



2045 Facilities Plan

COAST COMMUNITY COLLEGE DISTRICT

Revised Item #19.02
Attachment #12
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Introduction

This Coast Community College District 2045 Facilities Plan has been developed as a long-range vision that will guide the District over the future decades. It serves as a guide to explore a range of innovative planning concepts, and to evaluate preferred options to be developed into recommendations through a series of interactive meetings.

This approach ensures that the values of the District's community are an integral part of the planning process.

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Letter from the Chancellor



Dear Coast Community College District Community,

One characteristic of a strong organization is its ability to execute on visionary plans. Coast District’s ability to execute can be seen, touched, experienced simply by walking its college campuses. Since the first student stepped onto our first campus in 1948, the Coast District has been consistently executing on ambitious and innovative plans for the benefit of future students. Plans related to infrastructure, facilities, and technology are some of the most complex.

Our journey began with Orange Coast College, originally an Army Air Base complete with barracks. Today, we proudly encompass three colleges – Orange Coast, Golden West, and Coastline – across seven sites in six cities. While our first facilities were able to accommodate the first class of 515 daytime and 728 evening students, the founding board of trustees immediately began building and upgrading facilities in order to serve the growth they knew was coming. In our last full academic year, our student population was just over 50,000, with 13,499 of those attaining their associate’s degree or Career Education certificate. We are proud to serve as an economic engine for Orange County, not only by transforming the lives of students but by supplying local businesses with an educated workforce and bolstering the economy as employers.

The facilities necessary to serve this population would not have been possible without the support of our local community through the passage of two bond measures. In 2002, the voters approved Bond Measure C at \$370M. Ten years later, that support was reinforced through the approval of Bond Measure M for \$698M.

We owe it to the visionary planners who gave us the Coast District we see today, as well as to our future students and the broader community we serve, to plan for the coming decades. This includes anticipating changes in technology, developing career programs we cannot currently imagine, designing flexible classrooms, and creating more welcoming and energy efficient facilities. A forward-thinking, innovative approach remains our culture. In that spirit, I introduce the Coast Community College District 2045 Facilities Plan, a product of our governance processes and a work that builds on our legacy.

Sincerely,
Whitney Yamamura, Ed.D.
Chancellor, Coast Community College District

2025 Chancellor's Goals

1 Provide a safe and secure learning environment for students, faculty, and staff

- Upgrade safety and security technologies, lighting, signage, communications and utility infrastructure including a coordinated effort to implement building access control, security cameras, and emergency notification systems, in preparation for future emergencies.

2 Focus on student success and equity

- Adopt best practices to close equity gaps in outcomes
- Strengthen responses to student health, food and housing insecurity, Veterans, and DEIAA needs

3 Maintain fiscal integrity

- Increase alternative sources of revenue
- Reduce overall space to align utilization with standards established by Ed Code
- Maximize flexibility in order to adapt and serve future student needs
- Replace inefficient spaces with cost effective interior and exterior spaces
- Evaluate capital decisions based on long-term operational impacts and resources
- Reduce overall energy demand and expand renewable energy supply

4 Stabilize enrollments

- Establish new programs that meet educational needs and draw students
- Improve accessibility and increase retention

5 Leverage educational technology to support post-pandemic learning

- Support technological innovation at each College
- Enhance the operational integrity and security of Information Services
- Provide infrastructure to support workplace and instructional flexibility and wireless connectivity



GOLDEN WEST COLLEGE

GOLDEN WEST COLLEGE

Campus Today

Golden West College (GWC) is located in Huntington Beach in northwestern Orange County. The county is bordered by the ocean to the west and four larger counties: Los Angeles to the north, San Bernardino to the northeast, Riverside to the east, and San Diego to the south.

The planning process included the analysis of existing conditions to identify the key planning issues to address. The information was based on engagements with college students, faculty, classified professionals, and discussions with workgroups.

The existing campus conditions shown in the graphic illustrates the facilities in construction or construction zones, and existing buildings in use.



GOLDEN WEST COLLEGE

Facilities Planning Principles

Extensive analyses of qualitative and quantitative data inform the Facilities Planning Principles.

Facilities Planning Principles summarize the issues and dreams of GWC faculty, classified professionals, students, and administrators and describe how site and facilities improvements will support the Chancellor’s Goals. These principles were used to guide discussions related to site and facilities improvements over the coming decades.

These six principles were developed collaboratively with the 2045 Facilities Plan Task Force and align with GWC’s commitment to student success and equity. The principles serve as the key drivers for the site and facilities recommendations presented later in this chapter.

**STUDENT
FIRST**

**PRIDE OF
OWNERSHIP**

**ACCESS &
PATHWAYS**

**EFFECTIVE &
EFFICIENT**

**STEWARDSHIP
OF RESOURCES**

**COMMUNITY
ENGAGEMENT**

The Planning Framework provides the foundation for long-range campus development and the facilities planning principles represent the key drivers for the site and facilities recommendations.

GOLDEN WEST COLLEGE

Facilities Planning Principles

STUDENT FIRST	PRIDE OF OWNERSHIP	ACCESS & PATHWAYS	EFFECTIVE & EFFICIENT	STEWARDSHIP OF RESOURCES	COMMUNITY ENGAGEMENT
<ul style="list-style-type: none"> Develop campus to support the needs of each student Increase the presence and availability of tutorial and counseling services Develop spaces to encourage student/faculty interaction Develop site and facilities to keep students on campus Create healthy, safe and comfortable campus environment Create equitable student experiences Improve classroom experiences 	<ul style="list-style-type: none"> Establish a GWC brand identity Create logical groupings and adjacencies of programs and services Integrate instruction and student support services Enhance a sense of belonging + pride 	<ul style="list-style-type: none"> Develop welcoming + inviting campus entries Improve campus organization to enhance wayfinding Improve connections to all areas of the campus Create spaces to engage the internal and external communities 	<ul style="list-style-type: none"> Align facilities to support College Goals Address outdated facilities to enhance ownership and pride Replace inefficient and underperforming facilities Right-size facilities to support program needs and improve utilization Develop flexible, multi-purpose, and timeless space to adapt over time Develop spaces to support both virtual and in-person instruction and support services 	<ul style="list-style-type: none"> Optimize utilization of all facilities, including rentals Maximize land use to support College Goals Implement campus-wide sustainability design strategies Increase resources through partnerships and collaborations Maximize state and private funding opportunities Plan and implement Total Cost of Ownership strategies Focus on fiscal stewardship 	<ul style="list-style-type: none"> Increase visibility of GWC to the communities Welcome the communities into the campus Bring the College to the communities Expand opportunities for students by partnering with community agencies and businesses

GOLDEN WEST COLLEGE

2045 Facilities Plan

The 2045 Facilities Plan presents an overall picture of the future developed campus and includes recommendations for new construction, building renovations, and site development projects. The drawings represent a conceptual layout of the buildings and their site surroundings that highlight the location and purpose of the proposed improvements.

Modernization work is recommended for facilities where a significant change is not highlighted, and is needed, so that Golden West College will accomplish the following objectives:

- Repairs and upgrades for safety and accessibility
- Upgrades of technology systems
- Renewing of finishes, furniture and equipment
- Upgrades for sustainability



GOLDEN WEST COLLEGE

2045 Facilities Plan

The project list summarizes the major facilities projects highlighted in the Facilities Plan.

NEW CONSTRUCTION

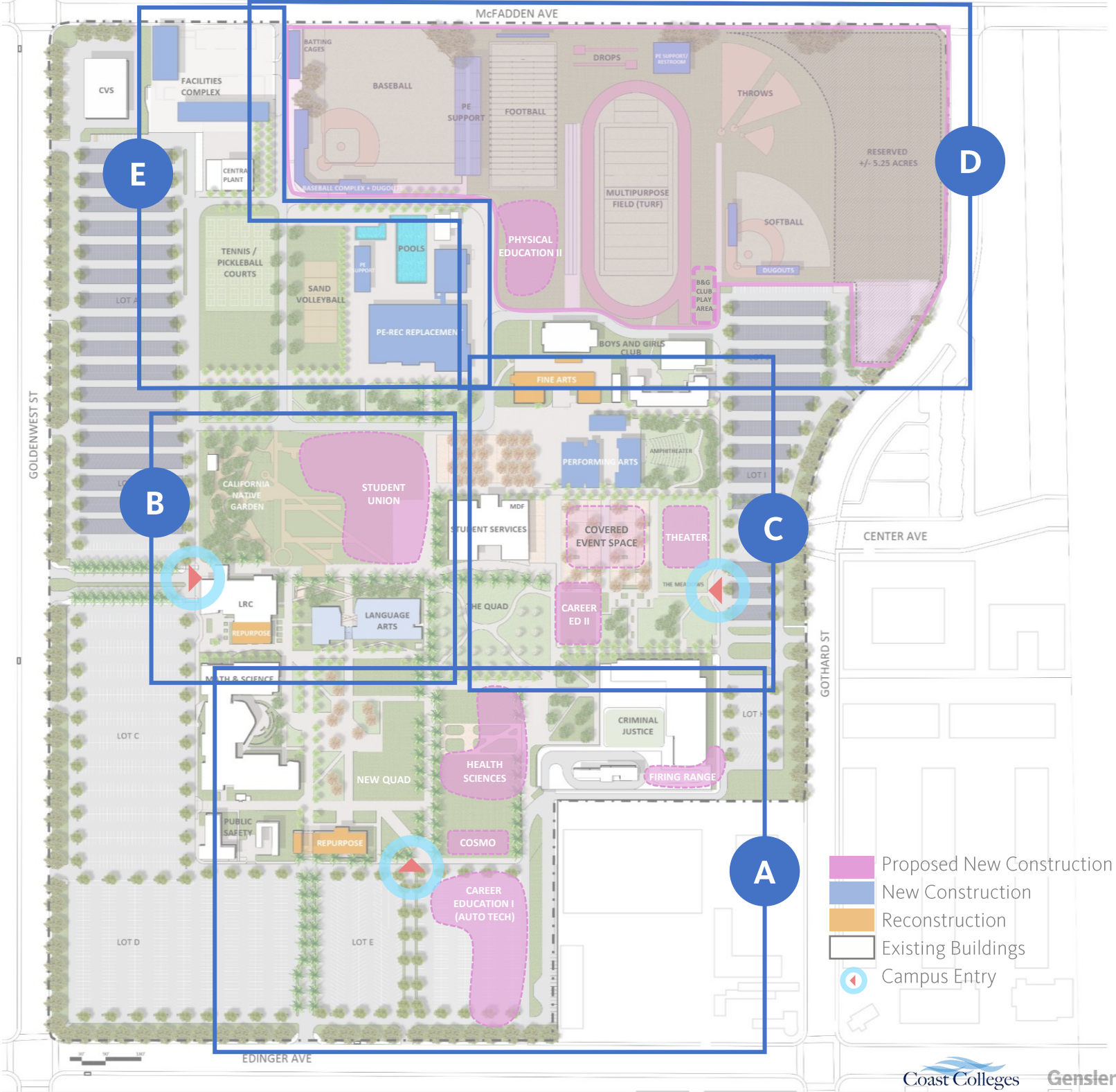
- PE Rec Replacement + PE Support
- Performing Arts Complex
- Facilities Complex
- Student Union
- Community Theater
- Career Education I
- Career Education II
- Health Sciences
- Criminal Justice Expansion (Firing Range)
- Cosmetology
- Physical Education II

