

17 APR 03  
REVISED 12 MAY 04

ESTRELLA MOUNTAIN COMMUNITY COLLEGE  
**CAMPUS MASTER PLAN UPDATE**



MARICOPA COUNTY COMMUNITY COLLEGE DISTRICT

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CAMPUS MASTER PLAN UPDATE

**VISION STATEMENT**

We will meet your needs and expand your aspirations through creative learning experiences. Our environment emphasizes caring, teamwork and flexibility. In partnership with us, you will gain knowledge, abilities and values essential to success in a highly complex and technological world. We are committed to building better communities...one life at a time.

**MISSION STATEMENT**

Estrella Mountain Community College provides opportunities for our students to achieve success in educational and personal goals. We are an institution of higher education serving the West Valley communities through: General Education, Transfer Education, Developmental Education, Workforce Development, Community Education and Student Support Services.

**CORE VALUES**

Our Core Values represent important elements of life at Estrella Mountain. They serve as enduring guides for all employees in meeting the needs of our many communities.

**COLLABORATION AND TEAMWORK**

Work together toward common goals.  
Promote an ongoing exchange of ideas.

**DIVERSITY**

Recognize that perspectives are shaped by backgrounds and experience.  
Promote positive attitudes towards each other.

**INTEGRITY**

Commit to the highest principles of academic and professional standards.

**CREATIVE AND CONTINUOUS LEARNING**

Commit to the success of students and employees.  
Encourage innovation.  
Promote a caring and supportive environment.

**RESPECT AND FAIRNESS**

Treat each other with respect.  
Act fairly and honestly with all.

The Estrella Mountain Community College 2003 Master Plan Update is the result of a team-oriented, highly participatory planning process involving representatives from EMCC.

The directional force for the Master Plan Update builds upon the 1990 Master Plan report and reinforces the EMCC mission, vision, and core values. The intent of this 2003 Master Plan Update is to direct the development of a comprehensive community college that will continue to serve residents of the western Maricopa County communities.

The Master Plan Update and the planning process focused on the accommodation of proposals for new and expanded programs and services which provide a response to the new and increasing demands that have been identified within the EMCC service area. The 2003 Master Plan Update also illustrates the necessary expansion of the campus infrastructure and the continued development of the existing student services program.

This Master Plan Update is intended to address the demands and trends of the EMCC service area. The majority of Estrella Mountains enrollment is generated in Western Maricopa County that includes the communities of Avondale, Goodyear, Litchfield Park, Tolleson, Buckeye, Gila Bend, El Mirage, Surprise and parts of West Phoenix. The service area is among the fastest growing parts of the County. Fueled by continued commercial and residential development, the area will become more affluent while pockets of poverty will continue to exist. At the same time the service area will continue to become more ethnically diverse.

The continued expansion of transportation and development corridors leading to EMCC's service area is expected to increase the accessibility of the existing EMCC campus. Interstate 10 is located 1.5 miles south of the EMCC campus, an outer loop is located to the west at Cotton Lane and the southward continuation of the Agua Fria Freeway to the west will surround the site.

Estrella Mountain Community College considers its proposed programs and services to be vital components in fulfilling its mission and accomplishing its strategic planning goals.



	YEAR	ANNUAL FTSE	FALL HEAD COUNT	NEW SF PER PHASE	BUILDING SF	PARKING SPACES PER PHASE	PARKING SPACES
<b>EXISTING</b>	2002-2003	2,680	5,439	-	232,536	-	1,108
<b>PHASE THREE</b>	2004-2014	6,417	12,262	156,000	388,536	1,926	3,034
<b>PHASE FOUR</b>	2014-2024	10,360	23,587	414,327	802,863	2,026	5,060

Notes:

FTSE - Full-Time Student Equivalent which is equal to 15 credit hours taken by one or more students during a semester.

Annual FTSE - is projected and includes 150 Skill Center FTSE.

Fall Headcount - excludes Skills Center Headcount.

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**STATEMENT OF PURPOSE**



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The purpose of the EMCC Master Plan Update is to establish a basis for coordinating physical development decisions to:

*Reinforce* the Vision of the EMCC campus.

*Support* the Core Values established by the employees at EMCC.

*Improve* the functioning of the EMCC campus for students, faculty, and staff.

*Improve* the quality of life for students, faculty, and staff.

*Optimize* the use of existing property as well as determine needs for future acquisitions

*Solve* the much needed parking/entry challenges that exist today on the EMCC campus.

The Master Plan Update that resulted from this effort addresses these planning goals by acknowledging the physical framework systems (development patterns, open space, pedestrian circulation, parking, vehicular circulation, service and utilities), which most fundamentally influence the EMCC campus appearance and functionality.

In summary, the Master Plan Update is concerned with physical development and provides a framework for long-term planning that is clear and flexible – responding to changing needs and conditions. The Update is not a detailed blueprint for building construction, rather, it demonstrates how the many factors that influence the quality of the EMCC campus environment should work together to create a functional environment for the purpose of delivering a high quality educational experience. Continued periodic updating of the plan will be required to remain current with activities, standards and other unknown initiatives or technologies that will become relevant in the future.

