


ASSESSMENT OF CAMPUS DOCUMENTS

September 2018





This document represents the compilation and assessment of the current planning documents for the American River Campus. The assessment represents our current understanding of the documents and guidance of the existing documents, but will require refinement for a complete understanding of the strategies and actions defined. The document is intended to frame the discussion for the Initiation and Assessment meeting with the Campus Planning Team and complete a current understanding of the campus improvements and needs. The objective of the initial meeting is to understand the State and Los Rios District standards and verify anticipated projects identified by current campus planning documents. From this discussion a better understanding of the vision and goals for the campus will emerge and the actions needed to achieve a desired future.

The assessment includes a review of the 2012 Campus Master Plan, Facilities Conditions Index, Building Inventory, Utility Master Plan, Transportation, Access and Parking Master Plan, Long Range Capital Needs Plan and Educational Master Plan (review omitted) with the intent of creating an understanding of the current physical state of the campus and documenting the planned campus improvements.

ARC Master Plan Booklet 2012

The 2012 Facilities Master Plan is intended to reflect the progress and decisions that have been made implementing the 2003 Master Plan as well as to provide a flexible framework to help inform, guide, and plan for future capital improvement projects. This 2012 Facilities Master Plan reflects projects and improvements that are planned for the American River College main campus. The Plan identifies preferred locations for proposed new buildings, modernization projects and future parking and transportation improvements.

I. Vision

A premier learning community that transforms and enriches peoples lives.

II. OBJECTIVES

The plan objectives include:

- Provide a plan which locates preferred sites for future capital improvement projects.
- Provide guidelines for establishing hierarchies and themes within the existing and potentially new “districts” on campus.
- Provide design guidelines which inform and plan for future growth on campus to help:
 - Improve the image of the college within the community and enhance the student experience on campus.
 - Improve existing pedestrian and vehicular circulation to increase way-finding.
 - Better utilize outdoor spaces and plazas.
 - Improve Accessibility.
 - Where appropriate, review reasonable accommodations for students and staff under ADA/ FEHA in designing new and modernized facilities.



Figure 1. ARC Facilities Master Plan Booklet 2012

III. DESIGN GUIDELINES

The design guidelines provide general recommendations and considerations towards improving the site, landscape, and architectural amenities to enhance the student experience and public image of the campus. The guidelines provide a conceptual design framework to accommodate a diversity of styles and locations found on the campus. The concept of developing key landmarks that define and differentiate departments and/or districts is emphasized.

- A. District Identification -- reinforce identity with landmark buildings and distinctive landscapes to provide clues for way-finding on campus.
- B. Site & Landscape Design -- coordinate with lighting design and site furnishings to update the image of campus site amenities and maximize existing and future connections through the campus.
- C. Boundaries & Perimeters -- improving the perimeter or edge of the campus promotes the perception of quality associated with higher education.
- D. Signage, Gateways & Way-Finding -- improve visual clues with the use of color, typology and/ or symbols rather than just arrows and texts.

E. Plazas & Open Space -- provide recognizable outdoor spaces that reflects the character and location of the district and reinforced existing formal open space and connections.

F. Temporary Facilities -- accommodate enough space to meet the needs of the projects anticipated in the Master Plan.

G. Transportation, Access, and Parking -- increase campus parking by constructing a new parking structure and establish new pedestrian circulation routes and other forms of transportation that reinforce existing walkways and improve accessibility throughout the campus and facilities.

H. Architectural Design Guidelines -- reinforce an overall campus hierarchy of material and form reflecting the high-tech image of the campus and design new structures with flexibility to accommodate changing technology over time.

IV. THE DISTRICTS

The guidelines for each district explore the **objectives, landmarks, open space, and circulation** as opportunities or constraints when developing within the district. While each of the Districts focuses on a specific piece of the campus, some common themes of the 15 Districts are summarized below.

Objectives

- Enhance the public image and front door of the campus.
- Replace or paint the existing turquoise fascia to match the overall building color and to create a consistent theme that can be replicated in other districts across campus.
- Complement the existing building material by using brick, concrete, metal, and glass.
- Improve connectivity to the rest of the campus.

Landmarks

- Reinforce a new public image and landmark.
- Develop gateway features at edges of district providing enhanced entries to campus core.
- Improve way-finding.

Open Space

- Create different type of open space based on existing building layout and function
- Reinforced existing formal open spaces and plazas
- Develop internal courtyards to encourage students activity and use

Circulation

- Enhance pedestrian circulation and way-finding by creating new entry gateways
- Increase public parking and better way-finding from each pedestrian entry gateway
- Emphasize entry gateway to the center of campus through landscape design
- Enhanced pathways to improve orientation and way finding to student service facilities

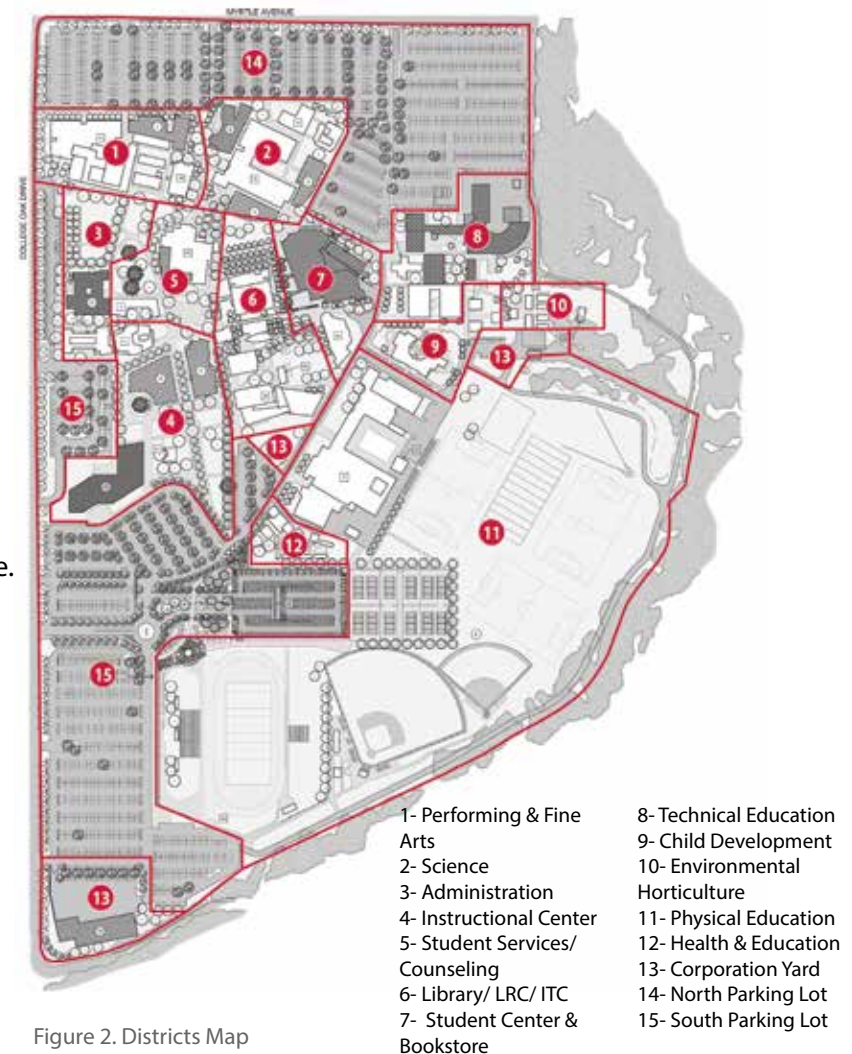


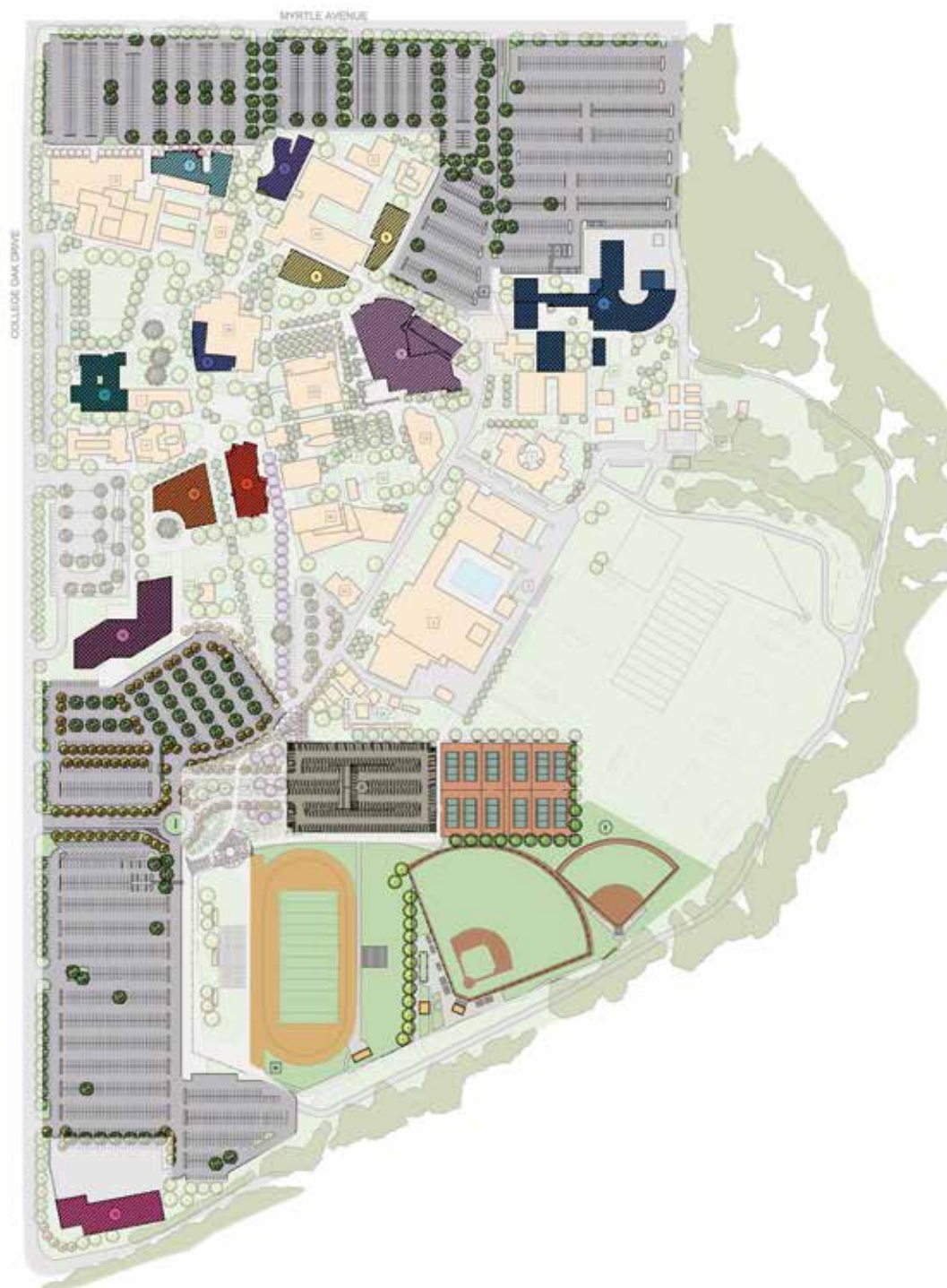
Figure 2. Districts Map

V. PROJECTS IN DETAIL

Development of each projects considering its location and opportunities and constraints. Table1 shows the summary of planned projects and the stages of development with mapped projects in Figure 3.