RECONSTRUCTION

- Fine Arts Renovation
- Learning Resource Center (partial)
- Nursing + Health (repurpose)

SITE DEVELOPMENT

- PE Field Improvements + Athletic Support



GOLDEN WEST COLLEGE

2045 Facilities Plan

Health Sciences

A new Health Sciences building is proposed to be adjacent to the Criminal Justice Building, once the existing Forum, Business and Administration buildings are removed. The new building will create an expanded new quad connecting with the Math & Science building, and is planned to replace the existing Nursing Building with an expanded program to include Health Sciences.

Cosmetology

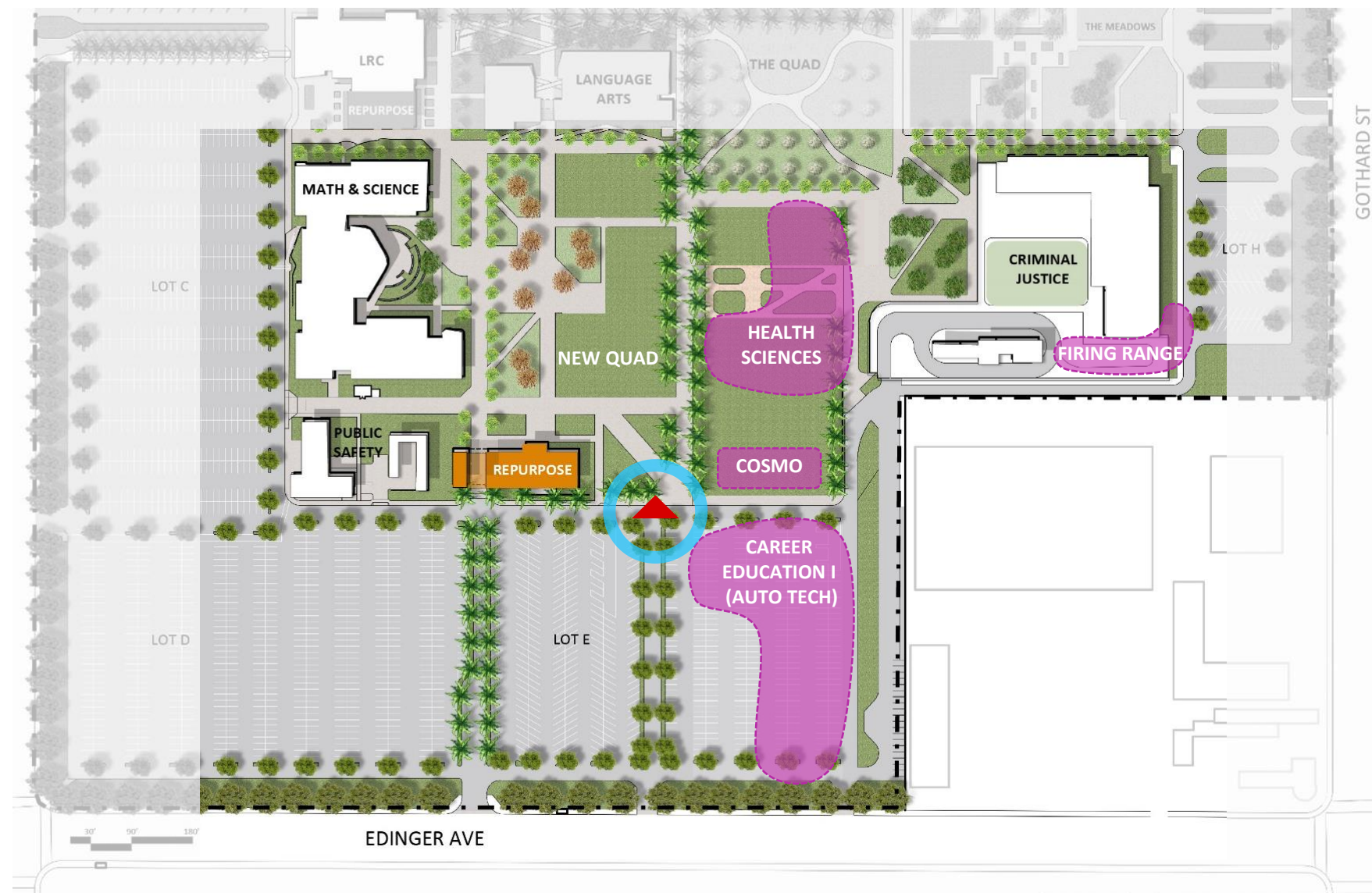
A new Cosmetology building is planned to be located adjacent to the Health Sciences and Career Education I buildings, providing important programmatic adjacencies at a primary entry point to campus and allowing public-facing community access.

Career Education I

A new Career Education Building is planned to replace aged and underperforming facilities and be sized to support program needs. The new building will include classrooms and interdisciplinary labs and offices to support career education programs, including functions currently located in the Automotive Technology, Technology and Cosmetology Buildings.

Nursing + Health (Repurpose)

The existing Nursing Building is proposed to be renovated and repurposed after the program moves into the new Health Sciences Building. This building will support adjacent instructional program needs and serve as an entry point into the campus.



GOLDEN WEST COLLEGE

2045 Facilities Plan

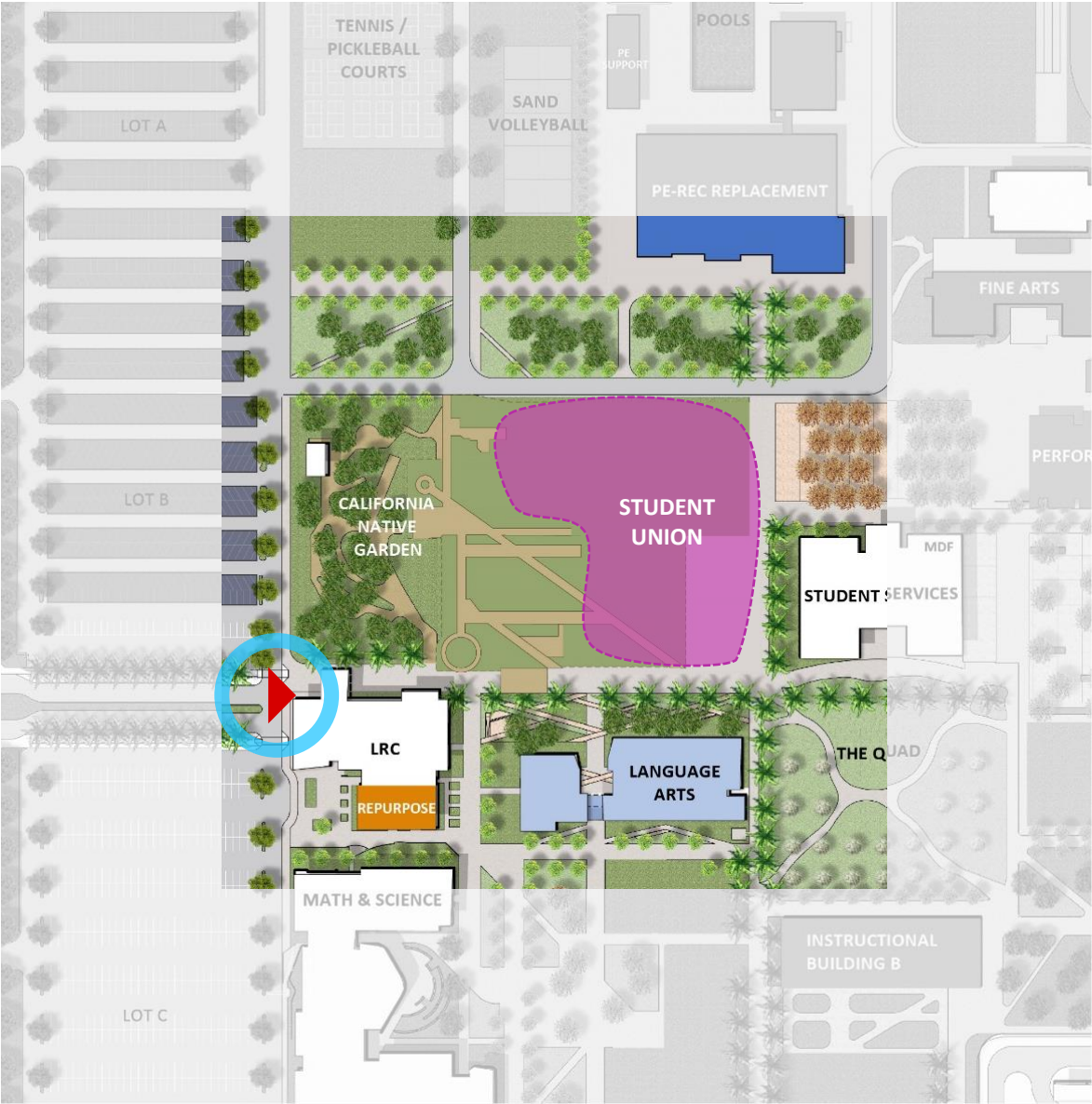
Student Union

A new Student Union Complex is planned to replace the aging Student Union/Cafeteria and Bookstore Buildings. The complex will be reconstructed in the same general location, along the primary east-west pedestrian corridor, adjacent to the core student support services located in the LRC and Student Services Center.