**Enlarge the Campus full build-out to approximately 802,000 gross square feet.**

- Accommodating 20K to 25K traditional fall students
- Illustrate the efficient use of the newly acquired 30 acres to the west (assuming no more than 20 acres dedicated to Athletic Fields)

**Examine opportunities to reinforce the existing orientation of the campus and original Centerpiece Concept.**

- Establish new major campus entrance from the north, crossing the R.I.D. canal.
- Estrella Hall will continue to be the focus and the architectural centerpiece of the EMCC campus. Recommend increasing the Estrella Hall centerpiece to a three-story building (most other buildings will be recommended at 2-stories).
- Illustrate the need for a campus loop road and the need for pedestrian safe walking paths and trails. Consider public transportation, car-pooling and bike paths.

**Incorporate site work improvements along Dysart and Thomas Roads**

- Create a pedestrian friendly entry at Dysart and Thomas roads from bus stops using walking and bike paths, trails, etc.
- Recommend the burial of electrical lines at Dysart Road
- Provide additional landscaping along Dysart Road and adjacent water retention areas.
- Establish a view corridor into campus for a person traveling south on Dysart Road and crossing the canal.

**Maximize the development potential of the site**

- Maximize and illustrate the parking potential and capacity
- Minimize the 'left over' land that could potentially be located at the corner of the property.

**GENERAL EDUCATION**

- To provide the knowledge and abilities that enable students to achieve academic and personal goals.

**TRANSFER EDUCATION**

- To provide quality transfer courses and programs that enable students to achieve success at four-year institutions.

**DEVELOPMENTAL EDUCATION**

- To provide quality developmental courses and programs that prepare students for educational and personal success.

**WORKFORCE DEVELOPMENT**

- To provide specialized quality training, courses and services that meet the needs of businesses and individuals.

**STUDENT SUPPORT SERVICES**

- To provide quality services and resources that meet the needs of students and support learning.

**COMMUNITY EDUCATION**

- To provide a wide variety of opportunities that meet the needs of life-long learners.

**TECHNOLOGY**

- The technology infrastructure will be highly flexible
- Technology will be fully integrated into all planning and facilities initiatives
- Cutting edge technology will be broadly incorporated
- Showcase facilities will be available to model the best in technology practices
- Wireless technology will be in place throughout the college
- The technology experience for students and staff will continue to be personalized whenever and wherever possible

**TEACHING AND LEARNING**

- A wide range of technologies will be available to support teaching and learning across the curriculum
- Flexible instructional delivery systems and spaces will support a wide range of teaching and learning opportunities
- Instructional spaces will encourage collaboration and support multiple teaching and learning styles

**PHYSICAL ENVIRONMENT**

- Future growth will be guided by an up-to-date Master Plan
- The campus orientation and original centerpiece concept have been reviewed and realigned as necessary
- The architecture and landscape will continue to reflect environmentally sensitive, southwestern design concepts
- The need for more than three phases of development has been identified
- Existing facilities have been moved to their permanent locations as defined by the existing Master Plan
- Sufficient instructional space will be available to support projected enrollments
- Useable outdoor and indoor spaces will be available to support projected enrollments
- Quiet, comfortable, flexible spaces will be widely available
- The campus will continue to be pedestrian-friendly
- Facilities will be highly energy efficient
- Zone landscaping will be expanded
- District standards for parking will continue to be exceeded
- Efficient vehicular circulation will be designed
- The 24-hour campus will be more secure

**GROWTH (EMCC Environmental Scan – July 2002)**

- In less than 20 years the Estrella Mountain extended service area will grow to a half-million residents. Approximately 375,000 of these residents will live within a six mile radius of campus, with the remaining 125,000 living in the extended service area communities of Buckeye, El Mirage and Surprise.
- Estrella Mountain enrollment will continue to grow for at least the next 20 years with the college hitting a fall enrollment of 12,000 to 13,000 students in 2014 and 20,000 to 25,000 students by 2024.
- Estrella Mountain's annual Total FTSE will grow from just over 2,500 today to 6,993 by 2014.

**DEMOGRAPHICS (EMCC Environmental Scan – July 2002)**

- If the historic trend between 1990 and 2000 continues, the ethnic minority populations will become the majority population.
- By 2010 the White (non-Hispanic) population will drop from 49% of the service area to just 40% while the ethnic and multi-racial categories will surge to 60%. Hispanics will continue to be the largest ethnic population and will present 90% of the ethnic population and more than half of all residents in our service areas.
- The community will become more affluent over time as new commercial and residential developments continue to grow in the Southwest Valley. However, pockets of high poverty in the older sections of the service area will still exist.
- The number of high school graduates are increasing therefore program growth is changing. Over the next decade the number of traditional college aged students (18-24) will increase as the children of the baby boom reach college age. This growth will place higher demands on day classroom space. Estrella Mountain feeder high schools will continue to see rapid growth; however, historical graduation rates for many of these high schools have been lower than the Maricopa County average.
- While Estrella Mountain's student population will become slightly younger, the college will still serve a diverse population of returning adults and seniors from the local adult communities.

