

South Orange County Community College District
Advanced Technology & Education Park

ATEP

Development
Framework

April 22, 2015

aterp

ATEP Development Framework

**South Orange County Community College District
Advanced Technology & Education Park (ATEP)**



ATEP



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LETTER

The development framework for the Advanced Technology & Education Park (ATEP) is the result of a year-long process by a team of professionals collaborating to define and maximize opportunities for the new site.

This framework is not about creating a finite plan. Instead it will serve as a high-level guide. The ATEP vision statement challenges planners to “create educational opportunities for emerging careers” and the blueprint for build out identified in the *ATEP Development Framework* embraces a unique opportunity for creating educational and commercial partnerships.

Participants from both colleges and district services emphasized their commitment to meet the challenge of developing leading edge facilities to address new approaches to closing the skills gap and developing a highly skilled workforce for the 21st Century and beyond. This objective is becoming a reality as a team from Irvine Valley College and district services work with planners and designers to create the criteria for the first permanent educational facility on the newly reconfigured site. Likewise, Saddleback College has made strides by defining programmatic needs for a facility dedicated to expanding allied health care educational opportunities for the region.

We thank the many dedicated faculty, staff members and administrators for their hard work and contributions in this district-wide effort. We also thank the team HMC Architects put together, who both listened to the visions of our colleagues and guided us toward the vision in this document. With this framework, the work of building an educational park to serve the needs of our students and the community can continue and grow.

Sincerely,



**Gary Poertner, Chancellor,
South Orange County Community
College District**

A handwritten signature in dark ink, appearing to read "G. Poertner".



**Glen Roquemore, Ph.D.,
President, Irvine Valley College**

A handwritten signature in dark ink, appearing to read "Glen R. Roquemore".



**Tod A. Burnett, Ph.D.,
President, Saddleback College**

A handwritten signature in dark ink, appearing to read "Tod A. Burnett".

ATEP Vision

As the premier center of career-technical education in Orange County, ATEP will prepare students in current and emerging technological careers for a globally competitive economy.

ATEP Mission

To offer applied education and training programs in current and emerging technological careers driven by innovative business, industry and education partnerships.

EXECUTIVE SUMMARY

The development framework for the Advanced Technology & Education Park (ATEP) is a forward-looking guide intended to inspire future development of the ATEP Site. From the beginning, the ATEP Site has been seen as the physical embodiment of the ATEP vision: to be a premier center of career-technical education, offering world-class educational opportunities through partnerships between educational institutions and business enterprises. The *ATEP Development Framework* positions the ATEP Site to welcome partners and nurture synergistic relationships among them in outdoor spaces and buildings that facilitate innovative workforce training opportunities.

Chapter One: Introduction & Background

begins by describing the purposes of the *ATEP Development Framework* and the participatory processes used to develop it. Changing circumstances, including the reconfiguration of, and the decision to extend Bell Avenue through, the ATEP Site, resulted in the need for a fresh look at the ATEP Site development objectives. Throughout 2014, members of the South Orange County Community College District (SOCCCD) community participated in a series of workshops, meetings, and college forums to share their ideas in an effort to provide feedback for the *ATEP Development Framework*.

Chapter One describes the origins of the ATEP Vision and the planning efforts that preceded the *ATEP Development Framework*. ATEP arose out of an opportunity created by the US Government's decision to close Marine Corps Air Station (MCAS) Tustin. SOCCCD was designated to receive land within the former base. From the start, Irvine Valley College (IVC) and Saddleback College have collaborated to shape technical training in the ATEP Vision.

In 2011, IVC and Saddleback College presented their respective ideas for the educational opportunity at the ATEP Site. IVC proposed a world-class workforce development center, highlighting emerging technologies and technical training. Saddleback College proposed a regional simulation healthcare center, to be known as the Center for Innovation in Healthcare Education, to meet the training needs of healthcare students and the community.

Chapter Two: Tustin Legacy Context describes the planning context for the ATEP Site. The Tustin Legacy project area consists of 1,606 acres that are being developed with retail, commercial/business, residential, and recreational uses in accordance with the Tustin Legacy Specific Plan/Reuse Plan for the Marine Corps Air Station (MCAS) Tustin (Specific Plan). The City of Tustin (the City) is in the process of updating the Specific Plan. The ATEP Site benefits from nearby amenities, including the Tustin Metrolink Station and mixed-use retail and entertainment venues, and will be adjacent to planned parklands that will offer bicycle and pedestrian circulation linkages.

The Development Agreement provides SOCCCD with vested rights to develop the ATEP Site with educational, commercial, and office uses. City development standards for the ATEP Site will remain in place through August 2033.

Chapter Three: Analysis & Parameters offers an analysis of the ATEP Site and its physical characteristics, including location, boundaries, and surrounding land uses. Existing and planned transportation and utilities infrastructure that will serve the ATEP Site are described. Former military uses have contributed to groundwater contamination in areas of Tustin Legacy, which are currently being remediated by the Department of the Navy. As a result, a portion of the ATEP Site has yet to be transferred to SOCCCD, but is expected to be in the near future. Climate conditions, including temperature and humidity, wind, and sun exposure, are described along with opportunities for designing sustainable buildings and outdoor spaces.

Key planning requirements set forth in the Specific Plan and the Development Agreement, are summarized. These requirements govern the development of the ATEP Site with regard to allowable land uses, building space capacity, ratios of building area allocated among defined land uses, and development regulations. Vehicle access points to the site are shown. The trip allowance, expressed in average daily trips (ADTs) generated by land uses on the ATEP Site, is described.

Chapter Four: Market Assessment describes the ATEP Site's potential to attract Non-educational and Educational partners that can benefit from the collaborative working and learning environments supported by the ATEP Vision. The demand for allowed Non-educational uses is assessed. The assessment identifies the location and quantity of competitive space, and the competitive advantages that the ATEP Site offers. The assessment concludes that ATEP is well-positioned to benefit from demand by corporate users with a desire for interaction with higher education programs.

Chapter 5: Vision for the Development Framework describes the attributes that the workshop participants felt that ATEP should embody. It lists the goals and criteria that are informed by the site analysis and were set forth to guide the exploration of planning options. A set of assumptions for building space capacity, ratio of uses, and required parking capacity was established for four successive phases of site development. This set of assumptions, one of many possible permutations, serves as the basis for a site design that embodies and illustrates the design recommendations of the *ATEP Development Framework*. Finally, preliminary and developed options are described. These options were presented and discussed at workshops, meetings, and college forums and their descriptions are accompanied by a summary of the discussion through which each was assessed.

Chapter 6: Recommendations begins with a description of the core planning principles that were distilled from the visioning process: Connectivity, Collaboration, Integration, and Innovation. The development framework is presented through an illustrative plan and renderings. Phasing plans based on the assumptions shown in *Chapter 5* are described and depicted.

In the subsequent sections, the development framework and its core planning principles are viewed through three lenses: Outdoor Environment Recommendations, Building Recommendations, and Infrastructure Recommendations. Each section describes the means by which the core planning principles may be achieved. Integrated throughout this chapter are green building and site design strategies to plan for a sustainable ATEP Site.

Chapter Seven: Next Steps recommends four planning efforts to begin the implementation of the *ATEP Development Framework*. They are: create design criteria; define the CC&R's; identify best practices for sustainable building, management, and operations; and study parking and transportation needs.

The *ATEP Development Framework* owes its existence to the collaborative effort by stakeholders, including faculty, staff, administrators, and professional consultants. The resulting document will be the road map to the successful development of the ATEP Site.

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Chapter one

Introduction & Background

This chapter states the purposes of the ATEP Development Framework and describes the interactive and broadly participatory processes through which it was developed. In addition, it acknowledges and describes previous planning and the development of the ATEP Vision.

- 1.01 **Purpose of the Development Framework**
- 1.02 **Planning Process**
- 1.03 **Background**
- 1.04 **The Evolution of the ATEP Vision**

INTRODUCTION & BACKGROUND

1.01

PURPOSE OF THE DEVELOPMENT FRAMEWORK

The *ATEP Development Framework* is a guide intended to inspire and inform future development of the ATEP Site for Saddleback College and IVC and for educational and non-educational partners. This plan is not intended to serve as an educational and facilities master plan as defined by the *California Education Code* Section 81820 et. seq. and *Title 5 California Code of Regulations* Section 51008. Instead, it is intended to serve as a conceptual guide to set the vision for planning efforts to follow.

SOCCCD staff originally developed various plans based on an irregularly-shaped 68-acre site. In 2013, negotiations between SOCCCD and the City resulted in a land exchange that provided a more favorable configuration, a decision to extend Bell Avenue through the ATEP Site, and a Development Agreement.

The agreements resulted in the need for a fresh look at the site development objectives for ATEP.

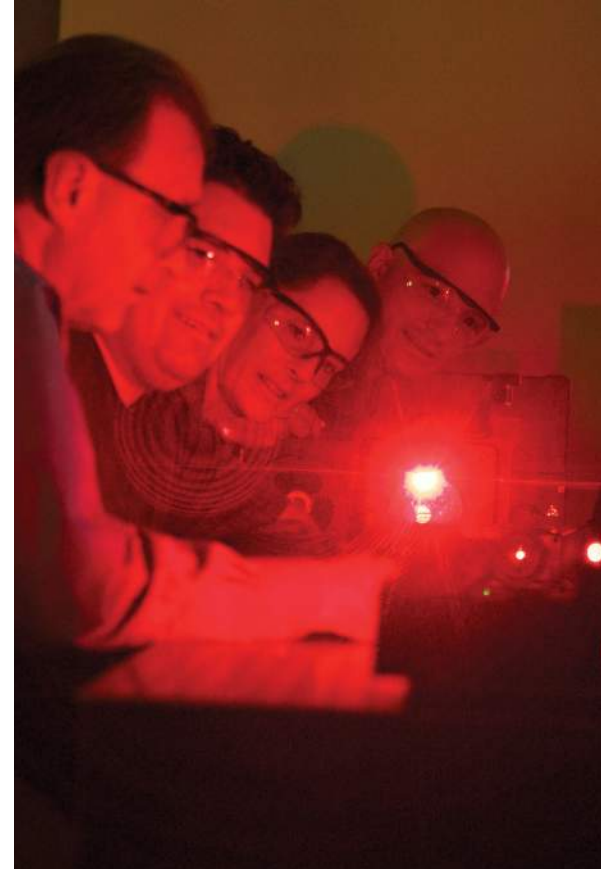
Computer Lab. Source: SOCCCD.



This framework document serves many purposes:

- 01** Describe the overall vision for the ATEP Site.
- 02** Inform potential ATEP Educational and Non-educational partners.
- 03** Lay a foundation for future educational and facilities planning processes at ATEP.
- 04** Align with Tustin Legacy infrastructure improvement plans.
- 05** Conceptualize the framework for potential phased implementation.

Photonics instruction. Source: SOCCCD.



INTRODUCTION & BACKGROUND

1.02 PLANNING PROCESS

The planning process for the *ATEP Development Framework* was a highly participatory exercise, involving the many constituencies of SOCCCD. The ATEP Development Framework Steering Committee served as the core working group throughout the entire process and welcomed the broader SOCCCD community to a series of interactive workshops and meetings designed to maximize opportunities for participants to create a shared vision. Please refer to the *List of Participants* in the *Appendix*.