The new complex will be designed to support a variety of functions in a welcoming environment that supports collaboration, enhances student engagement and strengthens the sense of belonging to the GWC community. In addition to replacing the functions planned for removal, the complex will house flexible, multi-purpose spaces to support a variety of activities, including large meetings and events.

Learning Resource Center Renovation

The existing Learning Resource Center is planned to be partially renovated to repurpose existing programs that will move into the new construction on campus. The renovated space could potentially house IT, HR, and/or Marketing.



GOLDEN WEST COLLEGE

2045 Facilities Plan



Performing Arts Complex

A new home for Performing Arts is proposed to replace functions currently located in the Music, Communications and Forum II Buildings along with a new Art Gallery. Strategically located between the Fine Arts and Theater Buildings, it will become the centerpiece of the new Arts Zone of the GWC campus. The new facility will be accessed from the network of pedestrian paths it connects to, and will frame a new Arts Plaza. The east side will open to the Amphitheater which is proposed to be improved to support a variety of formal and informal uses.

Community Theater

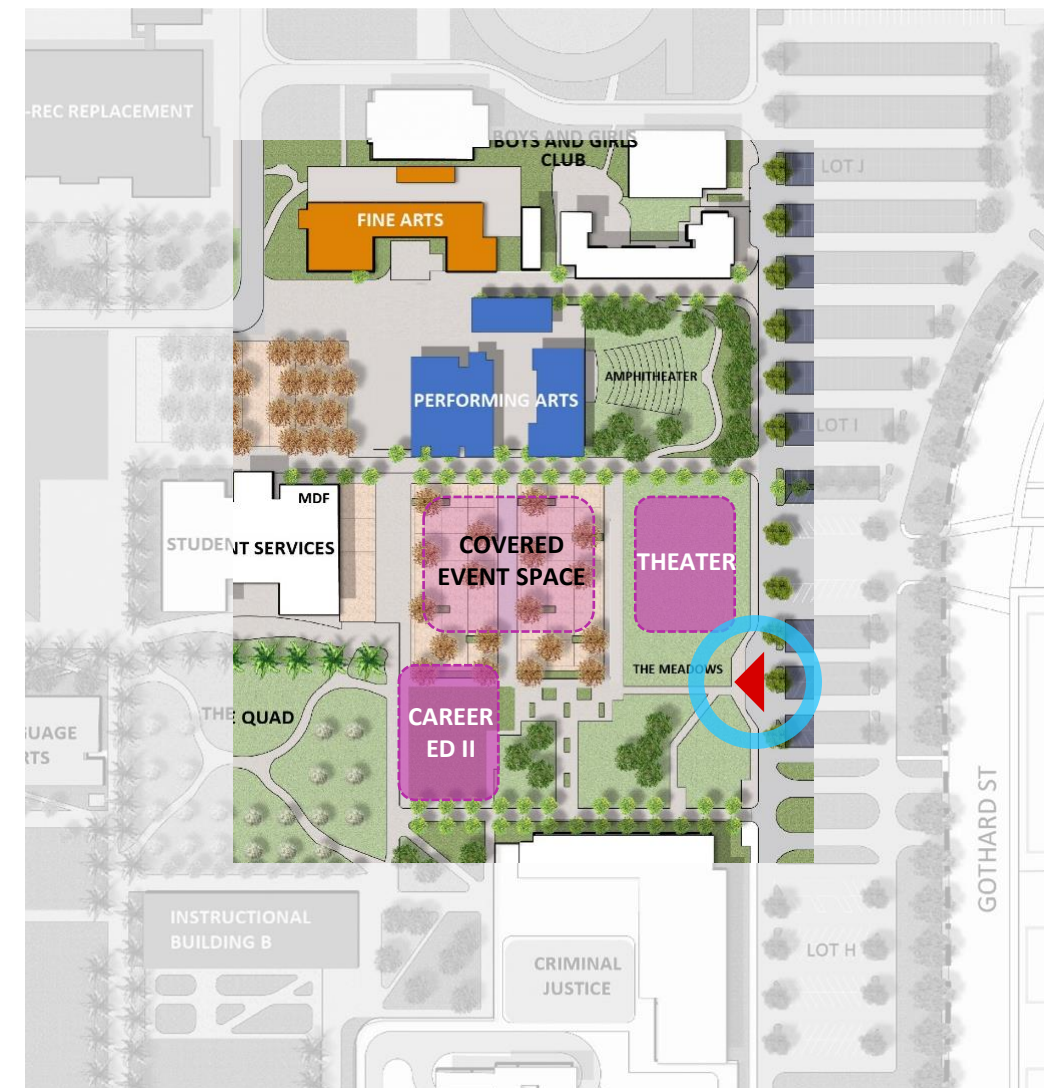
A new Theater proposed to replace the existing theater with adjacent open space and covered event space. When completed, the building will be up to date with technology, systems and other required upgrades.

Career Education II

A new Career Education Building is planned to replace aged and underperforming facilities and be sized to support program needs. The new building will include classrooms and interdisciplinary labs and offices to support career education programs, including functions currently located in the Automotive Technology, Technology and Cosmetology Buildings.

Fine Arts Renovation

A major renovation is proposed for the existing Fine Arts Building to address a number of building deficiencies and support current and projected program needs. When completed, the building will be transformed into an open, light-filled, environment that will celebrate the arts, attract students and encourage them to spend time there. Flexible and innovative design will leverage all areas of the building, maximize indoor and outdoor connections and improve the efficiency and utilization of space.



GOLDEN WEST COLLEGE

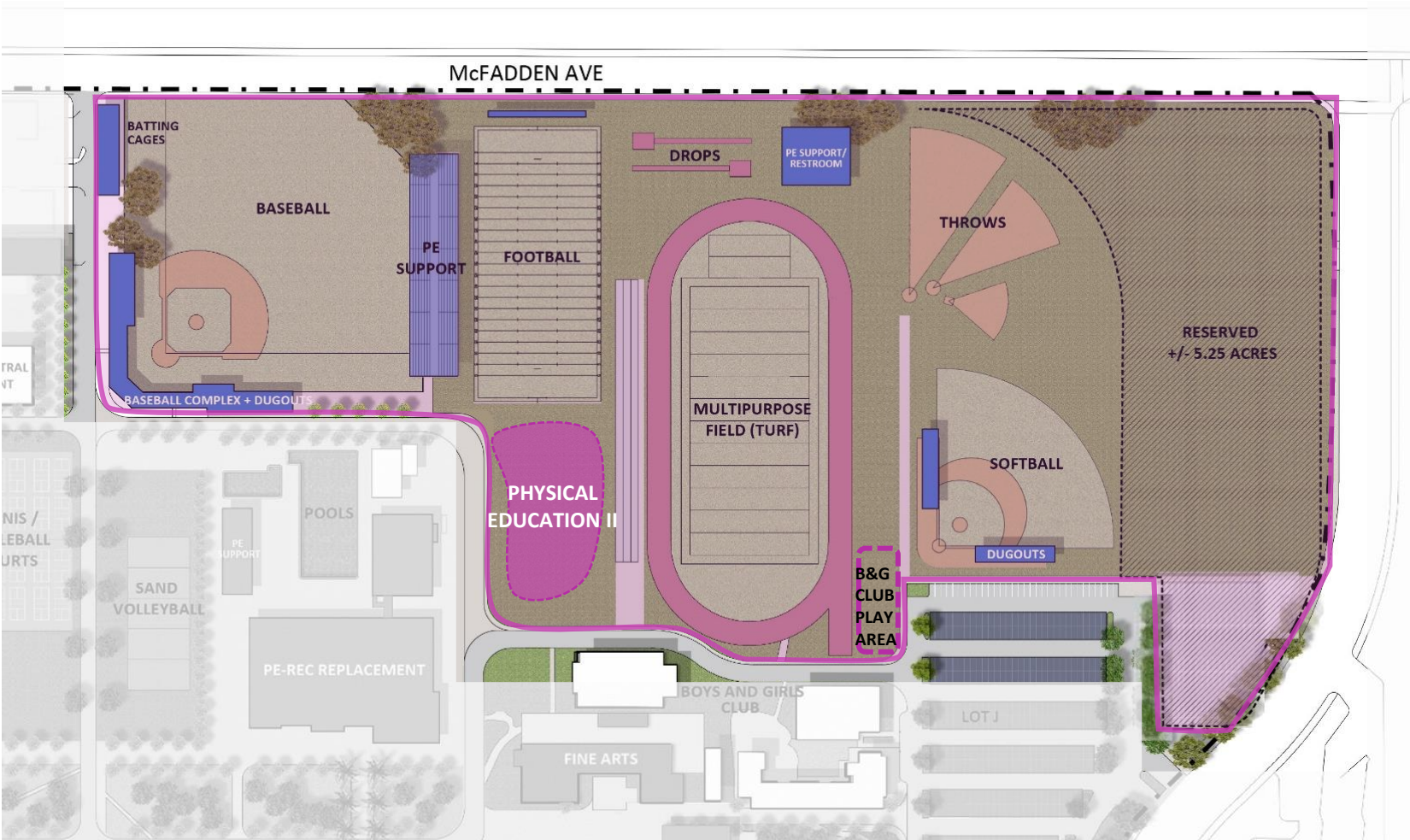
2045 Facilities Plan

PE Field Improvements + Athletic Support

The second PE facility is proposed as a Recreation/Fitness Center to support a variety of programs and activity spaces and complement the surrounding building uses. A public entry is planned on the northwest corner, connected to the gateway plaza and along the east-west pedestrian pathway.