Table 1. Summary of Projects

Label	Identified Project	Size	Stage of Development	Notes
1	Student Center Modernization & Expansion	34,701 ASF	Complete	
2	Life Science & Fine Arts Modernization	8,074 GSF	Complete	
3	Transportation, Access & Parking Improvements / Parking Structure		Garage Complete Parking Lots ??	
7	New Culinary Building	13,600 ASF	Complete	
8	Student Service Addition	5,500 ASF	Complete	
5	Liberal Arts Building Modernization	26,789 ASF	Under construction	STEM Building
6	Physical Education / Athletic Fields Improvements		Complete??	
4	Technical Education Modernization	42,469 GSF	FPP	
12	New Instruction Space I	25,650 ASF	STEM Building	
13	Relocated Corporation Yard		Future	Not listed on LRCNP or Inventory spreadsheet
10	Davies Hall Modernization	42,001 ASF	IPP	
11	Administration Building Modernization	17,527 ASF	Future	
9	New Instruction Space II	24,000 ASF	Future??	Not listed on LRCNP



SYMBOL LEGEND



SYMBOL	PROJECTS	ASSIGNABLE AREA	APPROX. GROSS SQUARE FOOTAGE (+/- 75% EFF.)	OCCUPY DATE
[Orange Box]	EXISTING BUILDINGS:			
[Purple Box]	STUDENT CENTER MODERNIZATION AND EXPANSION	34,700 SF	49,800 SF	2012
[Dark Purple Box]	LIFE SCIENCE AND FINE ARTS PORTABLES MODERNIZATION	8,074 SF	11,580 SF	2012
[Grey Box]	NEW PARKING STRUCTURE	1,000 STALLS		2013
[Light Blue Box]	CULINARY ARTS BUILDING	13,800 SF	16,450 SF	2014
[Pink Box]	STUDENT SERVICES ADDITION	5,500 SF	7,900 SF	2014
[Light Green Box]	P.E./ATHLETIC FIELDS IMPROVEMENTS			2014
[Red Box]	ACADEMIC BUILDING MODERNIZATION		26,789 SF	2016
[Blue Box]	TECHNICAL EDUCATION BUILDING MODERNIZATION		42,409 SF	2017
[Orange Box]	NEW INSTRUCTIONAL SPACE 1	25,650 SF	36,650 SF	2017
[Dark Blue Box]	CORPORATION YARD (RELOCATED)			2018
[Purple Box]	DAVIES HALL MODERNIZATION		42,000 SF	2018
[Green Box]	ADMINISTRATION BUILDING MODERNIZATION		17,527 SF	2019
[Yellow Box]	NEW INSTRUCTIONAL SPACE 2	24,000 SF	34,300 SF	2020

BUILDING LEGEND

EXISTING BUILDINGS	EXISTING BUILDINGS	FUTURE IMPROVEMENTS
1 ADMINISTRATION	22 DAVIES HALL	1 STUDENT CENTER MODERNIZATION AND EXPANSION
2 INSTRUCTIONAL TECH. CTR.	23 BOILER BLDG	2 LIFE SCIENCE AND FINE ARTS PORTABLE MODERNIZATION
3 LIBERAL ARTS	24 BOOK STORE	3 NEW PARKING STRUCTURE
4 RAFF HALL	25 LIBRARY	4 TECHNICAL EDUCATION BLDG MODERNIZATION
5 PHYSICAL EDUCATION	26 CHILDRENS CENTER	5 LIBERAL ARTS BLDG MODERNIZATION
6 TECH. VOCATION	27 CHILD CARE PORTABLES	6 P.E. / ATHLETIC FIELDS IMPROVEMENTS
7 TECH. VOC. PORTABLE	28 HEALTH AND EDUCATION	7 CULINARY ARTS BLDG
8 CHILD DEVELOPMENT CENTER	29 FUNERAL SERVICE PORTABLE	8 STUDENT SERVICES ADDITION
9 ADAPTIVE P.E.	30 STADIUM	9 NEW INSTRUCTIONAL SPACE 1
10 SCIENCE	31 RANCH HOUSE	10 DAVIES HALL MODERNIZATION
11 SCIENCE PORTABLE	32 CENTREX	11 ADMINISTRATION BLDG MODERNIZATION
12 SCIENCE PORTABLE	33 FINE ART TEMPORARY	12 NEW INSTRUCTIONAL SPACE 2
13 SCIENCE OFFICES	34 ENVIRONMENTAL RES.	13 CORPORATION YARD (RELOCATE)
14 SCIENCE PORTABLE	35 LEARNING RESOURCE CENTER	
15 FINE ARTS		
16 FINE ARTS PORTABLE		
17 FINE ARTS PORTABLE		
18 FINE ARTS OFFICES		
19 HOWARD HALL		
20 STUDENT SERVICES		
21 CAFETERIA		

Project: **Life Science & Fine Arts Portables Modernization**

Size: 8,074

Occupy: Jan-13 | 2012

Project: **Culinary Arts Building**

Size: 13,600

Occupy: Dec-14 | 2014

Project: **Student Service Addition**

Size: 5,500

Occupy: Jun-15 | 2014

Project: **Administration Building Modernization**

Size: 17,527

Occupy: Sep-26 | 2018 | 2026-2027 (FUSION2)

Project: **Davies Hall Modernization**

Size: 40,001 / 40,100

Occupy: Nov-24 | 2018 | 2024-2025 (FUSION2)

Project: **Corp Yard Relocation**

Size: 18,528

Occupy: May-23 | 2018

Project: **New Instructional Space 2**

Size: 24,000

Occupy: ??

Project: **Technical Educ Building Modernization**

Size: 60,552

Occupy: Nov-22 | 2017 | 2022-23 (FUSION2)

Project: **Student Center Modernization & Expansion**

Size: 34,701

Occupy: Feb-13 | 2012

Project: **STEM Building**

Size: 38,000

Occupy: 2020

Project: **New Parking Structure**

Size: 1,725 Stalls

Occupy: Mar-13 | 2013

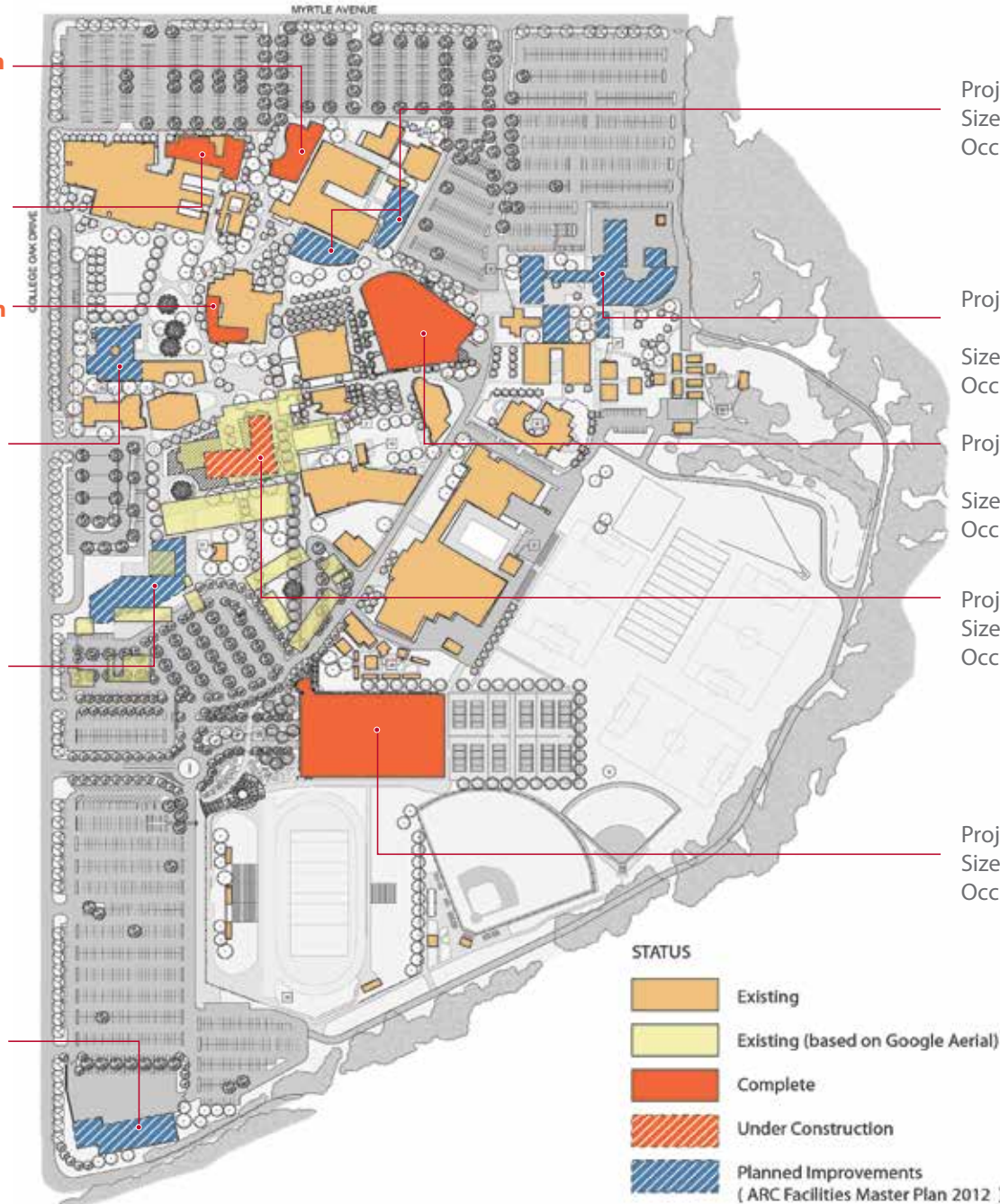


Figure 4. Planned Projects Status

ARC FCI Report 2018

- | | |
|----------------------------|-----------------------------|
| 1 Administration | 24 Bookstore |
| 2 Instructional Tech. Ctr. | 25 Library |
| 3 Liberal Art | 26 Children Center |
| 4 Raef Hall | 27 Child Care Portables |
| 5 Physical Education | 28 Health & Education |
| 6 Technical Vocation | 29 Funeral Service Portable |
| 7 Tec. Voc. Portable | 30 Stadium |
| 8 Child Development Ctr. | 31 Ranch House |
| 9 Adaptive Pe. | 32 Centrex |
| 10 Science | 33 Warehouse 3 |
| 12 Science Portable 12 | 34 Warehouse 1 |
| 13 Science Offices | 35 Warehouse 2 |
| 15 Fine Arts | 36 Shop 1 |
| 16 Life Science | 37 Environment Res. |
| 18 Fine Arts Offices | 38 Campus Police |
| 19 Howard Hall | 39 Parking Structure |
| 20 Student Services | 41 Grounds Shop |
| 21 Student Center | 42 Swing Space Portables |
| 22 Davies Hall | 46 Learning Resource Center |
| 23 Boiler Building | 48 Concession Stand |

The Facilities Conditions Index (FCI) assesses the physical condition of the structures on campus. The measure, conveyed in a percentage, is used to provide a benchmark to compare the relative condition of the campus buildings as a group. The measure is calculated by dividing the deferred maintenance cost of a building by the current replacement cost, resulting in a percentage score. The lower the FCI percentage the better condition the building. Thus, those buildings in green on the adjacent map, generally the new and rehabilitated buildings have a score of 0%. Those in dark orange or red are reaching, or have exceeded their replacement cost in the amount of deferred maintenance. Or, those buildings in red, would cost more to rehabilitate than to replace.

