COST/BENEFIT

ANALYSIS

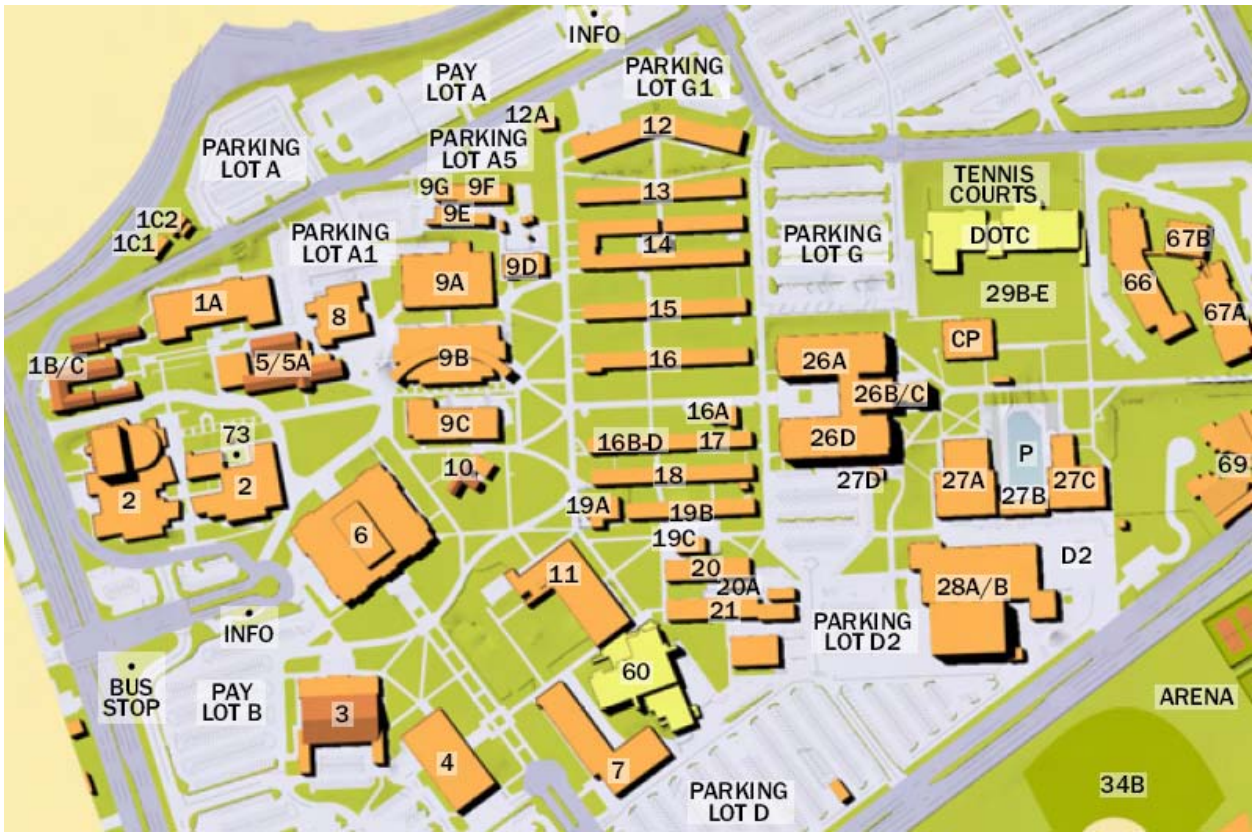
Campus Café (8)
Bookstore (9A)
Student Life Center (9C)

January 2008

SUMMARY

Purpose

The purpose of this analysis is to provide a quantifiable evaluation of the following three buildings regards to a set of alternatives. The buildings evaluated are the Campus Cafe (8), the Bookstore (9A), and the Student Center (9C).



Scope

This analysis will compare the costs and benefits of three alternatives for each building:

- Alternative 1: Demolition of Existing Facility
- Alternative 2: Reconstruction of Existing Facility into Classrooms
- Alternative 3: Construction of New Classroom Facility of Similar OGSF

Recommendation

This cost benefit analysis has demonstrated potential benefits with each of the alternatives presented. The greatest potential benefit consistently accompanies Alternative 3 and is therefore the recommended alternative for the Campus Cafe (8), the Bookstore (9A), and the Student Center (9C).

Alternative 3 includes the demolition of the existing facilities and proposes the construction of new similarly sized facilities focused on providing instructional space. However the cost to implement this alternative is the highest among all three alternatives presented. Alternative 1 remains the least cost alternative, although it provides no additional benefits beyond the savings of maintenance and utilities costs.