The PE Fields are reconfigured to improve land utilization and support program needs. Proposed improvements include the addition of a Football Field on the east side of the Track & Field and an area for field throwing sports on the north side along McFadden. Consideration for the use of artificial turf will be determined as projects are funded and designed.

A new building is proposed to support the multiple activities planned for the northeast zone of the campus. The proposed location is between the Track & Field and new Football Field and will include bleacher seating facing both east and west directions above enclosed PE support spaces such as restrooms, locker rooms, team rooms and equipment storage.



GOLDEN WEST COLLEGE

2045 Facilities Plan

PE Rec Replacement + PE Support

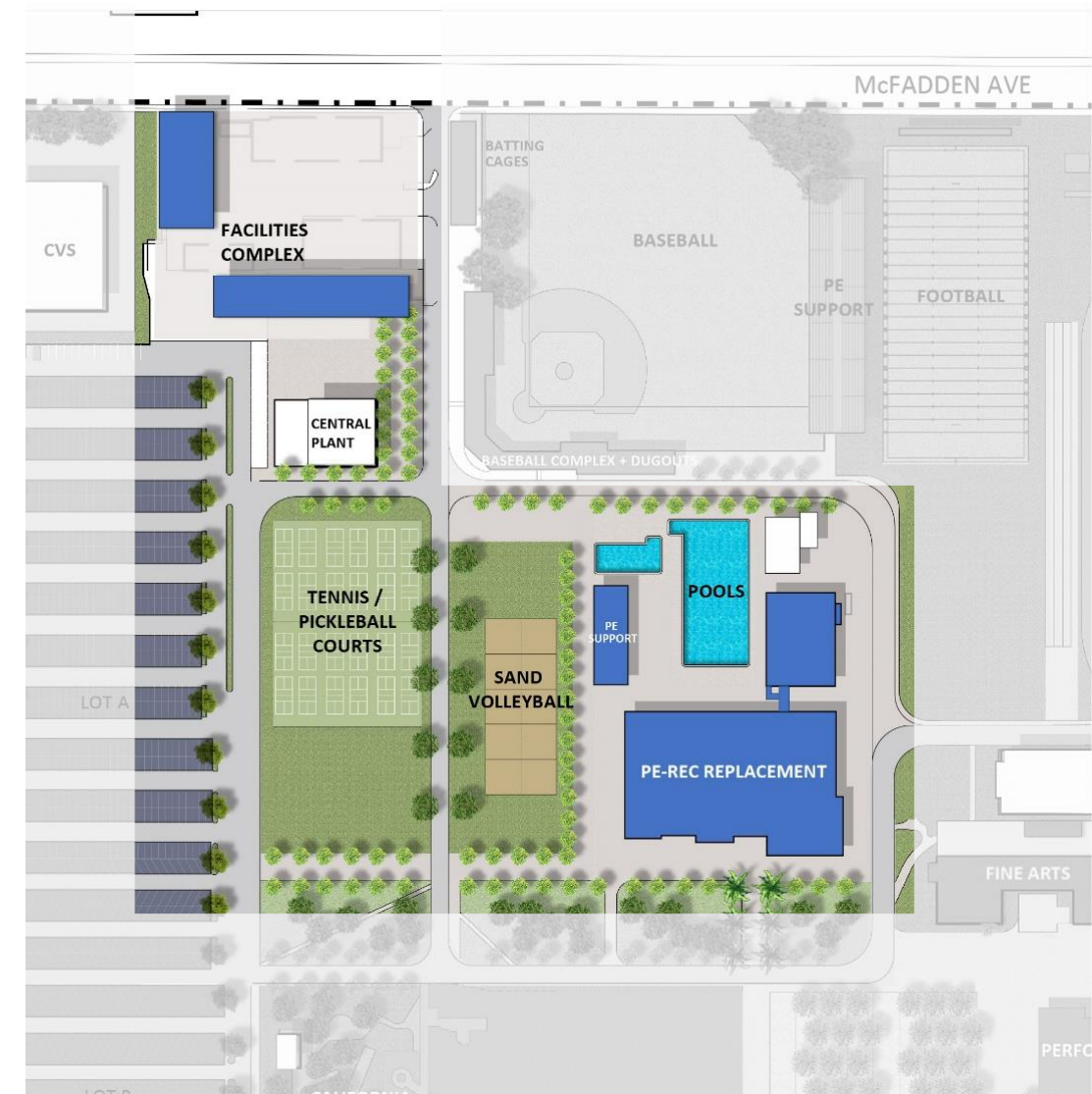
A new facility is proposed to replace the aged and underperforming Recreation Education/Gymnasium and Locker Room Buildings. This building will be part of a larger Physical Education Complex that will be designed to support the current and projected program needs.

The proposed location places the new building adjacent to the existing pools and creates a welcoming access point from the campus core along Main Street. Community members visiting the pool will be welcomed from the parking area, through the new gateway plaza and along the newly developed east-west pathway.

Facilities Complex

A new Facilities Complex is proposed to house functions currently located in the Maintenance and Operations Buildings that are planned for removal. The new complex is planned to be reconstructed in the same location to leverage the existing vehicular entrance at McFadden Avenue and the important adjacency to the Central Plant.

A complex of efficient indoor and outdoor spaces will be developed to support the program needs while minimizing disruption and limiting the need for swing space. Secured outdoor areas for receiving/loading and yards for multiple operations will be developed.



GWC Appendix

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MEP Analysis Report

Civil Design Considerations



GWC MEP UTILITIES ANALYSIS REPORT

Electrical System Analysis

Introduction and Background

Golden West College is undergoing a period of significant expansion, with multiple new facilities and buildings planned. In support of this growth, Gensler has been engaged to develop a comprehensive Facilities Plan that will guide future development. As part of this planning process, a thorough evaluation of the existing mechanical, plumbing, and electrical utilities is being undertaken. The purpose of this analysis is to determine whether the current utility infrastructure has sufficient capacity and reliability to support the anticipated demands of the proposed developments, and to identify any necessary upgrades or enhancements to ensure long-term operational efficiency.

Existing System

The existing main distribution system on the campus is serviced by Southern California Edison. It receives an underground service that operates at 12 (KV). The existing main distribution is located outdoor on the north side of the campus.

The existing main distribution consists of a main breaker rated at 1200A, three (3) branch circuit breakers, and three (3) 15 KV feeders. Feeder 1 and 2 serves several load centers with a selector switch. Feeder 3 serves a transformer rated at 2000 KVA at 12 KV-4160/2400 V. The 2000KVA transformer feeds a load center with a 5 KV switch and distributed to several load centers.

The existing electrical power distribution is shown on Figure 1 and is based on the as-built drawings.



Figure 1: Existing 12KV and 4.16KV Power Distribution System

GWC MEP UTILITIES ANALYSIS REPORT

Electrical System Analysis

Analysis

The campus had a peak demand of 2,630 KW (3,288 KVA) in 2024. Table 1 [Appendix 1] provides an electrical load analysis of buildings on campus. It includes existing buildings to remain, existing buildings to be demolished, new facilities currently in design, and new facilities planned.

Table 1: Electrical System Analysis

CAMPUS UTILITY LOAD SUMMARY					
Bldg #	BUILDING NAME	EXISTING		YEAR BUILT	KVA
		GSF	ASF		
EXISTING BUILDINGS					
4	Administration	32,604	29,544	1966	65
14	Auto Technology	31,720	29,432	1967	63
91	Bookstore	8,251	7,175	1966	17
39	Boys/Girls Club Child Dev	8,750	7,657	2011	18
3	Business	15,687	12,511	1966	31
13	Facilities Office	14,403	13,838	1969	29
35	Central Plant	8,850	5,194	2007	62
5	Communication	8,103	6,510	1966	16
20	Community Theater	27,419	22,301	1971	55
13	Facilities Office	14,403	13,838	1969	29
16	Cosmotology	12,243	10,816	1969	24
33	Criminal Justice Annex	2,150	1,826	2001	4
8	Fine+App Arts	40,472	33,426	1966	81
17	Forum 2	7,300	4,998	1971	15
2	Forum One	11,398	8,364	1966	23
38	Library/LRC	55,251	40,505	2011	221
37	Math & Science	122,747	76,577	2019	491
10	Mens Phys Ed	16,180	12,897	1966	32
6	Music	11,911	10,896	1966	24
95	New Criminal Justice Center	43,636	30,132	2018	87
36	Nursing & Health Serv	25,815	17,223	2008	52
26	Old Criminal Justice Center-TRN	11,583	8,941	1981	23
18	PE-Rec	44,796	41,895	1971	90
93	Pub Safety/Community Ed	5,950	3,717	2016	12
96	Student Services Center	48,894	29,680	2018	147
92	Student Union	15,225	14,791	1966	30
19	Technology	31,570	27,176	1971	174
25	Wellness Center	4,418	4,331	1979	9
11	Womens Phys Ed	8,720	6,469	1966	17
	Sub-Total	690,449	532,660		1,941
EXISTING BUILDINGS TO BE DEMOLISHED					
4	Administration	32,604	29,544	1966	65
91	Bookstore	8,251	7,175	1966	17
3	Business	15,687	12,511	1966	31
13	Facilities Office	14,403	13,838	1969	29
35	Central Plant	8,850	5,194	2007	62
5	Communication	8,103	6,510	1966	16
20	Community Theater	27,419	22,301	1971	55
13	Facilities Office	14,403	13,838	1969	29
16	Cosmotology	12,243	10,816	1969	24
33	Criminal Justice Annex	2,150	1,826	2001	4
8	Fine+App Arts	40,472	33,426	1966	81
17	Forum 2	7,300	4,998	1971	15
2	Forum One	11,398	8,364	1966	23
10	Mens Phys Ed	16,180	12,897	1966	32
6	Music	11,911	10,896	1966	24
26	Old Criminal Justice Center-TRN	11,583	8,941	1981	23
18	PE-Rec	44,796	41,895	1971	90

