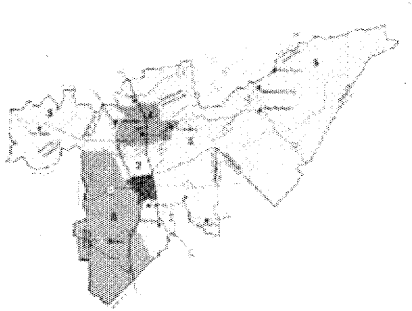


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## Introduction



San Joaquin Delta College District Map

To help document the need for funding the necessary replacement and upgrading of facilities within California's community college districts and to assist districts in preparing for bond issues, the Foundation for California Community Colleges (FCCC) negotiated a discounted-pricing agreement for facilities condition assessments with 3D/International. In Summer 2001, the FCCC issued a formal Request For Information (RFI) in a public newspaper and subsequently reviewed, considered, and evaluated the respondents' experience and quality of work, particularly work with higher education clients. San Joaquin Delta College District (SJDCCD) elected to participate in the joint agreement and contracted with 3D/I to assess and document the facility repair, rehabilitation, modernization requirements relative to the SJDCCD.

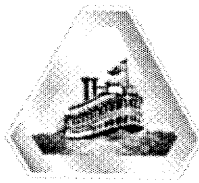
Over a period of about two months, a staff of six 3D/International planning and construction professionals working with the Chancellor's Office performed an Existing Facility Assessment. The following report presents 3D/International's findings.

The Report is organized into the following 2 sections:

- Introduction
- San Joaquin Delta College District Reports

The Assessment of Existing Facilities section reports on the current physical condition of thirty buildings, totaling approximately 786,666 gross square feet.

The results of the assessment will provide SJDCCD with the technical information needed to make informed decisions regarding the disposition of existing facility maintenance funds and the need and cost of a capital improvement program.



3D/International conducted a visual inspection of thirty of the existing SJDCCD facilities to identify the condition and to estimate the cost to perform the necessary repairs and renovations.

### **Existing Facility Assessment Findings**

The generally accepted range of Facility Condition Index (FCI) for establishing a buildings condition is shown below. This standard has been adopted by the Building Owners and Managers Association, the Council on Education Facilities, and the American University Planners Association, and a number of other national facilities groups.

Condition	FCI
Good	0 to 5%
Fair	6 to 10%
Poor	10% and above

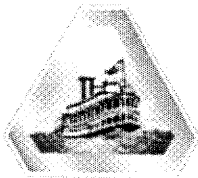
The results of our assessment are summarized in the FCI table on page 7. The estimated initial cost to repair these thirty facilities totals \$22,835,052.

The overall FCI rating of 14.0% for the thirty buildings assessed means that, in general, the facilities are in poor condition despite being generally well maintained. This is to be expected due to the age of the buildings, twelve of which were built prior to 1975.

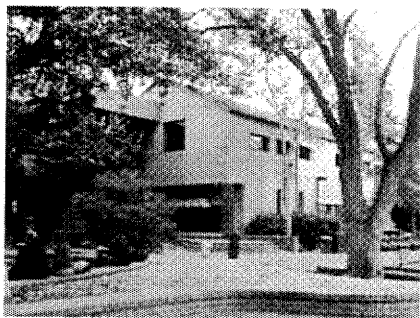
Thirteen buildings have an FCI less than 10%, the range for good or fair condition.

Three buildings have FCI ratings in excess of 50%. When the FCI is greater than 70% the building should be considered for replacement, as opposed to investing the substantial costs to repair a 25 to 30 year old building with systems well beyond their useful lives.

A more detailed discussion on the methodology and findings for each of the District buildings is provided in the Assessment of Existing Facilities section of this report.



## Assessment of Existing Facilities



Delta Community College  
Administration Building

In 2002, San Joaquin Delta College District authorized 3D/International to perform a district-wide, comprehensive facility condition survey assessment. The costs associated with correcting deficiencies can be identified as follows:

Deferred Maintenance – maintenance work that has been deferred on a planned or unplanned basis due to lack of funds in the annual budget cycle – excluding normal maintenance that has already been scheduled, planned or funded within the current budget cycle.