A four-step planning process provided a logical sequence for developing the collective understanding of the vision and goals for the ATEP Site, exploring a range of innovative concepts and developing the final recommendations.

ATEP Development Framework Workshop #1



DEVELOPMENT FRAMEWORK PROCESS

Figure 1.02a



INTRODUCTION & BACKGROUND

1.03 BACKGROUND

The ATEP Site as discussed in this development framework consists of approximately sixty-two acres that were formerly part of the Marine Corps Air Station Tustin (MCAS Tustin). When the United States Government determined to close MCAS Tustin, the base consisted of a total of 1,606 gross acres. The majority of MCAS Tustin, approximately 1,511 acres, is within the city of Tustin. In 1992, the Secretary of Defense designated the City as the local redevelopment agency (LRA) under the Defense Base Closure and Realignment Act of 1990 (Base Closure Act). As the LRA, the City submitted and obtained approval of a reuse plan for the base. Subsequently, Congress amended the Base Closure Act by the adoption of the Base Closure and Redevelopment Act of 1994 (Redevelopment Act).

As the LRA for MCAS Tustin, the City elected to proceed in accordance with the new Redevelopment Act by adopting a screening process whereby other governmental agencies could indicate an interest in acquiring portions of MCAS Tustin. On October 31, 1995, a “Notice of Interest in Buildings and Property” was submitted to the City, seeking approximately one hundred acres for educational purposes. On the same date, the County of Orange (County) submitted a Notice of Interest in an approximately ten-acre parcel for a Regional Law Enforcement Training Center (County Parcel).

The City adopted a final specific plan/reuse plan on February 3, 2003, replacing the reuse plan previously submitted. The Specific Plan was approved by the United States Government, acting by and through the Department of the Navy (Navy). The City coined the term “Tustin Legacy” to refer to the area covered by the Specific Plan. Under the Specific Plan, SOCCCD was designated to receive approximately sixty-eight acres of the former base, the County was designated to receive the County Parcel and other recipients were designated to receive several hundred acres of land, mostly for educational and park uses. On the remaining land, commercial and residential developments have been constructed, are under construction, or are approved for construction, including, but not limited to The District, an over one million square foot shopping center, a number of multi-family apartment projects and 2,327 single-family residences. The City has been actively marketing an additional 820 acres.

The current version of the Specific Plan calls for the City's remaining land in Tustin Legacy to be developed with 8,223,085 square feet of commercial/business uses and 2,274 additional dwelling units.

In April 2004, the City and SOCCCD entered into an Agreement for the Conveyance of a Portion of MCAS Tustin and the Establishment of an Advanced Technology Educational Campus (Conveyance Agreement) pursuant to which the City agreed to convey a portion of the former MCAS Tustin consisting of approximately 68 acres to SOCCCD. (Under the Redevelopment Act, all of the land in MCAS Tustin is first conveyed by the Navy to the City in its capacity as the LRA. The City then transfers the land, where appropriate, to other governmental agencies designated as recipients under the Specific Plan.) The Conveyance Agreement defined the uses to which the site would be put in the definition of "Advanced Technology Education Campus," which provided as follows:

"Advanced Technology Educational Campus" means an education-oriented development which may include traditional and non-traditional advanced education (extension and/or advanced degree opportunities), adult education, continuing education, vocational, job and educational training, or other educational and training opportunities, as well as accessory uses when customarily associated with and subordinate with the Educational uses listed above that would include the following uses: dormitory/student apartment housing; minor support commercial, office and retail service uses including but not limited to food services; administrative offices; a post office; medical/dental clinics; laboratories and office facilities used for basic and applied research, testing and consulting; industrial/commercial business incubators which support educational programs or provide educational opportunities; maintenance facilities, structures and storage facilities, and guard houses, gates and other security facilities and structures."

From the beginning, SOCCCD viewed the development of the ATEP Site as something more than a traditional college campus. The ATEP planners envisioned, in addition to conventional educational activities, partnerships with appropriate business enterprises to provide internships, workforce training opportunities, and other innovative arrangements. The permitted uses at the ATEP Site were ultimately redefined to include both Educational and Non-educational uses, as discussed in detail in *Section 2.03* below.

INTRODUCTION & BACKGROUND

1.03

BACKGROUND (cont'd)

Pursuant to the Conveyance Agreement, the City conveyed approximately thirty-eight acres of the former MCAS Tustin to SOCCCD. The remaining approximately thirty acres were part of a larger area (referred to by the Navy as a “Carve-Out Area”) retained by the Navy in order to pursue the remediation of certain contaminants in the groundwater at MCAS Tustin. A portion of the Carve-Out Area was leased by the Navy to the City pursuant to a “Lease in Furtherance of Conveyance” (LIFOC), which contemplates a transfer of such portion of the Carve-Out Area in fee to the City upon the remediation reaching a level that allows for the development of the site. The thirty acres that was subject to the LIFOC (LIFOC Area) were subleased by the City to SOCCCD pursuant to a Sublease dated April 29, 2004.

The approximately sixty-eight acres originally designated in the Specific Plan for conveyance to SOCCCD constituted a contiguous parcel, but it was irregularly shaped and difficult to develop. SOCCCD was able to improve the configuration of the land to be received through two transactions involving the exchange of real property.

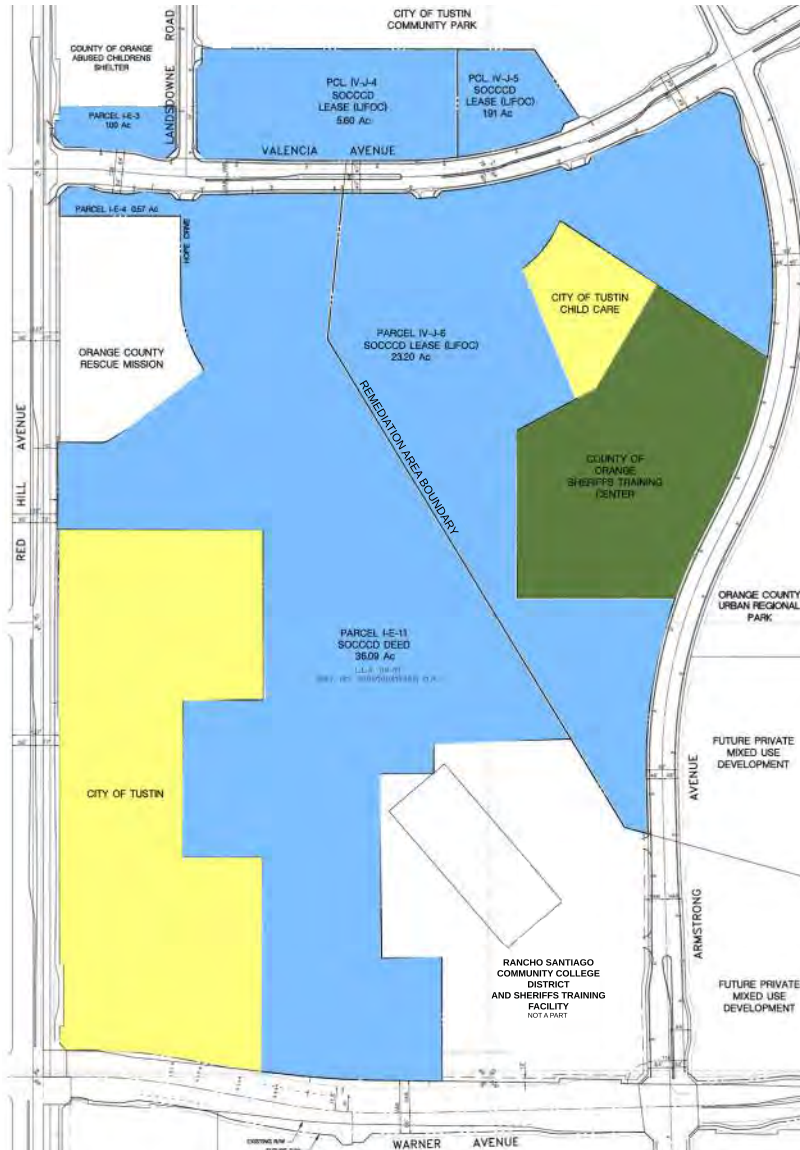
First, pursuant to a series of agreements with the City that were entered into in 2013, a number of important objectives were realized, as follows: a) the uses permitted on the ATEP Site were redefined in an amendment to the Specific Plan to allow for both Educational and Non-educational uses, b) the uses permitted in the Specific Plan became vested rights by virtue of a Development Agreement, c) the construction of a major arterial, Bell Avenue, bifurcating a portion of SOCCCD’s land and abutting a further portion on the south, was agreed upon, and d) the City and SOCCCD exchanged equally-sized parcels of land to the benefit of both parties. This transaction, including the exchange of parcels of real property, was consummated in August 2013. In 2014, SOCCCD agreed to convey a parcel of land isolated from the rest of SOCCCD’s land across Valencia Avenue to the City in exchange for certain concessions from the City. This transaction was consummated in August 2014.

The dedication of land to the City as right of way for Bell Avenue and the conveyance of the Valencia parcel reduced the acreage of the land ultimately to be conveyed to SOCCCD from approximately sixty-eight acres to its present sixty-two acres.

Second, prior to the negotiations with the City described, SOCCCD agreed to accept the County Parcel in exchange for a portion of SOCCCD’s land of equal size lying just southwest of the proposed Bell Avenue extension. The County Parcel, a part of the Carve-Out Area, is still held in fee by the Navy pending the remediation reaching a level that allows for development of the site. The Navy is committed to transferring the County Parcel in fee to the City under the conditions noted above. At that time, the exchange of parcels between SOCCCD and the County will be consummated. This development framework assumes that the SOCCCD-County land exchange will occur. As used in this development framework, the term “Remediation Area” refers to the aggregate of the LIFOC Area and the County Parcel, and the term “ATEP Site” refers to the aggregate of the thirty-eight acres that SOCCCD currently owns and the Remediation Area.

