Santa Ana College

Facilities Meeting

March 18, 2014

SAC Facilities Committee
March 18, 2014
1:30p.m. – 3:00p.m.
SAC Foundation Board Room, S-215

THE FACILITIES COMMITTEE is the participatory governance committee responsible for identifying and prioritizing capital projects including scheduled maintenance projects. It serves as an information and exchange body on facilities projects that are in construction or that are being planned.

Santa Ana College Participatory Governance Structure Handbook (May 8, 2013)

Agenda

1. Welcome and Introductions

2. Public Comments

3. Approval of Minutes – February 18, 2014 — ACTION

4. Project Updates- Carri Matsumoto/ Darryl Taylor — INFORMATION
   - Bond Projects Update
     - Central Mall conceptual design
   - SAC Active Project Update
   - Scheduled Maintenance Projects

5. Standing Reports (5mins.) — INFORMATION
   - HEPSS Task Force – Don Mahany
   - Facilities Report – Mark Wheeler
   - Environmental Task Force – Susan Sherod

6. Old Business
   - Committee goals evaluation — INFORMATION

7. New Business

8. Other

Next meeting April 29, 2014

The mission of Santa Ana College is to be a leader and partner in meeting the intellectual, cultural, technological, workforce and economic development needs of our diverse community. Santa Ana College prepares students for transfer, employment, careers and lifelong intellectual pursuit in a dynamic learning environment.

SAC FACILITIES MEETING
MINUTES – FEBRUARY 18, 2014
1:30P.M. – 3:00P.M.

Draft for approval

The mission of Santa Ana College is to be a leader and partner in meeting the intellectual, cultural, technological and workforce development needs of our diverse community. Santa Ana College provides access and equity in a dynamic learning environment that prepares students for transfer, careers and lifelong intellectual pursuits in a global community.

Administrators		Academic Senate		CSEA	
Michael Collins, Co-chair	Rhonda Langston	Maria Aguilar Beltran	Susan Sherod	Edward Luna(a)	Mike Ediss
Bart Hoffman	Loy Nashua	Ray Hicks	Valinda Tivenan	Sarah Salas	Maria Taylor
Jim Kennedy(a)	Linda Rose	Elliott Jones, Co-chair	John Zarske	District Liaison	
Eve Kikawa	Mark Wheeler		Louis Pedroza(a)	Carri Matsumoto(a)	Darryl Taylor

Guests				Campus Safety & Security
Tom Bonetati	Adam Nyssen			James Wooley
Ron Jones				ASG Representative
Don Mahany				Cristina Zainos(a)

1. WELCOME AND INTRODUCTIONS		
	Self Introductions were made	Meeting called to order – 1:32p.m.
2. PUBLIC COMMENTS		
	No Public Comments	
3. MINUTES	DISCUSSION/COMMENTS	ACTIONS/ FOLLOW UPS
	The November 19, 2013 meeting minutes were presented for approval.	ACTION Motion was moved by J. Zarske to approve the November 19, 2013 Facilities committee minutes as presented. 2nd – M. Taylor The motion carried unanimously.
4. PROJECT UPDATES	DISCUSSION/COMMENTS	ACTIONS/ FOLLOW UPS
	Darryl Taylor, Director of District Facilities and District Support Services provided an update to the committee. MEASURE E <u>Perimeter Project</u> • The project is in its final phases. • Diligent efforts are being made to complete and closeout the project.	

PROJECT UPDATES (cont.)	DISCUSSION/COMMENTS	ACTIONS/ FOLLOW UPS
	• All the parking lots that were touched as part of this project will receive a final slurry and stripping. o Some of that work has been done that was not satisfactory, however, the district is confident that the work will be completed meeting the required specifications. o The work schedule to complete the slurry/stripping work will be coordinated with instruction for minimal disruption. <u>R bldg. Handrail Replacement Project</u> Darryl will provide a concrete timeline in order to be able to provide clear communication to Administration, faculty and staff. All efforts will be made to ensure minimal disruption. <u>Parking Lot #11 expansion, Temporary Village, and Planetarium renovation - 3 pak</u> A plan view was presented to the members identifying the layout of Lot #11, the temporary village and the Planetarium. Renderings of the temporary village were provided for the committee's review. • The temporary village will be utilized as "swing space" for Dunlap Hall followed by Johnson Center. • The B bldgs. will be painted to match the rest of the village. • Resources have been included to provide a safe, comfortable learning environment for faculty, students and staff. • The portables will each come with cooling units. • The plan is to have the portables gone in 5 years. • The entire area will become parking once the village is gone. o The entire parking area will be paved and the village portables will be placed on a portion of the paved area. <u>Lot 11</u> • The lot will include electric car charging stations. o Mike Ediss is currently researching an electric dispensing service. o It was noted that there will be a cost associated with the dispensing service. The lot will be repaved and restriped and capture 32 additional parking spaces. A schedule of the projects was also provided for review. • A move management company will be hired to plan and coordinate the pieces of the move. o The communication will be a coordinated effort between Mark Wheeler and the area dean down to the impacted faculty.	

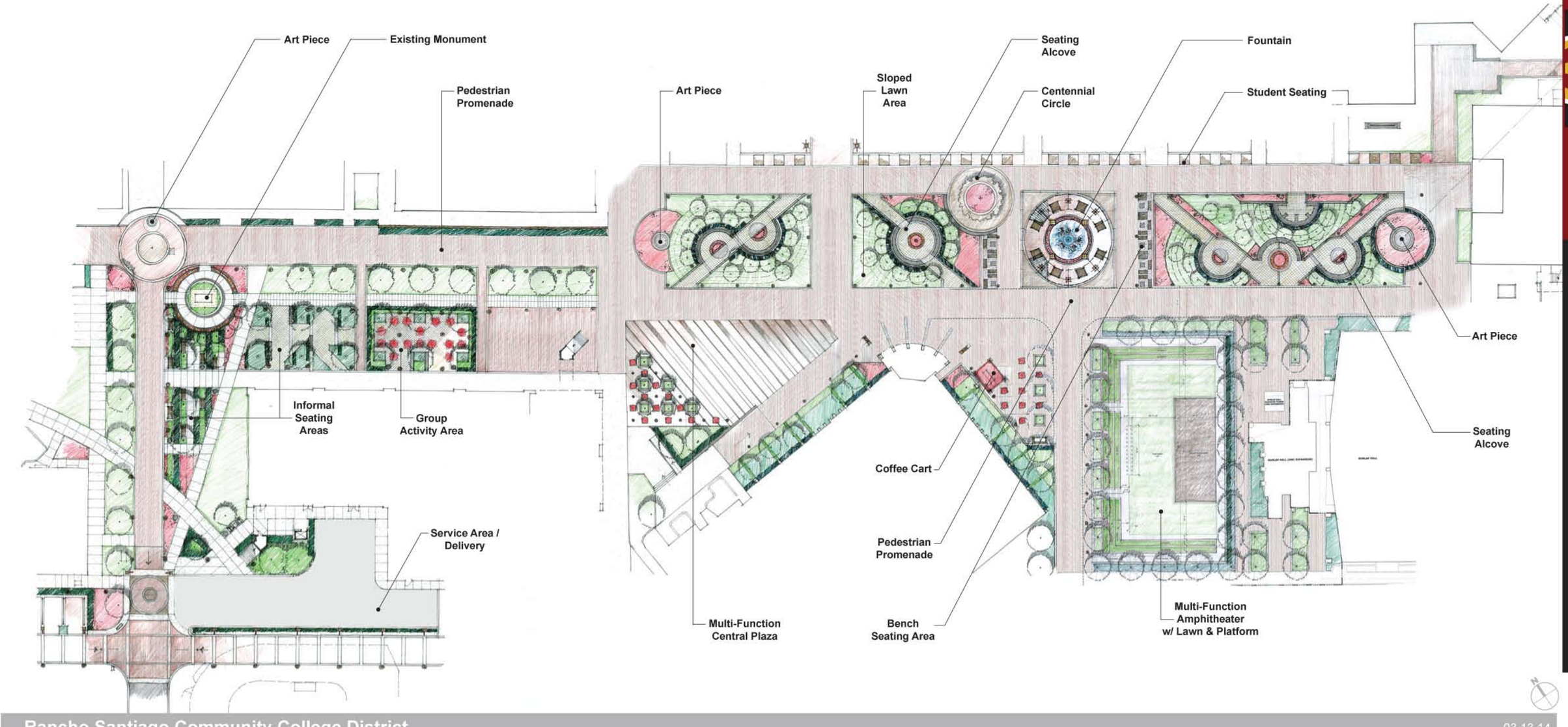
PROJECT UPDATES (cont.)	DISCUSSION/COMMENTS	ACTIONS/ FOLLOW UPS
	Dunlap Hall Negotiations are being conducted with the lease lease back contractor project. • Contractor will be conducting an on-site assessment in April. • Work will not begin until the spring semester has been completed. • The building will be handed over to the contractor once faculty and staff have moved and relocated to the temporary village. • Aside from the elevator /new structure work, there will be only minor renovations to the existing building. o Guardrails will be enclosed with scaffolding, removed and replaced. Members were reminded that if work is done inside in the building, the district would need to adhere to DSA regulations. The original plan for the project was that it would be phased over the course of two summers. The temporary village will allow for the project to be completed in a more efficient timeframe. SCHEDULED MAINTENANCE PROJECTS Boiler Replacement project – boiler replacement work in A, F & R will begin the closeout phase. It was noted that over the last six months, over 1 mil has been spent in bringing the campus back to where it needed to be from a routine and preventative maintenance stand point. Members were updated on the upcoming scheduled maintenance projects. It was noted that these projects total to just under 2mil. The college is catching up with scheduled maintenance needs that have accumulated over time. • High Voltage Preventative - Preventative maintenance work will be done on the high voltage lines. • Campus Key Access – This project will involve a retrofit of the campus doors to ensure security throughout the campus buildings. It was noted that only the cores will be replaced. • Roof repairs – roof repairs will begin in buildings C, H, N, P, and R in the next 6 months. • Hammond Hall - The building will be painted on the exterior. All windows in the building will be replaced with tinted, dual paned and Low E windows. • Practice Football field – There will be a renovation of the practice football field. The crown will be replaced for proper draining. Still exploring the options of sod or seed replacement depending on the budget.	