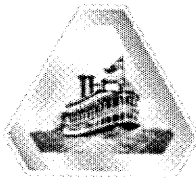
Capital Renewal – future renewal requirements for building systems that reach the end of their expected useful life.

The comprehensive facilities assessment performed for SJDCCD is a detailed visual, non-destructive, inspection of each building. 3D/I's software, "COMET" – Condition Management Estimation Technology – is used as the database for recording all deficiencies. The survey assessment is a comprehensive room-by-room inventory of defined key elements and characteristics. The result of the inspection is a populated database that catalogs every deficiency costing over a certain value.

In parallel with the FCCC-3D/I agreement for discounted facility condition assessment services, an information technology project referred to as the Facility Utilization, Space Inventory Options Net or "FUSION" Project is underway. This project will design and deliver a centralized database and software in which the facility condition assessment data will reside and be used and managed by the districts to better manage their real asset portfolio.

### Approach

The assessment teams are comprised of design professionals, typically an architect and an engineer. For each building, the teams collected much of the facility's historical information prior to visiting the facility. This research included a review of existing drawings, meetings with the campus maintenance staff, and a review of previous renovations. The assessment teams then conducted a site visit to verify data already gathered as well as to record additional information found during the inspection. Based on visual observations and discussions with facility occupants and maintenance staff, the assessors determined what deficiencies existed and the general conditions of key building systems. A written description of the facility, including an overview of the facility's construction, building systems and general condition, was then developed.



### Background

San Joaquin Delta College is a public two-year community college. The District covers over 2,300 square miles. The main campus is located in Stockton, California on a 165 acre site. The college also operates a 157 acre farm laboratory in Manteca and an 83 acre natural habitat reserve near Mountain Ranch in the Mother Lode Country. The enrollment at San Joaquin Delta College is over 17,000 including both full and part-time students.

The California Community Colleges Chancellor's Office encouraged districts within the CCC System to take advantage of the discounted assessment service to generate an unbiased appraisal of the school's physical conditions and to obtain recommendations for building system replacement based on priorities and expected useful life.

### Facilities

One of the findings of the assessment process is the determination of the Facility Condition Index, or "FCI." The FCI is a ratio of the estimated cost to repair the identified deficiencies divided by the estimated replacement value of the facility. It describes the relative state of physical condition of a building (or its components, or a group of buildings) against a cost model of the original building as if it were at the beginning of its useful life, fully "renewed" to today's standards.

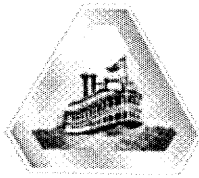
### Summary of Findings

The costs presented below are a summary of the findings of the assessment for the current deficiencies. The costs do include soft costs associated with a rehabilitation project. These costs can change based on the packaging of repair and renovation projects.

Condition	FCI
Good	0 to 5%
Fair	6 to 10%
Poor	10% and above

Campus	Estimated Repair Cost	Gross Square Feet	FCI %	Replacement Cost
San Joaquin	\$30,186,431	786,666	14.00%	\$215,594,467
Hard Cost	22,443,430			160,293,193
Soft Cost	7,743,001			55,301,274

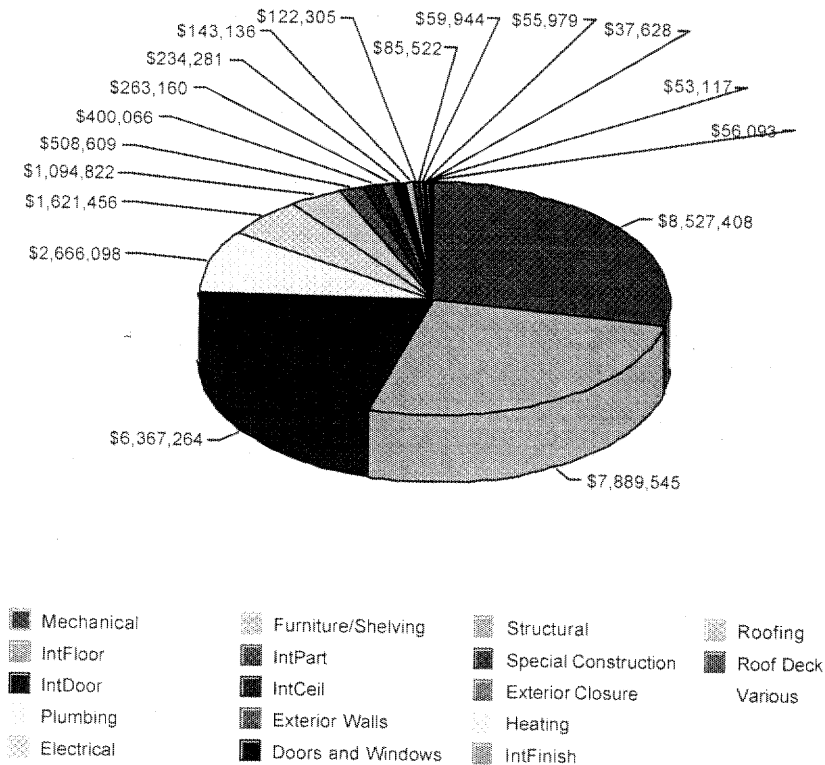
Based on current industry standards, the campus FCI indicates the facilities are in poor condition.