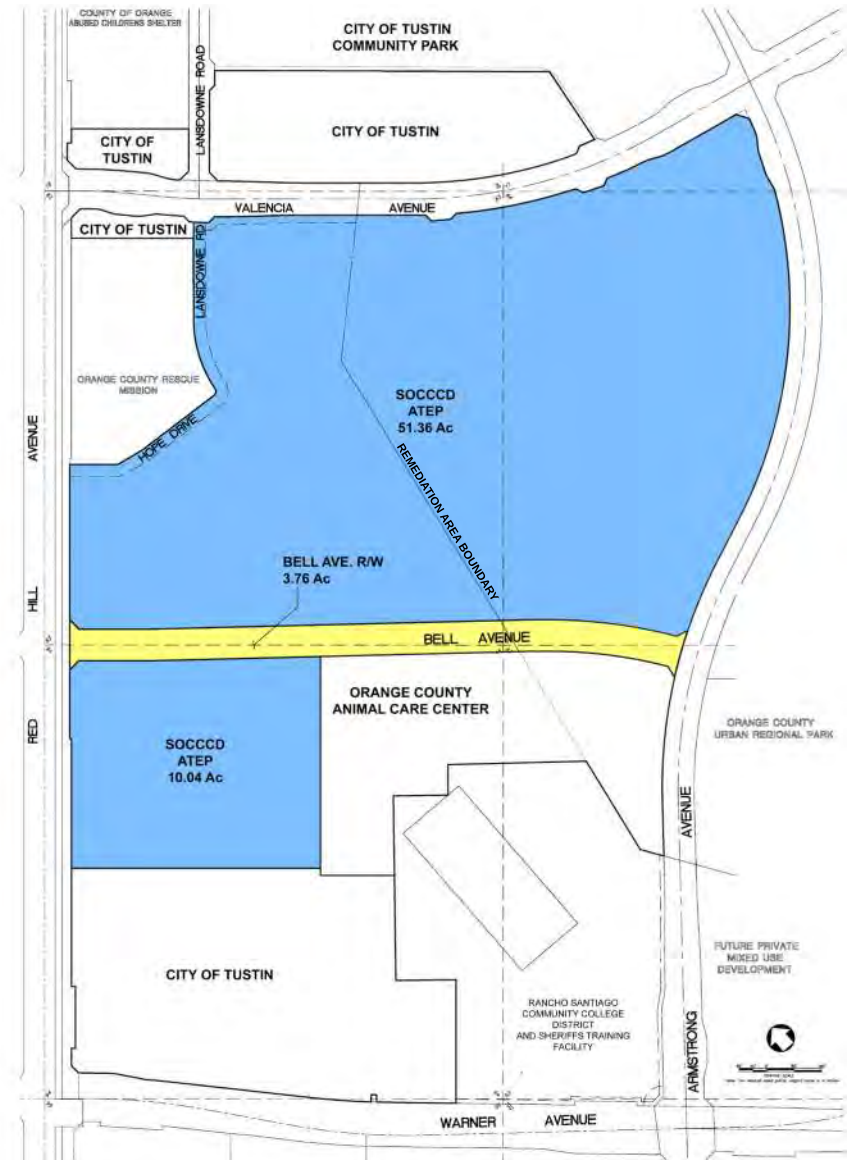
LAND OWNERSHIP CONFIGURATION PRIOR TO AUGUST 2013 LAND EXCHANGE

Figure 1.03a



FINAL LAND OWNERSHIP CONFIGURATION

Figure 1.03b



INTRODUCTION & BACKGROUND

1.04

THE EVOLUTION OF THE ATEP VISION

SOCCCD is a two-college district comprised of Saddleback College in Mission Viejo and Irvine Valley College in Irvine. Both Colleges will offer programs at ATEP in Tustin. The SOCCCD service area and campuses are shown on the opposing page on Figure 1.04a.

ATEP, with its central location in Orange County, California and its proximity to John Wayne-Orange County Airport (SNA), is positioned to be a major regional educational hub. As a satellite site, the ATEP Site will be developed in coordination with the two Colleges to serve the needs of SOCCCD's community for workforce development, advanced technology programs, and Career-Technical Education (CTE) programs. ATEP will become an innovative education park that changes the way people learn.

Advisory councils at IVC and Saddleback College helped guide the academic direction and long-range academic plans for ATEP since the beginning. A mission and vision statement was first adopted in 2000 and planning was started prior to the conveyance and sub-lease of the property from the Navy and City of Tustin. The concept for ATEP has been consistent from its inception: To develop a vibrant education park with a focus on advanced technology and workforce development by building strategic educational/industry partnerships onsite that will foster synergistic collaborations between educational instruction and emerging technology businesses. Both students and employers benefit from this arrangement. Students gain unique opportunities to receive cutting-edge technological instruction and opportunities for internships. Businesses gain a local workforce that is trained to meet their needs.

In 2007, ATEP opened its doors on a 1.5-acre portion of the originally designated ATEP Site. This site was developed into classrooms, labs, offices, and parking. It will remain in operation until early 2018.

ATEP original facilities

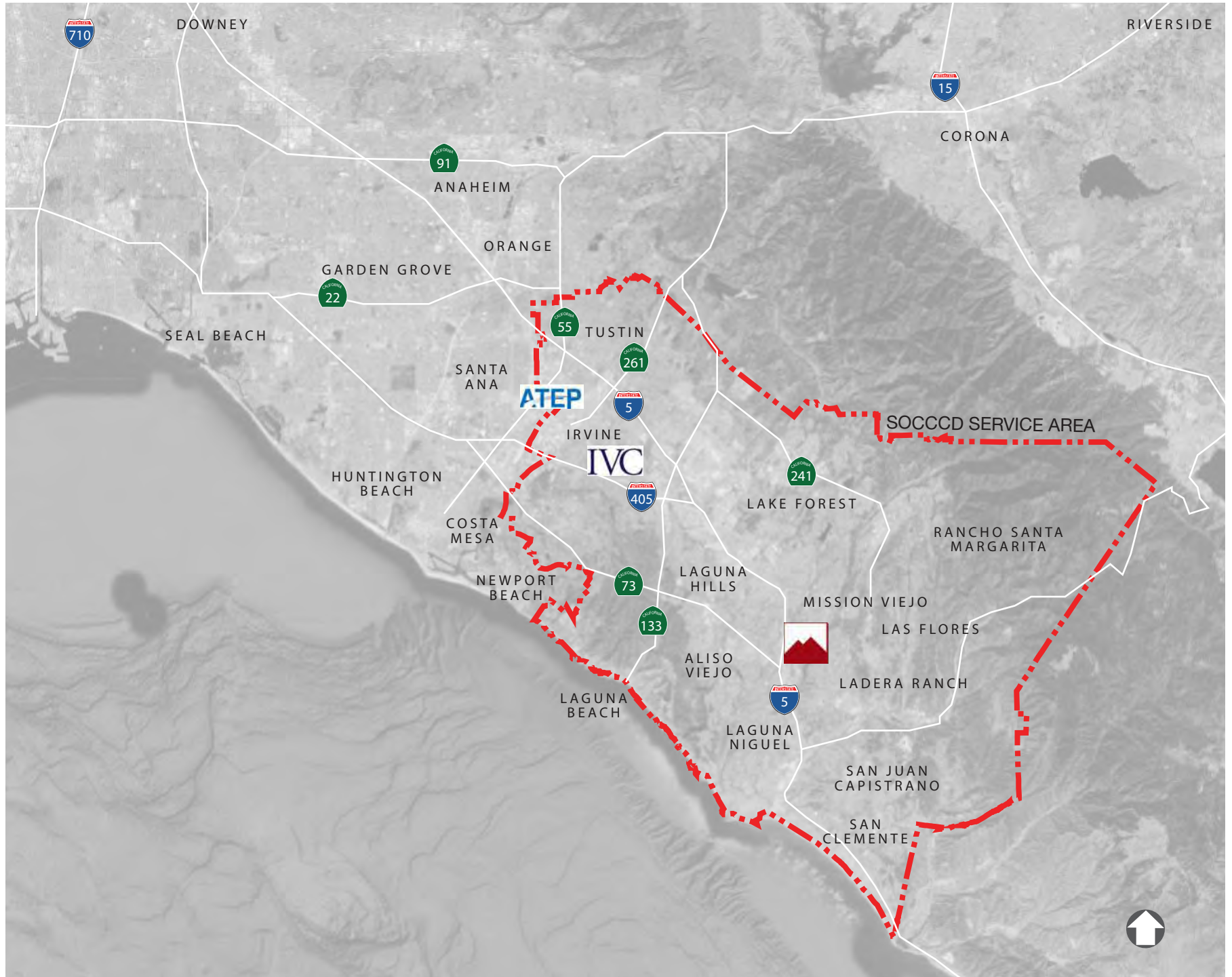


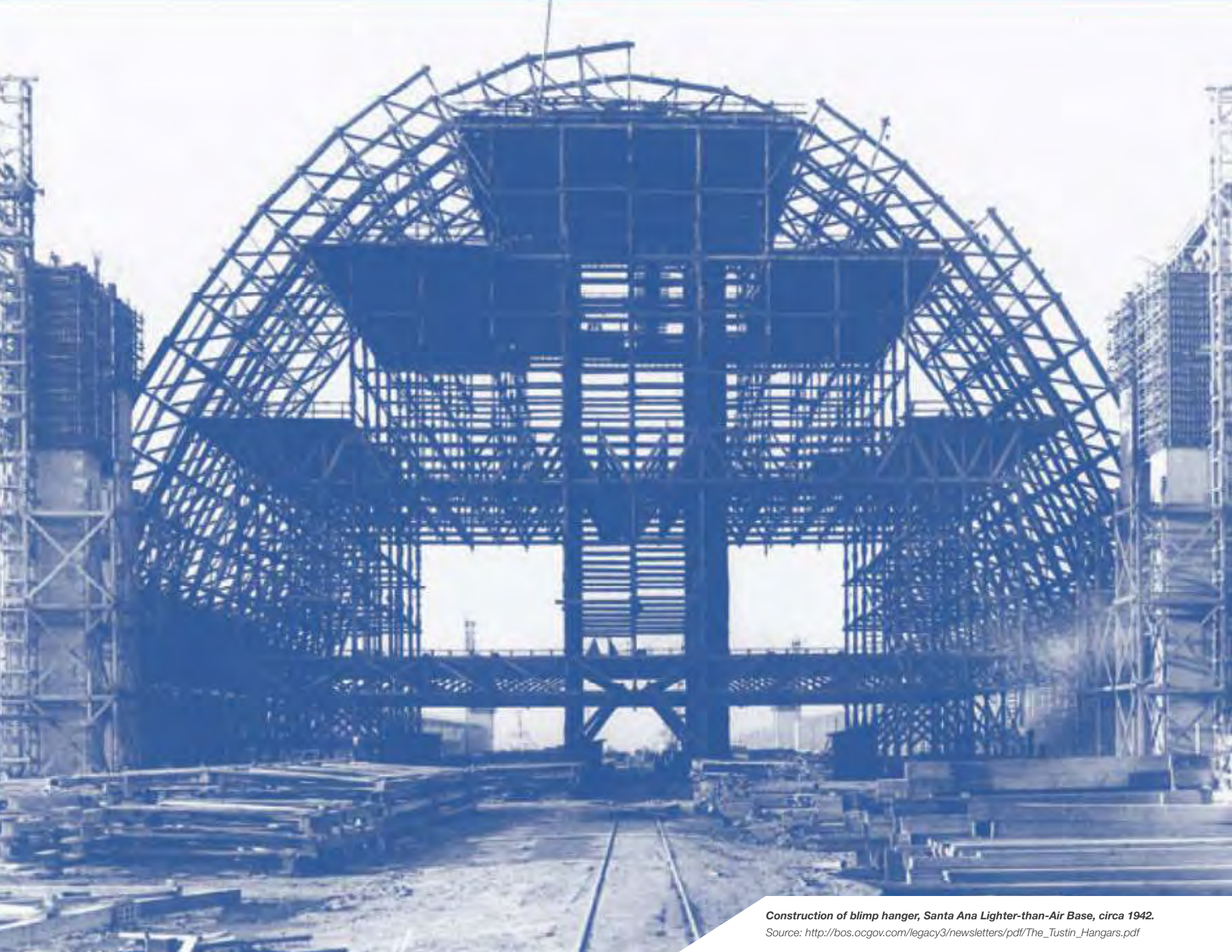
In December 2011, both IVC and Saddleback College presented their ideas for the ATEP Site. IVC highlighted emerging technologies, career preparation, and the opportunity to build a world-class workforce training center. While regional in character, they anticipate that the innovative and collaborative programs will be international in scope, with local and global partners. Academic disciplines for alternate energy systems featuring solar photovoltaic, wind, and alternative fuels mirror the objective of developing a sustainable ATEP Site.