PROJECT UPDATES (cont.)	DISCUSSION/COMMENTS	ACTIONS/ FOLLOW UPS
	• Russell Hall – The building will be painted to align with G, H, W, and the Planetarium bldgs. This project will tie in with the Russell Hall handrail replacement. • Russell Hall - Interior upgrades will be conducted to the building that are necessary to sustain the building until it is ready to come down in approximately 8 years.	
6. Standing Reports	DISCUSSION/COMMENTS	ACTIONS/ FOLLOW UPS
HEPSS (Health, Emergency Preparedness, Safety and Security) Task Force	A HEPSS report was provided for the members (Please see attachment.) • The committee is discussing replacing the current AlertU system with a single platform system. • An updated inventory review of the ER supply trailer was conducted. • Eyes and Ears Threat Assessment training hosted by OCDE was provided to faculty and staff. Two sessions were provided. • SAPD is looking to partner with Santa Ana College in setting up "active shooter scenarios" on campus. Those discussions are in progress. • The committee has completed an Emergency Notification for employees, similar to what is read to students on the first day of classes. o This notification has been provided to the faculty. There will be further discussion on how to provide the information to SAC Classified personnel.	
Facilities Report	The SAC Facilities Report was presented by Mark Wheeler (see attached). In addition to the report, the following notations were made: • The campus will be receiving a $2500.00 rebate from the Gas Co. for the new pool heater. • The three large trees in front of Russell that were removed will be replaced with Sycamore trees. • Medeco is the new key lock system that will be utilized on campus. It will consist of an access control system as well as a standard locks. o The access control system allows for audit trail reports.	
Environmental Task Force	Report was provided by Susan Sherod for members to review. (Please see attachment.) In addition to Susan's report, Susan stated that currently there are no members on the task force other than herself and Ray Shahbazian. She noted that Ray has chosen to focus on transportation. She welcomes participation. There was an inquiry regarding efforts to reduce the carbon footprint as well as any future plans for solar projects. The committee was updated on those efforts.	

Standing Reports	DISCUSSION/COMMENTS	ACTIONS/ FOLLOW UPS
	• Through Proposition 39, the college has been approved for LED lighting retrofit both exterior and interior. • This will result in a huge energy costs savings for the campus. • There will be a significant reduction in manpower due to the life of bulbs (5-7 years). • This project which will allow for those resources normally expended on light bulbs costs/lighting maintenance to be allocated elsewhere on campus. It was noted that Prop. 39 requires the college to list clean/energy efficient future projects. Solar projects are a part of the campus's future plans.	
7. Old Business	DISCUSSION/COMMENTS	ACTIONS/ FOLLOW UPS
Tobacco free college declaration update & proposed District Administrative Regulations	The membership was provided with a draft of recommended revisions to the District Administrative Regulations regarding Smoking and Tobacco Use in District Facilities and Vehicles. • SAC has completed their local tobacco free campus declaration. • SAC in collaboration with SCC have developed recommended revisions to the District Administrative (as presented) so that both campuses are consistent in their efforts. • It was confirmed that there is zero tolerance for drugs and alcohol.	
Committee Goals	2013/2014 Committee goals A draft of the 13/14 committee goals were presented to the committee for review and action. It was noted that the goals are very similar to the 12/13 goals. Members were updated that feedback received in the End of the Year report reflected the desire to carryover the 12/13 goals. Recommendations for evaluating the goals will be brought for discussion at the March meeting.	ACTION Motion was moved by R. Hicks to approve the 2013/14 SAC Facilities Committee goals as presented. 2nd – E. Kikawa. The motion carried unanimously. FOLLOW UP Dr. Collins and Dr. Jones will bring recommendations on how to evaluate the goals to the March meeting.
8. New Business	DISCUSSION/COMMENTS	ACTIONS/ FOLLOW UPS
	None	
9. Other	DISCUSSION/COMMENTS	ACTIONS/ FOLLOW UPS
	It was confirmed that the Daktronics marquee for theater is still slated to be installed. The marquee had been pulled from the Perimeter project but will be included in one of the upcoming packages. Members were provided with an overview of the district's RFQ and RFP processes. • RFQ (Request for Qualifications) companies are invited to present their qualifications and are placed on a list if they meet the district qualifications.	

Other (cont.)	DISCUSSION/COMMENTS	ACTIONS/ FOLLOW UPS
	• RFP (Request for Proposal) once deemed qualified, companies present their pricing and plans for a project. They are interview and a selection is made based on the value/cost and the ability to meet our scheduling needs. This practice has proven to allow for better pricing and better contractors for the district. CEC update • City Council did recommend a 5yr lease extension. • No long term lease – land swap is being considered. • The site needs $600,000 worth of repairs. The repairs will be done once the lease agreement is finalized. • Dr. Collins is working with the district's attorney and the city attorney on the agreement language. 17th and Bristol property • Still in a lease agreement. • Looking to schedule demo. • Design yet to be seen. • Tentative parking lot – Jan. 2015 • A P.O. has been initiated for the property to fenced which will help to secure the property. Perimeter Plants There was an inquiry in regards to the plans for the perimeter shrubs. It was noted that Mark Wheeler and his Grounds team will be meeting with the landscape architects to discuss the vision for the shrubs.	