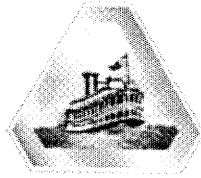
### Building System Classifications

The following chart gives a breakdown of the recorded deficiencies by their respective building systems for the entire campus.

Estimate by Building System – San Joaquin Delta College



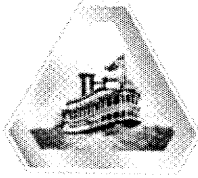
In general, the majority of the costs identified in the assessment are for mechanical and electrical systems. Within mechanical systems, most costs are for adding or replacing chillers, boilers, and associated components such as air handlers and ductwork. The majority of the electrical system costs are for replacing lighting fixtures and providing additional capacity to the main service and branch circuits.



### Facility FCI by Type Structure

The following is a list of the campus facilities grouped by building number displaying the Current Repair Cost, Replacement Cost and FCI.

Facility	Gross SQ FT	Yr Built	Repair Cost	Replacement Cost	FCI
<b>San Joaquin Delta College</b>					
51 Cunningham Center	92,504	1973	\$5,786,400	\$25,655,170	22.55%
52 Budd Center	136,711	1973	\$6,831,342	\$37,915,593	18.02%
53 Holt Center	124,726	1974	\$5,774,706	\$34,591,659	16.69%
54 Goleman Library	54,670	1974	\$1,844,711	\$15,162,243	12.17%
55 Administrative Wing	21,160	1974	\$913,270	\$6,213,858	14.70%
56 Shima Center	107,065	1975	\$3,479,483	\$28,170,429	12.35%
57 Forum Hall	11,646	1975	\$798,480	\$3,419,971	23.35%
58 Locke Center	82,948	1976	\$2,266,077	\$23,004,898	9.85%
59 Danner Hall	72,342	1976	\$1,031,630	\$21,243,995	4.86%
60 Auditorium	30,247	1977	\$405,442	\$8,614,367	4.71%
62 Field Building	3,080	1981	\$47,290	\$343,809	13.75%
63 Football Score Booth	1,016	1984	\$69,717	\$113,412	61.47%
64 Baseball Scorekeeper Booth	155	1979	\$1,092	\$17,302	6.31%
65 Tennis Storage Shed	85	1998	\$551	\$3,566	15.45%
66 Ticket Booth	28	1985	\$0	\$1,175	0.00%
67 Soccer Storage	85	1985	\$873	\$3,566	24.48%
68 Child Devel Center	16,066	1993	\$40,547	\$4,649,740	0.87%
75 Cottage	1,463	1929	\$68,363	\$328,258	20.83%
76 Garage	421	1929	\$6,156	\$21,604	28.49%
77 Warehouse	8,580	1976	\$70,723	\$1,230,965	5.75%
78 Equipment Warehouse	2,000	1976	\$10,251	\$286,938	3.57%
79 Central Plant	10,116	1996	\$30,977	\$2,933,985	1.06%
80 Farm Office	1,088	1928	\$442,197	\$244,118	181.14%
81 Farm Oil Storage	69	1966	\$2,126	\$2,895	73.43%
83 Farm Storage Building	1,690	1971	\$62,669	\$208,729	30.02%
84 Farm Incubator	440	1978	\$19,548	\$54,344	35.97%
85 Farm Barn	2,904	1966	\$177,847	\$416,634	42.69%
86 Farm Feed Storage	163	1966	\$3,963	\$20,132	19.68%
87 Farm Greenhouse	798	1995	\$0	\$26,410	0.00%
88 Manteca Center	2,400	1997	\$0	\$694,702	0.00%
<b>San Joaquin Delta College Totals</b>	<b>786,666</b>		<b>\$30,186,431</b>	<b>\$215,594,467</b>	<b>14.00%</b>