The following list of planning parameters was identified as a basis for the development of the Master Plan.

**EXISTING CAMPUS 2002 - 2003**

Estrella Mountain Community College has kept to the original master plan developed in 1990 by respecting the 'centerpiece' concept, courtyard buildings and the diagonal as a major organizing element. The 'centerpiece' facility is located in the heart of the campus and all other facilities are arranged to reinforce its centrality. Existing structures are arranged to interrelate indoor and outdoor space. These 'U-shaped' structures embrace the concept of courtyards and help promote individual and group involvement within the campus.

- 1 2-story Estrella Hall 51,800 SF
- 2 1-story Komatke Hall 49,082 SF
- 3 2-story Montezuma Hall 80,444 SF
- 4 1-story PE / Fitness Center 8,774 SF
- 5 1-story Skill Center 36,436 SF
- 6 Central Plant 6,000 SF

The original master plan represents the campus organized around a diagonal stretching from the southeast corner to the far northwest corner.

The location of the existing supportive infrastructure and building envelopes allow for future construction to occur along the long diagonal of the site. Multi-story buildings and a two phased expansion to the central plant will allow the existing campus to accommodate the expanding population of the surrounding community. Future athletic fields and facilities will continue the anchor the northwest corner of the site while parking will continue to be located around the building core to the northeast and southwest.

While the original master plan was developed around 105 acres, the existing campus plan shown reflects a site of 135 acres due to a recent 30 acre parcel acquisition to the west. The existing campus respects the relationship of the college to the community and the pattern of future site developments.



**2003 TOTALS**  
 2,680 ANNUAL FTSE  
 5,439 HEAD COUNT  
 232,536 BUILDING SF  
 1,108 PARKING SPACES



**SERVICE AREA**

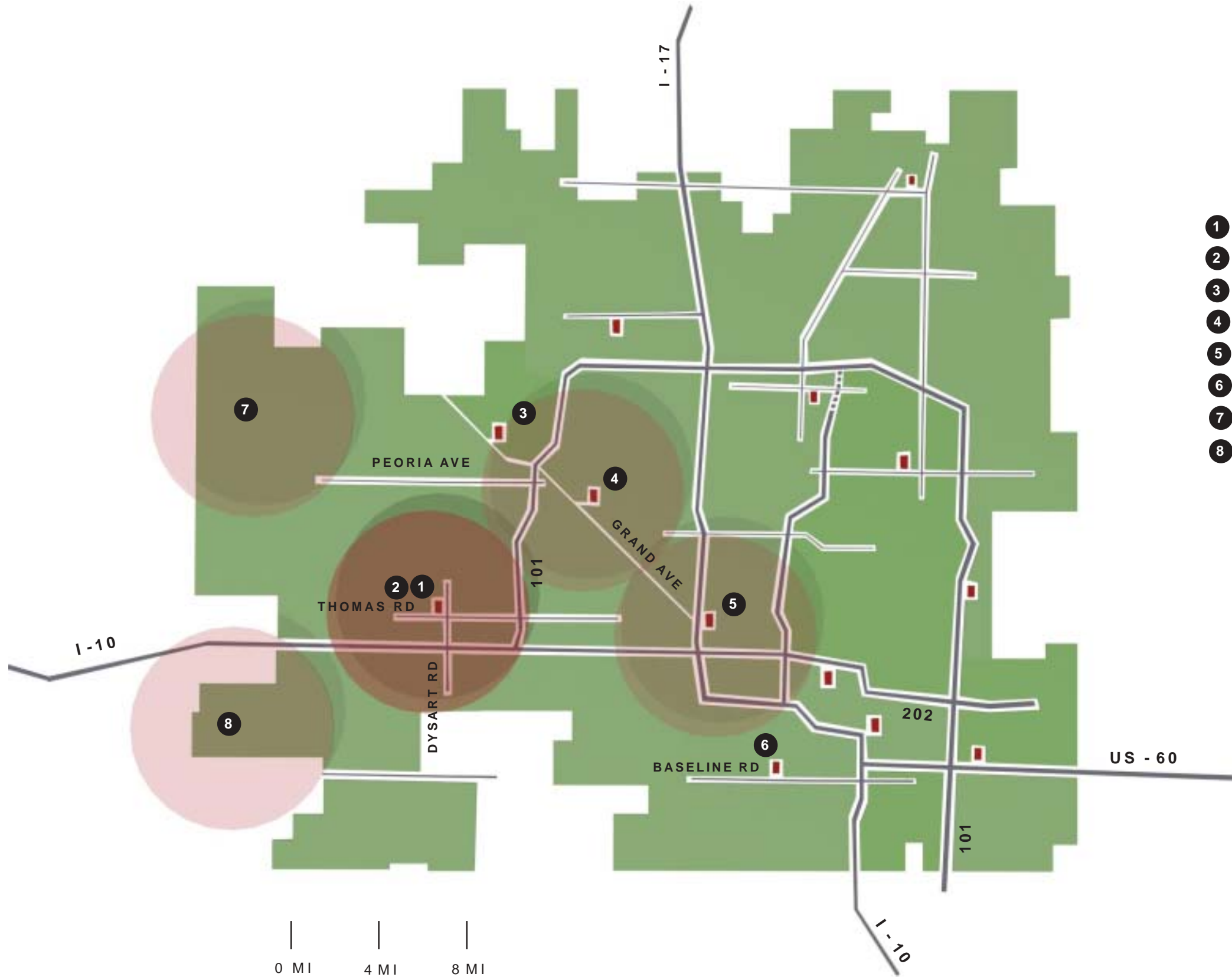
The service area of Estrella Mountain Community College contains approximately 220,000 people in west Phoenix and the communities of western Maricopa County.