As a result of the potential benefits from Alternative 3, the time required to recoup the implementation costs is found to be equal to or less than that of a reconstruction as proposed by Alternative 2.

Before proceeding with Alternative 3 a number of factors should be considered. The implementation cost of this alternative may be prohibitive for the District. Eligibility for additional space according to state guidelines has been limited due to a number of factors as evidenced in the Five Year Construction Plan. As a result state funding may not be available according to a preferred timeline. However, this analysis demonstrates that when planning a new building that fulfills the educational needs of the college it would be beneficial to do so when eligibility, funding, and schedule permit.

Campus Café (8)

	Alternative 1	Alternative 2	Alternative 3
Implementation Cost	$ 194,981	$ 5,191,778	$ 6,588,560
Total Annual Benefit	$ 108,424	$ 1,177,583	$ 1,654,640
Payback (Years)	2	4	4

Bookstore (9A)

	Alternative 1	Alternative 2	Alternative 3
Implementation Cost	$ 325,228	$ 7,563,070	$ 11,414,251
Total Annual Benefit	$ 158,980	$ 1,891,940	$ 3,428,339
Payback (Years)	2	4	3

Student Life Center (9C)

	Alternative 1	Alternative 2	Alternative 3
Implementation Cost	$ 255,215	$ 5,712,162	$ 7,115,406
Total Annual Benefit	$ 122,090	$ 877,061	$ 2,053,521
Payback (Years)	2	6	3

Overview

The Mt. San Antonio Community College District was created in December, 1945, when voters of four local high school districts approved the formation of a community college district. Initially known as Eastern Los Angeles County Community College; the institution was later renamed Mt. San Antonio College (Mt. SAC) after the most visible snow-capped mountain (popularly known as Mt. Baldy) in the distance behind the campus.

The 421-acre campus was originally part of the 48,000-acre La Puente Rancho. During World War II, the facility was converted into an Army hospital and later a Navy hospital. Mt. SAC opened in the fall of 1946 with 635 students occupying a few Spanish-tiled buildings and temporary Navy barracks clustered below the San Jose Hills.

Mt. SAC has emerged as a leader in education not only in the San Gabriel Valley, but in the state. It is California's largest, single campus community college with a combined Credit, Continuing Education, and Community Service student enrollment of nearly 40,000. In 2006, Mt. SAC proudly celebrates 60 years of educational excellence. The College will continue to offer access to quality programs and services as well as provide an environment for educational excellence throughout the 21st Century.

Campus Café (8)

The Campus Café facility was constructed in 1941 with fire resistive concrete and is 14,534 OGSF. The facility is currently in operation however, the current functions are scheduled to be relocated into a new specially designed facility. This building will be vacated when the new Learning Resource Center (LRC) is constructed. At this point the facility will need to undergo a reconstruction or be demolished. The Campus Inn/Campus Café consists of 10,503 ASF. The entire square footage is within the food facilities room type according to Title 5 guidelines. Once the new LRC is constructed the continued need for this specific space would most likely diminish.

Bookstore (9A)

The Bookstore facility was constructed in 1969 with fire resistive concrete and is 21,311 OGSF. The bookstore and its related functions are scheduled to be relocated into the new Learning Resource Center (LRC). The current space inventory lists the assignable square footage at 18,551 ASF and consists of merchandise facility, lounge, and office space categories. Once the new LRC is constructed the continued need for this specific space would most likely diminish.

Student Life Center (9C)

Constructed in 1962 the Student Life Center is 16,366 OGSF. The building currently houses the Student Life Office which has direct oversight of leadership development, student government, student clubs, the student center lounge, and all other student programs and events for Mt. San Antonio College. These functions are also scheduled to be relocated into the new LRC.

DESCRIPTION OF ALTERNATIVES

Alternative 1: Demolition of Existing Facility

This alternative proposes to demolish the existing campus facility which is scheduled to be vacated upon completion of the Learning Resource Center, the future location of the existing functions.

This alternative would:

- Allow for the demolition of the existing campus facility.
- Provide an additional building site for future use by the college to accommodate growth.
- Eliminate maintenance and utilities costs which may be incurred if building was kept.

This alternative would not:

- Recognize the original investment in the building.
- Provide additional facilities that could be used to address the current deficiencies in supporting the enrollment growth experienced by the college.