It is accepted practice within the field of professional property management to consider replacement rather than repair of an asset when the FCI for that facility is in the range of 60 – 70% or higher. For facilities with an FCI in or near this range, the master planning process should carefully weigh issues such as:

- Student population (current versus planned) of the school in question
- The condition of the existing foundations and superstructures.
- The need for additional space, i.e., new construction.
- The appropriateness of the location of current assets.

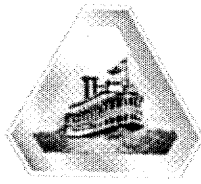


San Joaquin Delta College  
Goleman Library

Provided in this report are cost estimates to renovate the facilities and eliminate the identified deficiencies. Please note that these estimates reflect incorporating current building standards, codes, and livability issues into the renovation. The cost estimates *do not* reflect upgrades to:

- the architectural program—e.g., additional square footage for another educational mission;
- finishes—e.g., terrazzo tile in lieu of concrete; and/or
- systems—replacement of a 200 Amp electrical service with a 300 Amp service, which may in fact be more applicable for today's educational mission/program but would require further engineering and study to determine the appropriate service for today's learning environment.





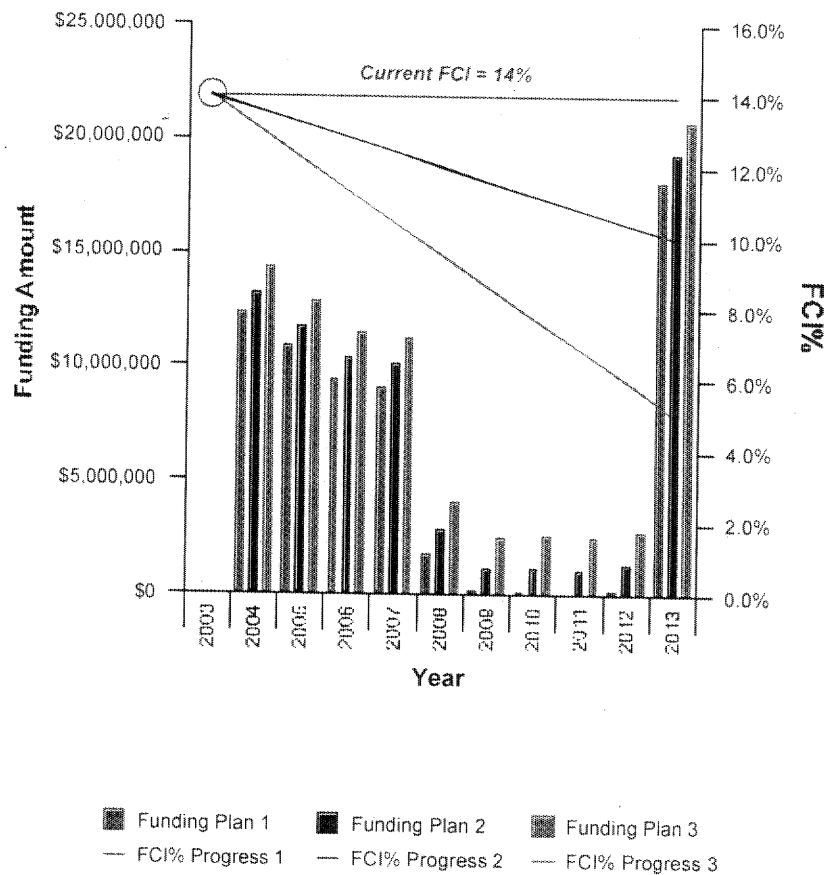
## Capital Renewal

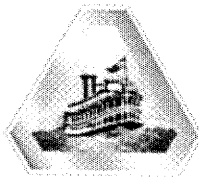
### Funding Requirements – 10 Year Renewal Projection