CAMPUS UTILITY LOAD SUMMARY					
Bldg #	BUILDING NAME	EXISTING		YEAR BUILT	KVA
		GSF	ASF		
92	Student Union	15,225	14,791	1966	30
19	Technology	31,570	27,176	1971	174
11	Womens Phys Ed	8,720	6,469	1966	17
Sub-Total		242,957	203,075		530
PROPOSED PROJECTS					
x	Facilities Complex	23,353		X	47
X	Instruction Building A	32,604		X	65
X	Instruction Building B	13,540		X	27
X	Performing Arts	40,472		X	81
X	Career Education	31,570		X	63
X	Physiscal Education-1	44,144		X	88
X	Physical Education-2	44,796		X	90
X	Studen Housing	11,825		X	83
X	Student Union & Coffee Shop	1,200		X	2
Sub-Total		220,151			499
TOTAL FUTURE ELECTRICAL LOAD SUMMARY					
Existing Building Area		690,449		1,941	KVA
Demolished Building Area		242,957		-530	KVA
Proposed Projects		220,151		499	KVA
Total Future Campus Area/Load		1,153,557		1,910	KVA
Total Future Campus Area (Amps)				92	A
Existing Main Breaker				1,200	A

GWC MEP UTILITIES ANALYSIS REPORT

Electrical System Analysis

Analysis

Based on the analysis in Table 1, it appears that the existing electrical system has adequate capacity to accommodate new facilities proposed in this facilities plan. New transformers and feeders will be provided to proposed new buildings. New feeders will be connected to the nearest existing manhole. New manholes will also be provided. See Figure 2 for proposed new electrical utility distribution.

As the College continues to grow, new projects will change the landscape of the campus. The electrical system must be set up to accommodate planned changes and growth. In anticipation of this, this study recommends electrical system improvement and additions that will set a clear path for connecting future projects to the electrical infrastructure.



Figure 2: Proposed 12KV and 4.16KV Power Distribution System

GWC MEP UTILITIES ANALYSIS REPORT

Electrical System Analysis

Additional Recommendations:

1. The existing main outdoor electrical power distribution system is beyond its expected life. Age and condition of existing cables and duct banks cannot be determined. It is recommended to replace and upgrade the main outdoor electrical power distribution to accommodate future growth and new facilities.
2. It is recommended that the electrical load analysis (Table 1 [Appendix 1]) be updated as new facilities are completed. This helps ensure the existing electrical power distribution system will not be overloaded.
3. The District is incorporating sustainability as a strategy in the 2045 Facilities Plan. To achieve this goal, renewable energy sources such as photovoltaic systems are recommended. The goal would be to achieve grid neutrality for the campus. Another measure to assist in grid neutrality is to install accurate energy monitoring throughout the campus. Accurate energy monitoring for existing and new buildings will be a major component in ongoing utility systems operation and maintenance.

GWC MEP UTILITIES ANALYSIS REPORT

Mechanical System Analysis

Analysis

The scope of analysis on the mechanical system is to determine if the overall existing central plant capacity for chilled and hot water is adequate to accommodate the future planning and expansion on this campus. A mechanical Load Summary spreadsheet (Table 2 [Appendix 1]) is provided listing the estimated HVAC cooling and heating loads for each individual building, existing buildings to be demolished and proposed future buildings. The HVAC load for each building breaks down into the chilled water load in tons of cooling, and heating loads in KBTUH. The overall and subtotals of different categories are also provided for comparison.

For most of the buildings, there are no design documents or as-built drawings available, therefore the estimate for total campus cooling and heating capacity for the central plant was based on square footage analysis.

According to campus maintenance personnel, the central plant capacity was recently upgraded to 1600 tons of cooling. This capacity is adequate to accommodate all existing and planned future expansion, an estimated total of 1,450 tons of cooling.

Chilled water is produced and pumped from the Central Plant and distributed below grade with chilled water and hot water piping to each building. Chilled and hot water lines will be extended to the future buildings from the main campus piping distribution network.

The new 2045 Facilities Plan will impact the existing underground chilled/hot water site distribution piping loop in some areas where future buildings are shown. In these areas part of the loop will need to be demolished and rebuilt around the buildings. Refer to Figure 3 that shows the proposed existing chilled & hot water site piping demolition plan, and Figure 4 that shows the new proposed chilled & hot water site piping distribution plan to accommodate the future expansion.

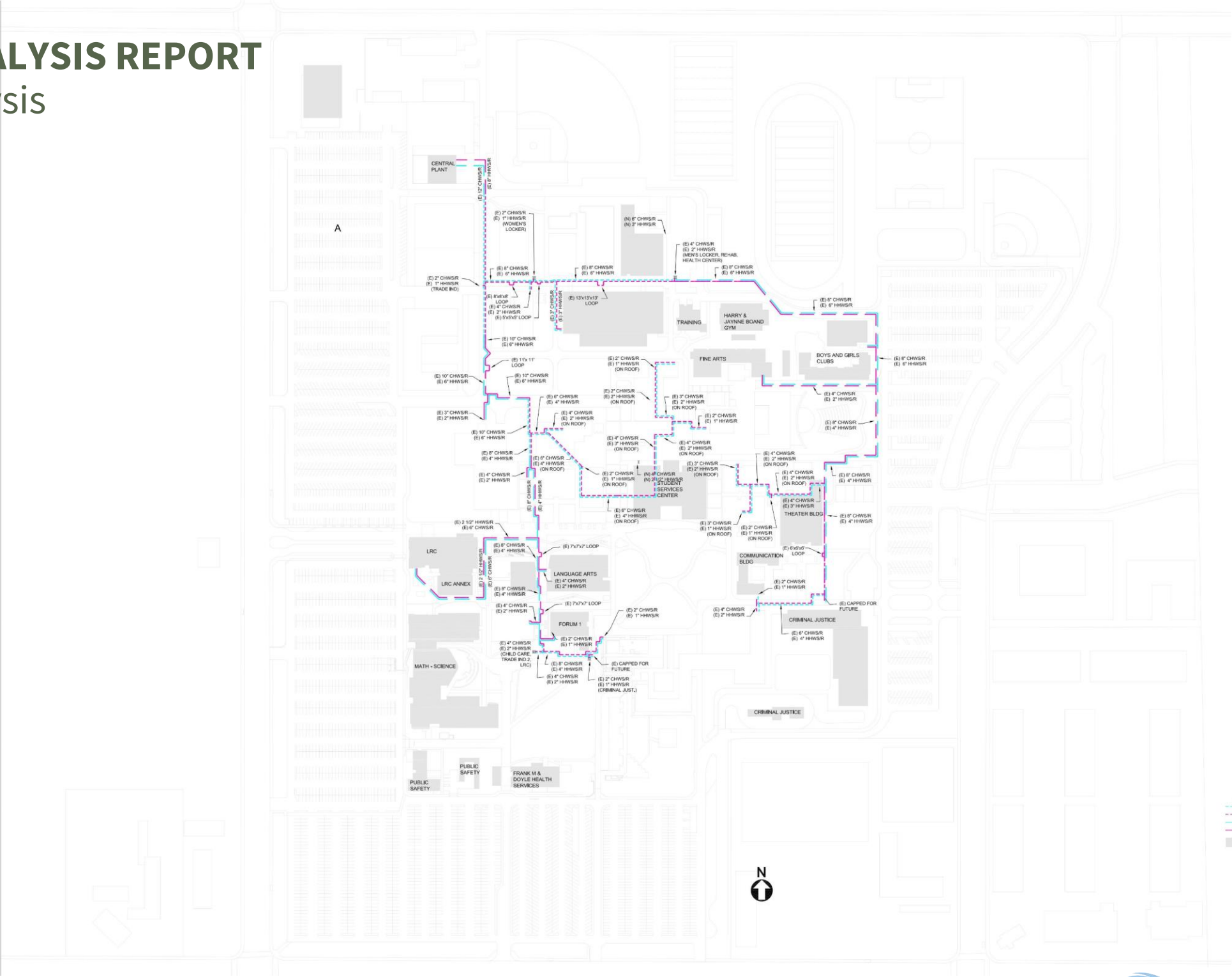
The existing central heating plant on campus produces enough space heating hot water for all existing and planned future buildings, which is an estimated total of approximately 27 million BTUH of boiler input load.

The current facilities plan indicates ten (10) new buildings are planned to be added to the campus while nineteen (19) existing buildings will be demolished to accommodate the proposed new construction. It appears that both the quantity of the buildings and the gross square footage will be reduced. As a result, we believe the capacity of the existing infrastructure is adequate to handle the demand for the proposed new buildings. With more accurate design and as-built information becoming available, more precise analysis and evaluation can be performed.