Saddleback College presented plans for the Center for Innovation in Healthcare Education, a regional simulation healthcare center, to meet the training needs of healthcare students and the community. Program components include simulation care units, clinical laboratories, patient services, medical records systems, and a training conference center. Once complete, this healthcare center will join a handful of similar centers located throughout the nation and be the first of its kind in Southern California.

SOCCCD SERVICE AREA

Figure 1.04a





Construction of blimp hanger, Santa Ana Lighter-than-Air Base, circa 1942.

Source: http://bos.ocgov.com/legacy3/newsletters/pdf/The_Tustin_Hangars.pdf

Chapter two

Tustin Legacy Context

This chapter describes the planning context for the ATEP Site, including a description of the rich history of MCAS Tustin, plans for the Tustin Legacy area, and the Development Agreement, which provides development rights and benefits to SOCCCD and its partners.

- 2.01 **Location & History of Tustin Legacy**
- 2.02 **Specific Plan**
- 2.03 **Development Agreement**

TUSTIN LEGACY CONTEXT

2.01

LOCATION & HISTORY OF TUSTIN LEGACY

The ATEP Site is on the 1,606-acre former MCAS Tustin. The base was commissioned in 1942 as a US Naval Lighter-Than-Air Base. It was used to support observation blimps and personnel that protected the Southern California coast during World War II.

In 1951, MCAS Tustin became the main west coast helicopter base for training and operations for the Marine Corps. MCAS Tustin was formally closed on July 2, 1999.

MCAS Tustin aerial view, c. 1960. Source: http://bos.ocgov.com/legacy3/newsletters/pdf/The_Tustin_Hangars.pdf



Marine Corps helicopter on ramp at MCAS Tustin, c. 1965. Source: http://bos.ocgov.com/legacy3/newsletters/pdf/The_Tustin_Hangars.pdf



2.02 SPECIFIC PLAN

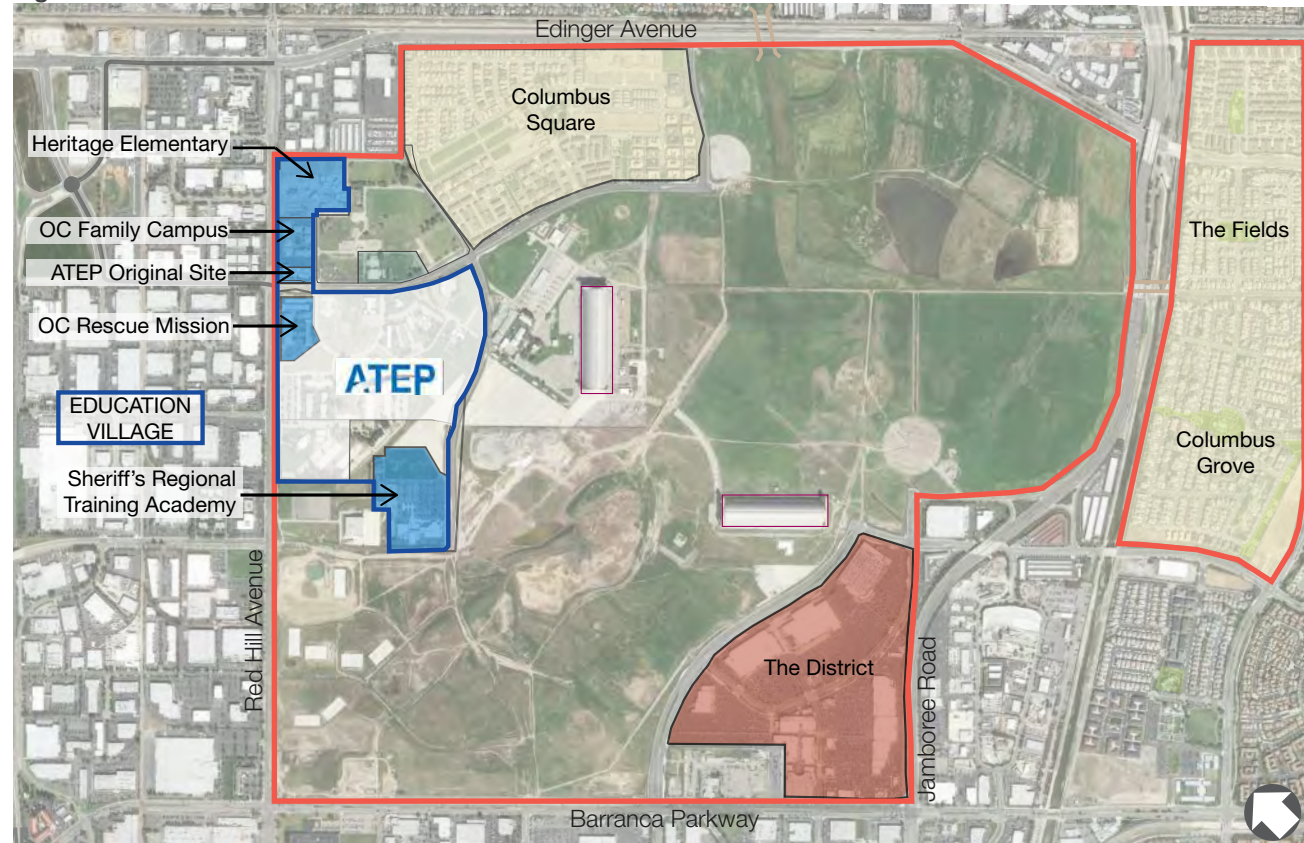
As explained in *Section 1.03 Background*, the City of Tustin adopted the Specific Plan to guide the conversion of the base to civilian uses. This document establishes the future land uses, zoning regulations, plans for circulation and infrastructure, and design guidelines for all future development. It establishes the 125-acre Tustin Legacy Education Village, defined as an educational environment consisting of a broad mix of public-serving, office, institutional, and/or government uses, of which the ATEP Site is a part.

The Specific Plan also identifies certain properties recommended for transfer to state or local agencies. One of the properties within the Tustin Legacy Education Village was transferred to SOCCCD and is now known as the ATEP Site. Office, research and development, and other commercial and supportive uses are permitted at ATEP to complement educational uses.

EXISTING DEVELOPMENT IN TUSTIN LEGACY

Source: City Council Presentation, December 2013

Figure 2.02a



In addition to educational uses office, research and development, and other commercial and supportive uses are permitted at the ATEP Site per the guidance in the Development Agreement.

The Specific Plan and the Development Agreement set development and use requirements for the ATEP Site. These requirements shaped the preparation of the *ATEP Development Framework* and are described in more detail in *Section 2.03*, below.

TUSTIN LEGACY CONTEXT

2.02

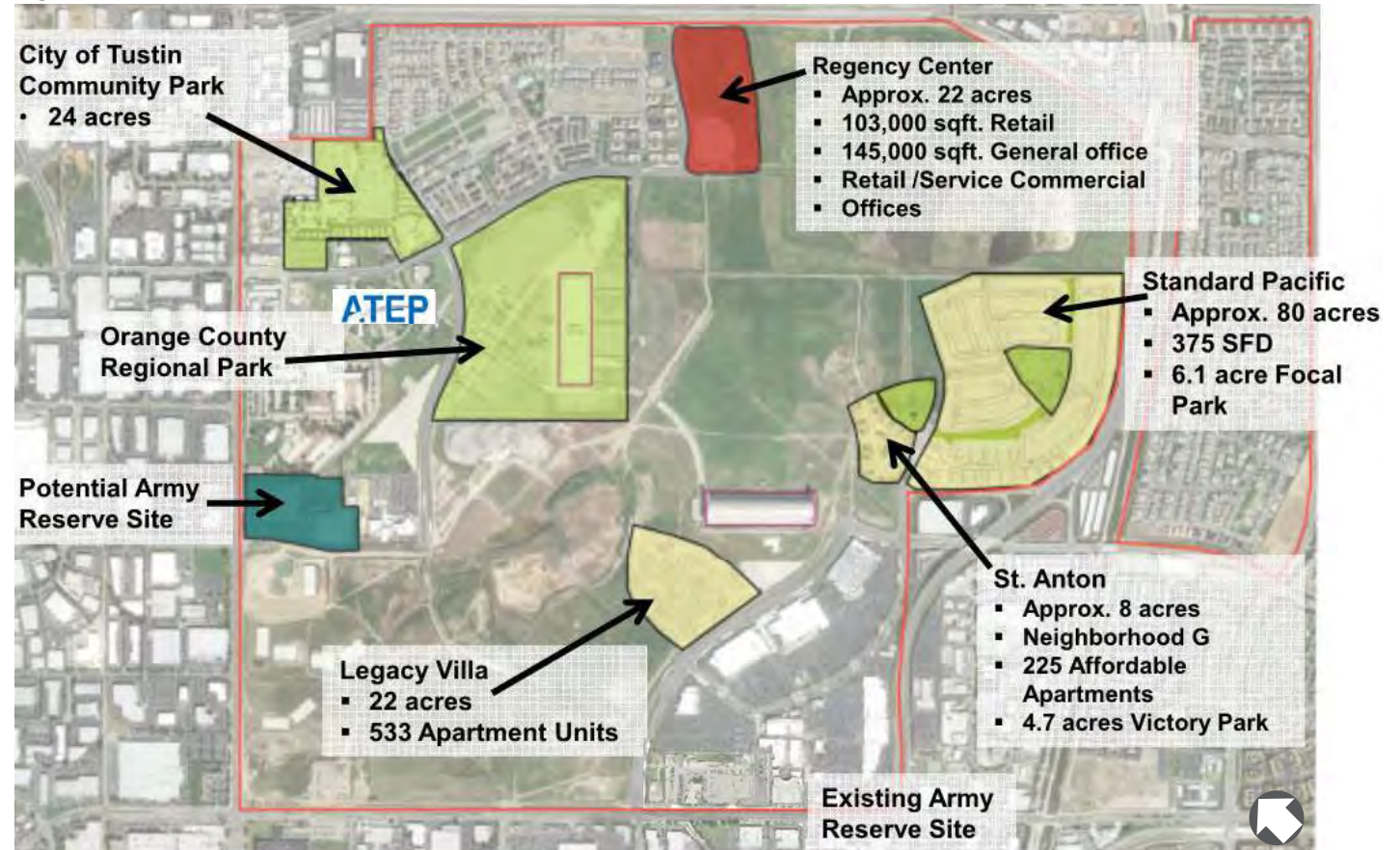
SPECIFIC PLAN (cont'd)

As of January 2015, Tustin Legacy is partially developed, with a total of 2,507 dwelling units and a regional shopping center, known as The District, consisting of over one million square feet of retail, restaurants, and entertainment uses. In addition, several public service uses have been constructed, including the Orange County Sheriff's Regional Training Center, the Orange County Rescue Mission, two schools, and a children and family care center. Three additional residential projects are under construction.