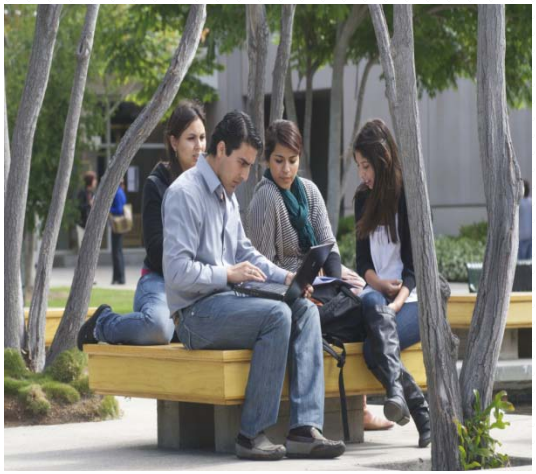
Adjourned - 2:57p.m.
Next Meeting – Tuesday, March 18, 2014
SAC Foundation Board Room
SUBMITTED BY Geni Lusk 2/28/2014



Santa Ana College
Central Mall Conceptual Design

SANTA ANA COLLEGE

FACILITIES COMMITTEE MEETING
MARCH 18, 2014



PROJECT UPDATES

RANCHO SANTIAGO
Community College District

SANTA ANA COLLEGE

MEASURE E
ACTIVE PROJECT UPDATES

- Perimeter Site Improvements
- Building G Renovation
- Parking Lot #11 Expansion & Improvements
- Temporary Village
- Tessman Planetarium Upgrade & Restroom Addition
- Chavez Hall Renovation

SANTA ANA COLLEGE

PROJECT UPDATE
SANTA ANA COLLEGE
PERIMETER SITE IMPROVEMENTS

Project Summary:

- Renovation of parking lots 1, 2, 3, 4, 5 and 6. Construction of the entries at Bristol and 17th Streets including pedestrian access, landscaping and walkways.
- Update pedestrian pathways, parking lighting, provide exterior campus signage and graphics for the entire campus.

Current Status:

- This project is in the close out phase with the contractor.
- Working on DSA certification of project.

Budget:

- $ 7 million

PROJECT UPDATE
SANTA ANA COLLEGE
BUILDING G RENOVATION

Project Summary:

- Replace gym doors and storefront glass at the entrance, replace non-compliant stairs, improve pedestrian access at side walk and parking lot 1.
- Replace exterior building lights with new LED fixtures for energy efficiency.

Current Status:

- Project is complete.
- Working on DSA certification of project.

Budget:

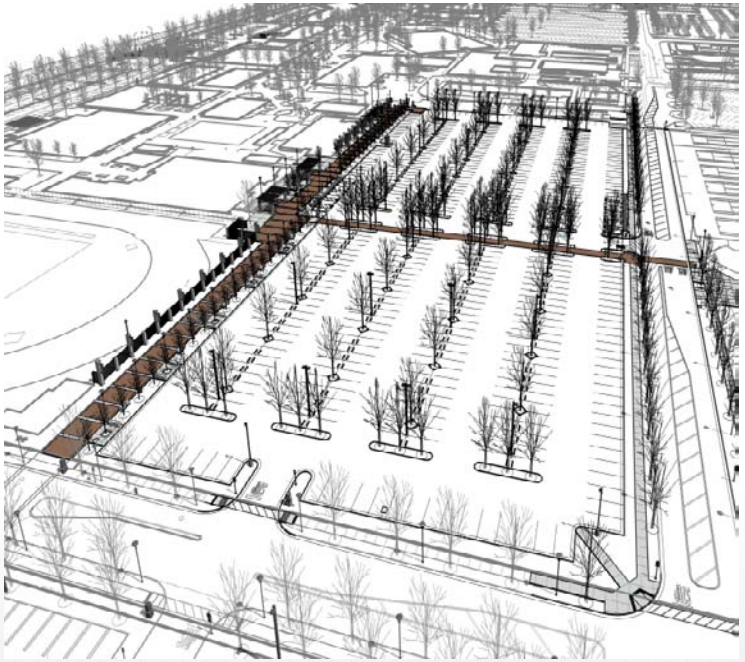
- $580,000

SANTA ANA COLLEGE

PROJECT UPDATE
SANTA ANA COLLEGE
PARKING LOT #11 EXPANSION & IMPROVEMENTS

Project Summary:

- Replace the old soccer field with a new parking lot that will include new accessible (ADA) parking and an electric car charging station.
- The storm drainage system will be enhanced to provide a retention system that will divert storm runoff back into the natural aquifer reducing runoff and pollutants that would otherwise run into the ocean.



Current Status:

- Construction has started with completion anticipated in mid July 2014.

Budget:

- $11.8 million

SANTA ANA COLLEGE

PROJECT UPDATE
SANTA ANA COLLEGE TEMPORARY VILLAGE

Project Summary:

- Provide temporary classrooms, lecture halls, and faculty offices for the Dunlap Hall project, the Johnson Building project, as needed.

Current Status:

- Portable building fabrication and installation is planned for July 2014.
- Target move in early August 2014.

Budget:

- $ 4.26 million

SANTA ANA COLLEGE

PROJECT UPDATE
SANTA ANA COLLEGE
TESSMAN PLANETARIUM UPGRADE & RESTROOM ADDITION

Project Summary:

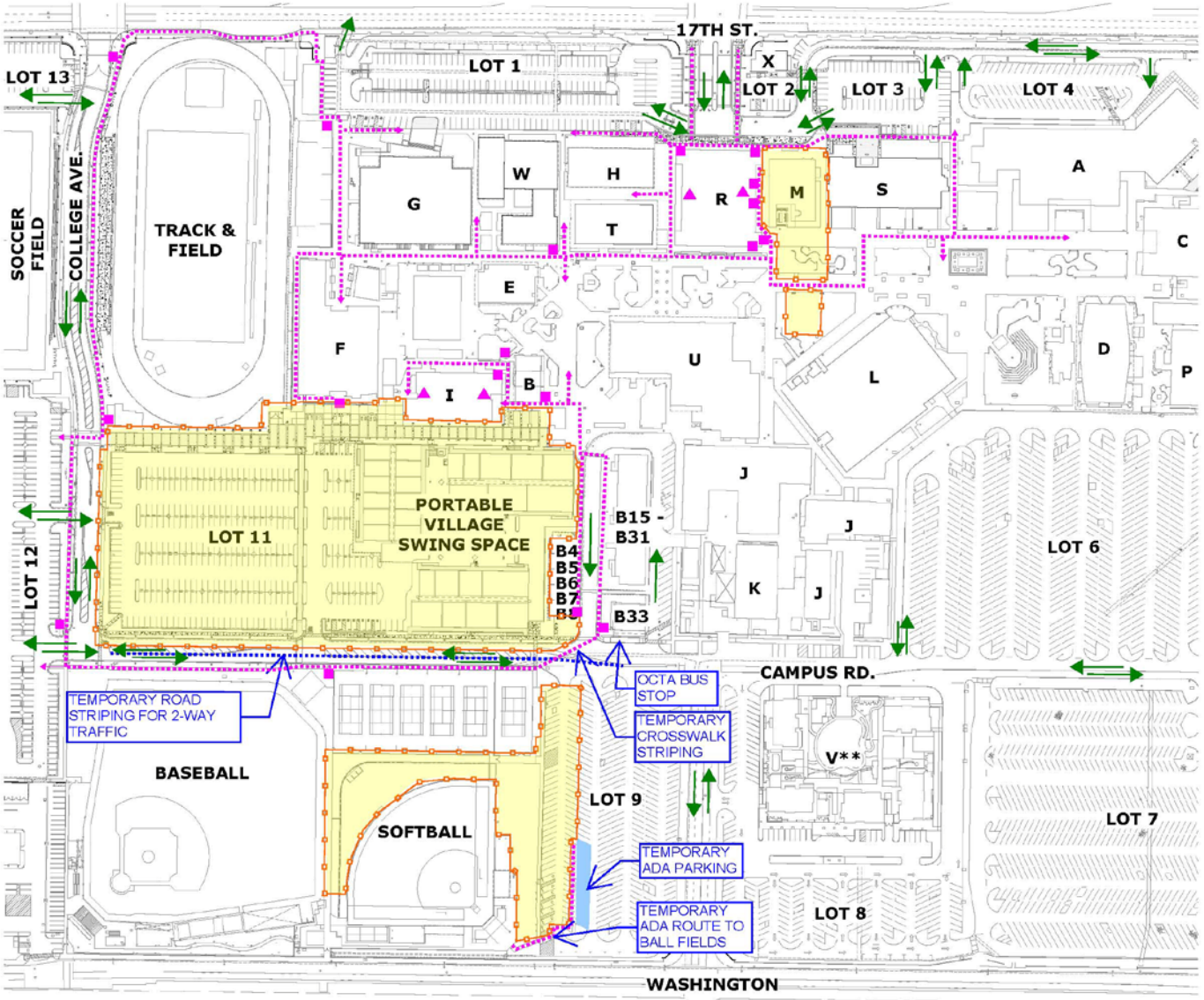
- Renovate the Tessmann Planetarium to comply with accessibility requirements and repurpose the office space for the Veterans Affairs group.
- Enhance the building exterior.
- Construct a new restroom annex.