The service area is defined by census tracts that represent 67<sup>th</sup> Avenue on the east, Litchfield Park, El Mirage and Surprise on the north, Buckeye and Gila Bend to the far southwest and Avondale, Goodyear, Litchfield Park and Tolleson on the south.

- 1 Estrella Mountain Community College
- 2 Southwest Skill Center
- 3 Rio Sun Cities Learning Center
- 4 Glendale Community College
- 5 Phoenix Community College
- 6 South Mountain Community College
- 7 Surprise / El Mirage / Peoria Satellite Campus
- 8 West Phoenix / Buckeye Satellite Campus

Estrella Mountain Community College has been successful in continuing to address the growth potential being realized in western Maricopa County. This continued growth is highlighted by plentiful and affordable land for development, and ever-developing infrastructure, available resources and positive attitudes for economic development and growth.

Tied to the ever-growing development opportunities is the expanding freeway system in Maricopa County. Interstate 10 is located 1.5 miles south of the EMCC campus. The 303 outer loop and the 101 Agua Fria Freeway surround the site.



PHOENIX KEY PLAN

**CONTEXT PLAN**

Estrella Mountain Community College started offering courses in 1990 and opened its Avondale campus in 1992. Since then the surrounding population has grown to over 220,000 residents and is expected to grow to more than 500,000 residents by 2020.



- 1 CVS Pharmacy
- 2 Childtime Daycare
- 3 Palm Valley Elementary School
- 4 Future Catholic High School
- 5 Future Commercial Development
- 6 Future Residential Development
- 7 Future Landscaped Open Space
- 8 Privately Owned Parcel - Undeveloped

The existing and proposed developments that surround Estrella Mountain Community College influence the increasing demand for campus expansion. Existing corporate centers, retail shops and resorts are just a few of the many amenities that have helped attract a diverse population to the surrounding area.

The campus has already seen the adjacent community grow with the Palm Valley development to the south and the Los Palmeros development to the east. Future residential developments have already been planned to the north and west.

A Catholic High School has also been planned a half mile west of campus off Thomas Road. The school is planned to have a large gathering facility, educational classrooms, athletic fields with bleachers and extensive parking. The proximity to campus and the practical facilities may allow the college to utilize the amenities in cooperation with the school to further help the college meet the demands of the growing population.

## DEVELOPMENT PATTERNS

Clear principles for land use organization are needed to establish a basis for coordinating future facility locations (i.e. academic facilities, parking, recreation, etc.). Planning for the future of the EMCC campus should build upon existing patterns. The organization of the EMCC campus land uses into logical zones can improve convenience, enhance orientation and improve operational effectiveness. A compact and dense campus with common and shared uses at the center will also enhance opportunities to improve social interaction. The manner in which campus buildings relate to open spaces, parking, and other buildings also plays an important role in establishing a visible and understandable sense of campus structure at EMCC.

### Recommendations

- Continue the development of the original “centerpiece” concept, locating future buildings in a manner which reinforces its centrality.
- Continue the development of buildable sites within a loop road which, respond to program demands for classroom, administrative, student service, support space as well as the performing arts.
- Explore development opportunities for the appropriate use of an additional 30-acres, which was purchased on the west side of the site, in order to best meet existing campus demands.
- Continue to explore existing opportunities for adjacent land acquisitions to support development demands.
- Reorganize and expand existing athletic fields and facilities to maximize the development opportunities.
- Recognize the importance of the placement of the proposed Performing Arts Center as an opportunity to interface more with the surrounding community.
- Continue to locate buildings in a fashion to interrelate indoor and outdoor spaces. Orient new facilities to provide variety and take advantage of views and sun/wind exposures unique to the southwest.

## OPEN SPACE AND PUBLIC ART

When treated as an integrated system, open space can create a powerful organizing element which can serve as a basis for locating and orienting buildings. Open space can enhance visitor orientation by making the overall structure of the EMCC campus more understandable. The location and design of open spaces can also create a unifying visual matrix that can help to blend the architecture on campus. Open space treatments or landscaping at the EMCC campus perimeter along roadways and entrances help to establish a positive identity for the campus. A variety of open space types, whether hard or soft surfaced, are included in the open space system for the EMCC campus.