TUSTIN LEGACY PROJECTS UNDER CONSTRUCTION OR PENDING

Source: City Council Presentation, December 2013

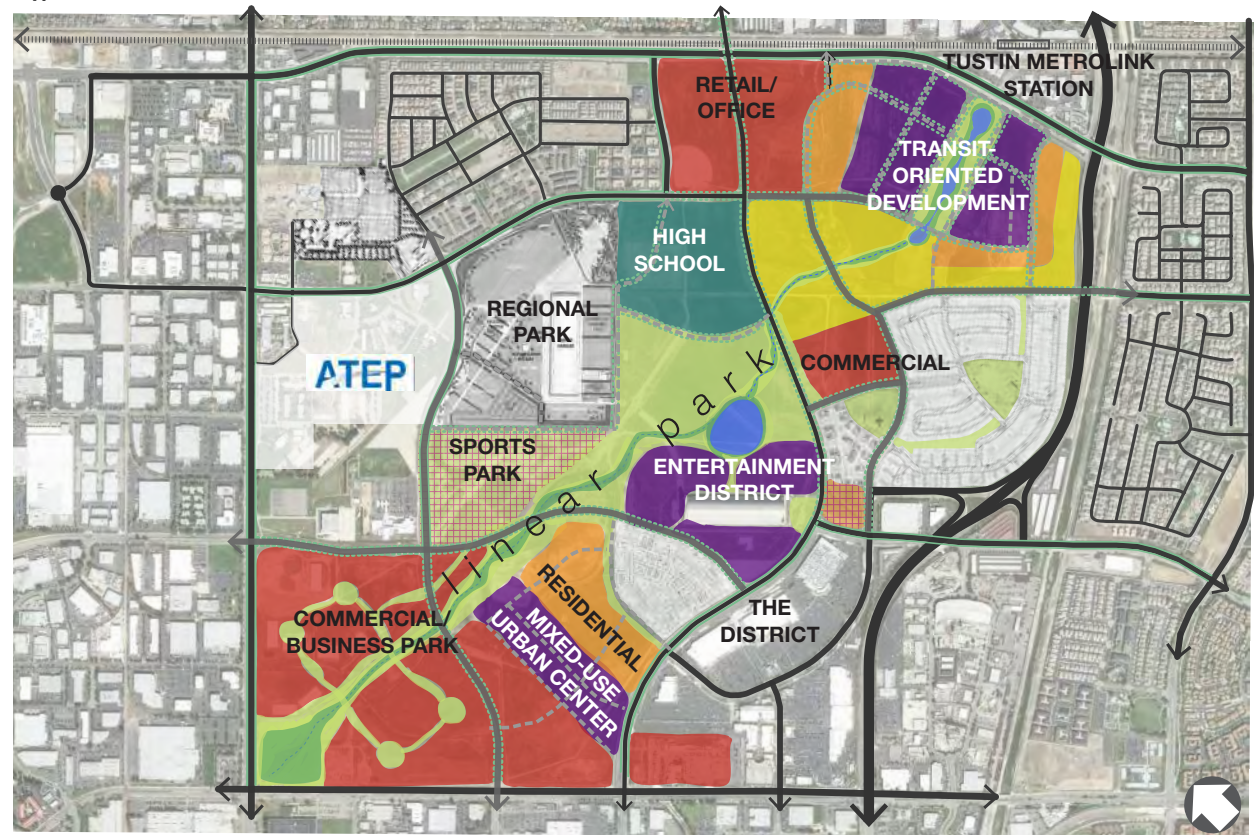
Figure 2.02b



TUSTIN LEGACY VISION CONCEPTS FOR REMAINING UNDEVELOPED LAND

Source: City Council Presentation, December 2013

Figure 2.02c



In 2013, the City initiated a re-visioning process for its remaining lands that will be applied in an amendment to the Specific Plan. This re-visioning process is underway and not occurring in parallel with the creation of the *ATEP Development Framework*.

The overall goal for amending the Specific Plan is to reposition the City's remaining undeveloped lands in light of future market conditions for residential, office, and commercial development and changing demographics and consumer preferences in the Orange County market. The re-visioning process is occurring as the City is actively marketing the remaining undeveloped 820 acres, as noted in *Section 1.03 Background*.

Changes include a redesign of the area across Edinger Avenue from the Tustin Metrolink Station to be a transit-oriented development featuring an increased density and mix of uses, improved walkability, and direct connection to the transit station.

The neighborhood west of The District, identified in Figure 2.02c, is envisioned to be a new mixed-use urban center designed around a "ramblas" (or walking street) that connects to the adjacent linear park.

TUSTIN LEGACY CONTEXT

2.03

DEVELOPMENT AGREEMENT

On August 9, 2013, the Development Agreement went into effect. It will remain in effect until August 2033. The Development Agreement vests the SOCCCD's right to develop the ATEP Site with education, commercial, and office uses, along with sufficient building capacity and vehicle trips to support the planned development. The Development Agreement also clarifies the ministerial project review requirements to avoid duplicative reviews between the City and the Division of the State Architect. It also simplifies development review procedures.

The Development Agreement provides significant benefits to ATEP tenants:

- The vested right to develop the ATEP Site with Educational uses (Land Use Category 1) and commercial and office uses (Land Use Category 2). No further legislative approvals are required.
- The vested right to develop up to 49% of the total building square footage at ATEP with commercial and office uses (Land Use Category 2). This will allow SOCCCD to enter into innovative public/private partnerships for IVC and Saddleback College and fund ATEP improvements and programs.
- The vested right to develop between 1,087,960 square feet of gross building area, if Land Use Category 2 buildings are maximized (floor area ratio (FAR) of 0.38), and 1,710,780 square feet if only Land Use Category 1 buildings are constructed (FAR of 0.59).
- An allocation of 10,470 average daily trips (ADT) for the ATEP Site, which is sufficient to support the vested development rights.
- More certainty and less bureaucracy. The City and SOCCCD are working together on a simplified and streamlined site plan and design review procedure for ATEP development projects.

- City land development standards for the ATEP Site are frozen in place until 2033.
- An exemption for Land Use Category 1 buildings from paying the Tustin Legacy Backbone Infrastructure Fees. While Land Use Category 2 buildings are subject to Tustin Legacy Backbone Infrastructure Fees, the amount is established and similar to fee programs for other projects in Orange County.
- The extension of Bell Avenue from Red Hill Avenue to Armstrong Avenue will increase visibility and access to the ATEP Site.

Note: See the MCAS Tustin Specific Plan/Reuse Plan for a complete set of land use and development regulations.



Chapter three

Analysis & Parameters

This chapter describes the ATEP Site and its physical environment, focusing on implications for the optimal development of the site and its facilities. In addition, it summarizes the planning parameters that govern the development of the ATEP Site.

- 3.01 **The ATEP Site & Surroundings**
- 3.02 **Transportation & Circulation**
- 3.03 **Utilities Infrastructure**
- 3.04 **Carve-Out**
- 3.05 **Climate Conditions**
- 3.06 **Planning Parameters**

ANALYSIS & PARAMETERS

3.01

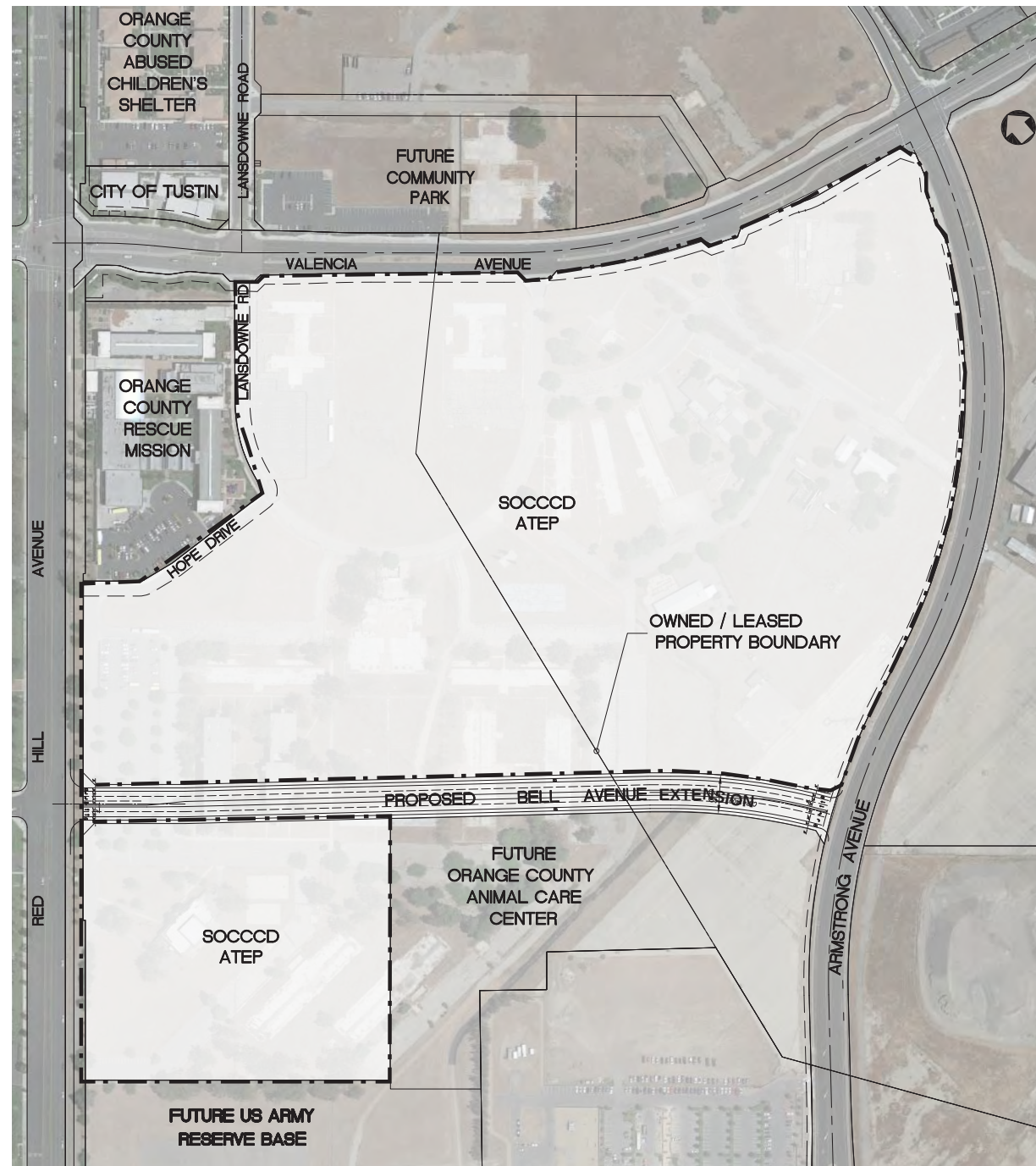
THE ATEP SITE & SURROUNDINGS

The approximately 62-acre ATEP Site is part of the 125-acre Education Village in the Tustin Legacy project. The ATEP Site is largely vacant land, with the exception of several former military buildings and parking areas that are being demolished. As shown on Figure 3.01a, the site is comprised of two parts, separated by the Bell Avenue extension, a 92-foot wide public right-of-way that will accommodate four lanes of traffic. Both parcels benefit from good public exposure along perimeter street frontages. The larger, 51.36-acre parcel abuts Valencia Avenue to the northeast, Armstrong Avenue to the southeast, the Bell Avenue extension to the southwest, and Red Hill Avenue to the northwest. The 10.04-acre parcel abuts the Bell Avenue extension to the northeast and Red Hill Avenue to the northwest. Each of these roads will feature sidewalks, bike lanes, and landscaped parkways to encourage walking or biking to the ATEP Site.

