programs

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- Meeting with high schools and adult schools
 - Meeting with business, economic sector
 - Meeting with non-profit, service, government sector
 - Meet with local veterans programs
- 4) Collaborative discussion of ways to effectively meet community needs**
- Extent to which need can and is being met by the college and other institutions
 - Ways the college and other institutions might improve programs and delivery
 - Suggestions for joint programs and/or shared delivery systems
 - Concurrent Internal Evaluation of College Effectiveness in Meeting Community Need
- 5) Evaluation of current programs**
- Review of program scope, quality, cost, and effectiveness
 - Review of program accessibility, enrollment and contacts
 - Suggestions for program improvements
 - Suggestions for improvement of learning environments
 - Suggestions for improvement of educational delivery systems
 - Suggestions for improvement of student support systems
- 6) Evaluation of the condition of existing facilities**
- Inventory all facilities e.g., site, buildings, equipment, systems
 - Evaluate the physical condition and projected life span of all facilities systems
 - Research new and upcoming regulations and trends affecting all facilities systems
 - Prepare a plan to correct current and upcoming physical and regulatory deficiencies
 - Identify physical and regulatory deficiencies that require facility/system improvements
- 7) Evaluation of the adequacy of existing facilities**
- Evaluate use and adequacy of educational delivery systems

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- Location and access
 - Safety and security
 - Environment, e.g., appearance, noise, light, sun, temperature
 - Interior and exterior space, horizontal and vertical
 - Equipment
 - Telecommunications, information systems linkages (Technology and Telecommunications Plan)
 - Evaluate effectiveness as learning environments
 - Student feedback
 - Student utilization
 - Identify inadequacies that require capital outlay improvements
 - Suggest ways to improve adequacy
- 8) Evaluation of the capacity of existing facilities**
- Calculate physical space capacity per building codes
 - Calculate capacity by using space standards
 - Compare with current and future WSCH
 - Suggest space reassignments, increased utilization strategies
 - Identify significant deficiencies requiring added space and capital outlay improvements
- 9) Evaluate facilities role in shared programs and/or delivery systems as appropriate within district policy**
- Evaluate the feasibility of shared programs and delivery w/ existing facilities
 - Suggest ways to accommodate shared programs and delivery
 - Identify any capital outlay improvements that will be needed
- 10) Combine lists of capital outlay improvements**
- Suggest a list of projects
 - Check the physical feasibility of the projects
 - Prepare a physical design of the campus
 - Estimate the magnitude of project cost

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- Consider chronological order of sequencing projects to lessen impact on instructional delivery
 - Prioritize the suggested projects

11) Evaluation of current and potential resources

- Evaluate current and future human, financial, and material resources
- Review the feasibility of the suggested program improvements
- Review the feasibility of the suggested capital outlay projects
- Show proposed funding sources and schedules for capital outlay projects
- Indicate project feasibility in terms of downstream operational funding (TCO)
- Evaluate the feasibility of shared programs and delivery
- Suggest tradeoffs between resources, facilities, and programs to increase feasibility
- Suggest any additional possibilities for shared programs and/or delivery

12) Reconciliation of collaborative and internal suggestions into a Master Plan

- Intensified brainstorming, discussion, and proposals
- Preparation of a tentative program plan
- Description of the delivery system proposed for each program
- Description of the resources proposed for each program
- Description of joint program and delivery plans
- Coordination into a long term general plan
- Prepare a description of purpose, community context, and educational approach
- Describe long term goals
- Describe shorter term objectives
- Set timetables, and accountabilities for the objectives
- Produce the Master Plan document
- Coordinate the document with other community plans
- Review and approve the Master Plan document (include all parties)

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- Contribute as necessary to a community educational Master Plan

13) Completion

- Prepare Five-Year Construction Plan, Initial Project Proposals (IPPs) and, Final Project Proposals (FPPs)
- Monitor objectives, timetables, and accountabilities
- Monitor effectiveness in the community
- Continue to make program improvements within the context of the plan
- Plan and develop capital projects within the context of the plan
- Prepare annual feedback and revisions

Master Plan Method B is dependent on the local Board's governing policy and on collaboration between the educational, student service, facilities, and resource sectors of the college and the greater community. Method B has the advantage of fostering new outlooks and solutions and the disadvantage of fitting less easily into the existing state capital outlay process. Method B's greatest advantage may be as a vehicle to begin developing alternative educational delivery methods during times of low capital outlay funding.

Alternatives that colleges are currently using:

- Using schools, shopping centers, and other neighborhood buildings to provide more accessible classes and locations for distance education
- Increasing the scope of their programs by using distance education between campuses
- Using distance education to transfer pathway classes with CSU
- Coordinating programs regionally, each college providing a unique combination of programs and delivery systems accessible to students from the entire region
- Developing small, interactive classes on personal development, communication, collaboration, creativity, cognition, etc. (called high touch) to counterbalance electronic information and delivery systems
- Developing campuses into learning communities with extensive self-guided labs, museums, simulations, multi-media computer programs, and video libraries — providing individualized, mentored programs to assist students in developing individual talents

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- Distance Learning: Using computers to deliver classes, counseling and advising to homes and centers away from main campus

2.9 Summary

The two master planning methods described here are extensive and may seem to require excessive time, money and effort. In practice, however, many of the steps listed in both methods occur as part of the accreditation process and the existing procedures for curriculum and program review, Technology and Telecommunications Plan, Space Inventory Report, Five-Year Construction Plans, Deferred/Scheduled maintenance planning, Board of Governors Energy & Sustainability policy and energy assessment planning. The Master Plan process is the means by which all of these processes are brought together into an integrated whole to yield a coherent and persuasive plan for the entire college.

Generally, a strong master planning effort may take up to 18 months and is updated as needed, often annually. A good Master Plan clarifies direction and revitalizes the college. A Master Plan that is short-term, vague, contradictory, lacking objectives, or otherwise flawed, does not provide clear and concise direction and quite possibly, is not worth the time, money and effort. It may also cause problems for the college during the accreditation review process. The methods presented here are rigorous to ensure that the most critical success factors are considered and the resulting Master Plan is a strong document with clear, credible capital outlay program objectives.