### Recommendations

- Continue the development of a variety of open space opportunities (plazas, themed courtyards, etc.) that will facilitate large as well as small numbers of individuals on campus. These open spaces will provide increased opportunities for student, faculty, and staff interaction on the EMCC campus. Continue to develop themed courtyards in conjunction with new building development.
- Continue the development of the landscape character around the perimeter zone of the EMCC campus. This landscape treatment demonstrates an environmentally responsible and sustainable approach to campus landscape improvements and projects a positive public image for the campus.
- Continue to identify locations and opportunities for including public art on the EMCC campus. Placement of the art pieces should be in highly visible areas and should be flexible enough that opportunities to rotate various pieces remain an option. Art pieces, which take advantage of the natural elements associated with the Phoenix desert climate (sun, wind, rain, etc.) should be encouraged.
- Continue to integrate art within the campus architecture.

## PEDESTRIAN CIRCULATION

A well-designed pedestrian walkway system can help bring order to the EMCC campus. Safety, convenience and order can be significantly enhanced if direct and clearly defined walkway connections are established between campus buildings and parking. The walking distance between campus functions is a critical measure of the organizational effectiveness of a campus environment. On the EMCC campus, the pedestrian will have priority, which results in a safer and more attractive environment. Parking will continue to be located at the perimeter of the building core.

### Recommendations

- Continue the development of a pedestrian walkway system that minimizes the number of instances where a pedestrian must encounter a vehicle accessing the EMCC campus and related parking.
- Develop a walkway hierarchy that recognizes and reinforces the volumes of students, faculty, and staff moving between different on-campus destinations.
- Provide for a safe, efficient, and convenient means of getting from the parking areas to the central core area of the EMCC campus. Improvements to consider include adequate sidewalk widths, appropriate landscaping, lighting, and provisions for shade structures.
- Analyze and accommodate the needs of the handicapped student, senior and other specialized users, including the partially disabled.
- Establish and reinforce a walkway system that limits the number of times a user has to share the walkway with a service vehicle.
- Continue to develop safe and adequate access to the campus core from the campus perimeter. Provisions for sidewalks, bike trails, and bus stop connections must be incorporated into the Master Plan which specifically address access across Dysart Road.

The 2003 Master Plan Update for the EMCC illustrates the planning recommendations that are based on an understanding of the existing campus patterns, which present problems to resolve as well as assets and opportunities on which to build. The following paragraphs describe how the various EMCC campus systems can be influenced to meet the established master plan purpose and goals. These campus systems and the way they relate to one another determine how well the EMCC campus is organized as well as the way it appears aesthetically.

**VEHICULAR CIRCULATION**

The traffic patterns of the EMCC campus are directly linked to the fabric of the Avondale/Litchfield Park/Goodyear community; problems generated by one have a direct impact on the other. Therefore, consideration was given to the impact that campus development will have on the surrounding community, and vice versa. Where streets define the edge of the EMCC campus, opportunities to improve the visibility to visitors and to improve access have been identified. The opportunity to reconfigure the internal campus drive will allow a higher quality pedestrian environment to be achieved. The continued positioning of parking around the campus perimeter will capture the majority of the vehicular traffic.

**Recommendations**

- Within the core of the EMCC campus where activity is greatest, vehicular traffic will be for the most part eliminated and service traffic will be carefully controlled. The enforcement of this circulation concept will ensure a pedestrian friendly environment for users and visitors to the EMCC campus.
- The completion of a loop road on campus is recommended. Serving as the primary campus drive, the completion of this roadway will increase access to campus facilities and proposed parking areas.
- Vehicular access to campus can improve with an additional entry drive from Thomas Road and a vehicular bridge over the RID canal.
- Implement measures for traffic calming that will reduce the speed with which individuals move through the EMCC campus. The introduction of changes in paving materials, broader and bolder crosswalks, concentrated landscaping, and minimized pavement widths will all contribute to reductions in the speed of motorized vehicles on the EMCC campus.

**PARKING**

Parking continues to be essential to the functioning of EMCC and, therefore, has been coordinated with the planning for vehicular and pedestrian circulation as well as land use organization. It must be adequate in terms of supply and within a convenient walking dimension.

**Recommendations**

- Continue to build and expand upon the efficiencies of the existing surface parking. The supply and the demand of the number of spaces available need to continue to meet the growing campus population.
- Surface parking lot locations need to be evaluated in terms of their desired proximity to campus destinations.

**Requirements**

- Exceed the parking expansion requirements using .80 parking space per day FTSE per MCCCCD planning requirements. This requirement enables the campus to maintain the existing parking to day FTSE ratio as a minimum.
- Minimum parking requirements according to the City of Phoenix Zoning requirements are as follows: 1space / 5 students (by head count) plus space / 5 employees.

**SAFETY AND SECURITY****Recommendations**

- The use of CCTV systems will enhance personal and asset security and safety.
- Access control and intruder alert systems will be used to assure asset and personal safety.
- Exterior lighting will exceed normal levels to provide optimum safety of students, staff and visitors.