Existing or planned adjacent uses include: a future City-owned community park for active sports; a future Orange County regional park that will contain one of the historic blimp hangars; the future site of the Army Reserve Center that is relocating from Barranca Parkway; the Village of Hope, which is a transitional housing/emergency shelter operated by the Orange County Rescue Mission; and the planned Orange County Animal Care Center.

THE ATEP SITE

Figure 3.01a



Southwest of the Education Village, 2.1 million square feet of office/research and development (R&D) space, called Cornerstone, is planned. This area is being designed to attract corporate headquarters and other large-size office uses. Beyond the Tustin Legacy area, the ATEP Site is situated near an employment center to the west and north, which is developed with office, manufacturing, and R&D uses.

The ATEP Neighborhood Context (Figure 3.01b) illustrates the distance to nearby services, including the retail and entertainment venues at The District shopping center and the Tustin Metrolink Station. The white dots show the current walking path from the Metrolink station to the ATEP Site. Plans for Tustin Legacy include a pedestrian bridge over Edinger Avenue near the Tustin Metrolink Station to enable convenient access between the station and future development within Tustin Legacy. In addition, pedestrian and bicycle paths within the linear park will add to the enjoyment of traveling within Tustin Legacy.

ATEP NEIGHBORHOOD CONTEXT

Figure 3.01b



ANALYSIS & PARAMETERS

3.02

TRANSPORTATION & CIRCULATION

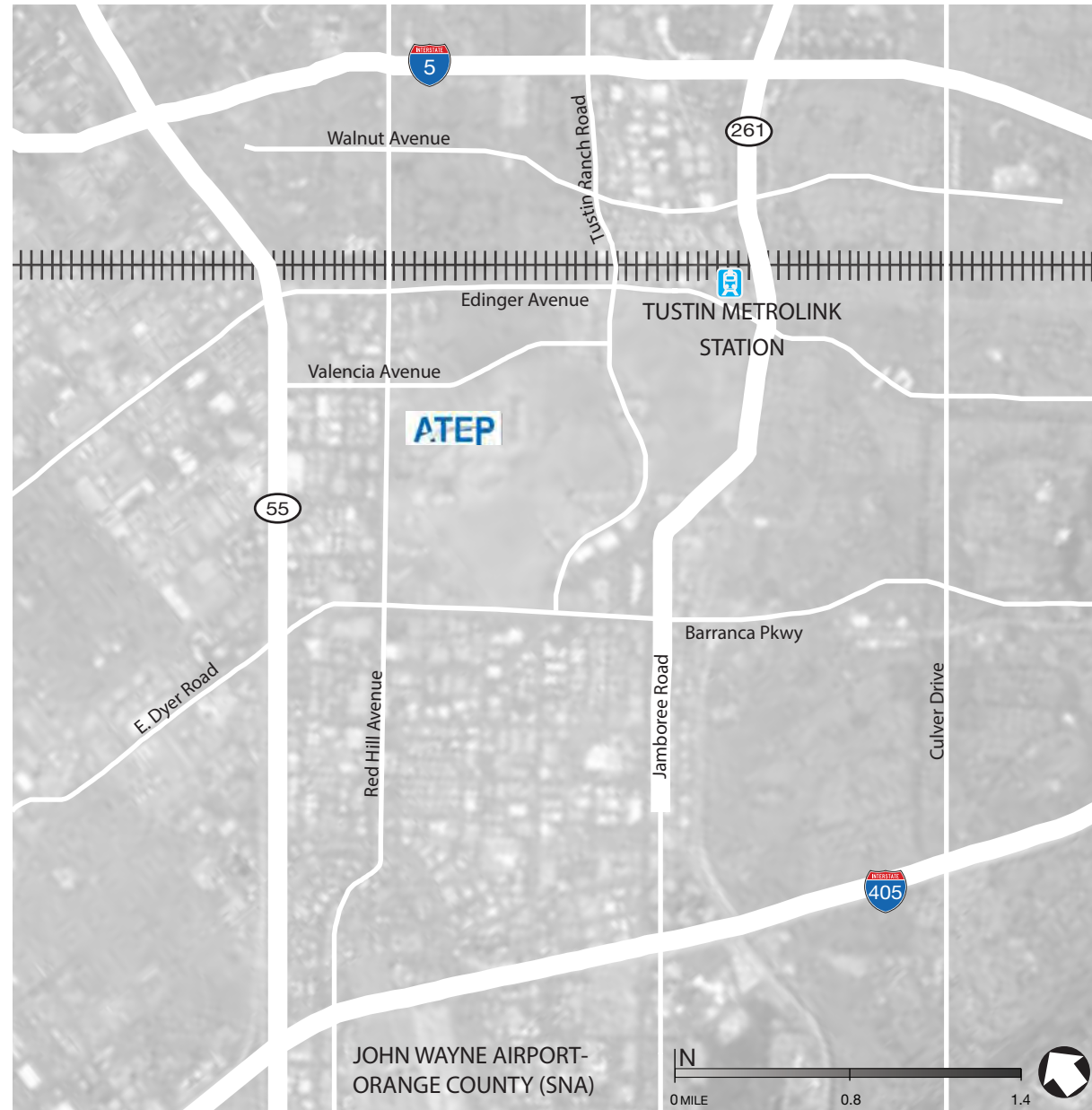
ROADWAYS

Regional access to the ATEP Site is available via State Route 55, which connects to Red Hill Avenue via East Dyer Road and Edinger Avenue. Red Hill Avenue is a six-lane arterial roadway traveling northeast and southwest through the City of Tustin that also connects to Interstate Highway 5. This roadway connects to other significant east-west roadways in Tustin. Access to the ATEP Site is also provided via Jamboree Road, which connects to both I-5 and I-405. Jamboree Road also provides access to the Eastern Transportation Corridor, State Route 261, which in turn, connects to the Foothill Transportation Corridor, State Route 241.

Local access to the ATEP Site from Red Hill Avenue is planned via Valencia Avenue, Bell Avenue, and Armstrong Avenue. Valencia Avenue and Armstrong Avenue are currently accessible and the Bell Avenue extension will be constructed by the City. A signal is planned for the intersection of Bell Avenue and Red Hill Avenue.

TRANSPORTATION CONTEXT

Figure 3.02a



TRANSIT LINKAGES

Two Orange County Transportation Authority (OCTA) bus routes, Routes 71 and 472, serve the ATEP Site via stops at the intersection of Red Hill Avenue and Valencia Avenue. Both routes travel northeast and southwest on Red Hill Avenue. The Tustin Metrolink Station has direct service provided by Route 472, and transfer service provided by Route 71.

There have been several proposals to expand transit service within Tustin Legacy, including the provision of a shuttle system. As of this time, a defined route and proposal for a shuttle system has yet to be planned.

The Tustin Metrolink Station provides regularly scheduled passenger train service connecting Orange County with Los Angeles, the Inland Empire, and San Diego. This is a well supported passenger train system that continues to expand services to meet the growing transportation needs of the community.

BICYCLE LINKAGES

Bicycle facilities are grouped into three general categories:

- Class I - Off-street trail with a separated pathway and no vehicular traffic.
- Class II - On-street painted bicycle lane where vehicles and bicycles share the roadway, but bicycles have their own demarcated area.
- Class III - Bicycle route with no designated areas for bicycles. Signage is used to notify drivers bicycles may be present on these routes.

Both Valencia Avenue and Armstrong Avenue have Class II bicycle lanes. The City of Tustin is proposing to construct Class II bicycle lanes on Bell Avenue, which will then connect to comparable lanes on Valencia Avenue and Armstrong Avenue.

A proposed key feature of the Specific Plan is the linear park that will extend diagonally through Tustin Legacy. The linear park will likely have Class I bicycle trails, as well as walking paths, which could be linked to the ATEP Site through the Orange County regional park. More detailed information regarding connectivity to the linear park will be determined as the Specific Plan is updated.

Example of bike trails and walking paths in an urban park setting. Proposal for McLaren Park, San Francisco. Source: sf.streetsblog.org



Metrolink train at the Tustin Metrolink Station. Source : watrydesign.com



ANALYSIS & PARAMETERS

3.03

UTILITIES INFRASTRUCTURE

The Specific Plan includes backbone infrastructure plans for storm drainage, sanitary sewer, domestic water, and recycled water services. These plans establish system-wide capacities to serve the planned land uses throughout the Tustin Legacy development.

In 2004, the City prepared the Run Off Management Plan (ROMP) for Tustin Legacy. The ROMP updated the planning for storm water infrastructure and recommended best management practices (BMPs) for projects within Tustin Legacy. More recently, sub-area master plans (SAMPs) for domestic and recycled water have been updated.

The Base Map of Existing Utilities, Figure 3.03a provides a picture of existing mainlines for both wet and dry utilities in proximity to ATEP. The ATEP Site will be served by extending laterals from these mainlines into the site.

The Base Map of Existing Utilities describes the infrastructure for the following services.

STORM DRAINAGE

The ATEP Site may be served by storm drainage mainlines in Valencia Avenue (48") and Armstrong Avenue (72").

SANITARY SEWER

The ATEP Site may be served by sanitary sewer mainlines in Valencia Avenue (8") and Armstrong Avenue (15").

DOMESTIC WATER

The domestic water supply system is provided by Irvine Ranch Water District (IRWD). The ATEP Site may be served by domestic water mainlines in Valencia Avenue (12") and Armstrong Avenue (12").

RECYCLED WATER

The recycled water supply system is provided by IRWD. The ATEP Site may be served by recycled water mainlines in Valencia Avenue (6") and Armstrong Avenue (12").