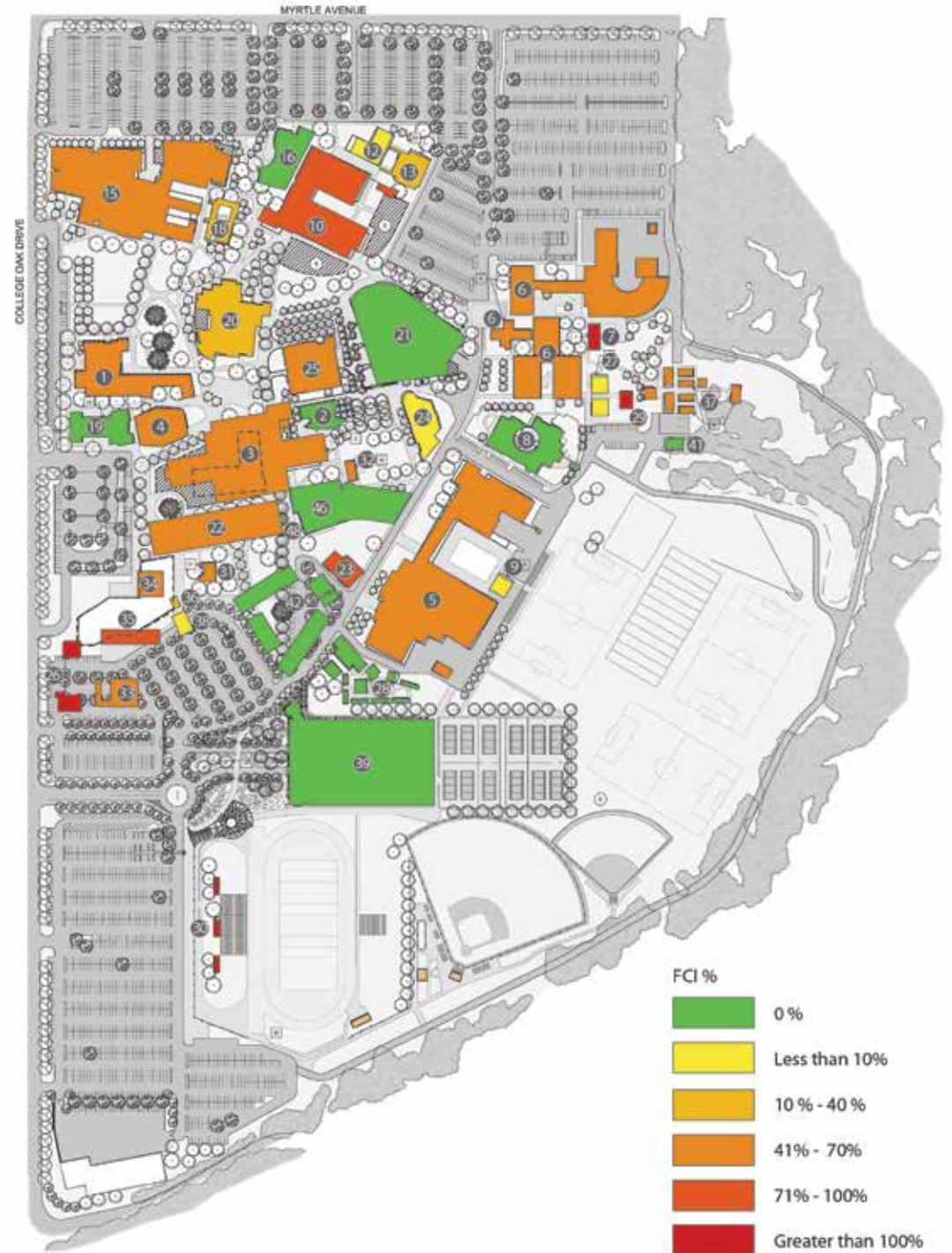


Figure 5. FCI Report Map

ARC Long Range Capital Needs Plan (LRCNP)

The LRCNP identifies and estimates the projects size, type, location and cost of construction for campus projects, remodel or modernization. The Los Rios District maintain the LRCNP for the ARC campus, as well as the other campuses in the District.

Status (now)	Campus Project
Complete	ARC - Land and Site Development for New Center
Complete	ARC - Faculty Offices Building
	ARC - Allied Health Expansion
Complete	ARC - Learning Resource Center Expansion
	ARC - Allied Health Modernization
Complete	ARC - Fine Arts Modernization and Fly Tower Expansion
Complete	ARC - Fine Arts Recording Studio, Scene Shop and Lobby Expansion
Complete	ARC - Swing Space Portables
Complete	ARC - Physical Education Space Addition 1 and 2
Complete	ARC - TAP - McClellan Parking Improvements
Complete	ARC - Fine Arts Instructional Space Expansion
Complete	ARC - TAP - Circulation and Parking at Gym
Complete	ARC - Library Expansion
Complete	ARC - Physical Education Phase 3 (pool)
Complete	ARC - Student Athlete Support Area
Complete	ARC - Student Center Modernization and Expansion
Complete	ARC - Infrastructure - ARC Student Center Expansion
Complete	ARC - Life Science and Fine Arts Portables Modernization
Complete	ARC - Infrastructure - Life Science Portables Mod
Complete	ARC - Infrastructure Master Planning
Complete	ARC - Fine Arts - Art Work and Fountain at Entry
Complete	ARC - Fine Arts - Repair Stucco Crack Over Entry
Complete	ARC - New Parking Structure
Complete	ARC - Fine Arts - Sound Wall and Sound Doors
Complete	ARC - Culinary Arts Building

Status (now)	Campus Project
Complete	ARC - Infrastructure - Hydraulics Tie between Life Science and Student Center
Complete	ARC - Fine Arts/Theater Plaza
Complete	ARC - Student Services Addition
Complete	ARC - Security Improvement Project - Phase 1
Complete	ARC - Infrastructure - New Water Well
Complete	ARC - P.E. / Athletic Fields Improvements
Complete	ARC - Paint Exterior of Library
STEM site	ARC - Liberal Arts Building Modernization
Complete	ARC - Public Arts at Student Services
Sep-18	ARC - Monument Sign at NW Corner
Complete?	ARC - Infrastructure - Main Storm Drain Extension Around Stadium
STEM site	ARC - Liberal Arts Replacement Infrastructure
Complete? Jun-18	ARC - Infrastructure - New Well Equipment Installation
Complete	ARC - Liberal Arts Mod - Swing Space I Modification
Complete	ARC - Liberal Arts Mod - Swing Space II (New)
Mar-18	ARC - Infrastructure - South Well Decommission
Sep-18	ARC - Campus Wide Electrical Improvement
Oct-18	ARC - Replace Boilers
Complete	ARC - Pool Lighting - Prop 39
Complete	ARC - Stadium Scoreboard
Nov-18	ARC - Infrastructure - Hydronic Modifications At Multiple Buildings
Jan-19	ARC - Library Cell Tower
Jul-20	ARC - Infrastructure Stadium Lighting Upgrade

Status (now)	Campus Project
Dec-19	ARC - Central Utility Plant Upgrade - Chiller
Mar-19	ARC - TAP Improvements - North Parking Lots
Jun-21	ARC - Testing 2018-06-11
Mar-19	ARC - Campus Master Plan Update 2018
May-20	ARC - Health Center Relocation
Nov-22	ARC - Technical Educ Building Modernization
May-23	ARC - Corp Yard Relocation
Nov-24	ARC - Davies Hall Modernization
Sep-26	ARC - Administration Building Modernization
Nov-27	ARC - New Instructional Space 1

ARC Building Inventory -- Age of Buildings

Table 2. Aged Buildings - Needed Improvement Based on Age

Bldg. No.	Bldg. Name	Abbrv.	Const. Year	Age	GSF	Notes
31	Ranch House	RH	1936	82	1,730	N/A
1	Administration	Adm	1958	60	25,141	Future
3	Liberal Arts	LA	1958	60	42,188	Active
5	Physical Education	PE	1958	60	91,791	Recent Expansions
6	Technical Vocation	TV	1958	60	75,243	FPP
10	Science	LS	1958	60	39,213	TBD
15	Fine Arts	FA	1958	60	86,744	Recent Expansions
4	Rae Hall	RH	1963	55	9,654	TBD
30	Stadium	S	1963	55	4,129	TBD
7	Tech. Voc. Portable	TVP	1967	51	2,590	FPP
22	Davies Hall	DH	1967	51	85,556	IPP
32	Centrex	C	1967	51	1,360	N/A

The building inventory has been organized based on the age of the structure, with the oldest building at the top of the list. Table 2 shows the buildings in need of improvement based on their age. The projects identified are in various states of progress from active to planned for future improvements. Current active projects include:

- Liberal Arts (STEM) is under construction;
- Technical Vocation and Technical Vocation Portable are in Final Project Proposal stage; and
- Davies Hall is in Initial Project Proposal stage; and

New projects constructed after 2012 including Life Science, Student Center, Parking Structure, Concession/ Restroom, Press Box/ Ticket, Field/ Soccer/ Football St, and Computer/ Math Classrooms are now at the bottom of the inventory list.

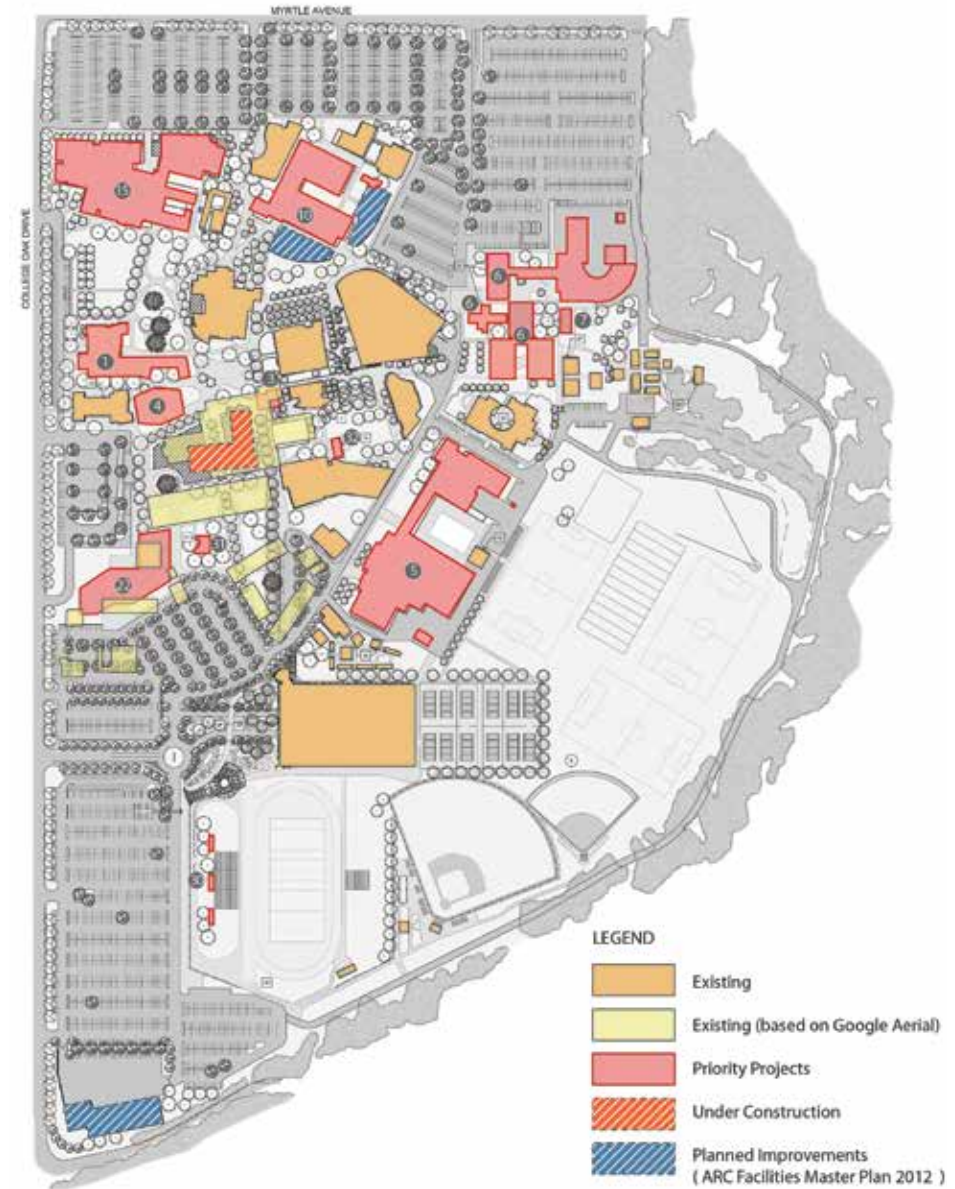


Figure 6. ARC Building Inventory

Utility Master Plan American River College 2012

I. SUMMARY

The Utility Master Plan is intended to support future campus growth so that appropriate utility infrastructure is provided to serve the Facility Master Plan. The report analyzes existing utilities, replacement of aging utilities, and expansion of utilities to serve future growth.