GWC MEP UTILITIES ANALYSIS REPORT

Mechanical System Analysis

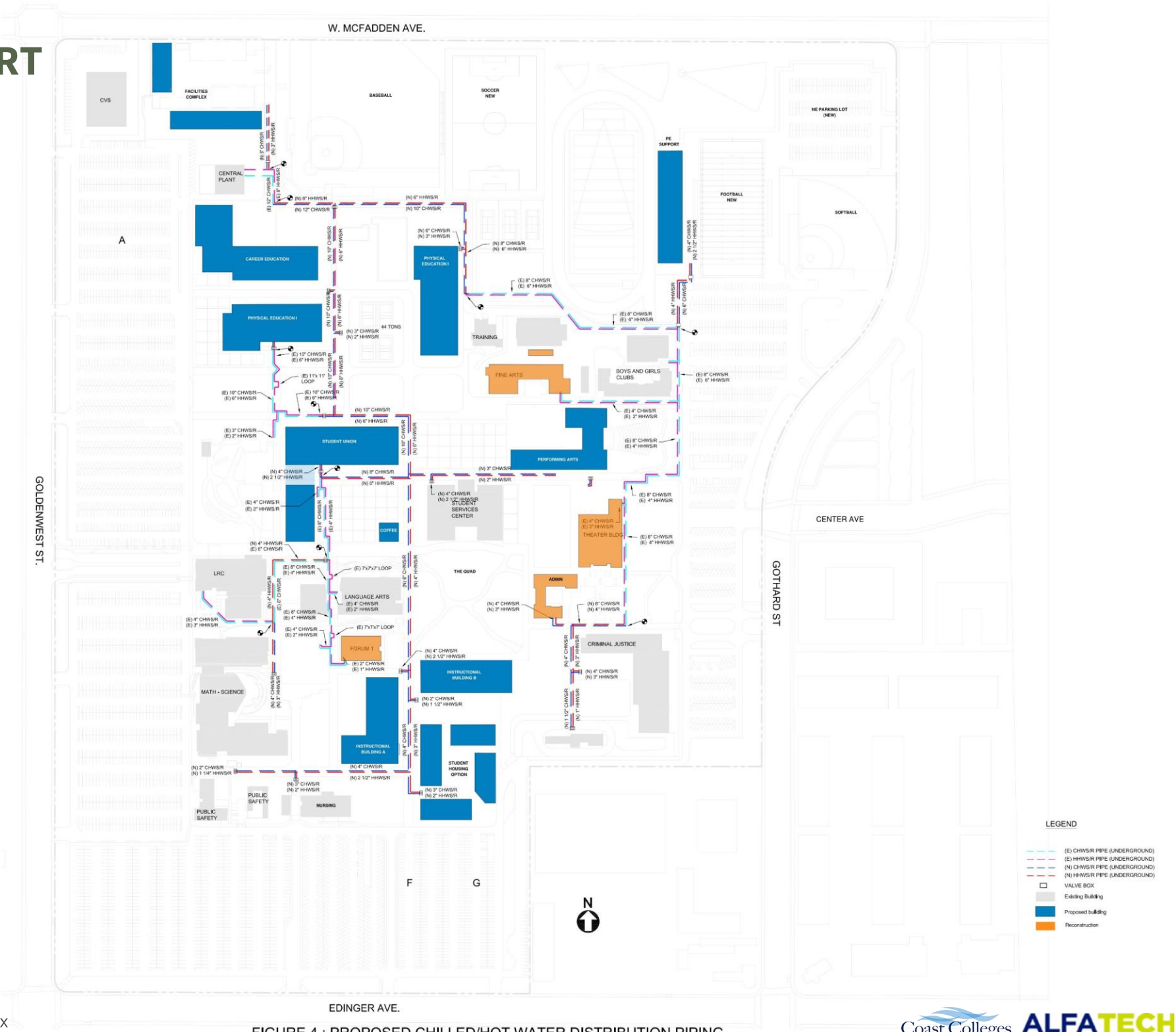
Figure 3: Existing Chilled/Hot Water Distribution Piping (Proposed Demolition Plan)



GWC MEP UTILITIES ANALYSIS REPORT

Mechanical System Analysis

Figure 4: Proposed Chilled/Hot Water Distribution Piping



GWC MEP UTILITIES ANALYSIS REPORT

Mechanical System Analysis

Table 2: HVAC System Analysis

HVAC LOAD SUMMARY												
Bldg #	BUILDING NAME	BUILDING AREA		COOLING LOAD			HEATING LOAD				LOAD ASSUMPTIONS	
		GSF	ASF	CHW TONS	Delta T (°F)	FLOW (GPM)	BOILER OUTPUT LOAD (MBH)	INPUT (KBTUH)	Delta T (°F)	FLOW (GPM)	ASF / TON	BTUH / ASF
EXISTING BUILDINGS												
4	Administration	32,604	29,544	80	(42-54)	160	1,182	1,477	(180-140)	59	370	40
14	Auto Technology	31,720	29,432	80	(42-54)	159	1,177	1,472	(180-140)	59	370	40
91	Bookstore	8,251	7,175	19	(42-54)	39	287	359	(180-140)	14	370	40
39	Boys/Girls Club Child Dev	8,750	7,657	21	(42-54)	41	306	383	(180-140)	15	370	40
3	Business	15,687	12,511	34	(42-54)	68	500	626	(180-140)	25	370	40
35	Central Plant	8,850	5,194	14	(42-54)	28	208	260	(180-140)	10	370	40
5	Communication	8,103	6,510	18	(42-54)	35	260	326	(180-140)	13	370	40
20	Community Theater	27,419	22,301	60	(42-54)	121	892	1,115	(180-140)	45	370	40
13	Corp Yard - Maintenance	14,403	13,838	37	(42-54)	75	554	692	(180-140)	28	370	40
16	Cosmetology	12,243	10,816	29	(42-54)	58	433	541	(180-140)	22	370	40
33	Criminal Justice Annex	2,150	1,826	5	(42-54)	10	73	91	(180-140)	4	370	40
8	Fine+App Arts	40,472	33,426	90	(42-54)	181	1,337	1,671	(180-140)	67	370	40
17	Forum 2	7,300	4,998	14	(42-54)	27	200	250	(180-140)	10	370	40
2	Forum One	11,398	8,364	23	(42-54)	45	335	418	(180-140)	17	370	40
15	Health Science	18,590	15,472	42	(42-54)	84	619	774	(180-140)	31	370	40
21	Humanities	39,944	27,534	74	(42-54)	149	1,101	1,377	(180-140)	55	370	40
94	Kaplan International	6,240	5,066	14	(42-54)	27	203	253	(180-140)	10	370	40
38	Library/LRC	55,251	40,505	109	(42-54)	219	1,620	2,025	(180-140)	81	370	40
37	Math & Science	122,747	76,577	207	(42-54)	414	3,063	3,829	(180-140)	153	370	40
1	Math Science	44,144	36,927	100	(42-54)	200	1,477	1,846	(180-140)	74	370	40
10	Mens Phys Ed	16,180	12,897	35	(42-54)	70	516	645	(180-140)	26	370	40
6	Music	11,911	10,896	29	(42-54)	59	436	545	(180-140)	22	370	40
95	New Criminal Justice Center	43,636	30,132	81	(42-54)	163	1,205	1,507	(180-140)	60	370	40
36	Nursing & Health Serv	25,815	17,223	47	(42-54)	93	689	861	(180-140)	34	370	40
26	Old Criminal Justice Center-TRN	11,583	8,941	24	(42-54)	48	358	447	(180-140)	18	370	40
18	PE-Rec	44,796	41,895	113	(42-54)	226	1,676	2,095	(180-140)	84	370	40
93	Pub Safety/Community Ed	5,950	3,717	10	(42-54)	20	149	186	(180-140)	7	370	40
97	Scenario Drill Build A	2,645	1,895	5	(42-54)	10	76	95	(180-140)	4	370	40
98	Scenario Drill Build B	1,650	1,108	3	(42-54)	6	44	55	(180-140)	2	370	40
99	Scenario Drill Build C	1,546	1,209	3	(42-54)	7	48	60	(180-140)	2	370	40
96	Student Services Center	48,894	29,680	80	(42-54)	160	1,187	1,484	(180-140)	59	370	40
92	Student Union	15,225	14,791	40	(42-54)	80	592	740	(180-140)	30	370	40
22	Swing Space (KOCE)	11,755	8,051	22	(42-54)	44	322	403	(180-140)	16	370	40
19	Technology	31,570	27,176	73	(42-54)	147	1,087	1,359	(180-140)	54	370	40
25	Wellness Center	4,418	4,331	12	(42-54)	23	173	217	(180-140)	9	370	40
11	Womens Phys Ed	8,720	6,469	17	(42-54)	35	259	323	(180-140)	13	370	40
	Sub-Total	802,560	616,084	1,665		3,330		30,804		1,232		
EXISTING BUILDINGS TO BE DEMOLISHED												
4	Administration	32,604	29,544	80	(42-54)	160	1,182	1,477	(180-140)	59	370	40
14	Auto Technology	31,720	29,432	80	(42-54)	159	1,177	1,472	(180-140)	59	370	40
91	Bookstore	8,251	7,175	19	(42-54)	39	287	359	(180-140)	14	370	40
3	Business	15,687	12,511	34	(42-54)	68	500	626	(180-140)	25	370	40
13	Corp Yard - Maintenance	14,403	13,838	37	(42-54)	75	554	692	(180-140)	28	370	40