Current Status:

- Construction is underway with the completion expected in October 2014.

Budget:

- $ 2.95 million



CAMPUS IMPROVEMENT CONSTRUCTION TEMPORARY PEDESTRIAN & VEHICLE ROUTING

SANTA ANA COLLEGE

PROJECT UPDATE
SANTA ANA COLLEGE
CHAVEZ HALL PROJECT

Project Summary:

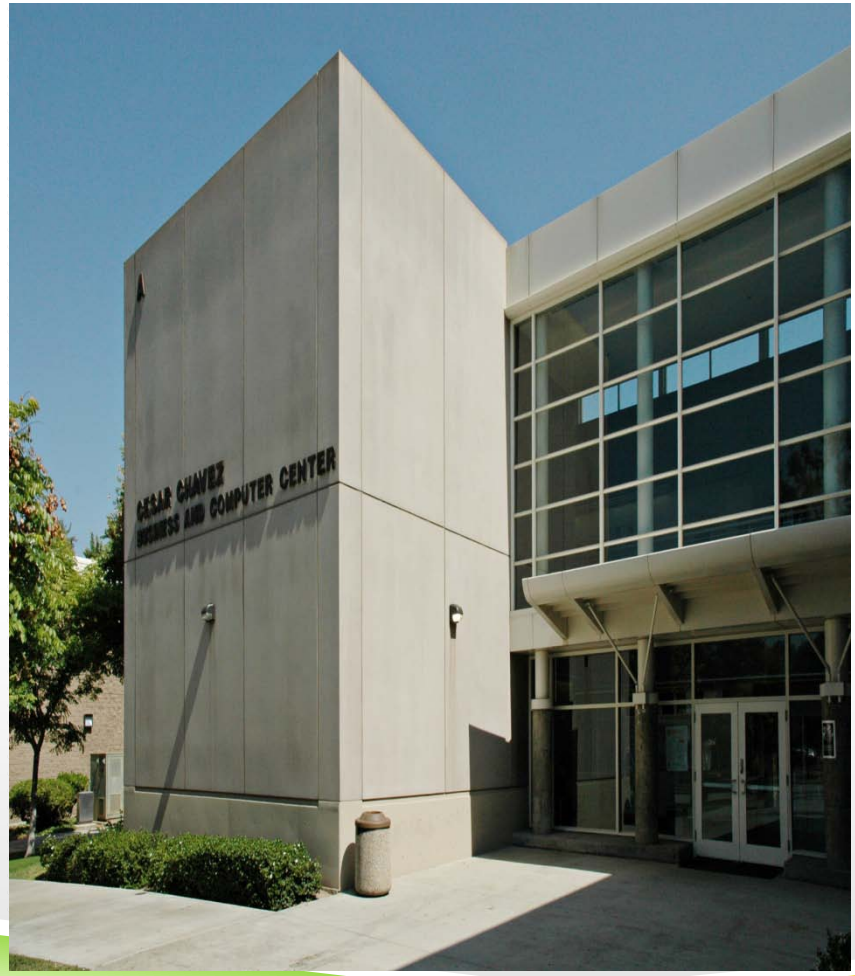
- Includes an assessment to address the exterior walls, parapet and restore or replace the exterior finish.

Current Status:

- Forensic building consultant approved by Board March 10, 2014.
- Investigations of building underway.

Budget:

- $906,000



SANTA ANA COLLEGE

MEASURE Q
PROJECT UPDATES

- Dunlap Hall Renovation
- Central Plant 3 Phases
- Johnson Center Renovation
- Science, Technology, Engineering and Mathematics (STEM) Building
- Health Sciences Building
- 17th & Bristol Parking Lot

SANTA ANA COLLEGE

PROJECT UPDATE
SANTA ANA COLLEGE
DUNLAP HALL RENOVATION

Project Summary:

- Renovate and replace the aging guard rails around the pedestrian walk ways on all levels of Dunlap Hall, as well as, providing a new elevator and stair tower.
- Remodel the existing restrooms.

Current Status:

- Plans approved by the Division of State Architect.
- Pending bid award by Board on March 24, 2014 utilizing Lease-Leaseback construction delivery method.
- Construction is expected to begin the first week in April 2014 with target completion expected in June 2015.

Budget:

- $14.2 million

SANTA ANA COLLEGE

PROJECT UPDATE
SANTA ANA COLLEGE
CENTRAL PLANT (CONST.) PROJECT

Project Summary:

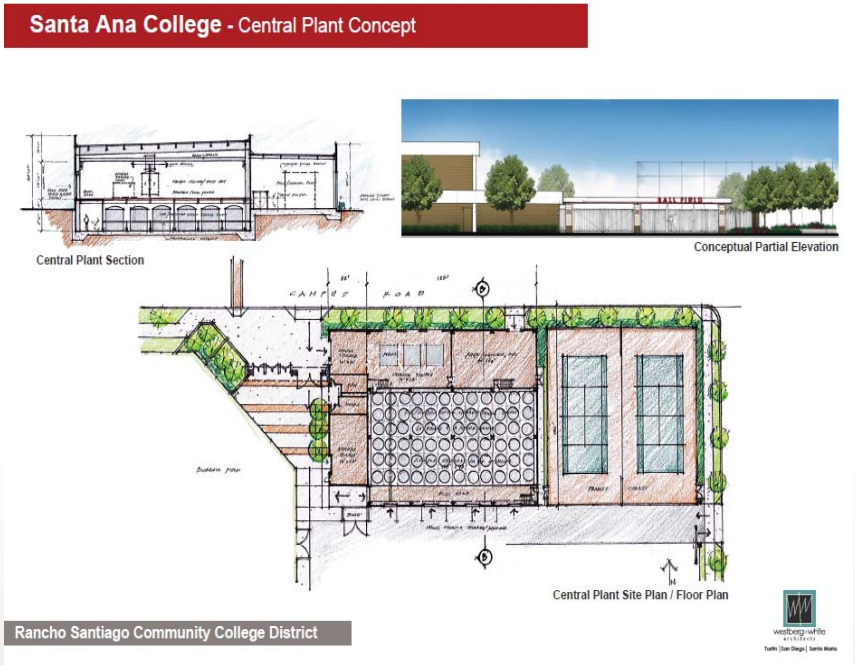
- Construction of the Central Plant in 3 phases.
- It includes a new central cooling plant, underground chilled water piping loop as well as upgrading existing site gas and domestic water piping system, sewer, drainage and fire water systems.
- It will also include HVAC system conversion for 8 existing buildings to be connected to the new Central Cooling Plant and a new campus wide energy management system (EMS).
- The central plant building will be designed to achieve LEED Silver accreditation.

Current Status:

- Project is in design.
- First phase of the work is expected to begin January 2015.

Budget:

- $68.1 million



SANTA ANA COLLEGE

PROJECT UPDATE
SANTA ANA COLLEGE
JOHNSON CENTER RENOVATION PROJECT

Project Summary:

- Renovate the Johnson building to better utilize the space available and repurpose the space to support the new program requirements established by the master plan.
- The old bookstore annex will be torn down due to seismic safety issues.
- New elevators will be added to increase accessibility for students and faculty. Measure E funds supported the programming phase. The construction will be funded by Measure Q.

Current Status:

- Programming is complete.
- Pending start of design phase in May 2014.
- Target construction start is May 2016.