II. PURPOSE & OBJECTIVES

This Utility Master Plan provides a framework that allows the campus to address utility improvements in the context of broader campus needs. It identifies necessary utility infrastructure improvements required to support the campus Facilities Master Plan and addresses existing campus issues. These improvements can generally be divided into the three categories below:

1. Correction of existing deficient utilities.
2. Expansion of utilities to serve future growth.
3. Replacement of aging utilities.

The report provides an overview and analysis of the following utility systems: Water, sanitary sewer, storm drainage, hot and chilled water (hydronics), natural gas, compressed air, electrical, and communications. It also identifies priorities, preliminary costs, and phasing of the identified improvements in subsequent sections of the UMP.

III. UTILITY MASTER PLAN PROCESS

The plan was prepared using a process that resulted in identification of the most feasible projects to support the growth of the campus. The process included several steps including:

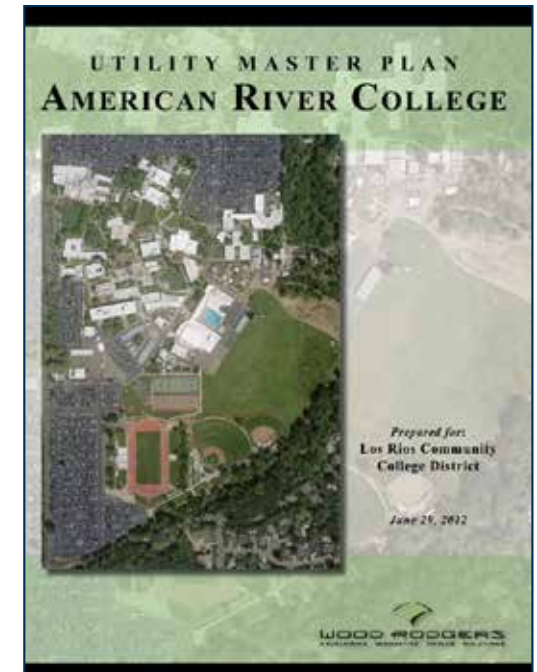


Figure 7. Utility Master Plan 2012

PROCESS

The consultant team was selected by the District to provide analysis for each utility.

Identification of existing utility infrastructure was determined by review of as-built drawings, site visits, infrastructure plans, and discussion with campus and District staff.

Demands were analyzed based on existing and proposed facilities. For some utilities, additional phasing analysis was provided based on build out per the Facilities Master Plan.

The team analyzed the utilities to understand function, current deficiencies, and proposed needs.

Cost estimates were prepared based on the most likely alternative for proposed utility improvements.

IV. Analysis

1. Water



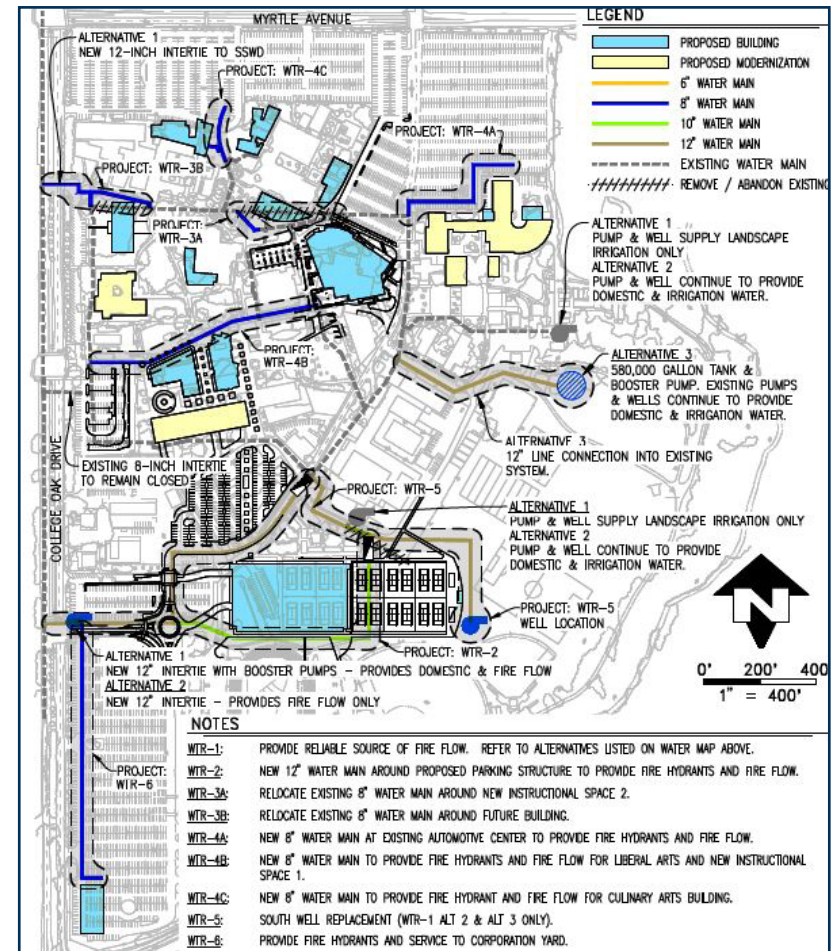
Existing Domestic Water Infrastructure

Water is provided by two on-site wells, each with a hydro-pneumatic tank, a distributed through a series of 6", 8" and 12" water mains.



Existing & Proposed Fire Hydrant Layout

Existing campus fire hydrants serve the campus and possible locations of future fire hydrants that are anticipated to serve future development have been identified. Future hydrant locations include: 1) on the east corner of STEM Building; 2) on the north of Technical Education Building; 3) two new fire hydrants on the south corner of the campus where close to the Corp Yard Relocation site.

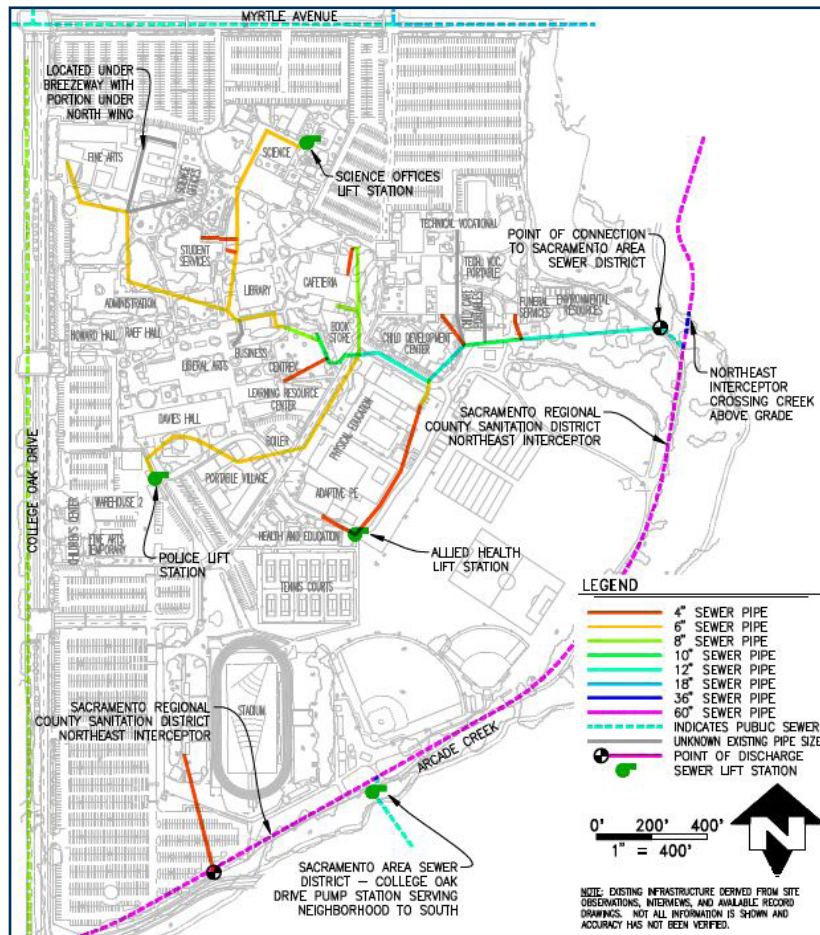


Proposed Domestic Water Infrastructure

As the campus grows, water demand will also increase. The plan anticipates that by the year 2020, the campus will expand by approximately 118,560 gross square feet. Therefore, new water infrastructure will be needed meet the needs of larger campus. Three alternatives have been identified to meet anticipated demand:

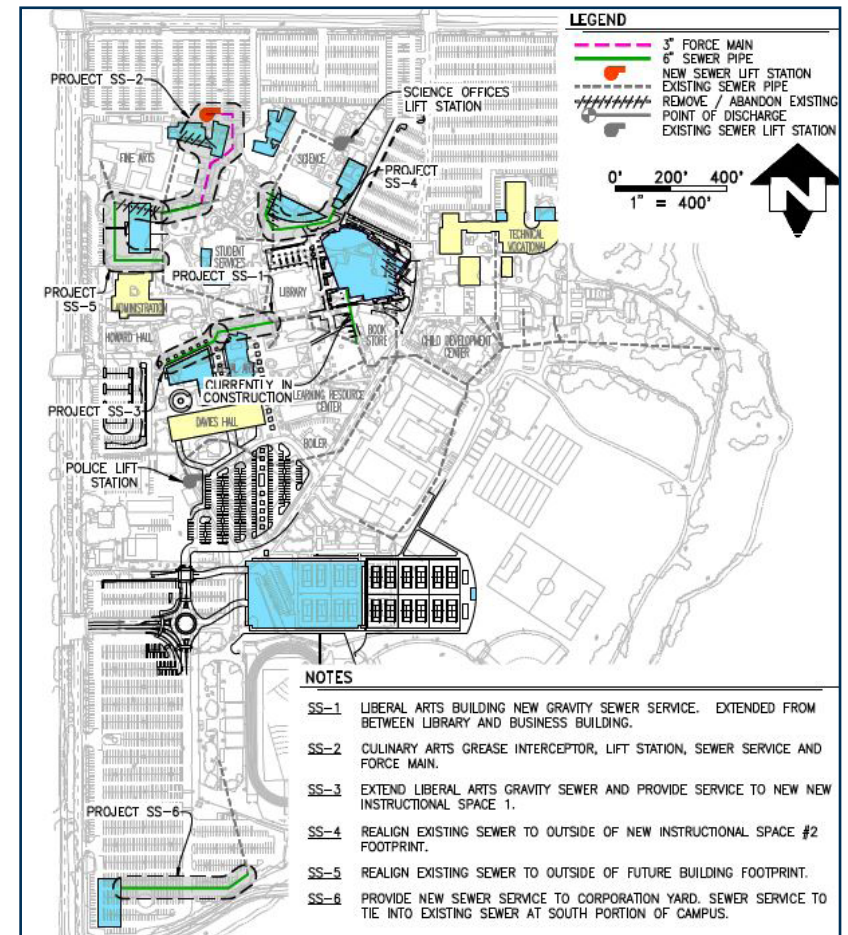
1. SSWD Provides 100% of Domestic Water Use
2. SSWD Provides Supplemental Domestic Water
3. College District Owned Water Tank & Booster Pumps

2. Sanitary Sewer



Existing Sanitary Sewer Infrastructure

The campus is served by two points for sanitary sewer -- the east side of campus and south west of the stadium, connection to the Sacramento Area Sewer District (SASD). These two primary points of connection serve most of the campus. The main branch line adjacent to the child Development Center extends to the campus core where it branches out into eight, six, and four-inch pipes to serve the remainder of the campus. The majority of campus is served via gravity piping, however there are three sewer lift stations that serve central portions of the campus.