The following chart illustrates the 10-year total funding requirements for the San Joaquin Delta College District for three (3) funding scenarios. It shows the combined funding needed for correcting the assessed deficiencies and the predicted capital renewal requirements. Using this chart, we can query:

- “How much funding is required to maintain the current FCI?”
- “What level of funding is required to achieve an FCI of 10%?”
- “What level of funding is required to achieve an FCI of 5%?”

Future Facility Funding vs. FCI for San Joaquin Delta College





Funding Plan	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total
Red	\$12.4M	\$10.9M	\$9.4M	\$9.1M	\$1.8M	\$0.2M	\$0.1M	\$0.0M	\$0.2M	\$18.1M	\$62.2M
Blue	\$13.3M	\$11.8M	\$10.3M	\$10.1M	\$2.8M	\$1.2M	\$1.2M	\$1.1M	\$1.3M	\$19.3M	\$72.4M
Green	\$14.4M	\$12.9M	\$11.5M	\$11.3M	\$4.0M	\$2.5M	\$2.5M	\$2.5M	\$2.7M	\$20.8M	\$85.1M

**Three scenarios are shown:**

- **Current FCI: Keep the current FCI Stable (Red)**

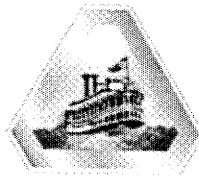
The red line assumes no spending in the current year (2003) for current deficiencies. Capital renewal costs, as shown, over the next 10 years would be required to maintain the current FCI. The total to keep the FCI stable is approximately \$62.2 million.

- **Required funding: Reduce the FCI to 10% (Blue)**

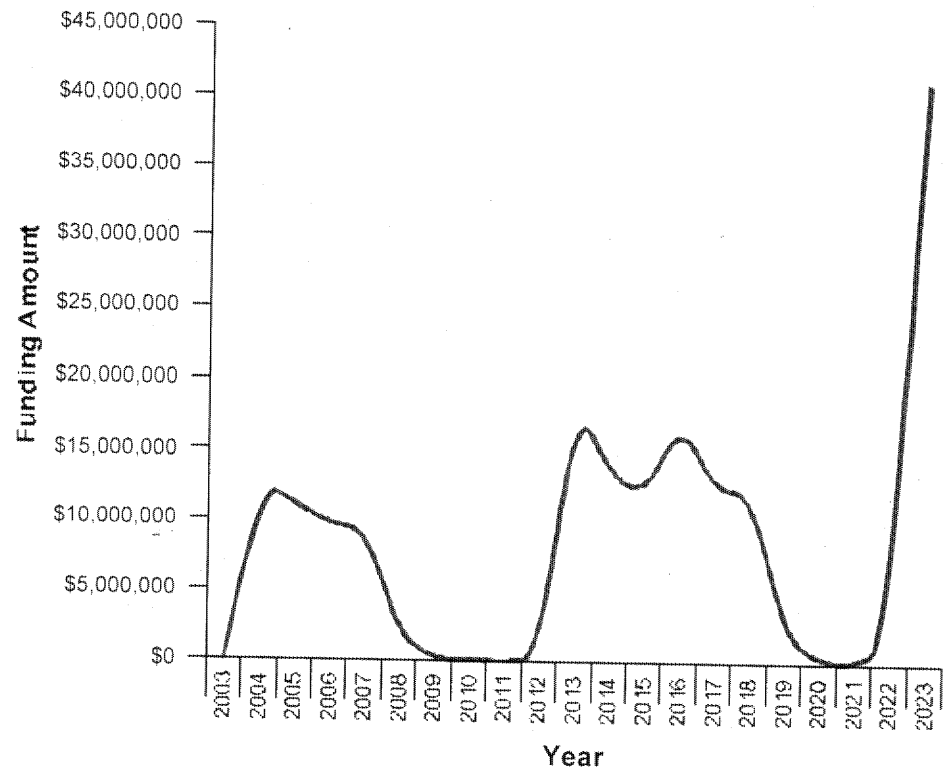
The green line assumes no spending in the current year (2003) for all current deficiencies. It assumes a consistent level of funds for the next 10 years to buy-down the current deficiencies and additional funding for capital renewal items to achieve an FCI of 10%. (Minimal standard as published by APPA.) The total to reduce the FCI to 10% is approximately \$72.4 million.