Budget:

- $16.7 million

SANTA ANA COLLEGE

PROJECT UPDATE
SANTA ANA COLLEGE SCIENCE, TECHNOLOGY ENGINEERING AND MATHEMATICS (STEM)

Project Summary:

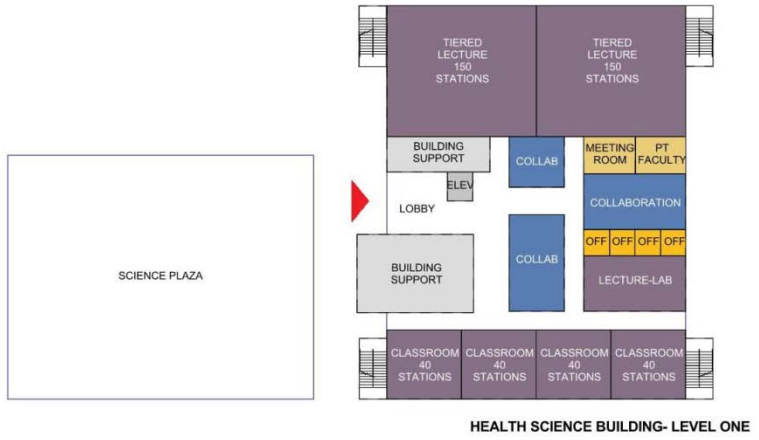
- Construction of a new 63,100 square foot science and math complex housing modern laboratories, classrooms, lecture halls, and faculty offices.

Current Status:

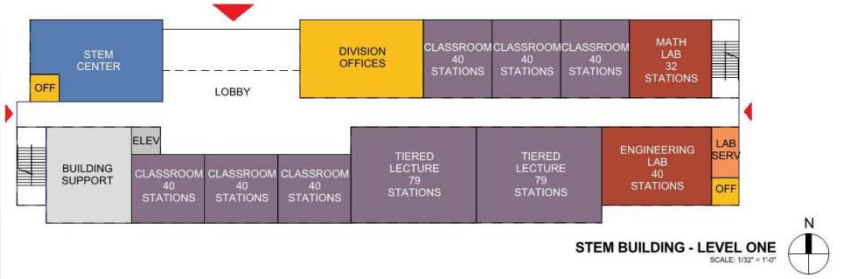
- The project is in the planning stages.
- Pending start of programming phase in August 2014.
- Target construction start is June 2017.

Budget:

- $66 million



HEALTH SCIENCE BUILDING- LEVEL ONE



STEM BUILDING - LEVEL ONE

SANTA ANA COLLEGE

PROJECT UPDATE
SANTA ANA COLLEGE
HEALTH SCIENCES PROJECT

Project Summary:

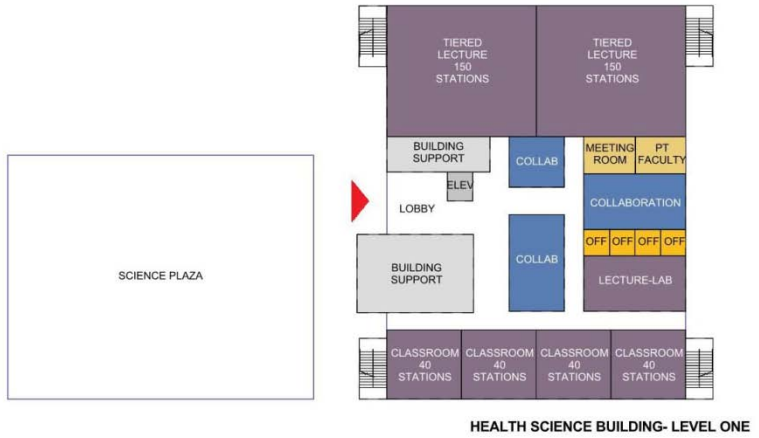
- Construction of a 55,138 square feet facility to allow for the consolidation and growth of the Health Sciences Programs including Nursing, Occupational Therapy Assistant, Medical Assistant, Emergency Medical Technician and Pharmacy Technology.

Current Status:

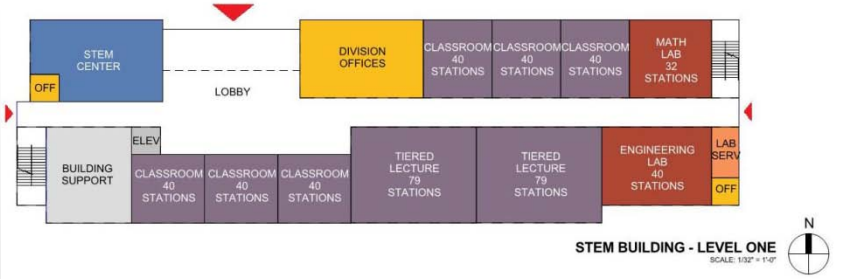
- This project has been submitted to the state for future funding.
- Design and construction start to be determined.

Budget:

- $50 million
- Need additional funds to start construction.



HEALTH SCIENCE BUILDING- LEVEL ONE



STEM BUILDING - LEVEL ONE

SANTA ANA COLLEGE

PROJECT UPDATE
SANTA ANA COLLEGE
PARKING LOT AT 17TH/BRISTOL ST.

Project Summary:

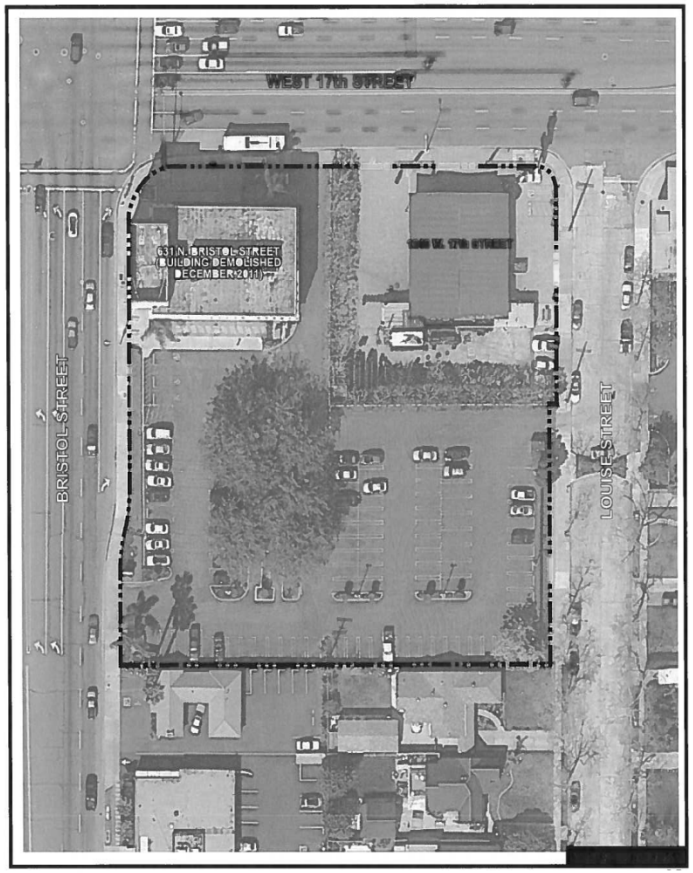
- New surface parking lot.

Current Status:

- Architect Board approved March 10, 2014. Donald Krotee Partnership.
- Design underway.
- Demolition package preparing to bid in March 2014.
- Target construction start is November 2014 with a completion in February 2015.

Budget:

- $1.7 million
- Acquisition of property was paid by Measure E funds.



SANTA ANA COLLEGE

MEASURE Q
MASTER PROGRAM BUDGET
(BASED ON NO STATE FUNDING)

PROJECT	****ESTIMATED TOTAL BUDGET***	***STATUS***	***TARGET CONSTRUCTION***
❖ Dunlap Hall Renovation	$14.2 M	Pending Construction	April 2014 - June 2015
❖ 17th & Bristol Parking Lot	$ 1.7 M	In Design	June 2014 - Feb 2015
❖ Central Plant 3 Phases	$68.1 M	In Design	Jan 2015 – Sept 2016
❖ Johnson Center Reno	$16.7 M	Programming	May 2016 – July 2017
❖ STEM Building	$66 M	Programming	June 2017 – June 2019
❖ *Health Sciences Building	$50 M	Pending	To Be Determined
TOTAL	**$216.7 M**		

*State Funding Eligible $19 M

**Includes construction, design and owner contingencies

SANTA ANA COLLEGE

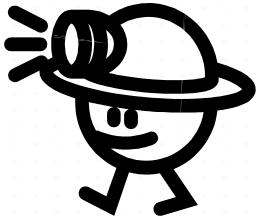
MEASURE Q

Scheduled Maintenance and Other Projects

SANTA ANA COLLEGE

ACTIVE
SCHEDULED MAINTENANCE & OTHER PROJECTS

- Russell Hall Guard Rail Repair & Replacement
- Buildings A, F & R Boiler Replacements
- Door Hardware Upgrade
- Building H Windows and Screen Replacement
- Buildings H & R Painting
- Buildings C, H, N, P & R Roof Repairs
- Football Field Reconditioning
- CEC Parking Lot and Utility Upgrades
- Prop 39 LED Lighting Replacement



ACTIVE
OTHER PROJECT
RUSSELL HALL GUARD RAIL EMERGENCY REPAIR AND REPLACEMENT

Project Summary:

- Remove, repair and replace guard rail screen system on second and third floors of the Russell Hall.