Proposed Sanitary Sewer Infrastructure

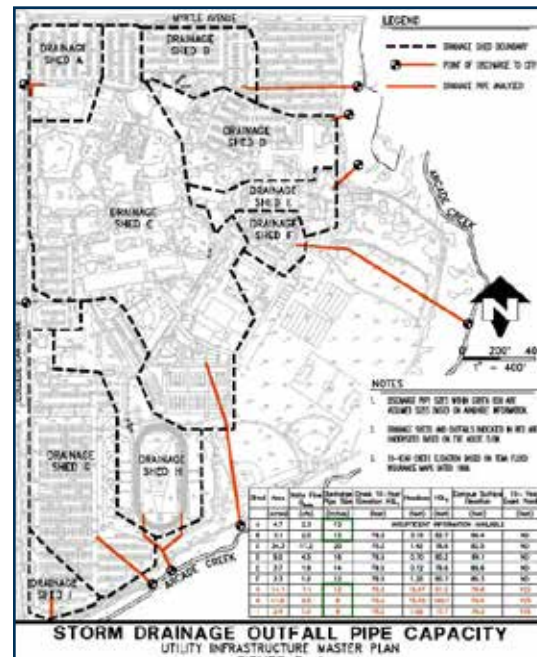
Future infrastructure is primarily proposed to improve existing infrastructure and plan for future campus built-out.

- New sewer to extend from along north side of proposed Liberal Arts building.
- The proposed Culinary Arts building will require demolition of the existing culinary arts grease interceptor and propose a new grease interceptor, sewer lift station, and associated force main.
- The service for the New Instructional Space #2 should be realigned with the future building footprint and reconnected.
- Provide new sewer service to Corporation Yard to connect the existing sewer at south portion of campus.

3. Storm Drainage



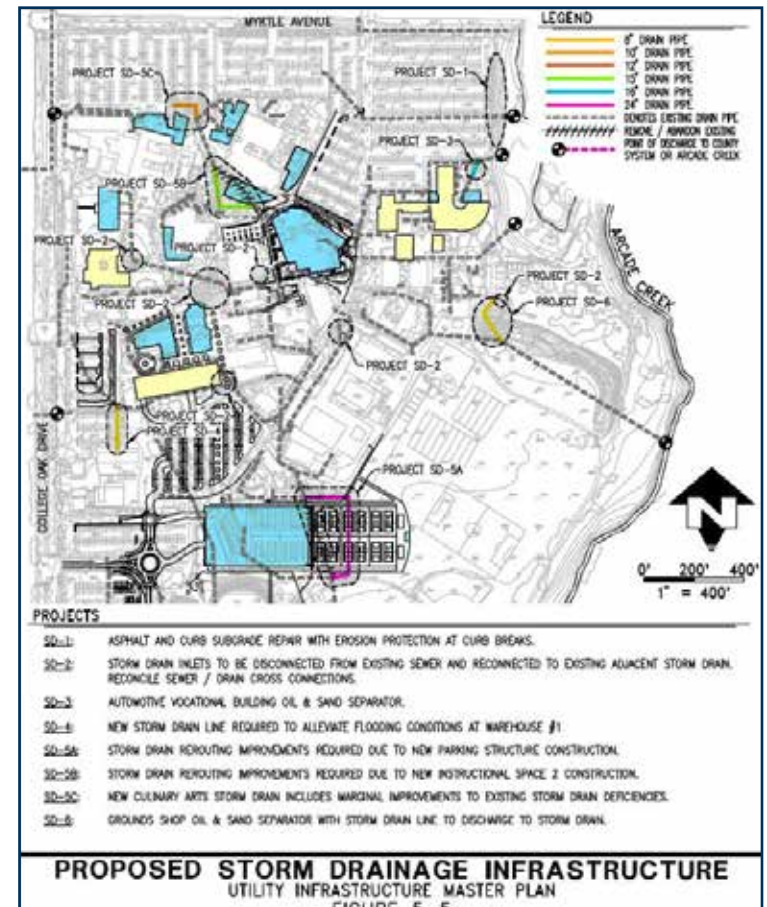
Existing Storm Drainage Infrastructure



Storm Drainage Outfall Pipe Capacity

Flooding was identified as a problem on campus near Warehouse #2 and deficiencies were identified near the north parking lot between the proposed Science Expansion and Culinary Arts Building by the Infrastructure Master Plan.

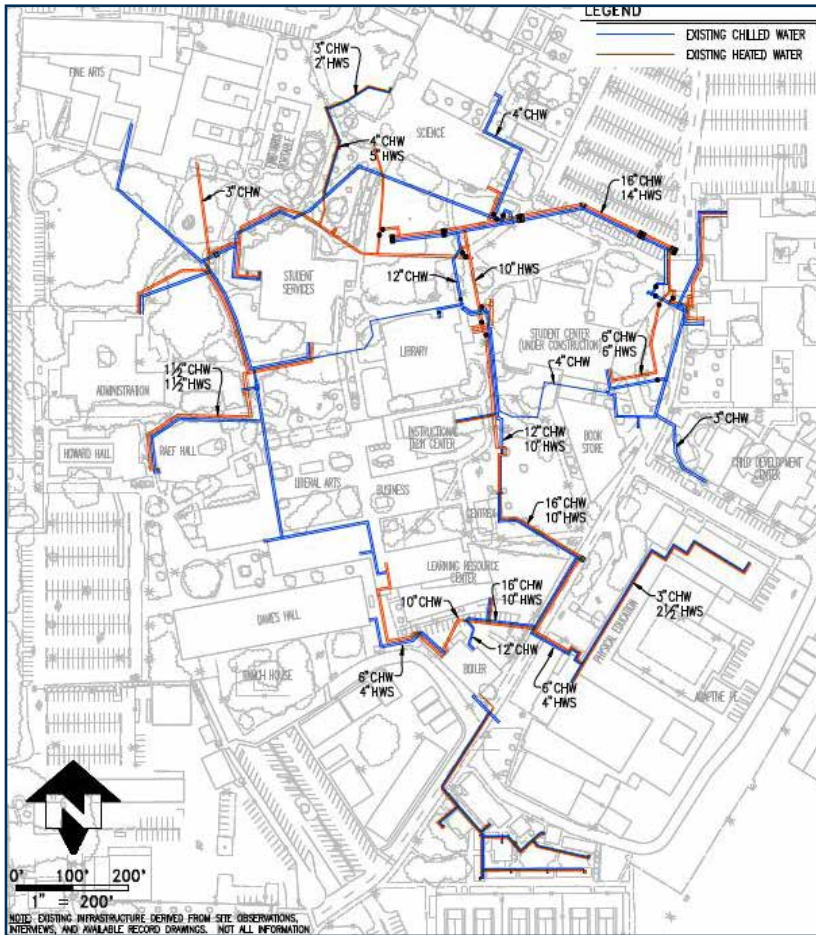
There are twelve primary drainage sheds on campus. Two sheds, the northeast parking lot and the sport fields sheet flow directly to Arcade Creek. Three drainage sheds discharge to roadside ditches, two along College Oak Drive and one into Winding Way. Seven drainage sheds discharge directly into Arcade Creek through campus owned and maintained drain structures and pipes.



Proposed Storm Drainage Infrastructure

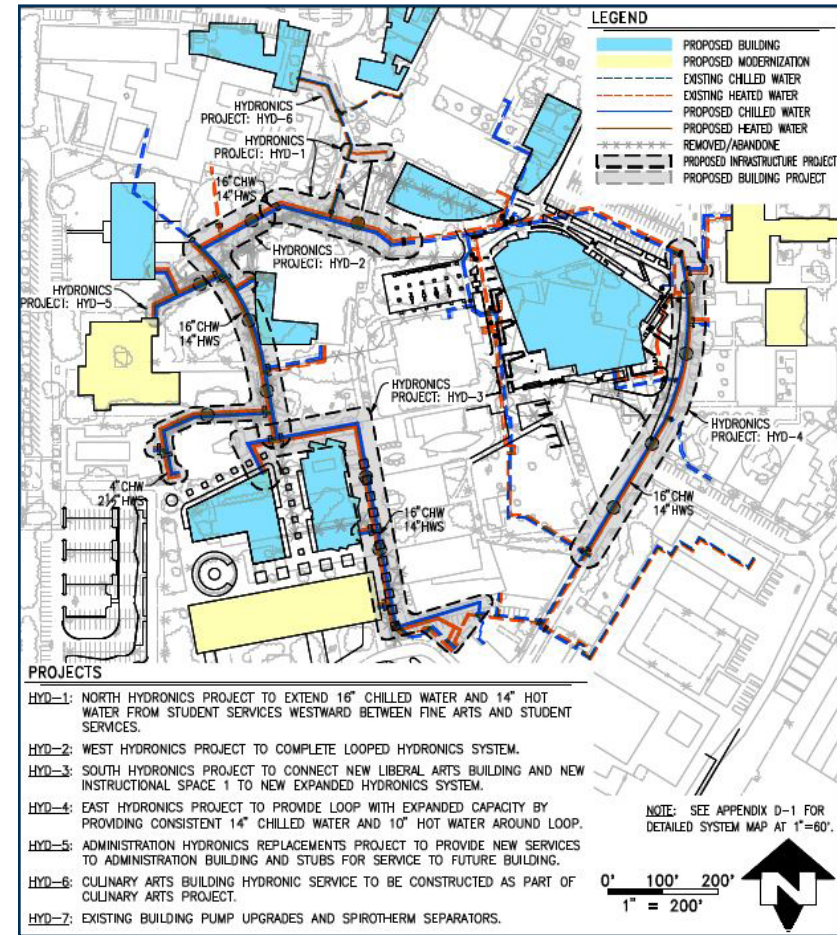
- Asphalt and curb sub-grade repair with erosion protection at curb breaks.
- Storm drain inlets to be disconnected from existing sewer and reconnected to existing adjacent storm drain.
- Automotive vocational building oil & sand separator.
- New storm drain line required to alleviate flooding conditions at Warehouse #2.
- Storm drain rerouting improvements according to new footprint for the Parking Structure.
- New Culinary Arts storm drain includes marginal improvements to existing storm drain deficiencies.
- Grounds shop oil & sand separator with drain line to discharge to storm drain.

4. Hydronics



Existing Campus Hydronics Infrastructure

The existing chilled and heating water systems are provided from a central utility plant, known as the boiler, immediately south of the Learning Resource Center. The central plant has three 400-ton water cooled chillers with three cooling towers on the roof of the central plant and three gas fired boilers. It currently serves 14 buildings with an additional 8 buildings planned for future expansion. Although the central plant meets the existing cooling and heating requirements of the campus, it is suspected this is due to the diverse scheduling of loads on campus during peak climatic conditions.

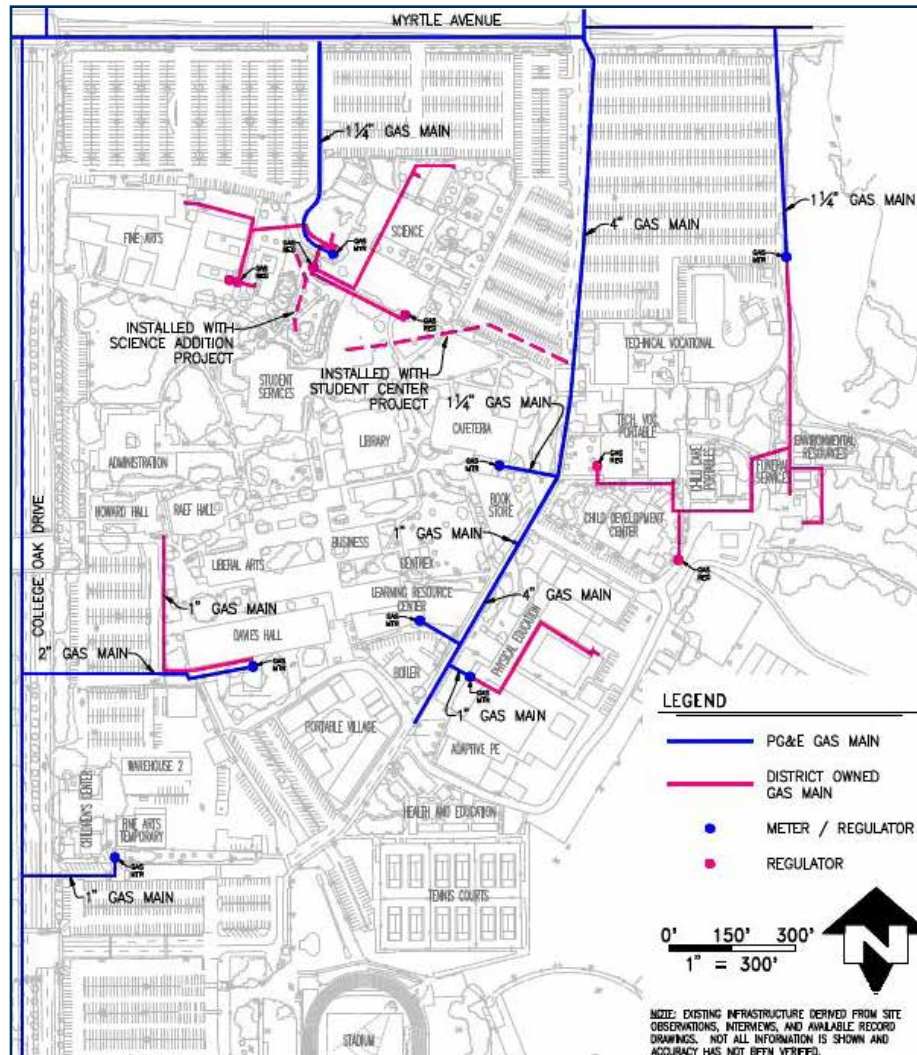


Proposed Campus Hydronics Infrastructure

The proposed distribution improvements will abandon in-place the existing chilled and heating water transite piping and replace with a new 16-inch chilled water supply/return and 14-inch heating water supply/return hydronic piping loop from the central plant.