- **Required funding: Reduce the FCI to 5% (Green)**

The blue line assumes no spending in the current year (2003) for all current deficiencies. It assumes a consistent level of funds for the next 10 years to buy-down the current deficiencies and additional funding for capital renewal items to achieve an FCI of 5%. The total to reduce the FCI to 5% is approximately \$85.1 million.



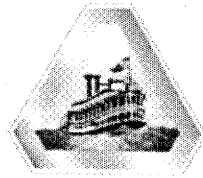
## Facility Renewal Forecast for San Joaquin Delta College



— San Joaquin Delta CCD

**20 Year Capital Renewal Forecast**

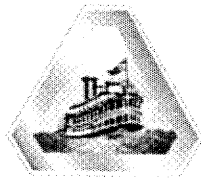
The cost models for each building give us a method to predict future needs for capital renewal. Each model allows us to assess the remaining life of each of the main systems in the building and to enter the expected time of replacement of such systems. Although each model is only a rough approximation for one building, over a larger sample size use of these cost models produces a reliable estimate of the yearly cost to replace building systems. This chart illustrates a 20-year projection of capital renewal funding requirements, excluding current deficiencies for the entire district.



## Conclusions

The overall FCI of the facilities in the San Joaquin Delta College District is 14.0%, typical of what we find for facilities of similar age, type, and function across the nation. While this is a "poor" FCI, (as defined by the APPA) the facilities are generally well maintained.

The majority of the deferred maintenance requirements are of the type that can be renewed without demolition of the facility. (e.g., mechanical and electrical systems, wall and floor finishes, and exterior doors and windows.) Not all facilities should be renovated; however, renovation should remain an option as the planners consider educational master plans, new buildings, high growth areas, population, etc.



## COMET Assessments

Condition Management Estimation  
Technology – 3D/International Facility  
Management Software



San Joaquin Delta College Auditorium

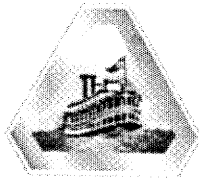
### Facilities Assessment Methodology

The basic level of surveys to be performed within the CCC System is referred to as “Level 1” or “Level 2” assessments. A Level 1 (L-1) assessment is a mathematical model of a facility’s component building systems, which is used to determine their conditions based on the components’ planned life cycles. It is a strategic tool for programming and budgeting capital renewal costs; a macro view of facility status. A Level 2 (L-2) assessment is a detailed physical survey of the condition of existing facilities wherein the assessors document hundreds or thousands of current deficiencies. These deficiencies are added to the L-1 component building system life cycles to determine a comprehensive facility evaluation of both current deficiencies and future renewal costs. It is a tool for facility managers to identify specific deferred maintenance and capital renewal items to repair or replace.

The majority of the facility condition assessment being performed by 3D/I, for Districts within the California Community College System, are Level 2 assessments. For this type of assessment, data is collected from a review of as-built drawings and other current documents as well as a complete but non-destructive visual inspection of facilities. Typical areas of buildings that are investigated include roofs, mechanical rooms, and exterior support areas extending to 5 feet from the building.

The first phase of an L-2 assessment is the review of the floor plans of each facility to be assessed. Next a hierarchical structure (a “tree” or “parent/child” relationship) that captures the facilities and all interior rooms and spaces is designed in the COMET software. The tree structure provides the assessor a road map of the building and the lowest level of the tree structure is where the deficiencies are recorded. The next step is developing cost models for the life cycles of building systems. This includes reviewing existing documents to determine types, ages, and components of the buildings, and the dates and scope of any recent renovations.

3D/I’s cost models are based on RS Means building material estimates and the Business Owners and Managers Association (BOMA) estimated useful life of building components. However, COMET can be customized to reflect individual client’s project or O&M cost histories and to account for particular environmental or operational conditions—such as excessive moisture and heat or continuous operation. Also considered are preventative maintenance efforts, since they can often significantly affect the number of years a system can remain in operation.