**SERVICE AND UTILITIES**

The convenience, appearance and overall quality of the EMCC campus are influenced by the location of existing utilities and proposed service points and routes. Certain uses, particularly the Student Union and Library, have special service requirements. Likewise, a well-planned utilities system is important to ensure that the EMCC campus is able to perform its functions without interruptions.

**Recommendations**

- Concentrate the service requirements for existing facilities on the EMCC campus wherever possible.

**OFF-SITE CENTERS**

The college will consider the purchase of land to build Centers in the rapidly developing sections of our service area, these are: Surprise, Buckeye and West Phoenix. The anticipated population growth in these areas will require additional facilities to accommodate the educational needs of the new residents. Each future parcel will be a minimum of 70 acres in order to accommodate the necessary facilities.



**2005- 2010**

- ① Classroom Buildings 16,000 SF
- ② Montezuma Hall Building Remodel- Science Labs 8000 SF
- ③ Occupational Programs Building and SouthWest Skill Center Expansion 36,700 New SF and 12,892 Remodeled SF
- ④ Estrella Hall Expansion 88,900 SF
- ⑤ Central Plant Expansion 7,100 SF
- ⑥ College Fine Arts Complex

Campus Infrastructure

- New College Bridge Entrance- R.I.D Canal to Osborn Road
- Dysart Road Improvements
- Expanded Parking
- Technology Investments
- New Northeast Loop Road

**2010- 2014**

- ⑦ Estrella Hall Remodel 23,000 SF
- ⑧ Child Development Building 7,300 SF

Campus Infrastructure

- Expanded Parking
- Technology Investments
- New Thomas Road Entrance
- Pedestrian Pathways and Crossings

- Ⓜ Future Site of West Valley Fine Arts Council- Center for the Arts

**2014 TOTALS**  
 6,417 ANNUAL FTSE  
 12,262 FALL HEADCOUNT  
 388,536 BUILDING SF  
 3,034 PARKING SPACES

**FULL BUILD - OUT**



- ① Central Plant Expansion 4,500 SF
- ② Central Plant Remodel 3,000 SF
- ③ Student Center 58,500 SF
- ④ Academic Building 'A' Expansion 71,700 SF
- ⑤ Academic Building 'B' 87,025 SF
- ⑥ Academic Building 'C' 87,025 SF
- ⑦ Academic / Partnership Facility 60,775 SF
- ⑧ Fine Arts Building 16,300 SF
- ⑨ PE / Fitness Center 29,500 SF
- ⑩ Athletic Fields and Courts 20 Acres
- ⑪ Completion of Campus Loop Road
- ⑫ Extension of Pathway around Campus
- Ⓜ West Valley Fine Arts Council-Center for the Arts

**2024 TOTALS**  
 10,360 ANNUAL FTSE  
 23,587 HEAD COUNT  
 802,863 BUILDING SF  
 5,060 PARKING SPACES

**SITE ADEQUACY**

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The following diagram tests the adequacy of the proposed site and graphically indicates the total land coverage required for the entire campus.

The 'BUILDING ZONE' combines the Building area requirements with open space of equal area. For these studies the building area is assumed to be entirely at one story.

Land has also been allocated for student / staff parking and athletic fields.

The final diagram indicates that the site can accommodate the campus as planned.



**SITE CHARACTERISTICS**

136.1 GROSS ACRES  
 129.7 NET ACRES  
 P.A.D. ZONING WITH C-2\* DESIGNATION

\* When adjacent to a residential district or use, the following side and rear yard setbacks shall apply:

Building Height	Setback
1 Story (15')	25'
2 Story (30')	50'

**EXISTING SITE UTILITIES**

**CHILLED WATER**

Estrella Mountain Community College currently has an existing central plant, which provides chilled water to each building on campus. The central plant currently has an installed capacity of 1220 tons. Estimated connected load is approximately 900 tons. Chilled water is distributed to each building in direct buried underground piping. The original piping was installed in 1991 using PVC piping and a foam insulation material. The campus has not experienced leaks in the underground piping system. Underground PVC piping material is expected to reach its life expectancy at approximately 15 years from the installation date, or 2006. The piping installed in 2002 from the main to the Komatke Hall addition has been installed with pre-insulated PVC jacketed steel piping.

**SANITARY SEWER**

An existing 10" sanitary sewer system currently serves the campus and is connected to the Thomas Road main. It extends north to the center of the existing campus, where east-west mains provide connections to each building. An 8" sanitary sewer main extends north from the manhole to the 4" connection to the Skill Center. Estrella Mountain Community College has not experienced problems with the existing sanitary sewer and believes it is in good condition. The existing load on the sanitary sewer system is approximately 1400 fixture units.

**WATER**

The site is currently served by a 12" and 8" water connection to a 12" main along Dysart Road. The two connections were used to incorporate a campus water loop as the site developed. The 12" main extends south and west between the existing buildings, along the main axis to the central plant. The 8" main currently extends onto the site and connects to the 12" main, near the existing Montezuma Hall. The system is currently loaded to approximately 2000 fixture units.