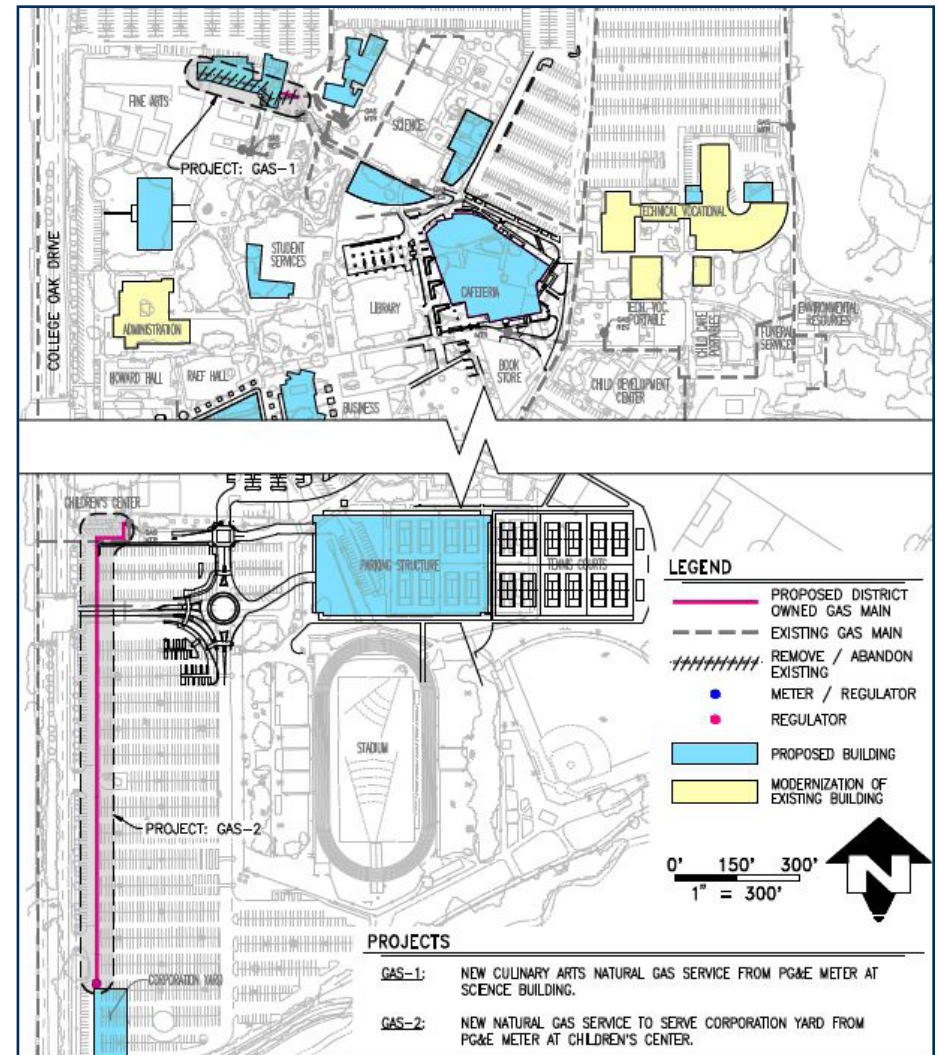
- North: extend chilled and hot water from Student Services westward between Fine Arts and Student Services.
- West: complete looped hydronics system.
- South: connect new Liberal Arts building and New Instructional Space 2 to system.
- East: provide loop with expanded capacity with new piping around loop.
- Administration: provide new services to administration building and stubs for future building.
- Culinary Arts Building: service constructed as part of building project.

5. Natural Gas



Existing Natural Gas Infrastructure

Natural Gas is supplied by Pacific Gas & Electric (PG&E) through five points of connection on the north and west of campus. The campus has 8 gas meters serving multiple areas and buildings on campus. The District owned gas distribution system is a combination of elevated pressure with pressure regulators at each building served, and a standard delivery pressure 7-inch water column.

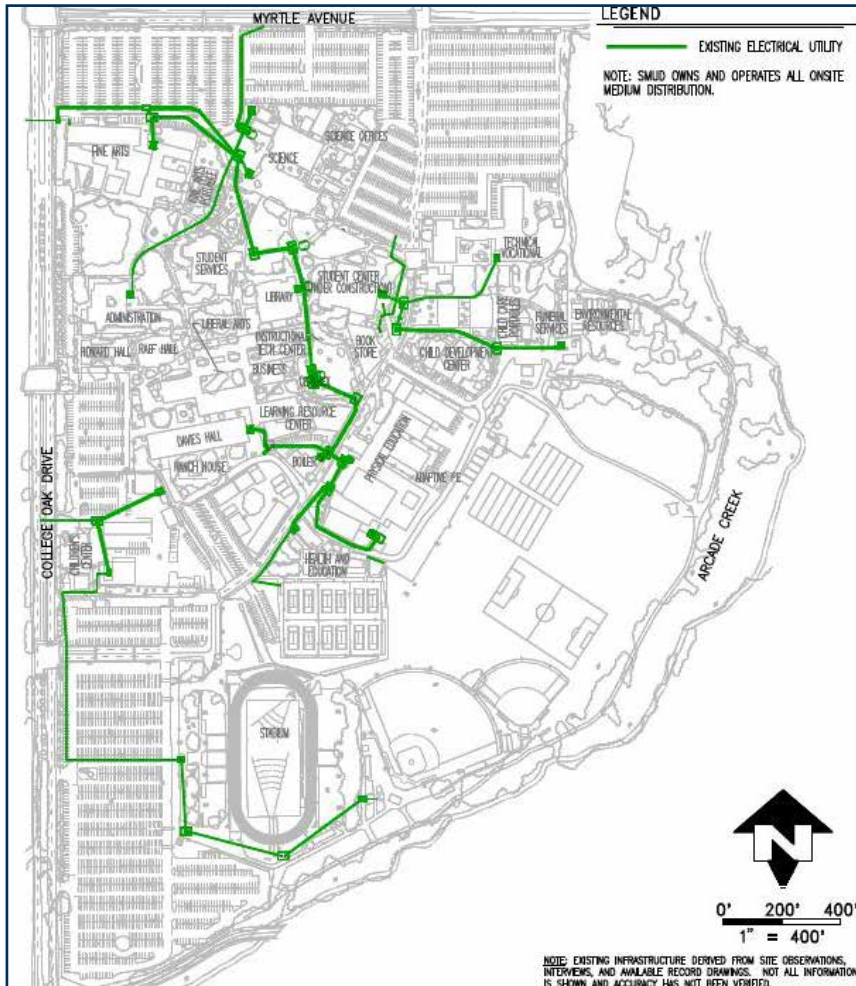


Proposed Natural Gas Infrastructure

There are two planned improvements to the natural gas distribution system on-site:

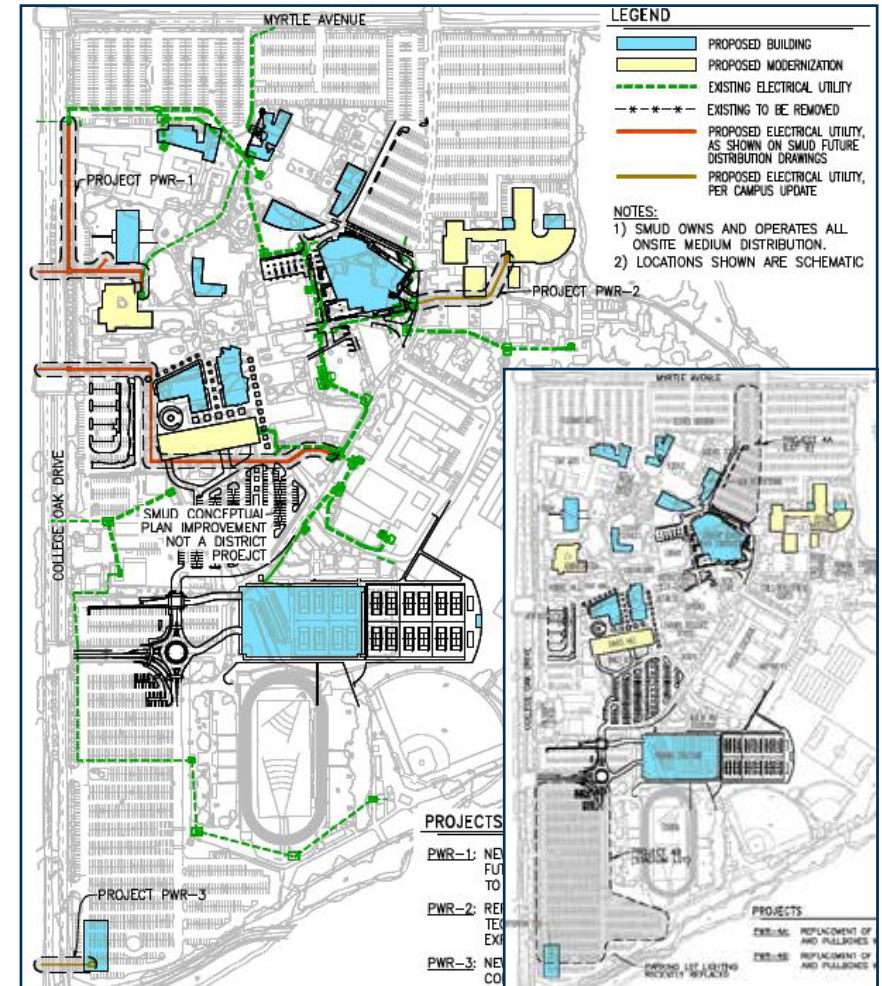
- The new Culinary Arts Building will require natural gas service. The new service will intersect the existing campus owned gas main from the PG&E meter at the Science Building expansion.
- New gas service will be provided to the existing southwest parking lot to

6. Electrical



Existing Electrical Infrastructure

The principle electrical distribution system on the campus is Sacramento Municipal Utility (SMUD). The campus currently has 3 main feeds from SMUD's overhead distribution system. The feeds are located on the north section of College Oak Drive, south section of College Oak Drive and the north side of campus at Myrtle Avenue. The main primary feeders on campus run underground from north to south on the campus through a series of manholes, pull boxes, and above grade switches. Individual buildings are served from transformers located adjacent to the building served.