Current Status:

- In construction.
- Anticipated target completion is mid April 2014.

Budget:

- $400,000

SANTA ANA COLLEGE

ACTIVE SCHEDULED MAINTENANCE

Buildings A, F, & R Boiler Replacements

Project Summary:

- Remove and replace existing boilers.
- The existing boilers at Building A, F & R have been deemed by the Air Quality Management Department (AQMD) to be in non-compliance with the existing state standards.

Current Status:

- Closing contract with the contractor.
- In DSA Certification phase.

Budget:

- $321,850

High Voltage Preventative Maintenance

Project Summary:

- To perform preventative maintenance on the high voltage equipment.

Current Status:

- Pending preparation of as built drawings of the electrical distribution system.

Budget:

- $61,146

SANTA ANA COLLEGE

ACTIVE SCHEDULED MAINTENANCE

Door Hardware Upgrade

Project Summary:

- To retrofit door hardware.
- Included in this project is the purchase of key stock and cores.

Current Status:

- Preparing Request for Proposal for hardware consultant to manage this project.

Budget:

- $176,800

Buildings H & R Painting

Project Summary:

- Painting of the building exteriors.

Current Status:

- Bid pending.
- Target construction start in May 2014 and target completion date of June 2014.

Budget:

- $58,000

SANTA ANA COLLEGE

ACTIVE SCHEDULED MAINTENANCE

Building H Windows and Screen Replacement

Project Summary:

- To replace windows and screens in Bldg. H.

Current Status:

- Bid pending.
- Target construction start May 2014 and completion in June 2014.

Budget:

- $170,000

Buildings C, H, N, P & R Roof Repairs

Project Summary:

- Repair roofs.

Current Status:

- Bid pending.
- Target construction start June 2014 and completion in August 2014.

Budget:

- $1.06 million

SANTA ANA COLLEGE

ACTIVE SCHEDULED MAINTENANCE

Football Field Reconditioning

Project Summary:

- To recondition the turf of the football field.

Current Status:

- Developing the scope of work.
- The work is anticipated to begin on May 2014 and target completion date of June 2014.

Budget:

- $100,000

CEC Parking Lot and Utility Upgrades

Project Summary:

- To resurface and stripe the parking lot, replace the concrete walks, and water main line.

Current Status:

- Pending design start.
- Request for proposals underway for architect.

Budget:

- $600,000

SANTA ANA COLLEGE

ACTIVE
PROP 39 PROJECT
LED LIGHTING UPGRADE

Project Summary:

Replace fluorescent and incandescent lights with LED retrofit kits for all applicable interior lights and replace exterior parking lights with new LED fixtures.

- Project Cost - $1,516,730
- Source of Funding
  - Prop 39 - $783,505
  - Projected Energy Saving Rebates - $154,472
  - District - $578,753

Current Status:

- Out to bid.
- Target start May 2014 and completion by end of June 2014

SANTA ANA COLLEGE

RANCHO SANTIAGO
Community College District

QUESTIONS

SANTA ANA
COLLEGE

SANTA ANA COLLEGE

Facilities update
3/18/2014

- We have received 181 work orders and have 29 open work orders on the books.
- The pool heater was replaced and we are submitting the necessary paperwork to the AQMD for compliance, and the gas company for a $2500 rebate.
- The main elevator in U building has been repaired and is in good working order.
- W106 electrical installation has been completed along with the removal of mirrors and the patch and paint of the walls.
- We are in the process of devising a way to eliminate the fumes created by the machines in the machine shop from being entrained back into the building. This will mean removing a large window and installing a louver. It will also entail balancing the system.
- The Russell Hall guardrail installation project is currently underway. The replacement panels are scheduled to be installed on April 7th, 2014. It appears the project is on schedule and going well.
- We have started the 3 pack project; lot 11/swing space, retention basin and the planetarium. McCarthy is on site and pressing forward. There has been a significant amount of fencing installed and traffic, both foot and vehicular are being affected. We are doing all we can to minimize the overall impact. The scheduled completion date in September 30th, 2014. The fences will be coming down in some areas prior to that date.
- The job walk for the H building renovation has been scheduled for March 27th with bids due back on April 4th.

Update for 3-18-14

1. **The Environmental Task Force studied the payback time for traditional and Solar Assisted Natural Ventilation with the following results:**

Outcomes for Solar Assisted Natural Ventilation Design

The environmental and economic outcomes could lower costs for energy to cool, for a savings of 70% to 100% of energy formerly used for cooling, and reduce the costs to heat the building. Overall energy cost of the building is estimated to be reduced by 10 - 30% ***for the natural ventilation alone*** (Walker**),** ***but it will be higher with the addition of fans and controls, perhaps 60% or more*** (Graham). In addition, adding all fresh air to the building should reduce exposure to routine pathogens that are trapped and re-circulated by mechanical HVAC type systems currently in place. ***Since long term costs are up to 75% of the life cost (Siegler) for a building of this type, it is even better that the project will result in perhaps only 10% (Maisey) as much cost for maintenance and repairs as a mechanical HVAC system would.***

Santa Ana College Electrical Savings with Solar Assisted Natural Ventilation Design

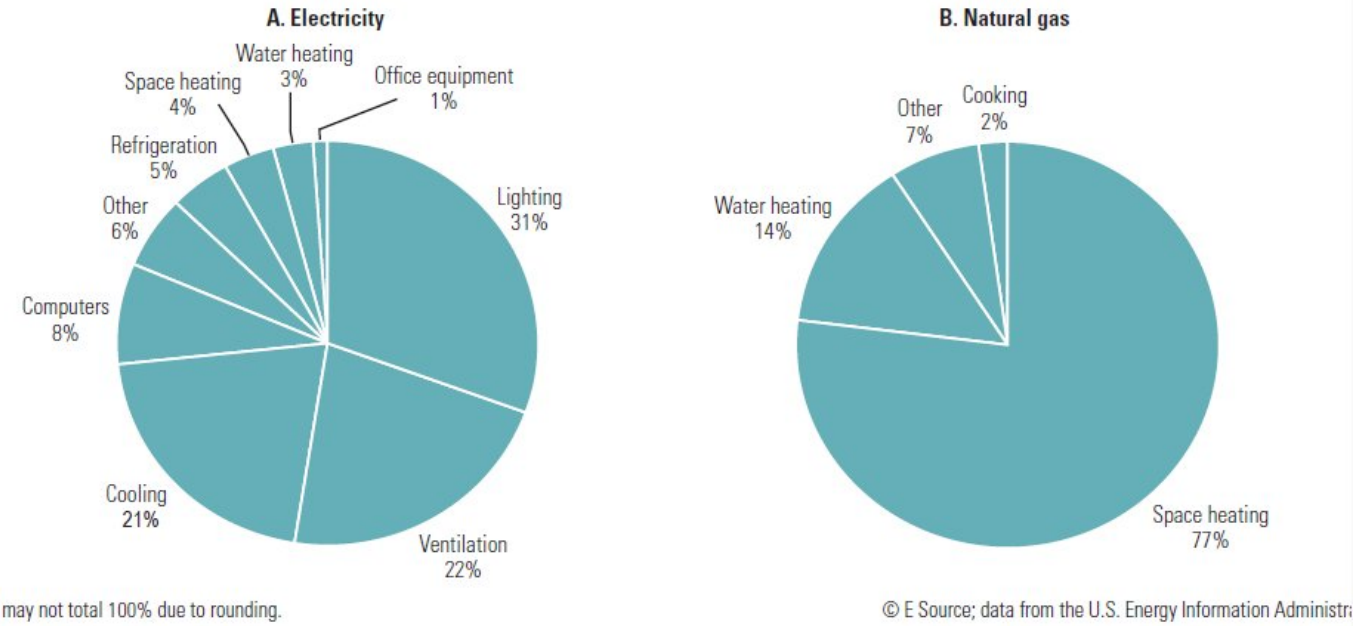
Annual electric cost at Santa Ana College is approximately $1.8 million USD (data provided by Don Maus). From data in the chart below, we can see the cost for HVAC is about 43% of the electric, or $774,000.