Alternative 2: Reconstruction of Existing Facility

This alternative proposes to reconstruct the existing campus facility into an academic building consisting of lecture and active learning spaces as a response to campus deficiencies and the inability to provide adequate academic space.

This alternative would:

- Recognize the investment in the original building.
- Upgrade electrical systems, technology infrastructure, heating and cooling systems resulting in reduced operating costs.
- Resolve issues associated with the existing floor plan configurations.
- Remedy potential environmental factors (hazmat etc.).
- Provide some additional space to accommodate the enrollment growth that is currently being experienced by the campus.
- Provide compliance with current building codes and with the Americans with Disabilities Act (ADA) to better serve those with disabilities.

This alternative would not:

- Address existing inefficient operations and would also further reduce building efficiency after the application of new building codes and taking space to comply with ADA standards.
- Provide for a new facility with modern layouts, efficiencies, and a longer lifecycle.

Alternative 3: Construction of New Facility of Similar OGSF

This alternative proposes to construct a new facility of equal size to replace the square footage of the existing facility with new efficiently designed lecture and active learning spaces.

This alternative would:

- Create a modern academic facility that would provide efficiently designed learning spaces.
- Solve the need to improve physical conditions.
- Provide technology support, and an environment for different delivery systems.
- Respond to positive enrollment projections for this District.
- Provide an efficient network infrastructure.
- Meet the current building codes and ADA requirements.
- Include the demolition of the existing facility.

This alternative would not:

- Utilize the existing facilities and would lose that residual value.
- Provide the lowest cost implementation solution for the college.

CAMPUS CAFÉ (8)

Comparison of Alternatives

For each alternative previously described, summarizations of the cost and benefits have been presented below in a manner to facilitate comparison.

Implementation			
Demolition	$ 194,981	$ -	$ 194,981
Reconstruction	$ -	$ 4,799,455	$ -
New Construction	$ -	$ -	$ 6,001,256
Equipment	$ -	$ 392,323	$ 392,323
Recurring Annual			
Maintenance Costs	$ -	$ 71,798	$ 71,798
Utilities Costs	$ -	$ 36,626	$ 36,626
Annual Cost	**$ -**	**$ 108,424**	**$ 108,424**
Benefits			
Recurring Annual			
Maintenance savings	$ 71,798	$ 7,180	$ 10,770
Utilities savings	$ 36,626	$ 3,663	$ 5,494
Apportionment	$ -	$ 1,275,164	$ 1,746,800
Annual Benefit	**$ 108,424**	**$ 1,286,006**	**$ 1,763,064**
Total Annual Benefit			
Annual Benefit	**$ 108,424**	**$ 1,286,006**	**$ 1,763,064**
Annual Cost	**$ -**	**$ 108,424**	**$ 108,424**
Total Annual Benefit	**$ 108,424**	**$ 1,177,583**	**$ 1,654,640**
Payback (Years)	**2**	**4**	**4**

Alternative 1 of this analysis refers to the demolition of the existing facility. The cost to implement this alternative is the lowest among all three and requires the shortest amount of time to recoup the initial. **Alternative 2** renovates the existing facility into an academic building. The initial cost to implement this alternative is only marginally lower than Alternative 3 yet still requires four years to recoup the initial costs. **Alternative 3** includes the demolition of the existing facility and the construction of a new academic building similarly sized to the existing facility. The initial cost to implement this alternative is the most expensive but provides for the largest annual benefit. However, before Alternatives 2 & 3 can be implemented, space eligibility should be verified so as to maximize state funding and minimize the loss of maintenance and operational funds.

BOOKSTORE (9A)

Comparison of Alternatives

For each alternative previously described, summarizations of the cost and benefits have been presented below in a manner to facilitate comparison.

Implementation			
Demolition	$ 325,228	$ -	$ 325,228
Reconstruction	$ -	$ 6,996,200	$ -
New Construction	$ -	$ -	$ 10,522,153
Equipment	$ -	$ 566,870	$ 566,870
Recurring Annual			
Maintenance Costs	$ -	$ 105,276	$ 105,276
Utilities Costs	$ -	$ 53,704	$ 53,704
Annual Cost	**$ -**	**$ 158,980**	**$ 158,980**
Benefits			
Recurring Annual			
Maintenance savings	$ 105,276	$ 10,528	$ 15,791
Utilities savings	$ 53,704	$ 5,370	$ 8,056
Apportionment	$ -	$ 2,035,022	$ 3,563,472
Annual Benefit	**$ 158,980**	**$ 2,050,920**	**$ 3,587,319**
Total Annual Benefit			
Annual Benefit	**$ 158,980**	**$ 2,050,920**	**$ 3,587,319**
Annual Cost	**$ -**	**$ 158,980**	**$ 158,980**
Total Annual Benefit	**$ 158,980**	**$ 1,891,940**	**$ 3,428,339**
Payback (Years)	**2**	**4**	**3**