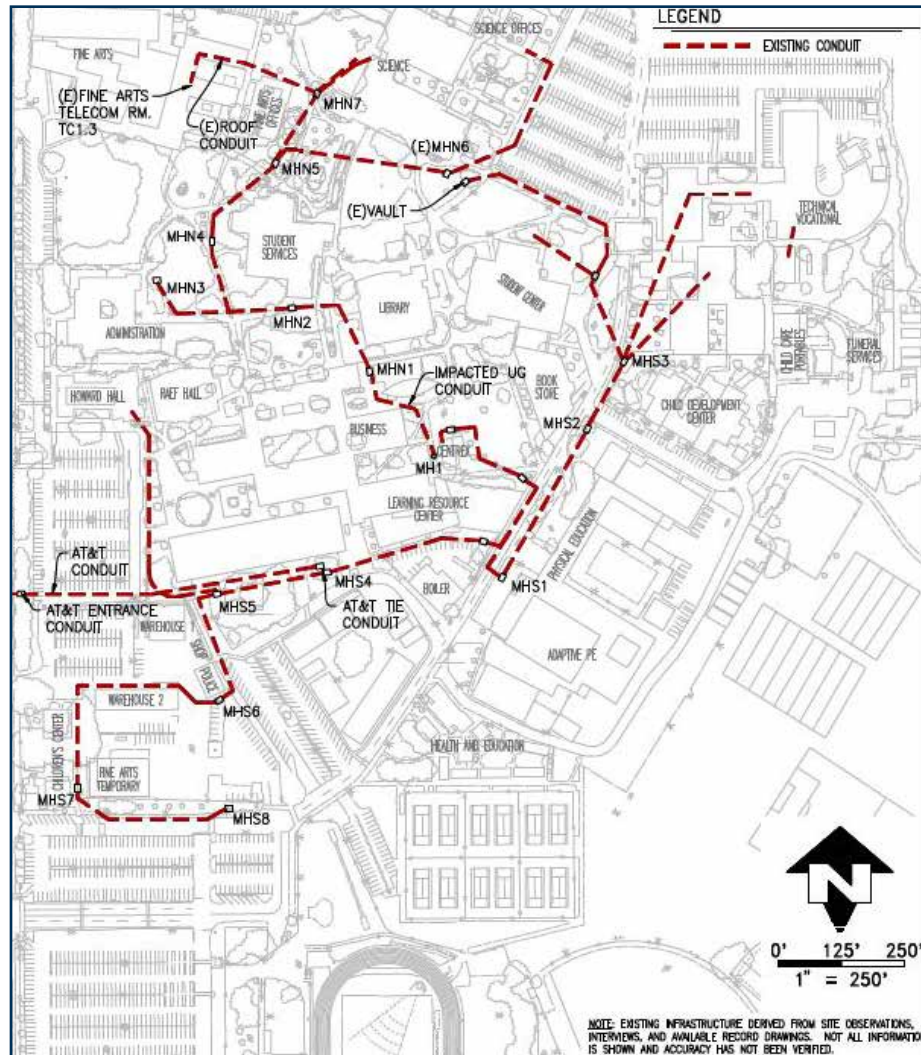


Proposed Electrical Infrastructure

SMUD proposed a central utility plant feeder project on their future planning distribution plans. It will be installed from an existing pole located near Orange Grove Avenue and College Oak Drive and will provide a new loop feed to the transformer located near the central utility plant. Other projects include:

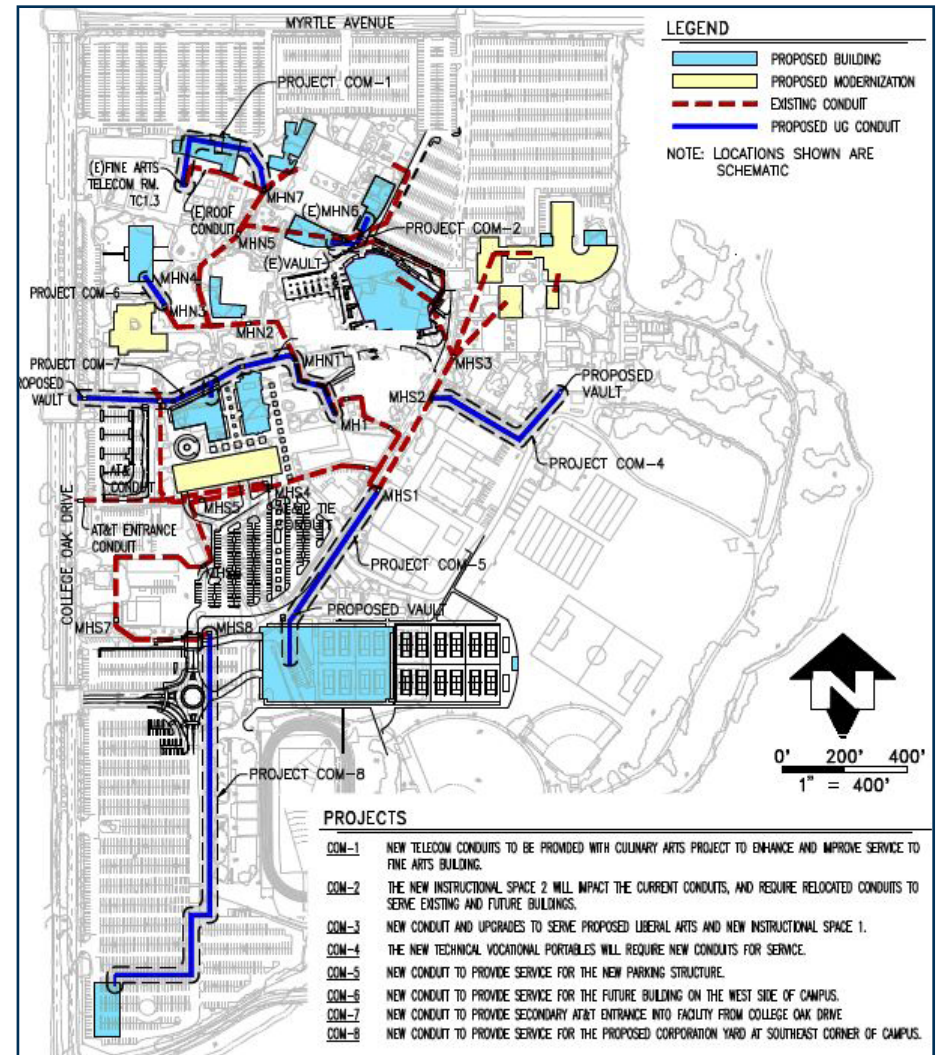
- New feed from SMUD to serve Administration and future building.
- Replacement of existing feeder that serves the Technical Vocational Building.
- New SMUD primary feed service with transformer at Corporation Yard.
- Replace existing light systems of parking lot and Stadium.

7. Communication Conduits



Existing Communication Conduits

The campus main point of entry for communications is located in the Centrex building near the middle of campus. The campus fiber and telephone copper terminate in the Centrex facility. The overall conduit condition is good. Some existing conduit will require upgrade due to conduit impaction and planned buildings.



Proposed Communication Conduits

- New conduit to provide service for the future buildings of campus.
- The New Instructional Space 2 will require new and relocated conduits to serve existing and future buildings.
- New telecom conduits to be provided with Culinary Arts projects to enhance and improve service to Fine Arts buildings.
- New conduit and upgrades are necessary to serve proposed Liberal Arts and New Instructional Space 1.

8. Compressed Air

Existing Compressed Air Facilities

Compressed air is distributed on site from an air compressor located at the central plant. This compressed air is used for pneumatic HVAC controls within the buildings. Table 1 shows buildings are currently being served by this campus system.

Table1. Buildings on Centralized Compressed Air System

Building No.	Building Name
1	Administration
3	Liberal Arts
5	Physical Education
6	Technical Vocation
20	Student Services
22	Davies Hall

Proposed Compressed Air Facilities

The campus wide compressed air system is being slowly phased out. Individual air compressors are being provided at each building requiring pneumatic air for HVAC controls. Ultimately, all building controls will be converted to electronic DDC controls.

9. General Recommendations

Concurrent with Buildings -- facilitate the planning and design of project utilities.

Standalone Projects -- ensure adequate functioning of utilities and continued acceptability as the campus expands.

V. Summary of Utility Projects

The following pages provide a summary of the infrastructure projects identified by the Infrastructure Master Plan in support of the Campus Facilities Plan. Several of the project identified in 2012 have been completed but this list will serve as a checklist for identifying those projects that are still in need, and frame the discussion of those projects that may be necessary to support future development.

1. Water System

Project	Status	Notes	Verify
WTR-1: Provide reliable source of fire flow		3 alternatives ^[1]	<input type="checkbox"/>
WTR-2: New 12" water main around proposed parking structure to provide fire hydrants and fire flow	Complete?	Parking Structure Complete	<input type="checkbox"/>
WTR-3A: Relocate existing 8" water main around New Instructional Space 2	Not yet?	LRCNP doesn't have this building project	<input type="checkbox"/>
WTR-3B: Relocate existing 8" water main around Future Building	?	2012 Master Plan didn't have this bldg	<input type="checkbox"/>
WTR-4A: New 8" water main at existing automotive center to provide fire hydrants and fire flow	?		<input type="checkbox"/>
WTR-4B: New 8" water main to provide fire hydrants and fire flow for Liberal Arts and New Instructional Space 1	Complete?	STEM building site and under construction	<input type="checkbox"/>
WTR-4C: New 8" water main to provide fire hydrants and fire flow for Culinary Arts Building	Complete??	Building complete	<input type="checkbox"/>
WTR-5: South well replacement (WTR-1 Alternative 2 & Alternative 3 only)	Complete (Mar-18, LRCNP)		<input type="checkbox"/>
WTR-6: Provide fire hydrants and service to Corporation Yard	Not yet?	Building complete until 2023 (LRCNP)	<input type="checkbox"/>

[1] 3 Alternatives: 1. SSWD Provides 100% of Domestic Water Use; 2. SSWD Provides Supplemental Domestic Water; 3. College District Owned Water Tank & Booster Pumps

2. Sanitary Sewer System

Project	Status	Notes	Verify
SS-1: Liberal Arts Building new gravity sewer service. Extended from between Library and Business Building	Complete?	STEM building site and it's under construction	<input type="checkbox"/>
SS-2: Culinary Arts grease interceptor, lift station, sewer service and fore main	Complete?	Building complete	<input type="checkbox"/>
SS-3: Extend Liberal Arts gravity sewer and provide service to new New Instructional Space 1	Complete?	STEM building site and it's under construction	<input type="checkbox"/>
SS-4: Realign existing sewer to outside of New Instructional Space 2 footprint	Not yet?	LRCNP doesn't have this building project	<input type="checkbox"/>
SS-5: Realign existing sewer to outside of Future Building footprint	?	2012 Master Plan doesn't have this bldg	<input type="checkbox"/>
SS-6: Provide new sewer service to Corporation Yard. Sewer service to tie into existing sewer at south portion of campus	?		<input type="checkbox"/>

3. Storm Drainage System

Project	Status	Notes	Verify
SD-1: Asphalt and curb sub-grade repair with erosion protection at curb breaks	?		
SD-2: Storm drain inlets to be disconnected from existing sewer and reconnected to existing adjacent storm drain. Reconcile sewer / drain cross connection	Complete?		<input type="checkbox"/>
SD-3: Automotive Vocational Building oil & sand separator	Not yet?		<input type="checkbox"/>
SD-4: New storm drain line required to alleviate flooding conditions at Warehouse #1	Complete?		<input type="checkbox"/>
SD-5A: Storm drain rerouting improvements required due to New Parking Structure construction	Complete?	Parking Structure complete	<input type="checkbox"/>
SD-5B: Storm drain rerouting improvements required due to New Instructional Space 2 construction	Complete?	STEM building site and under construction	<input type="checkbox"/>
SD-5C: New Culinary Arts storm drain includes marginal improvements to existing storm drain deficiencies	Complete?	Building complete	<input type="checkbox"/>
SD-6: Grounds Shop oil & sand separator with storm drain line to discharge to storm drain	?		<input type="checkbox"/> <input type="checkbox"/>