Colleges and universities spend around $1.95 per ft^2 on electricity and $0.15/ft^2 on natural gas annually (assuming energy use of 18.94 kilowatt-hours [kWh]/ft^2 and 0.17 hundred

difference, but remember that every 1,000,000 kWh sav
turning things off takes $100,000 off your institution's
bill annually (assuming electricity costs of $0.10/kWh).

FIGURE 1: Energy consumption in U.S. educational facilities by end use

Data from the U.S. Energy Information Administration show that lighting, ventilation, and cooling account for 74 percent of electric use (A) and space heating dominates natural gas use at 77 percent (B).



Note: Sum may not total 100% due to rounding.

© E Source; data from the U.S. Energy Information Administra

EPA estimates $1.95/sq. foot for higher education campus electric cost. SAC Campus square footage is approximately 823,700 sq. feet. SAC cost/square feet = $1.8 million/823,700 sq. feet = $2.185/sq. foot. SAC

operates with an apparently higher than average electric cost for a higher education facility, so the savings will be greater than average.

The opening statements in the document with the above image, by E-Source Company Direct, (2010) says " By implementing economical energy efficiency measures, many colleges and universities have the potential to cut their energy bills by 30 percent or more." Santa Ana College has already implemented some of their recommended strategies such as schedule changes, but if we can do much better.

Typical scheduling changes and updating to traditional energy efficient HVAC equipment on the campus might net 30% of electric bill savings, where 30% x $774,000 = $232,000 annually.

Updating to Solar Assisted Natural Ventilation would result in savings of 60% of electric bill savings, where 60% * $774,000 = $464,400 annually, or more in years when less to no AC is needed, plus the reduced long term maintenance cost savings of 90% of the life cost of the system, for a total savings of perhaps 70% of electricor more, annually.

Better yet, Solar Assisted Natural Ventilation upgrades don't require tearing up the campus and buildings as much, and the new equipment needed costs less, possibly less than a quarter of the cost of an $8 million dollar central plant since adding solar assisted natural ventilation is probably between $55,000 and $100,00 per building on campus per information provided by a vendor of solar roof vent fans. For example, the installed cost of four such solar roof vent fans was quoted as only $42,000 in 2012.

Sources:

Graham, Carl Ian, PE. High-Performance HVAC. Whole Building Design Guide. 12-07-2009. Web

Maisey & Milestone. Optimizing HVAC Life-Cycle Performance. 08-31-2010. http://www.wbdg.org/resources/tqc.php. Web. Accessed 12-8-2011.

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Milne, Murray, & Gomez, Carlos, & LaRoche, Pablo, & Morton, Jessica. Why Design Matters:Comparing Three Passive Cooling Strategies In Sixteen Different Climate Zones. UCLA, Department of Architecture and Urban Planning. http://www.energy-design-tools.aud.ucla.edu/papers/ASES05-Milne.pdf . Web. Accessed 11-27-11.

Walker, Andy. Natural Ventilation. Whole Building Design Guide sponsored by National Renewable Energy Laboratory. 06-15-2010. Web. Accessed 12-8-2011.

2. **The Environmental Task force found some free General Services Administration tools that can be used for Design and Analysis.**

Design and Analysis Tools

http://eponline.com/articles/2011/02/11/free-gsa-sustainable-facilities-tool-available-now.aspx

The use of computer programs can considerably reduce the time and effort spent on formulating the LCCA, performing the computations, and documenting the study. Listed below are several LCCA-related software programs:

- Building Life-Cycle Cost (BLCC) Program-Economic analysis tool developed by the National Institute of Standards and Technology for the U.S. Department of Energy Federal Energy Management Program (FEMP).

- ECONPACK for Windows-An economic analysis tool developed by the U.S. Army Corps of Engineers in support of DOD funding requests.
- Energy-10-Cost estimating program available from the Sustainable Buildings Industry Council (SBIC).
- SuccessEstimator Estimating and Cost Management System-Cost estimating tool available from U.S. Cost.

3. The Environmental Task Force researched software, for Life-Cycle Cost Analysis and found there is some free and some not free software as follows.

Life-Cycle Cost Analysis Software

Free Software

Building for Environmental and Economic Sustainability (BEES) (http://www.bfrl.nist.gov/oae/software/bees/) is a tool that helps select cost-effective building products from more than 200 environmentally preferred items. BEES is based on consensus standards and measures the environmental performance of building products by using the life-cycle assessment approach specified in the International Organization for Standardization (ISO) 14040 series of standards (http://www.iso.org/iso/home.htm). BEES has been adapted for application to biobased products—see BEES for USDA (http://www.bfrl.nist.gov/oae/software/bees/bees_USDA.html). BEES has been supported in part by the U.S. Environmental Protection Agency's Environmentally Preferable Purchasing program (http://www.epa.gov/epp/).

The **Chilled Water System Analysis Tool** (http://www1.eere.energy.gov/industry/bestpractices/software.html) is used to determine the energy requirements of chilled water cooling systems and to evaluate opportunities for energy and cost savings by applying improvement measures. The program, developed by the U.S. Department of Energy (DOE), allows you to calculate the current energy consumption of an existing system, then select proposed equipment or operational changes for comparison.

The **Combined Heat and Power Application Tool** (http://www1.eere.energy.gov/industry/bestpractices/software.html) is used to evaluate the feasibility of combined heat and power. This tool, developed by the DOE, will estimate system costs and payback period. It also performs "what if" analyses for various utility costs. It includes performance data and preliminary cost information for many commercially available gas turbines and default values that can be adapted to meet specific application requirements.

The **Construction Waste Calculator** (http://www.metrokc.gov/dnrp/swd/greenbuilding/construction-recycling/cost-effectiveness.asp) from King County Solid Waste Division, WA, explains how to determine the cost effectiveness of recycling versus disposal by using the Recycling Economics Worksheet (http://www.metrokc.gov/dnrp/swd/greenbuilding/documents/economics_worksheet.xls). The worksheet contains separate calculation sheets for commercial-hauling and self-hauling options, as well as samples of completed worksheets.

The **Cool Roof Calculator** estimates cooling and heating savings for flat and low-slope roofs with surfaces that are not black. It includes DOE Web-based software programs for managers of small and medium-sized facilities that purchase electricity without a demand charge (http://www.ornl.gov/sci/roofs+walls/facts/CoolCalcEnergy.htm) and for large facilities that purchase electricity with a demand charge based on peak monthly load (http://www.ornl.gov/sci/roofs+walls/facts/CoolCalcPeak.htm).

DOE-2 (http://www.doe2.com/) is a frequently updated **FORTRAN** program developed by James J. Hirsch & Associates in collaboration with Lawrence Berkeley National Laboratory. It calculates the hourly energy use and energy cost of a commercial or residential building based on user-supplied information about the building's climate, construction, operation, utility rate schedule, and heating, ventilating, and air-conditioning (HVAC) equipment. It can be used in its basic form or accessed through a friendlier interface such as eQUEST, EnergyPlus, Green Building Studio, or PowerDOE, all of which are described in this section.