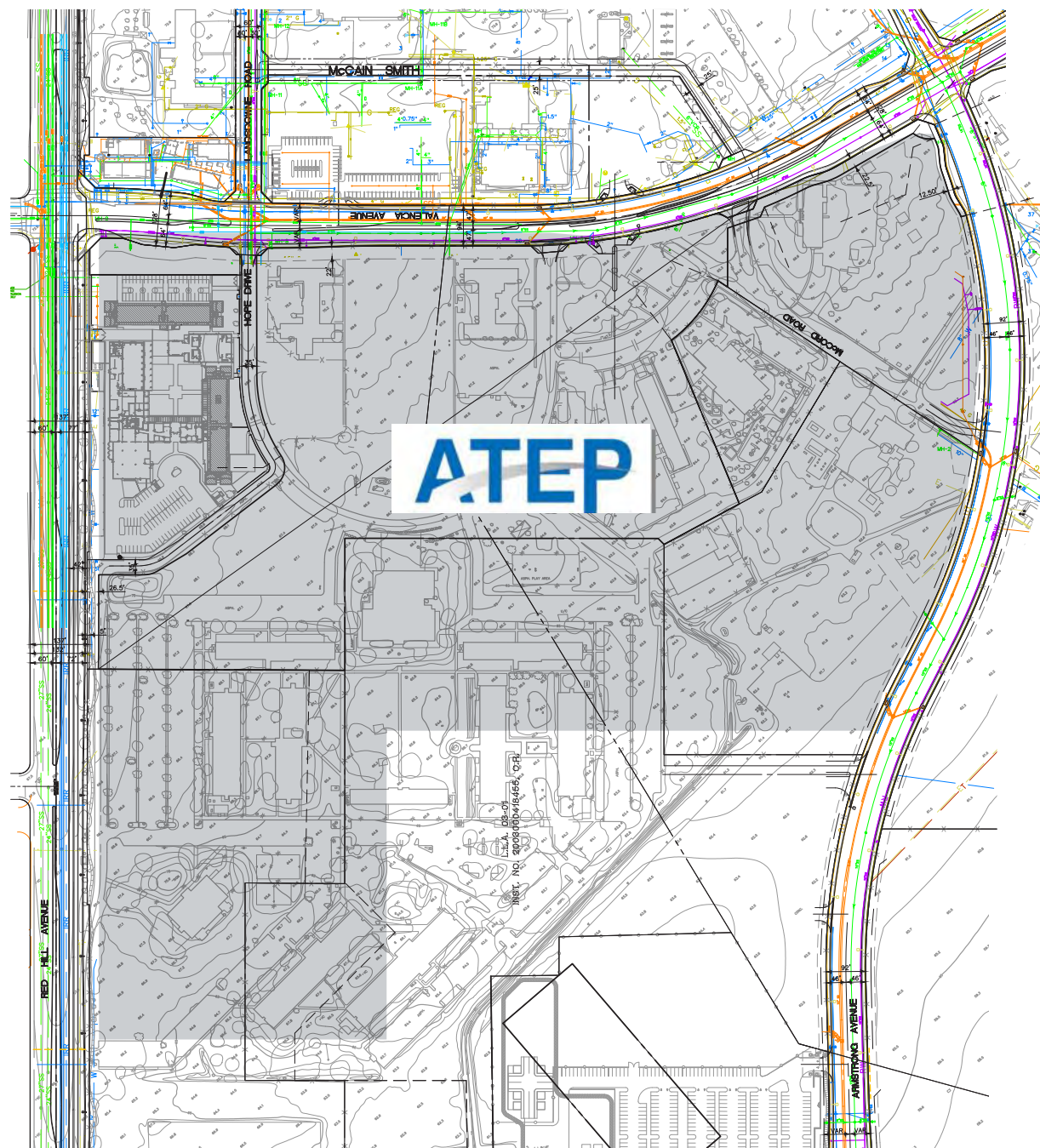
NATURAL GAS, ELECTRICITY, AND COMMUNICATIONS

Valencia Avenue and Armstrong Avenue include underground backbone systems that supply natural gas, electricity, communications, and cable TV.

BASE MAP OF EXISTING UTILITIES
Figure 3.03a

- STORM DRAINAGE —
- SANITARY SEWER —
- DOMESTIC WATER —
- RECYCLED WATER —
- NATURAL GAS —
- ELECTRICITY —
- ATEP SITE

Note: The buildings shown on the Base Map of Existing Utilities have been or are being demolished.



ANALYSIS & PARAMETERS

3.04

CARVE-OUT

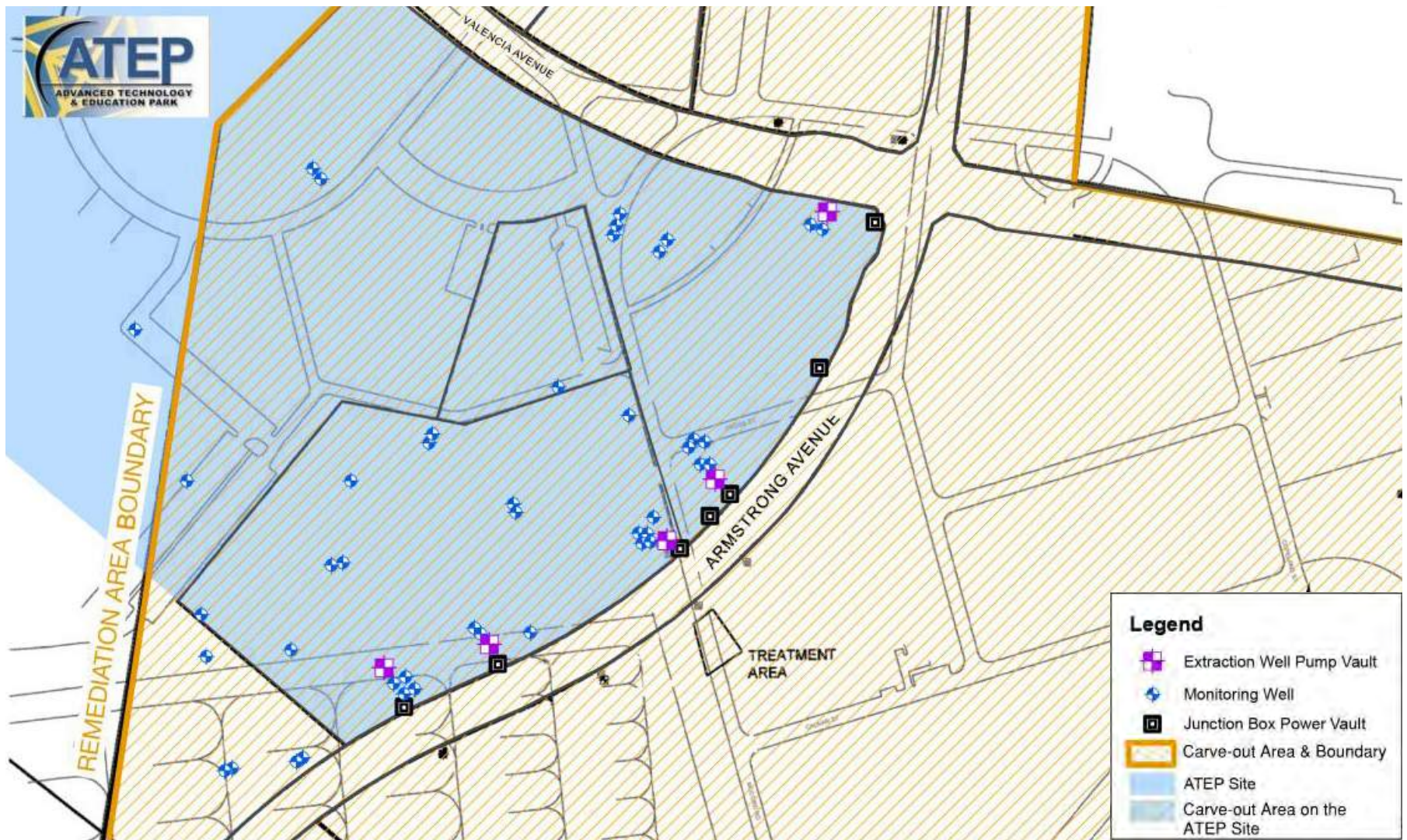
Since ceasing operations at MCAS Tustin, the Navy has performed a multitude of investigations and remedial activities, the vast majority of which have been successfully completed. The only ongoing remediation on the ATEP Site relates to a plume of contaminated groundwater located beneath the eastern portion of the property. The contamination was caused by historical Navy operations on the base, and the Navy is responsible for the cleanup of this contamination.

The groundwater remediation system installed by the Navy is a “pump-and-treat system” and is illustrated in Figure 3.04a. The system pumps contaminated groundwater from a series of extraction wells, shown in purple, conveys the water through underground piping to a treatment area on the east side of Armstrong Avenue, and discharges the treated water to the municipal sewer. The system’s performance is evaluated on a regular basis by testing the water collected from Navy monitoring wells, shown in blue, located in the area of the plume. The Navy has reported that contaminant levels in the groundwater are steadily decreasing each year, and estimates clean-up will be complete in the next few decades, which is a typical timeline for these types of systems.

The regulatory agencies overseeing the remediation have determined that the Navy’s remediation system in the area is operating “properly and successfully.” This determination allows the Navy to proceed with the conveyance of the land before full clean-up of the contamination is achieved. It is currently anticipated that the Navy will transfer the Remediation Area to the City by the end of 2018. The City, in turn, will then transfer the Remediation Area to SOCCCD.

SITE MONITORING WELLS AND VAULTS. Source: SOCCCD.

Figure 3.04a



ANALYSIS & PARAMETERS

3.05

CLIMATE CONDITIONS

An understanding of climate conditions at the ATEP Site helps planners and designers to select the most environmentally and financially sustainable design strategies—those that take advantage of ATEP’s favorable climate to use less energy.

The climate information in this section is based on data from the nearest weather station, located at John Wayne-Orange County Airport (SNA). The ATEP Site is located in Climate Zone 6, situated about 9 miles inland on an ocean-influence coastal plain, where hills are low or nonexistent.

The ATEP Site enjoys a Mediterranean climate. For much of the year, the weather is ideal to support a lifestyle that flows from indoors to outdoors. Most of the rainfall occurs during mild winters. Summers are cooled by breezes from the ocean. Although prevailing onshore winds bring higher humidity, comfort is maintained by the cool ocean temperatures. Occasionally the wind reverses to the offshore direction, bringing in warm, dry desert air.