## Priorities

Each deficiency is assigned a "Priority" as described below.

- **Priority 1: Directly Affects the Educational Mission** – Systems or elements within systems that should be repaired or replaced to mitigate issues *that prevent the educational mission* of the facility.
- **Priority 2: Indirectly Affects the Educational Mission** - Systems or elements within systems that should be replaced or repaired to *maintain the educational mission* of the facility or mitigate additional damage to the facility.
- **Priority 3: Beyond Expected Useful Life** – Systems or elements within systems that should be replaced or repaired to *maintain the mission* of the facility but potentially have some life left.
- **Priority 4: Finishes and Improvements** – Systems or elements within systems that should be replaced or repaired or upgraded that have *minimal impact on the educational mission* of the facility.

## Filters

### Categories

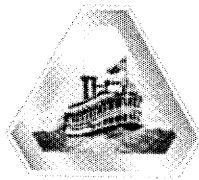
Each deficiency is classified into one of the following categories.

Life Safety Code Compliance  
Building Code Compliance  
Accessibility Code Compliance  
Capital Renewal  
Deferred Maintenance  
Energy Efficiency Improvement  
Hazmat

### Adverse Effects

Each deficiency is assigned one of the following risk potentials.

Campus / Facility Closure  
Safety Hazard  
Disruption of Program  
Code Violation  
Greater Future Damage / Cost  
Inconvenience  
Potential / Future Damage / Cost



### City Cost Index (CCI)

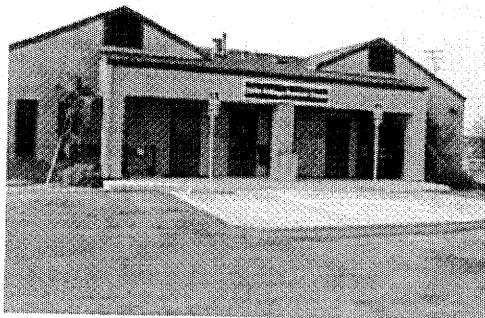
The R.S. Means data used to develop the cost models and price the deficiencies is based on a national average. In order to reflect pricing indicative of this area of the country, a CCI is applied to all pricing and cost models. The CCI used for SJDCCD is 147.42%.

## Definitions

### Facility Condition Index (FCI)

The FCI represents the relative physical condition of facilities. The FCI measures the estimated cost of the recommended improvements and compares that to the replacement cost of the facility. The total cost of repairs divided by the facility replacement cost is the FCI. A higher FCI indicates a facility in worse shape. For example, if a building has a replacement value of \$1,000,000 and has \$100,000 of existing deficiencies, the FCI is  $\$100,000/\$1,000,000$  or 0.10. The generally accept rule of thumb in building condition assessments is:

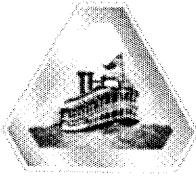
Condition	FCI
Good	0 to 5%
Fair	6 to 10%
Poor	10% and above



Manteca Center

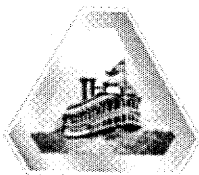
### Facility Systems

- Conveying: Elevators
- Electrical includes alarms and communications, lighting, power, service and distribution.
- Excavation includes any digging for underground access or removal of soil.
- Exterior Closure includes exterior doors, trim, caulking, etc.
- Exterior Walls includes refinishing and painting exterior surfaces and materials.
- Fire Sprinkler includes fire protection systems.
- Foundations include work to repair footings or level slabs, etc.
- Heating & Cooling System includes boilers, cooling, HVAC piping, insulation, mechanical components like pumps and controls.
- Interior construction includes ceiling finishes, flooring finishes, interior doors, stairs, wall finishes and walls.
- Plumbing includes potable and sanitary piping and plumbing fixtures.