Alternative 1 of this analysis refers to the demolition of the existing facility. The cost to implement this alternative is the lowest among all three and requires the shortest amount of time to recoup the initial. **Alternative 2** renovates the existing facility into an academic building. The initial cost to implement this alternative is significantly lower than Alternative 3 but requires four years to recoup the initial costs the longest amongst all the alternatives. **Alternative 3** includes the demolition of the existing facility and the construction of a new academic building similarly sized to the existing facility. The initial cost to implement this alternative is the most expensive but provides for an annual benefit that is almost twice as large as Alternative 2. However, before Alternatives 2 & 3 can be implemented, space eligibility should be verified so as to maximize state funding and minimize the loss of maintenance and operational funds.

STUDENT LIFE CENTER (9C)

Comparison of Alternatives

For each alternative previously described, summarizations of the cost and benefits have been presented below in a manner to facilitate comparison.

Implementation			
Demolition	$ 255,215	$ -	$ 255,215
Reconstruction	$ -	$ 5,393,292	$ -
New Construction	$ -	$ -	$ 6,482,077
Equipment	$ -	$ 318,870	$ 378,114
Recurring Annual			
Maintenance Costs	$ -	$ 80,848	$ 80,848
Utilities Costs	$ -	$ 41,242	$ 41,242
Annual Cost	**$ -**	**$ 122,090**	**$ 122,090**
Benefits			
Recurring Annual			
Maintenance savings	$ 80,848	$ 8,085	$ 12,127
Utilities savings	$ 41,242	$ 4,124	$ 6,186
Apportionment	$ -	$ 986,942	$ 2,157,298
Annual Benefit	**$ 122,090**	**$ 999,151**	**$ 2,175,612**
Total Annual Benefit			
Annual Benefit	**$ 122,090**	**$ 999,151**	**$ 2,175,612**
Annual Cost	**$ -**	**$ 122,090**	**$ 122,090**
Total Annual Benefit	**$ 122,090**	**$ 877,061**	**$ 2,053,521**
Payback (Years)	**2**	**6**	**3**

Alternative 1 of this analysis refers to the demolition of the existing facility. The cost to implement this alternative is the lowest among all three and requires the shortest amount of time to recoup the initial costs. **Alternative 2** renovates the existing facility into an academic building. The initial cost to implement this alternative is only marginally lower than Alternative 3 yet requires six years to recoup the initial costs. **Alternative 3** includes the demolition of the existing facility and the construction of a new academic building similarly sized to the existing facility. The initial cost to implement this alternative is the most expensive but provides for the largest annual benefit which reduces the time needed to recoup initial cost to only three years. However, before Alternatives 2 & 3 can be implemented, space eligibility should be verified so as to maximize state funding and minimize the loss of maintenance and operational funds.

APPENDIX 1

Assumptions and Constraints

The major assumptions related to this cost/benefit analysis:

- The existing facilities will be vacated once the new Learning Resource Center is completed.
- All major renovation projects will provide a 10 percent energy reduction per the adopted Energy and Sustainability Policy by the Board of Governors.
- All new facilities will provide a 15 percent energy reduction per the adopted Energy and Sustainability Policy by the Board of Governors.
- All major renovation projects will provide a 10 percent savings in maintenance costs.
- All new facilities will provide a 15 percent savings in maintenance costs.
- The space array scenarios developed for reconstruction projects focused on providing more office space.
- The space array scenarios developed for new construction projects focused on providing more instructional space.
- The building efficiency of newly constructed buildings was calculated around 70%.
- The building efficiency of reconstructed buildings was calculated around 65%.
- A newly constructed building has a life cycle of 60 years.
- A reconstructed building was assumed to have a life cycle of 30 years and would require an additional unknown amount of funding.
- Apportionment was calculated based on funding levels proposed for the implementation of SB 361 ($4,367 per credit FTES).

The major constraints related to this cost/benefit analysis:

- The Five Year Construction Plan highlighted laboratory space as one the only categories in which growth could occur.
- Faculty salaries were not taken into account as the space provided in alternatives 2 and 3 were interdisciplinary.
- Reconstruction projects would require additional funding at some point but that cost is currently unknown and therefore was not calculated.
- Because the existing facilities would be vacated a status quo was not calculated as that was not the scope of this analysis. This analysis was to determine which alternative to move forward.