**NATURAL GAS**

The site has been provided with a 4" medium pressure natural gas connection to Thomas Road. It extends onto the site, north and west to serve the Komatke Hall kitchen, the Central Plant and the Fitness Center.

**POWER\***

The campus receives primary electrical service from Arizona Public Service. The 12,470V primary feeders originate in an APS switching cabinet along the south edge of the property and terminate in a primary metering section located in the central plant. Primary transformer PT-1 is located outside the central plant building and fed from the primary distribution switchgear. It consists of (2) load break switches and a 1000KVA fluid-filled transformer. The loadbreak switch feeds both the 12,470V primary loop running to the south and Skills Center service transformer. The campus primary loop then feeds Komatke Hall (PT-2), Montezuma Hall (PT-3) and Estrella Hall (PT-4).

**SPECIAL SYSTEMS**

The campus voice, data, audio/visual, fire alarm and security networks originate in the Estrella Hall. A central east/west duct bank located south of Estrella and Montezuma Hall and north of Komatke Hall distributes all of the special system cables to the various buildings and provides interconnectivity between them.

**ELECTRICAL LOAD**

Arizona Public Service indicates that the peak demand load on the primary loop is 954 KVA (55.21A @ 12,470V, 3 phase), which occurred during the month of January 2003.

\*Refer to Appendix B for 'Existing One-Line Diagram'.



EXISTING





**PHASE FOUR SITE UTILITIES**

**CHILLED WATER**

The central plant capacity will need to be reviewed as each individual building is added under Phase Four. The anticipated total added load for Phase Four is approximately 1300 tons. This will require the central plant to be up-graded and reach its maximum build out at approximately 3500 tons. The west half of the chilled water piping system will need to be extended north and northeast to support the Phase Four buildings. Piping will run north between the Academic and Student Union, west of the Academic Partnership Building. Piping should be installed with valve connections for each building and be sized for the full Phase Four build-out. Chilled water total system gpm at the completion of this phase is approximately 6400 gpm. Piping can be installed in segments as new buildings are added along the main. It is recommended that the above piping be installed with pre-insulated PVC jacketed steel for longevity.

**SANITARY SEWER**

Sanitary sewer will be provided for Phase Four with an extension from the 8" main provided under Phase Three, near the Fine Arts Complex. The new 8" sanitary sewer will extend west between the proposed Phase Four buildings with a 6" connection extending northeast to the P.E. / Athletic Building. This will allow connections for all Phase Four buildings and can be installed as new buildings are added. Estimated sanitary sewer fixture units on the system at the completion of this phase, is approximately 4800.

**WATER**

The existing site water system will need to be extended to provide fire protection and domestic water service to the Phase Four buildings. It's recommended a new site water loop be created that will provide an exterior loop at the Phase Four level, and act as an exterior loop for fire hydrants. The water line loop extension will be connected to the 8" water line west of the Phase Three Skill Center, extend northwest around Phase Four and connect into the 8" loop near the Fine Arts Complex. This will allow domestic water, fire riser and fire hydrant connections for all Phase Four buildings and allow connections to the outlying P.E. / Athletic Building. Estimated water fixture units on the system at the completion of this phase, is approximately 7200.

**NATURAL GAS**

Under Phase Four, the natural gas piping will be extended to the P.E. / Athletic Building to provide domestic hot water and a heating source. The piping will be connected to the 4" medium pressure gas piping near the Fine Arts Complex. It will be extended west and northwest to the P.E./Athletic Building.

**POWER**

The existing primary switchgear is sufficient to support the campus ultimate load of 9,042KVA (419A @ 12,470V, 3 phase). The Phase Four expansion will require the construction of a new primary ductbank extending out of the central plant to the north. This ductbank will complete the primary electrical service loop around the campus. Primary feeders will also extend to the west to support the power requirements of the athletic fields.

**SPECIAL SYSTEMS**

The existing ductbank running to the north will be extended further to support Phase Four buildings special systems.

**ELECTRICAL LOAD**

Central Plant Addition	4,500 SF	12.0	VA/SF	54 KVA
Student Center	58,500 SF	12.0	VA/SF	702 KVA
Academic Building 'A' Expansion	27,700 SF	12.0	VA/SF	332.4 KVA
Academic Building 'B'	74,750 SF	12.0	VA/SF	897 KVA
Academic Building 'C'	74,750 SF	12.0	VA/SF	897 KVA
Academic / Partnership Facility	48,500 SF	12.0	VA/SF	582 KVA
Fine Arts Building	16,300 SF	12.0	VA/SF	195.6 KVA
PE / Fitness Center	29,500 SF	12.0	VA/SF	354 KVA

**Total 334,500 SF 4014 KVA**

**ELECTRICAL LOAD SUMMARY**

Existing	4,022 KVA
NEC 220-35 (25% of Load)	1,006 KVA
Phase Four Load Added	4,014 KVA