GWC MEP UTILITIES ANALYSIS REPORT

Mechanical System Analysis

Table 2: HVAC System Analysis

HVAC LOAD SUMMARY												
Bldg #	BUILDING NAME	BUILDING AREA		COOLING LOAD			HEATING LOAD				LOAD ASSUMPTIONS	
		GSF	ASF	CHW TONS	Delta T (°F)	FLOW (GPM)	BOILER OUTPUT LOAD (MBH)	INPUT (KBTUH)	Delta T (°F)	FLOW (GPM)	ASF / TON	BTUH / ASF
16	Cosmetology	12,243	10,816	29	(42-54)	58	433	541	(180-140)	22	370	40
17	Forum 2	7,300	4,998	14	(42-54)	27	200	250	(180-140)	10	370	40
15	Health Science	18,590	15,472	42	(42-54)	84	619	774	(180-140)	31	370	40
21	Humanities	39,944	27,534	74	(42-54)	149	1,101	1,377	(180-140)	55	370	40
94	Kaplan International	6,240	5,066	14	(42-54)	27	203	253	(180-140)	10	370	40
1	Math Science	44,144	36,927	100	(42-54)	200	1,477	1,846	(180-140)	74	370	40
10	Mens Phys Ed	16,180	12,897	35	(42-54)	70	516	645	(180-140)	26	370	40
6	Music	11,911	10,896	29	(42-54)	59	436	545	(180-140)	22	370	40
26	Old Criminal Justice Center-TRN	11,583	8,941	24	(42-54)	48	358	447	(180-140)	18	370	40
18	PE-Rec	44,796	41,895	113	(42-54)	226	1,676	2,095	(180-140)	84	370	40
92	Student Union	15,225	14,791	40	(42-54)	80	592	740	(180-140)	30	370	40
22	Swing Space (KOCE)	11,755	8,051	22	(42-54)	44	322	403	(180-140)	16	370	40
19	Technology	31,570	27,176	73	(42-54)	147	1,087	1,359	(180-140)	54	370	40
11	Womens Phys Ed	8,720	6,469	17	(42-54)	35	259	323	(180-140)	13	370	40
	Sub-Total	382,866	324,429	877		1,754	12,977	16,221		649		
FUTURE BUILDINGS												
X	Administration	X	32,604	88	(42-54)	176	1,304	1,630	(180-140)	65	370	40
X	Career Education	X	13,540	37	(42-54)	73	542	677	(180-140)	27	370	40
X	Performing Arts	X	11,911	32	(42-54)	64	476	596	(180-140)	24	370	40
X	Instructional	X	6,240	17	(42-54)	34	250	312	(180-140)	12	370	40
X	M & O	X	44,144	119	(42-54)	239	1,766	2,207	(180-140)	88	370	40
X	Physical Education	X	44,796	121	(42-54)	242	1,792	2,240	(180-140)	90	370	40
X	Student Housing	X	11,825	32	(42-54)	64	473	591	(180-140)	24	370	40
X	Student Union	X	23,476	63	(42-54)	127	939	1,174	(180-140)	47	370	40
X	Volleyball Area	X	0	0	(42-54)	0	0	0	(180-140)	0	370	40
	Sub-Total		188,536	510		1,019	7,541	9,427		377		
HVAC LOAD CALCULATION												
	Existing Building Loads			1,665		3,330	287	30,804		1,232		
	Demolished Building Loads			877	0	1,754	12,977	16,221		649		
	Future Building Loads			510	0	1,019	7,541	9,427		377		
	Total Future Campus Loads			1,298	0	2,596	-5,149	24,010		960		

GWC MEP UTILITIES ANALYSIS REPORT

Plumbing System Analysis

Existing System

The scope of analysis on plumbing system is to determine if the overall existing plumbing site utility infrastructure can accommodate the future planning and expansion campus wide. A spreadsheet is provided to evaluate the plumbing load for each individual building, existing buildings to be demolished and proposed future buildings (Table 3 [Appendix 1]). The plumbing load for each building breaks down into water, sanitary, storm, gas, and fire. The overall and subtotals of different categories are also provided for comparison.

For most of the buildings, there are no design documents or as-built drawings available, therefore the estimate is largely based on the square footage except a few of them with drawings from which the plumbing load is taken. The square footage method is as follow:

Use 2016 CPC chapter 4 table A-occupant load factor to determine the maximum occupancy load for each type of building; Use 2016 CPC chapter 4 table 422.1 – minimum plumbing facilities to determine the minimum number of plumbing fixtures required and add 30% more to this number. With the quantity of plumbing fixtures, the water and sanitary load can be calculated in terms of fixture units or gallons per minute (GPM). Storm water (roof drainage) is evaluated based on square footage and converted to gallons per minute with corresponding rainfall rate. The gas load is evaluated based on 40 btu/square foot for space heating (except buildings served by heat pumps) plus the domestic water heating. The fire water demand is assumed 500 GPM for small building, 750 GPM for medium building and 1000 GPM for large building.

Analysis

The current facilities plan indicates that 10 new buildings are planned to be added to the campus while 19 existing buildings will be demolished to accommodate the proposed new constructions. It appears that both the quantity of the buildings and the gross square footage will be reduced. The total water, gas, sewer, and storm loads campus wide are expected to decrease about 10-20%. We believe the capacity of the existing infrastructure is adequate to handle the existing demand and the proposed new buildings.

GWC MEP UTILITIES ANALYSIS REPORT

Plumbing System Analysis

Table 3: Plumbing System Analysis

PLUMBING LOAD SUMMARY																	
Bldg #	BUILDING NAME	AREA		NO. OF FLOORS	YEAR BUILT	DOMESTIC WATER			FIRE WATER		NATURAL GAS			STORM		SANITARY	
		GSF	ASF			FIXTURE UNITS	WATER DEMAND (GPM)	WATER PRESSURE REQUIRED (PSI)	DEMAND (GPM)	WATER PRESSURE REQUIRED (PSI)	HVAC DEMAND (MBH)	PLUMBING DEMAND (MBH)	TOTAL NATURAL GAS DEMAND (MBH)	ROOF AREA (SF)	FLOW RATE (GPM)	FIXTURE UNITS	MAIN PIPE SIZE (INCH)
EXISTING BUILDINGS																	
4	Administration	32,604	29,544	2	1966	150	80	55	1,000	110	1,477	100	1,577	32,604	1,043	121	4
14	Auto Technology	31,720	29,432	2	1967	169	84	55	1,000	110	1,472	100	1,572	35,313	1,130	99	4
91	Bookstore	8,251	7,175	1	1966	26	39	50	750	70	359	100	459	8,251	264	21	4
39	Boys/Girls Club Child Dev	8,750	7,657	1	2011	178	86	50	750	70	383	100	483	9,535	305	146	4
3	Business	15,687	12,511	2	1966	80	61	55	750	110	626	100	726	9,160	293	64	4
35	Central Plant	8,850	5,194	1	2007	26	39	50	750	70	260	100	360	9,374	300	21	4
5	Communication	8,103	6,510	1	1966	49	50	50	750	70	326	100	426	8,103	259	39	4
20	Community Theater	27,419	22,301	2	1971	147	80	55	1,000	110	1,115	100	1,215	17,306	554	115	4
13	Corp Yard - Maintenance	14,403	13,838	1	1969	26	39	50	750	70	692	100	792	14,403	461	21	4
16	Cosmetology	12,243	10,816	2	1969	71	58	55	750	110	541	100	641	14,838	475	56	4
33	Criminal Justice Annex	2,150	1,826	1	2001	26	39	50	500	70	91	40	131	2,504	80	21	4
8	Fine+App Arts	40,472	33,426	2	1966	360	119	55	1,000	110	1,671	100	1,771	19,731	631	347	6
17	Forum 2	7,300	4,998	1	1971	52	52	50	750	70	250	100	350	7,300	234	43	4
2	Forum One	11,398	8,364	2	1966	80	61	55	750	110	418	100	518	11,398	365	64	4
38	Library/LRC	55,251	40,505	2	2011	147	80	55	1,000	110	2,025	100	2,125	23,557	754	115	4
37	Math & Science	122,747	76,577	3	2019	385	123	60	1,000	120	3,829	100	3,929	49,761	1,592	310	6
10	Mens Phys Ed	16,180	12,897	2	1966	89	64	55	750	110	645	100	745	16,180	518	69	4
6	Music	11,911	10,896	2	1966	55	53	55	750	110	545	100	645	11,911	381	45	4
95	New Criminal Justice Center	43,636	30,132	2	2018	162	83	55	1,000	110	1,507	100	1,607	30,335	971	129	4
36	Nursing & Health Serv	25,815	17,223	2	2008	110	70	55	1,000	110	861	100	961	10,568	338	94	4
26	Old Criminal Justice Center-TRN	11,583	8,941	1	1981	52	52	50	750	70	447	100	547	11,583	371	43	4
18	PE-Rec	44,796	41,895	2	1971	304	111	55	1,000	110	2,095	200	2,295	38,566	1,234	263	4
93	Pub Safety/Community Ed	5,950	3,717	1	2016	26	39	50	750	70	186	40	226	5,950	190	21	4
97	Scenario Drill Build A	2,645	1,895	1	2018	26	39	50	500	70	95	40	135	2,645	85	21	4
98	Scenario Drill Build B	1,650	1,108	1	2018	26	39	50	500	70	55	40	95	1,650	53	21	4
99	Scenario Drill Build C	1,546	1,209	1	2018	26	39	50	500	70	60	40	100	1,546	49	21	4
96	Student Services Center	48,894	29,680	2	2018	253	102	55	1,000	110	1,484	100	1,584	27,911	893	283	6
92	Student Union	15,225	14,791	2	1966	89	64	55	750	110	740	100	840	15,225	487	69	4
22	Swing Space (KOCE)	11,755	8,051	1	1976	52	52	50	750	70	403	100	503	11,755	376	43	4
19	Technology	31,570	27,176	2	1971	147	80	55	1,000	110	1,359	100	1,459	12,842	411	119	4
25	Wellness Center	4,418	4,331	1	1979	40	46	50	500	70	217	40	257	4,418	141	41	4
11	Womens Phys Ed	8,720	6,469	1	1966	64	56	50	750	70	323	100	423	8,720	279	51	4
	Sub-Total	693,642	531,085			3,493	2,079		25,500		26,554	2,940	29,494	484,943	15,518	2,936	
EXISTING BUILDINGS TO BE DEMOLISHED																	
4	Administration	32,604	29,544	2	1966	150	80	55	1,000	110	1,477	100	1,577	32,604	1,043	121	4
14	Auto Technology	31,720	29,432	2	1967	169	84	55	1,000	110	1,472	100	1,572	35,313	1,130	99	4
91	Bookstore	8,251	7,175	1	1966	26	39	50	750	70	359	100	459	8,251	264	21	4
3	Business	15,687	12,511	2	1966	80	61	55	750	110	626	100	726	9,160	293	64	4
13	Corp Yard - Maintenance	14,403	13,838	1	1969	26	39	50	750	70	692	100	792	14,403	461	21	4
16	Cosmetology	12,243	10,816	2	1969	71	58	55	750	110	541	100	641	14,838	475	56	4
17	Forum 2	7,300	4,998	1	1971	52	52	50	750	70	250	100	350	7,300	234	43	4
37	Math & Science	122,747	76,577	3	2019	385	123	60	1,000	120	3,829	100	3,929	49,761	1,592	310	6
10	Mens Phys Ed	16,180	12,897	2	1966	89	64	55	750	110	645	100	745	16,180	518	69	4
6	Music	11,911	10,896	2	1966	55	53	55	750	110	545	100	645	11,911	381	45	4