APPENDIX 2

Methodology

Implementation Cost

- Building Scenarios were developed for each alternative based on:
  - Existing data from FUSION
  - Building efficiency assumptions
    - New construction provided an efficiency of 70%
    - Reconstruction provided an efficiency of 65%
  - Reconstruction focused on providing more office space
  - New construction focused on providing more instructional space
- Building Scenarios were developed to provide:
  - OGSF
  - ASF by Title 5 space category.
  - TOP Code
- Cost models were developed for those building scenarios by gkkworks | CCS group
- Costs for Group II Equipment were developed using:
  - Current state guidelines known as the California Construction Cost Index
  - Existing Space Inventory data from FUSION
  - Building scenarios

Recurring Annual Cost

- Alternative 2 & 3
  - Maintenance Costs were calculated using the college average of $4.94 per OGSF
  - Utilities Costs were calculated using the college average of $2.52 per OGSF

Recurring Annual Benefit

- Alternative 1
  - Maintenance Savings were calculated at 100% of current costs
  - Utilities Savings were calculated at 100% of current costs
- Alternative 2
  - Maintenance Savings were calculated at 10% of current costs
  - Utilities Savings were calculated at 10% of current costs
  - Apportionment was calculated using:
    - FTES x $4,367 = Apportionment
    - ASF from building scenarios and Title 5 guidelines were used to determine WSCH which was then converted into FTES
- Alternative 3
  - Maintenance Savings were calculated at 15% of current costs
  - Utilities Savings were calculated at 15% of current costs
  - Apportionment was calculated using:
    - FTES x $4,367 = Apportionment
    - ASF from building scenarios and Title 5 guidelines were used to determine WSCH which was then converted into FTES

APPENDIX 3

Acronyms, Abbreviations & Glossary

ASF: Assigned Square Footage

Definition: ASF is the usable space within buildings for teaching and work purposes (i.e., all classroom, office, lab spaces, conference, meeting and support rooms). Non-assignable space is the area of the building used for foot traffic and utilities (i.e., entry foyers, lobbies, hallways, stairways, restrooms, custodial, closets, and mechanical spaces).

CCCI: California Construction Cost Index

Definition: The California Construction Cost index is developed based upon Building Cost Index (BCI) cost indices for San Francisco and Los Angeles produced by Engineering News Record (ENR) and reported in the second issue each month for the previous month. This table is updated at the end of each month.

5-YCP: Five Year Construction Plan

Definition: That part of the facility master plan that defines the capital improvements the college will need to have if it is to achieve the learning outcomes specified in its college master plan.

Group II Equipment: Movable Equipment

Definition: The designation given to equipment not identified as Group I - Fixed Equipment. Such equipment usually can be moved from one location to another without significantly changing the effective functioning of facilities at either location. If appropriate, existing equipment for an active program should be transferred into remodeled or expanded space before new equipment is considered. The need for new Group II Movable Equipment and its related cost request should be reduced as much as possible through the transfer of any existing equipment.

OGSF: Outside gross square footage

Definition: generally, replacement space and modernization proposals should not include an increase in OGSF; however, an increase in OGSF is permissible if the increase is demanded to comply with building codes. These increases cannot increase the number of stations/offices for the impacted space.

TOP or TOP Code: Taxonomy of Programs

Definition: The Taxonomy of Program (TOP) is a system of numerical codes used at the state level to collect and report information on programs and courses, in different colleges throughout the state that have similar outcomes

WSCH: Weekly Student Contact Hours

Definition: the number of students in the program multiplied by the number of hours students spend in the program. Enrollment is divided by programs and 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.

APPENDIX 4

References

- 2007-08 Mt. San Antonio College Catalog
- 2005 Mt. San Antonio College Master Plan Update
- 2007-08 Mt. San Antonio CCD Report 17, obtained from FUSION database
- 2007-08 Mt. San Antonio College Expense List by Fund and Location Report
- Initial Cost Models developed by gkkworks/CCS Group
- Board of Governors California Community Colleges, Title 5 Regulations: Proposed Permanent Regulations for Implementation of SB 361
- California Construction Cost Index
- California Community Colleges Space Inventory Handbook
- California Community Colleges Taxonomy of Programs
- California Code of Regulations, Title 5, Section 57028