**Total Following Phase Four 9,042 KVA**

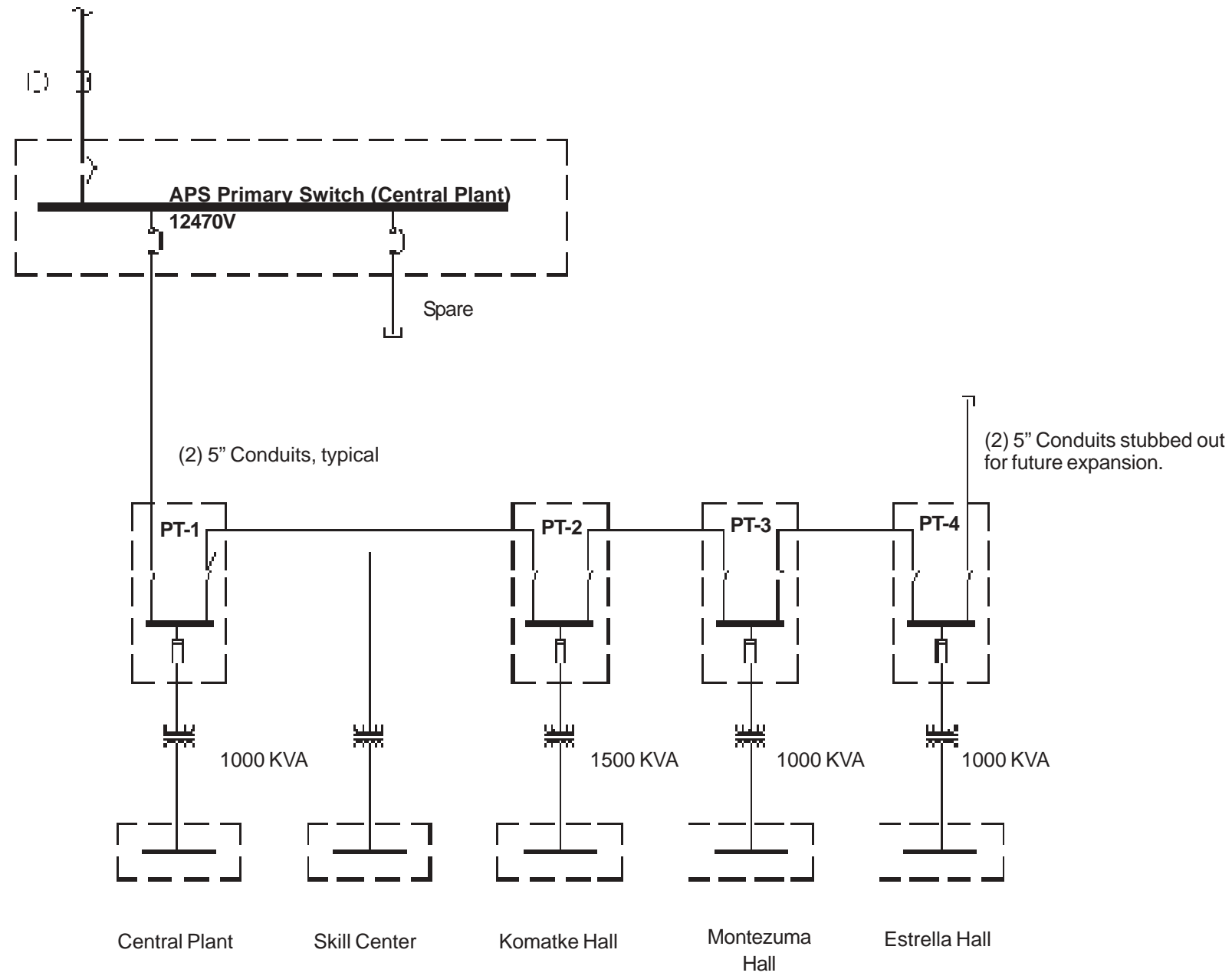


PHASE FOUR



- Chilled Water
- Sanitary Sewer
- Water
- Natural Gas

EXISTING ONE-LINE DIAGRAM



**REFERENCES**

- Master Plan Report - Estrella Mountain Community College, Maricopa Community College District. prepared by DMJM/SLS Architects Associated. 1990.
- 'Master Planned to Grow with the West Valley'. Estrella Mountain Community College Master Plan Revision 10/30/01.
- 'Estrella Mountain Community College Master Planning Consultant RFP, College Information'.
- 'Addendum to the Master Plan RFP'
- 'Estrella Mountain Community College Master Planning Statement'. 10/2001.
- 'Estrella Mountain Environmental Scan and Fact Book.' Strategic and Institutional Planning Document #31, 8/02.



EMCC 2004 Bond Planning Committee Members:

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Ms. Nancy Greenlaw (co-chair)	Executive Team
Dr. Ernie Lara	Executive Team
Dr. Brian Tippett	Executive Team
Mr. Clay Goodman	Executive Team
Mr. Randy Mauldin	Executive Team
Mr. Rene Willenkens	Executive Team
Ms. Joyce Jackson	Executive Team
Mr. Rich Marmon	Executive Team
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Mr. Joe Ochap	Steering Team
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Ms. Kim Mounts	Steering Team
Ms. Michelle Hamm	Steering Team
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