4. Hydronics System

Project	Status	Notes	Verify
HYD-1: North hydronics project to extend 16" chilled water and 14" hot water from Student Services westward between Fine Arts and Student Services	Complete (Dec-14, LRCNP)	Building complete	<input type="checkbox"/>
HYD-2: West hydronics project to complete looped hydronics system	Complete?	Building complete	<input type="checkbox"/>
HYD-3: South hydronics project to connect new Liberal Arts Building and New Instructional Space 1 to new expanded hydronics system	Complete?	STEM building site and it's under construction	<input type="checkbox"/>
HYD-4: East hydronics project to provide loop with expanded capacity by providing consistent 14" chilled water and 10" hot water around loop	Complete?	LRCNP doesn't have this building project	<input type="checkbox"/>
HYD-5: Administration hydronics replacements project to provide new service to Administration Building and stubs for service to Future Building	Not yet?	Adm bldg modernization complete until 2026; 2012 Master Plan doesn't have the Future Building	<input type="checkbox"/>
HYD-6: Culinary Arts Building hydronics service to be constructed as part of Culinary Arts project	Complete?	Building complete	<input type="checkbox"/>
HYD-7: Existing building pump upgrades and spirotherm separators	Will complete (Oct-18, LRCNP)	LRCNP: replace Boilers, occupy Oct-18	<input type="checkbox"/>

5. Natural Gas System

Project	Status	Notes	Verify
GAS-1: New Culinary Arts natural gas service from PG&E meter at Science Building	Complete?	Related building projects complete	<input type="checkbox"/>
GAS-2: New natural gas service to serve Corporation Yard from PG&E meter at Children Center	Complete?	2012 Master Plan doesn't have Child Center anymore	<input type="checkbox"/>

6. Electrical System

Project	Status	Notes	Verify
PWR-1: New feed from SMUD to serve Administration and Future Building. Existing service to Admin. Building to be abandoned	Complete?	Adm bldg modernization complete until 2026; 2012 Master Plan doesn't have the Future Building	<input type="checkbox"/>
PWR-2: Replacement of existing feeder that serves the Technical Vocational Building. Existing feeder experiences faults	Not yet?	Building modernization complete until 2022	<input type="checkbox"/>
PWR-3: New SMUD primary feed service with transformer at Corporation Yard	Not yet?	Building complete until 2023 (LRCNP)	<input type="checkbox"/>
PWR-4A: Replacement of existing light fixtures, conduits, and pullboxes within existing Parking Lot B	Complete?		<input type="checkbox"/>
PWR-4B: Replacement of existing light fixtures, conduits, and pullboxes within existing Stadium Parking Lot	Will complete (Jul-20, LRCNP)		<input type="checkbox"/>

* Campus wide electrical improvement will complete on Sep-18 (LRCNP)

7. Communication Conduit System

Project	Status	Notes	Verify
COM-1: New telecom conduits to be provided with Culinary Arts project to enhance and improve service to Fine Arts Building	Complete?	Building complete	<input type="checkbox"/>
COM-2: The New Instructional Space 2 will impact the current conduits, and require relocated conduits to serve existing and future buildings	Not yet?	LRCNP doesn't have this building project	<input type="checkbox"/>
COM-3: New conduit and upgrades to serve proposed Liberal Arts and New Instructional Space 1	Complete?	STEM building site and it's under construction	<input type="checkbox"/>
COM-4: The new Technical Vocational Portables will require new conduits for service	?	Project on FPP stage	<input type="checkbox"/>
COM-5: New conduit to provide service for the New Parking Structure	Complete?	Parking Structure complete	<input type="checkbox"/>
COM-6: New conduit to provide service for the Future Building on the west side of campus	?	2012 Master Plan doesn't have the Future Building	<input type="checkbox"/>
COM-7: New conduit to provide secondary AT&T entrance into facility from college oak drive	?		<input type="checkbox"/>
COM-8: New conduit to provide service for the proposed Corporation yard at southeast corner of campus	?	Building complete until 2023 (LRCNP)	<input type="checkbox"/>

American River College Technology Master Plan 2009-2012

I. SUMMARY

In order to make the best use of existing and future technologies ARC continues to integrate technology planning into the college wide planning process. The success of a technology plan is dependent on several basic assumptions and incorporates the needs and expectations of students, faculty, and staff. These assumptions include the recognition of the following high priority areas.

II. TECHNOLOGY VISION

The vision for the future of technology is to continue to provide reliable access to current technological resources for ARC staff, faculty and students. The mission is to:

- Stay abreast of emerging technologies
- Offer appropriate solutions to meet instructional and learning needs both face-to-face and at a distance
- Encourage higher standards of computer literacy
- Utilize technology to improve services to students and to staff and faculty members
- Anticipate and adapt to changes in technology that benefit business and industry in our community
- Ensure the security of all private data and utilize current disaster recovery strategies
- Promote conservation of energy resources
- Promote the responsible use of technology
- Promote collaborative efforts between District and ARC planning

III. TECHNOLOGY PLANNING

ARC strives to support the role of technology through planning processes at a number of levels within the college and districts: District-wide planning, College-level planning, Department and user level planning, and Technology funding.

IV. TECHNOLOGY ONGOING GOALS & RECOMMENDATIONS

- Ensure that staffing costs are included when new labs and services are requested.
- Build and maintain an appropriate infrastructure to support college technology to keep a reliable supportable service.
- Improve security and disaster recovery measures to protect college communications, equipment and confidential data.
- Find an easy way to send notifications to student groups.
- Enhance web services to facilitate instruction and expedite service.
- Update on-line sites for all approved student organizations.
- Los Rios District supports PeopleSoft and should maintain current web-based user manuals and documentation for PeopleSoft users.
- Support distance education services.
- Equip and maintain all classrooms with built-in computer display equipment.
- Maintain up-to-date portable multimedia carts for classroom use where appropriate.



Figure 8. Technology Master Plan

ARC Transportation Access and Parking Master Plan (TAP-MP) 2009

The TAP-MP has identified necessary transportation, access and parking improvements to support the growth and connectivity of the ARC campus. The focus of the plan is to create a multi-modal transportation network, including automobiles, pedestrians, bicycles and transit to serve the ARC community.

I. GOALS

The Transportation Access and Parking Master Plan seeks to create a safe and efficient multi-modal system that is beneficial to American River College and the surrounding community. The TAP-MP is intended to support the long-term vision of a sustainable campus transportation solution through the following goals:

TRANSPORTATION SYSTEM

- Promote a multi-modal transportation system to and from campus.
- Create a network of campus access routes that serve users of all levels of mobility.
- Strive to minimize conflicts between different modes of travel.
- Enhance safety on campus roadways and paths through design, education and enforcement.
- Promote and enable alternatives to commuting in a single-occupant vehicle, thereby increasing alternative transportation mode share.

VEHICULAR ACCESS & CIRCULATION

- Increase the supply of parking to accommodate unmet demand and future campus growth.
- Maintain vehicle restrictions within the core campus.
- Consolidate campus maintenance facilities to improve general access to campus facilities from the west and south (CMP, 2003).

VEHICULAR PARKING

- Improve access driveways and internal circulation roadways to address existing deficiencies and future campus growth.
- Increase efficiency and flow within existing surface lots, specifically on the north end of campus (CMP, 2003).

PEDESTRIAN SYSTEM

- Promote a walkable campus.
- Reconfigure parking lots to provide pedestrian walkways and introduce shade and landscaping (CMP, 2003).
- Maintain campus roadways for circulation to and through parking lots and avoid roadways that bisect pedestrian flow through campus (CMP, 2003).

TRANSIT

- Collaborate with the Sacramento Regional Transit District and local agencies to improve service to campus.
- Explore an on-campus bus terminal with convenient access to high use areas on campus.

BICYCLE CIRCULATION & PARKING

- Work with local, regional, and state agencies to provide a continuous regional and local bicycle network.
- Develop a system of on-campus paths and routes that provide connections from surrounding bicycle facilities to the campus core.
- Enhance campus bicycle storage options.

SERVICE & EMERGENCY ACCESS

- Ensure access to service buildings and for emergency services.

II. KEY FEATURES IN SUPPORT GOALS & STATUS REVIEW (need to look the graphics)

	Key Features	Status	Notes
TRANSPORTATION SYSTEM	Construction of a parking structure on the existing tennis court site	Complete	
	Completion of an internal access road through the existing corporation yard	?	Existing corporation yard?
	Modification of the north parking lots to provide vehicle connectivity between parking areas	Complete?	
	Creation of pedestrian corridors that are physically separated from vehicle traffic	?	
	Improvements to provide pedestrian connectivity from the Stadium lot, across the parking structure access roads and directly into the academic core	Complete?	
	Collaboration with Sacramento Regional Transit regarding a potential on-campus transit center and increased bus service	?	
	Development of formal bikeways and supporting bicycle parking facilities	?	
	Provision of additional transportation demand management strategies such as preferential carpool parking and education and outreach regarding commute options		
VEHICLE ACCESS & CIRCULATION	A roundabout is proposed at the juncture of the north-south Stadium lot drive aisle and the south entrance to the parking structure to establish right-of-way and maintain efficient traffic circulation	Complete	
	A new access road will be constructed through the existing corporation yard as services are consolidated into new or modernized facilities. The road will provide direct access between staff parking facilities west of Davies Hall and the Stadium lot	?	
	The north parking lots will be reconfigured to provide vehicle connectivity between parking areas in addition to introducing pedestrian walkways between the perimeter of campus and the academic core	Complete?	
	Off-site Improvements (have not been fully vetted):		
	Reconfigure Myrtle Avenue from College Oak Avenue to Walnut Avenue to provide a continuous two-way left turn lane		
	Construct an eastbound left-turn lane on Myrtle Avenue approaching College Oak and modify signal phasing at this intersection		
	Lengthen the southbound dual left turn pocket on College Oak Drive at the signalized Stadium parking lot entrance		

	Key Features	Status	Notes
VEHICLE PARKING	Construction of a parking structure on the existing tennis court site, the structure would provide 1,650 parking spaces near the academic core of the campus and have access from an existing signalized intersection and four-lane access road. The structure may incorporate preferential carpool parking spaces, secure bike storage, electric vehicle charging stations or PV energy solar panels on the roof	Complete	
	The north parking lots (Lot A – Lot D) will be redesigned to provide internal access between all lots. A series of walkways will facilitate pedestrian access from both the campus perimeter and on-site parking areas to the campus core.		
PEDESTRIAN SYSTEM	Establishment of pedestrian corridors, which are physically separated from vehicle traffic, through the north surface parking lots		
	Physical improvements to provide pedestrian connectivity from the Stadium lot, across the parking structure access roads and into the academic core. Access will be achieved through the creation of formal paths and sidewalks		
	Completion of discontinuous sidewalks along Myrtle Avenue and College Oak Drive. Advocate sidewalk upgrades and barrier removal on Sacramento County facilities		
	Retain vehicle restrictions within the campus core by enforcing policies and maintaining existing physical barriers, which prevent general vehicle traffic from traveling between north and south parking lots		
	Development of a formal Arcade Creek crossing as part of the Class I connection to the nature trail and Arcade Creek Park east of campus		
	Explore a bicycle-pedestrian connection from Walnut Avenue north to the baseball field across Arcade Creek		
TRANSIT	Create an on-campus transit center on the west side of campus parking lot or on the north end of the Stadium lot based on design elements and considering the proximity to the academic core.	4 conceptual options	

	Key Features	Status	Notes
BICYCLE CIRCULATION & PARKING	Class I path connections from the planned Class I bike path adjacent to Arcade Creek. The existing service road with a continuation along the southern perimeter of the Stadium lot may prove to be a suitable alignment for a multi-use path		
	Class III bike routes from County streets to the perimeter of the campus core would provide an intuitive connection to on-campus bike parking facilities		
	An exclusive bike connection on the existing gated service road between north and south campus parking lots should be promoted. The roadway would still be used by service and emergency vehicles		
	Bike Parking:		
	Adopt a standard bicycle rack design for future installations		
	American River College has identified a hanging rack style as their preferred treatment for future installation		
	Expand secure bicycle parking, including consideration of a bike cage within the proposed parking structure		
SERVICE & EMERGENCY ACCESS	Direct connections between existing surface parking lots		
	Design accommodation of emergency vehicles on key campus walkways in concert with building modernization and expansion		
	New access road through the corporation yard		Existing corporation yard/ proposed corporation yard
	Modification to the south and east perimeter road, which may include existing gravel sections		

Educational Master Plan

The Educational Master Plan will be assessed once it has been received.