GWC MEP UTILITIES ANALYSIS REPORT

Plumbing System Analysis

Table 3: Plumbing System Analysis

PLUMBING LOAD SUMMARY																	
Bldg #	BUILDING NAME	AREA		NO. OF FLOORS	YEAR BUILT	DOMESTIC WATER			FIRE WATER		NATURAL GAS			STORM		SANITARY	
		GSF	ASF			FIXTURE UNITS	WATER DEMAND (GPM)	WATER PRESSURE REQUIRED (PSI)	DEMAND (GPM)	WATER PRESSURE REQUIRED (PSI)	HVAC DEMAND (MBH)	PLUMBING DEMAND (MBH)	TOTAL NATURAL GAS DEMAND (MBH)	ROOF AREA (SF)	FLOW RATE (GPM)	FIXTURE UNITS	MAIN PIPE SIZE (INCH)
26	Old Criminal Justice Center-TRN	11,583	8,941	1	1981	52	52	50	750	70	447	100	547	11,583	371	43	4
18	PE-Rec	44,796	41,895	2	1971	304	111	55	1,000	110	2,095	100	2,195	44746	1,432	263	6
33	Criminal Justice Annex	2,150	1,826	1	2001	26	39	50	500	70	91	40	131	2,504	80	21	4
92	Student Union	15,225	14,791	2	1966	89	64	55	750	110	740	100	840	15225	487	69	4
19	Technology	31,570	27,176	2	1971	147	80	55	1,000	110	1,359	100	1,459	16927	542	119	4
11	Womens Phys Ed	8,720	6,469	1	1966	64	56	50	750	70	323	100	423	8720	279	51	4
	Sub-Total	387,090	309,782			1,785	1,055		13,000		15,489	1,540	17,029	299,426	9,582	1,415	
FUTURE BUILDINGS																	
X	Administration	X	32,604	2	X	172	85.0	55	1,000	110	1,630	100	1,730	16,302	522	138	4
X	Career Education	X	13,540	2	X	80	61.0	55	750	110	677	100	777	6,752	216	64	4
X	Fine Arts	X	40,472	2	X	147	80.0	55	1,000	110	2,024	100	2,124	20,236	648	115	4
X	Gallery Music Forum	X	11,911	2	X	62	56.0	55	750	110	596	100	696	5,956	191	49	4
X	Instruction	X	6,240	1	X	49	50.0	50	750	70	312	100	412	6,240	200	39	4
X	MS	X	44,144	2	X	225	96.0	55	1,000	110	2,207	100	2,307	22,072	706	181	4
X	Recreation Ed	X	44,796	2	X	143	79.0	55	1,000	110	2,240	200	2,440	22,398	717	111	4
X	Student Housing	X	11,825	2	X	256	76.0	55	750	110	591	200	791	5,913	189	220	6
X	Student Union & Bookstore	X	23,476	2	X	125	74.0	55	1,000	110	1,174	100	1,274	11,738	376	101	4
X	Volleyball	X	16,180	2	X	90	65.0	55	1,000	110	809	100	909	8,090	259	71	4
	Sub-Total		245,188			1,349	722		9,000		12,259	1,200	13,459	125,697	4,022	1,089	
PLUMBING LOADS CALCULATION																	
	Existing Building Loads					3,493	2,079		25,500		26,554	2,940	29,494	484,943	15,518	2,936	
	Demolished Building Loads					1,785	522		13,000		15,489	1,540	17,029	299,426	9,582	1,415	
	Future Building Loads					1,349	722		9,000		12,259	1,200	13,459	125,697	4,022	1,089	
	Total Future Campus Loads					3,057	2,279		21,500		23,325	2,600	25,925	311,214	9,959	2,610	

GWC CIVIL DESIGN CONSIDERATIONS

OVERVIEW

Golden West College, located at the northeast corner of Goldenwest St and Edinger Ave in Huntington Beach, CA, is undergoing significant redevelopment as part of its updated 2045 Facilities Plan. Originally, the approved 2030 Vision proposed 15 new buildings and the redevelopment of 5 existing structures. However, the updated plan now includes the construction of 8 previously proposed buildings while introducing 8 additional new buildings on campus.

In addition to these structural improvements, the project will feature enhanced landscaping and the development of new walkways to improve campus accessibility. New utility lines will be reconfigured to accommodate these upgrades, ensuring the improvements supports the college’s long-term growth and modernization.

EXISTING CONDITIONS / SITE DEMOLITION

Golden West College campus primarily consist of buildings, landscaped areas, concrete walkways, and asphalt roads. Several of the existing buildings are located within the areas designated for new improvements and will need to be demolished, with their utility lines capped and abandoned. Additionally, any existing utilities on-site that conflict with the proposed design will either be removed if no longer necessary or relocated to accommodate the new construction.

To ensure compliance and site stability during construction, erosion control measures such as fiber rolls and dust control fencing will be implemented around the project perimeter. Temporary construction entrances and exits will also be stabilized to minimize disruption and maintain safety throughout the redevelopment process.

SITE EXCAVATION AND GRADING

The current surface drainage patterns cannot be verified as the Topographic Survey has not been obtained. However, based on available resources such as Google Earth, it can be inferred that the existing drainage pattern flows from northeast to southwest across the site. While no specific details have been provided regarding offsite improvements to the storm drain system, it is known that a significant drainage infrastructure traverses the campus, running from the western edge of Goldenwest St to the southern boundary along Edinger Ave. This system consists of a 63-inch reinforced concrete pipe (RCP) that transitions into a larger 75-inch RCP line, serving as a critical component of the site's stormwater management. Any excavation and grading activities will need to account for this drainage system to ensure proper water flow and prevent disruptions to existing hydrology. To minimize grading, the finish floor elevations of the proposed buildings will be determined to meet ADA minimum requirements while reducing the need for extensive grading and minimizing impacts to utilities. Accessible open-grated catch basins will be strategically installed throughout the project site to collect surface runoff. All new flat work within the project scope will comply with accessibility regulations, as well as provide smooth transitions to the existing surrounding facilities. Grading for the project will adhere to the recommendations outlined in a provided geotechnical report. Excavation will follow the Standard Specifications for Public Works Construction ("Greenbook").

SITE CIVIL UTILITIES

The civil utilities for the project include storm drains, domestic water, and sanitary sewer systems. The Underground Mapping by P2S details the current utility infrastructure within the project limits.

GWC CIVIL DESIGN CONSIDERATIONS

STORM DRAINAGE

In the proposed condition, preserving the existing drainage pattern remains a primary objective to ensure effective stormwater management. A network of catch basins will be strategically placed to collect runoff from their respective tributary areas, ideally positioned within landscaped zones to capture surface flows from adjacent hardscapes while also managing potential runoff from softscape areas. These catch basins will be integrated into the existing storm drain system, maintaining efficient drainage across the site. All roof drains from the proposed buildings will be directed into this system, further supporting proper water flow and minimizing the risk of localized flooding.

To further accommodate the proposed buildings, storm drain lines have been strategically rerouted to ensure they do not run beneath new structures while maintaining the existing drainage pattern. These adjustments allow for uninterrupted stormwater flow while preventing potential conflicts with building foundations.

WATER DISTRIBUTION

The existing water line system on campus currently serves both buildings and fire hydrants, ensuring a reliable water supply throughout the site. To accommodate proposed improvements, water lines passing through new construction areas have been strategically rerouted to prevent any portions of the system from running beneath new structures. Several new laterals have been integrated into the existing network to provide necessary connections for the proposed buildings, ensuring seamless water distribution. A backflow preventer, such as a double check detector assembly (DCDA), is likely unnecessary if a campus-wide backflow preventer is provided before the connection point. The routing of these water lines within the building footprint will be determined by the plumbing engineer. All newly proposed water lines, as well as existing lines designated for removal, are detailed in the Civil Proposed Utility Plan.

SANITARY SEWER

As part of the campus redevelopment, existing sanitary sewer lines that currently service buildings slated for demolition will be cut, capped, and abandoned, as they will no longer be necessary once these structures are removed. To accommodate the new construction, a network of new sanitary sewer lines will be installed to provide proper service to the proposed buildings. This will include the placement of new laterals, cleanouts, and manholes to ensure efficient wastewater flow and prevent potential blockages within the system. New sewer routes have been strategically planned, as some proposed buildings will be constructed directly over existing lines, necessitating their relocation to avoid structural conflicts and potential damage. The design will aim to match the existing pipe sizes at their points of connection; however, if the projected demand from new buildings requires additional capacity, an upsize of certain sewer lines may be considered to maintain optimal system performance. Laterals that require removal and sanitary sewer lines being proposed can be found in the Civil Proposed Utility Plan.

GWC CIVIL DESIGN CONSIDERATIONS

EXISTING UTILITY LEGEND:

- SS SANITARY SEWER
- W WATER
- SD STORM DRAIN
- MANHOLE
- FH FIRE HYDRANT
- WATER METER

PROPOSED UTILITY LEGEND:

- SS SANITARY SEWER
- W WATER
- SD STORM DRAIN
- EXISTING SANITARY SEWER TO BE REMOVED
- EXISTING WATER TO BE REMOVED
- EXISTING STORM DRAIN TO BE REMOVED
- PROPOSED FIRE HYDRANT
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED BUILDING