- Roof includes all components of a roofing system including the deck, insulation, membrane, and any special work such as gutters or repairing flashing, etc.
- Slab on Grade includes any repairs, removal, or replacement after other work is done.
- Special Construction includes chalk and tack boards, seating, etc.
- Structural includes framing system, columns, beams, and slabs.
- Superstructure includes the exterior walls.
- Windows includes repair or replacement of window units.
- Structural: superstructure (columns, beams, footings, foundations, slab-on-grade, etc)





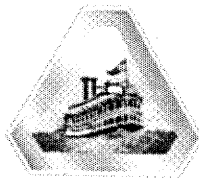
### Facility Replacement Cost

This represents the derived expense to rebuild the existing facilities in a manner representing the desired construction. The replacement cost is determined by multiplying the gross area of the facility by the estimated cost per square foot cost value associated with the pertinent cost model.

### Renewal Premiums

The costs developed in the models are typical of permanent new construction. When a renovation project is undertaken, certain additional costs are incurred for some systems because of demolition and difficulty. For other systems, not all items in the assembly are replaced. In these instances the reduction in work overcompensates for the demolition costs, and a lower cost is incurred. The table below details our strategy for this issue by system group.

System Name	Life (yrs)	% Renewal
Conveying	25	75%
Electrical	30	90%
Exterior Closure	25	105%
Exterior Walls	100	100%
Fire Protection	25	95%
Foundations	100	100%
IntCeil	13	105%
IntDoor	40	110%
IntFinish	10	100%
IntFloor	10	105%
IntPart	40	110%
Mechanical	30	90%
Plumbing	30	90%
Roof Deck	100	120%
Roofing	20	120%
RoofOpSp	20	120%
Special Construction	25	110%
Special Electrical	10	90%
Stairs	100	100%
Structural	100	100%
Structural walls	100	100%
Windows	25	105%

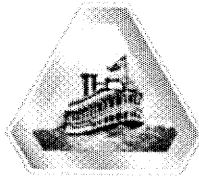


### Hard and Soft Costs

Hard Costs include the installing contractors cost (RS Means data), site work, the contractor's general conditions, the general contractors overhead and profit and an amount for construction contingency. Soft costs are additional costs, which are necessary to accomplish the work, but are not directly attributable to the general contractor or the deficient system. Soft costs vary by user but can include design fees; specialized investigations such as geo-technical, environmental, or hazardous material; program management fees; and various administrative fees. The soft costs used in this assessment are as follows:

### New Construction Cost Break down for Cost Models

Description	Percentage
<b>Hard Cost</b>	
1. Total Subcontractor/Specialty Costs	R.S. Means Assembly price
2. Site Work	12.0% of 1
3. Area Location Factor	8.0% of 1
4. General Conditions	15.0% of (1+2+3)
5. Contractor Overhead and Profit	10.0% of (1+2+3+4)
6. Construction Contingency	5% of (1+2+3+4+5)
7. General Contract	1+2+3+4+5+6
<b>Soft Cost</b>	
8. Architecture & Engineering	15.0% of General Contract
9. Plan Check/Permits/Fees	2.0% of General Contract
10. Hazardous Materials	0.5% of General Contract
11. Materials Testing & Inspection	2.0% of General Contract
12. Bonds & Insurance	2.0% of General Contract
13. Temporary Storage and Relocation	1.0% of General Contract
14. Furniture & Equipment	7.0% of General Contract
15. Construction Management	5.0% of General Contract

**Renovation Cost Breakdown for deficiencies pricing**

Description	Percentage
<b>Hard Cost</b>	
1. Total Subcontractor/Specialty Costs	R.S. Means per unit price
2. General Conditions	15.0% of 1
3. Contractor Overhead and Profit	10.0% of (1+2)
4. Construction Contingency	15% of (1+2+3)
5. General Contract	1+2+3+4
<b>Soft Cost</b>	
6. Architecture & Engineering	15.0% of General Contract
7. Plan Check/Permits/Fees	2.0% of General Contract
8. Hazardous Materials	3.0% of General Contract
9. Materials Testing & Inspection	2.0% of General Contract
10. Bonds & Insurance	2.0% of General Contract
11. Temporary Storage and Relocation	1.0% of General Contract
12. Furniture & Equipment	7.0% of General Contract
13. Construction Management	5.0% of General Contract

It is important to note that these costs may vary once plans for executing the work are created. If variations do occur over time, the data in COMET can be easily updated to reflect the changing costs.