Energy Cost Calculators (http://www.fedcenter.gov/_kd/go.cfm?destination=ShowItem&Item_ID=8336) from the Federal Energy Management Program allow users to enter their own utility rates, hours of use, and so forth, to estimate the energy cost savings from buying a more efficient product. Calculators are available for compact fluorescent lamps, commercial unitary air conditioners, air-cooled chillers, water-cooled chillers, commercial heat pumps, boilers, refrigerators, freezers, beverage vending machines, computers, monitors, faxes, printers, copiers, faucets/showerheads, toilets/urinals, central air conditioners, gas furnaces, electric/gas water heaters, clothes washers, and dishwashers.

Energy-10 (http://www.nrel.gov/buildings/energy10.html) from the National Renewable Energy Laboratory helps architects and building designers quickly identify the most cost-effective energy-saving measures for small commercial and residential buildings. It integrates daylighting, passive solar heating, and low-energy cooling strategies with energy efficient shell design and mechanical equipment. It enables designers to make good decisions about energy efficiency early in the design process.

EnergyPlus (http://www.eere.energy.gov/buildings/energyplus/) is a DOE building energy simulation program for modeling a building's heating, cooling, lighting, ventilating, and other energy flows. It is based on the most popular features and capabilities of DOE-2, but it includes simulation capabilities such as time steps of less than an hour, modular systems, HVAC zone simulation, multizone air flow, thermal comfort, and photovoltaic systems.

eQUEST (http://www.energydesignresources.com/resource/130) was developed by Energy Design Resources to perform a detailed analysis of state-of-the-art building design technologies without requiring extensive experience in the "art" of building performance modeling. It combines a building creation wizard, an energy efficiency measure wizard, and a graphical results display module with a DOE-2 building energy-use simulation program. Results are displayed in tables and graphs. eQUEST appears to be one of the most popular energy-use simulation programs, probably because of its

ability to display energy consumption over time using colorful, easy to- read graphs and tables.

The **Financing Alternatives Comparison Tool** (http://epa.gov/owm/cwfinance/cwsrf/fact.htm) is a U.S. Environmental Protection Agency (EPA) financial analysis tool that helps identify the most cost-effective method to fund a wastewater or drinking water management project. This tool produces a comprehensive analysis that compares various financing options for these projects by incorporating financing, regulatory, and other important costs.

The **Life-Cycle Cost Analysis Model** (http://www.green.ca.gov/LCCA/default.htm) was developed by the State of California to determine the cost effectiveness of implementing energy conservation measures using the results of energy audits or energy feasibility studies. This Excel spreadsheet has information specific to California (details about energy costs, California energy tariffs, peak/part-peak/off-peak rates, etc.) already filled in, although the information can be modified. The model provides detailed analysis of energy cost savings and implementation costs.

Radiance (Windows version at http://radsite.lbl.gov/deskrad/ and Unix version at http://radsite.lbl.gov/radiance/) is a tool for lighting design and rendering, developed by the DOE and the Swiss Federal Government through the Lawrence Berkeley National Laboratory. It quantitatively renders daylight in building models to provide graphic displays and luminance numbers that can be used to determine how much artificial lighting is needed in a room or how room configuration could be changed to eliminate the need for artificial light.

The **Target Finder** (http://www.energystar.gov/index.cfm?c=new_bldg_design.bus_target_finder) is an EPA energy modeling tool that helps architects and building owners set aggressive, realistic energy targets and rate a commercial building's estimated energy use, based on the EPA's survey of existing buildings and climate by ZIP code. Site and source energy calculations are provided for both energy use intensity and total annual energy.

The **Unitary Air Conditioner Cost Estimator** (http://www1.eere.energy.gov/femp/procurement/eep_unitary_ac_calc.html) compares high-efficiency rooftop air conditioners to standard equipment in terms of life-cycle cost. This estimator, developed by the DOE, accounts for local climate and partial load as well as full load efficiencies. The Web-based, menu-driven format is easy to learn and use. It quickly estimates life-cycle cost, simple payback, return on investment, and the savings-to-investment ratio based on user-specified air conditioning requirements and building use patterns. Results are easily downloaded as graphic files for further analysis or for presentations.

Commercial Software

Ecotect (http://squ1.com/) is a whole-building simulator from Square One Research that "combines an interactive building design interface and 3D modeler with a wide range of environmental analysis tools for a detailed assessment of solar, thermal,

lighting, shadows and shading design, energy and building regulations, acoustics, air flow, cost, and resource performance of buildings at any scale." It works with Square One's CAD engine, or you can import building information from AutoCAD.

Green Building Studio (http://usa.autodesk.com/adsk/servlet/index?siteID=123112&id=11179531) is one of the many interfaces to DOE-2. It also is compatible with other energy-analysis software. Green Building Studio has tools that help evaluate building designs for energy consumption and carbon footprints.

PowerDOE (http://www.doe2.com/Download/Docs/D22PDSum.pdf) is a commercial interface to DOE-2 (see the "Free Software" section) that uses graphics, building images, and models to both organize data input and display building energy use for heating, cooling, lighting, ventilating, and so forth.

The **Virtual Environment** (http://www.iesve.com/content/default.asp?page=home_Our%20Software) can act as a plugin to AutoCAD's Revit, calculating heating and cooling loads. Developed by Integrated Environmental Solutions, Ltd. This plugin can also be used to model several other systems from within Revit.

Life-Cycle Assessment Software

Free Software

Building for Environmental and Economic Sustainability (BEES) (http://www.bfrl.nist.gov/oae/software/bees/) is a tool that helps select cost-effective building products from more than 200 environmentally preferred items. BEES is based on consensus standards and measures the environmental performance of building products by using the life-cycle assessment approach specified in the International Organization for Standardization (ISO) 14040 series of standards (http://www.iso.org/iso/home.htm). BEES has been adapted for application to biobased products—see BEES for USDA (http://www.bfrl.nist.gov/oae/software/bees/bees_USDA.html). BEES has been supported in part by the U.S. Environmental Protection Agency's Environmentally Preferable Purchasing program (http://www.epa.gov/epp/).

Building Materials Reuse Calculator (http://www.wastematch.org/calculator/calculator.htm) from New York City's NY Wa$teMatch Materials Exchange estimates the environmental benefits of salvaging and reusing building materials, rather than buying and installing new ones. The calculator measures the environmental benefits of reusing building materials.

Pharos (http://www.pharoslens.net/about/) is a labeling system that is sponsored by the Healthy Building Network and its partners. The labeling system, still being developed, is intended to be a consumer-friendly display of the evaluation of materials across impact categories, including energy/ water usage, air quality impacts, toxicity, occupational safety, social justice, and habitat impacts. The PharosWiki

(http://www.pharosproject.net/wiki/index.php?title=Main_Page) is available, although the labeling system was not yet available when this report was prepared.

Comparison and Evaluation:

The **Sustainability Tracking, Assessment & Rating System™** (STARS) is a transparent, self-reporting framework **for colleges** and universities to measure their sustainability performance.

https://stars.aashe.org/pages/register/register-stars.html

4. Environmental Task Force Next Steps

We recommend further investigation of the tools available. We will review them in greater depth as much as we can if it pleases the Facilities Committee.

Respectfully Submitted,

Susan M. Sherod

SANTA ANA COLLEGE

Facilities Committee Goals 2013/2014

1. Align SAC Facilities Improvements with the RSCCD Sustainability Initiative. Maximum effort will be made to ensure that all improvements be created and managed sustainably for reduction of fossil fuel consumption, and thus the reduction of the campus carbon footprint. "Green" efforts will be considered as a means of reducing utility costs and improving the campus and community environment.

2. Receive and disseminate reports on maintenance, repair, renovations, and upgrades to existing buildings, infrastructure, and equipment, as well as progress on new construction as new buildings are approved, designed, and started. Provide feedback as appropriate.

3. Monitor efforts to maintain and improve campus appearance.

4. Continue to review and implement the SAC Facilities Master Plan at ancillary sites.

5. Monitor efforts and support the Environmental task force and the HEPSS (Health, Emergency Preparedness, Safety and Security) task force.

6. Monitor the campus grounds and facilities for ADA compliance and review the ADA Transition Plan. Recommend that modifications be made in a timely manner to correct known deficiencies.

7. Provide a conduit for communication for faculty, staff and students to bring forward facility related issues to administrative attention, as well as provide regular updates to College Council.

Approved 2/18/14