TEMPERATURE, HUMIDITY & COMFORT ZONE

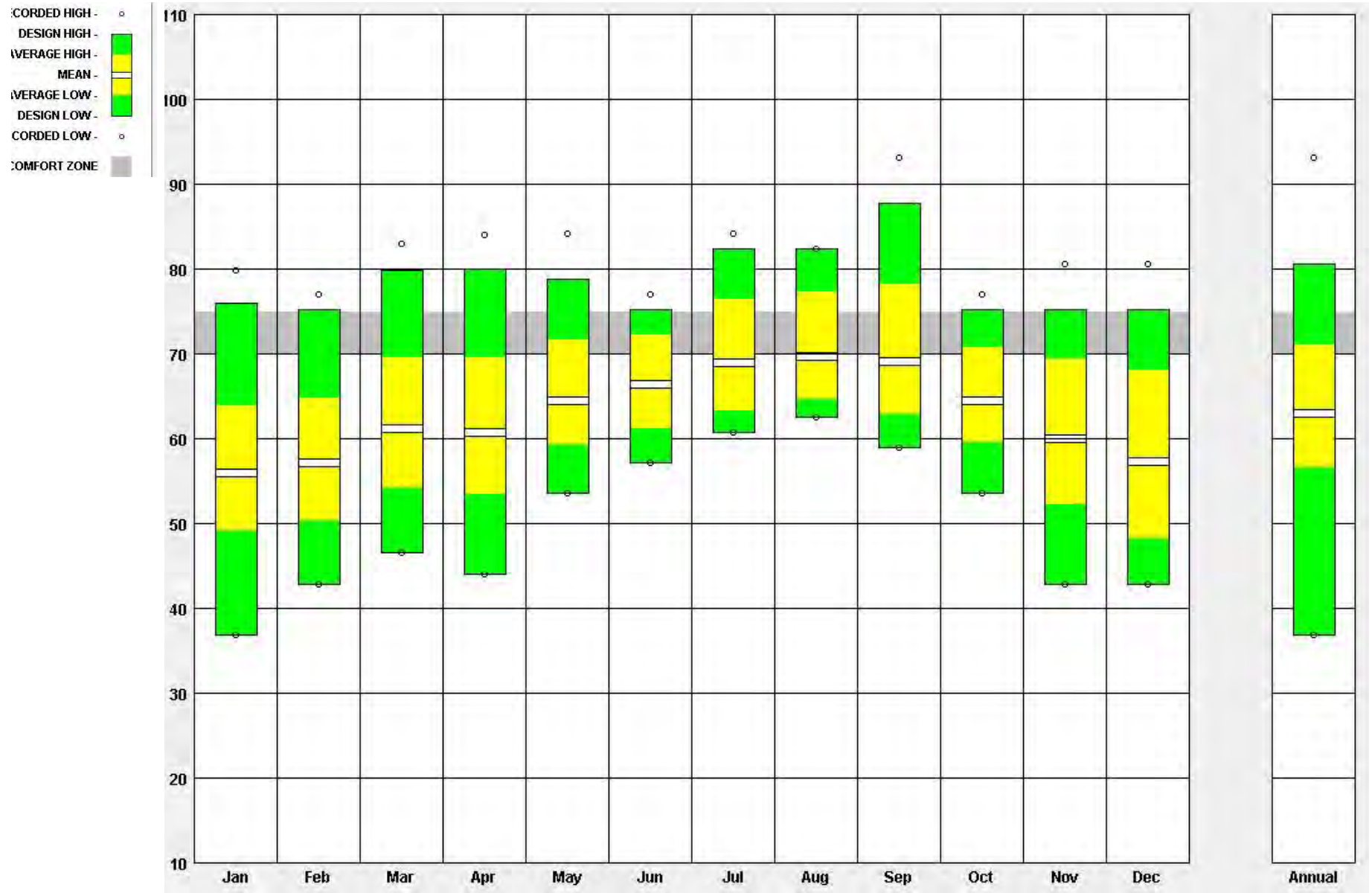
Thermal comfort is a result of the combined effects of solar radiation, temperature, air movement, and relative humidity. The Comfort Zone Chart, Figure 3.05a, illustrates that the outdoor temperatures experienced at the ATEP Site remain within comfortable levels during most of the year.

During the summer months, temperatures often fall within the comfort zone (shown by the gray horizontal bar ranging between 70-75 degrees Fahrenheit), but can periodically range as high as 20 degrees above the comfort zone. These warmer conditions may be mitigated with passive cooling strategies supplemented by the use of regulated mechanical cooling to achieve thermal comfort.

During the winter, temperatures are approximately 10 degrees Fahrenheit lower than, but can be as low as 20 degrees below, the comfort zone. These cooler conditions may be mitigated with passive heating strategies supplemented by mechanical heating.

COMFORT ZONE CHART

Figure 3.05a



ANALYSIS & PARAMETERS

3.05

CLIMATE CONDITIONS (cont'd)

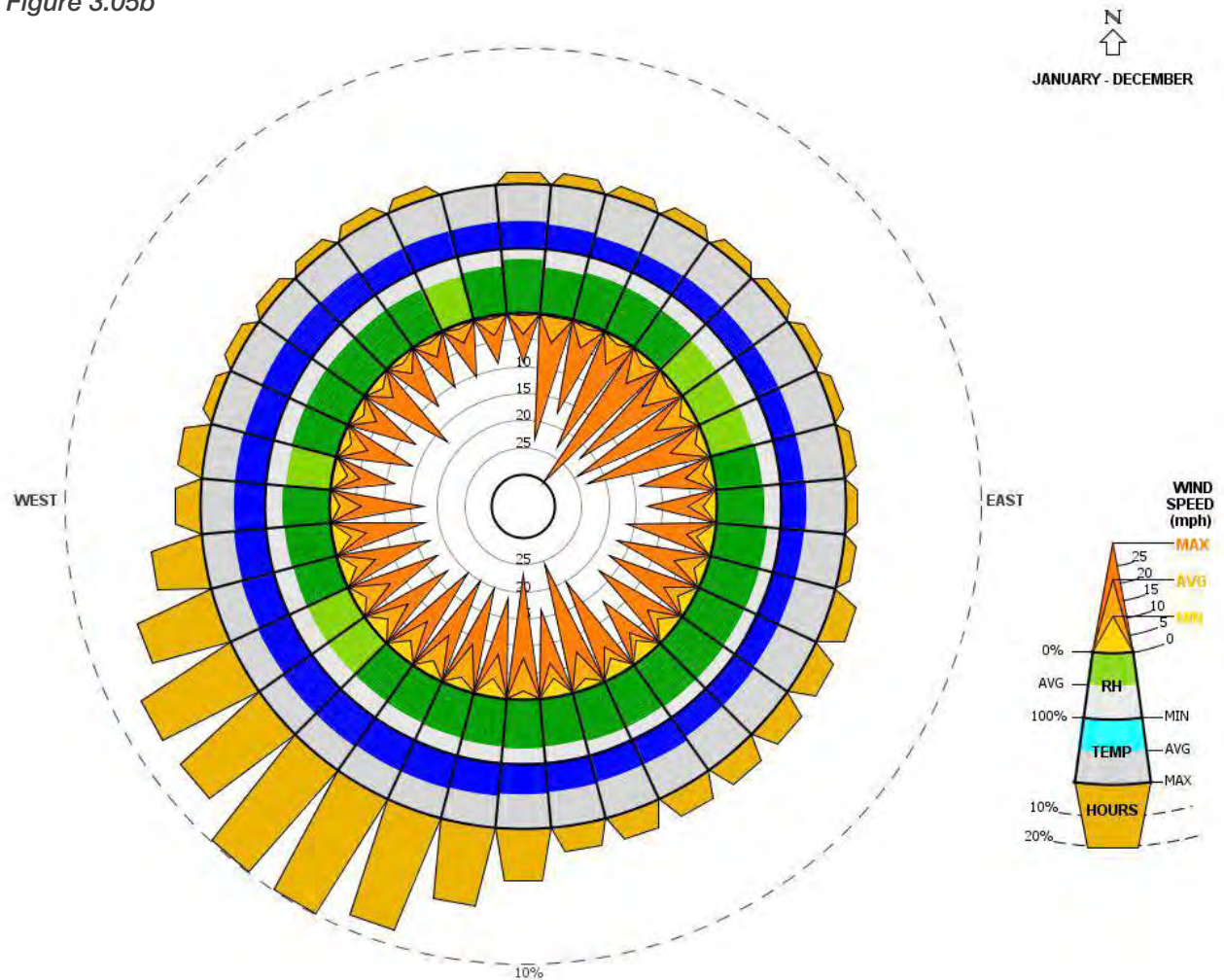
WIND

An understanding of wind characteristics allows planners and designers to channel comfortable breezes and shield occupants from occasional strong winds.

During the summer, winds primarily come from the southwest within a range of 5-10 miles per hour at an average of 60 degrees Fahrenheit, and a relative humidity level greater than 70%. During the winter, winds primarily come from the southwest within a range of 5-10 miles per hour, with gusts that range between 15-20 miles per hour. These winds are slightly cooler at 50-55 degrees Fahrenheit, with a relative humidity that ranges between 32-70%.

WIND ROSE

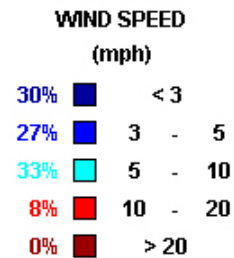
Figure 3.05b



Occasional high gusts tend to occur between April and June and again between September and October, initially signaled by a shift in the wind direction during late afternoon and evening hours. These winds tend to come from a northeasterly direction and are commonly known as Santa Ana Winds.

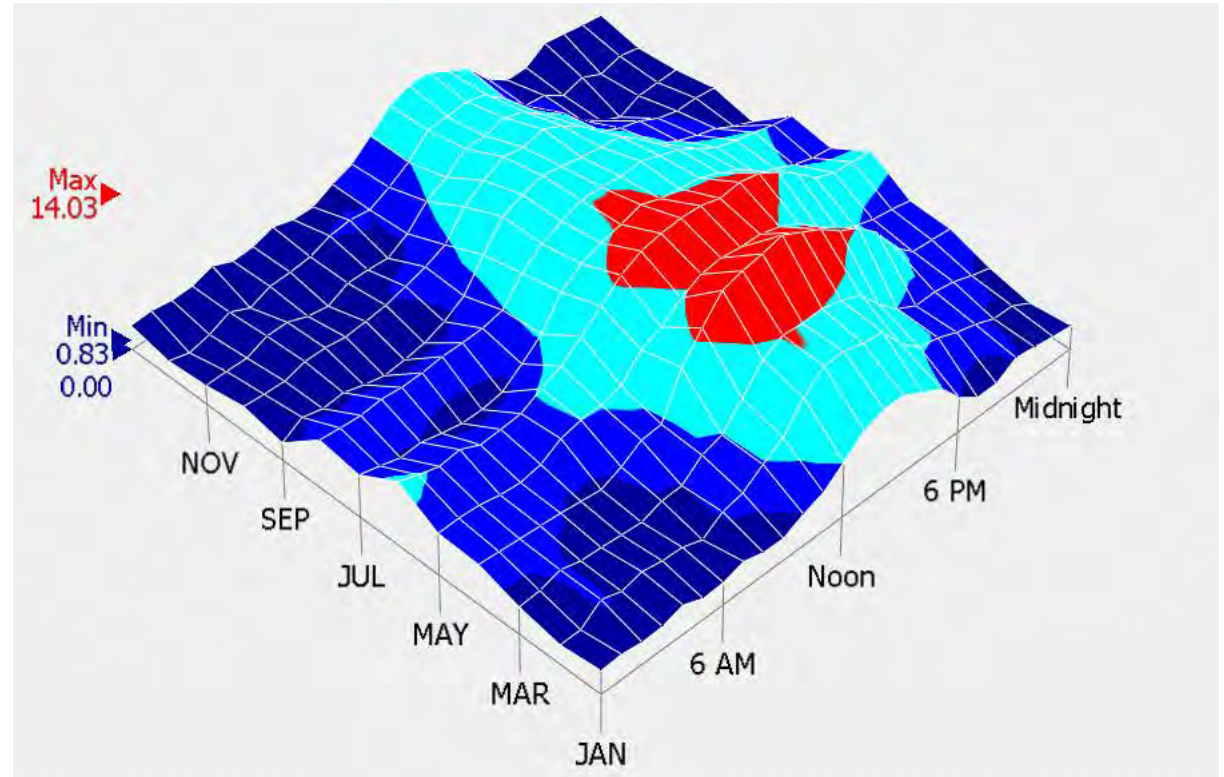
They range between 10-15 miles per hour, with gusts as high as 25 miles per hour and tend to be dryer and warmer than the prevailing winds.

The Maximum & Minimum Winds (Figure 3.05c) and the Average Wind Velocity (Figure 3.05d) illustrate the variation in wind velocity over the course of the day and year. Throughout the course of the year, the average wind velocity is approximately 6-7 miles per hour. These wind characteristics are ideal for outdoor comfort and the natural ventilation of buildings. Buildings may be oriented so courtyard spaces are cooled by summer breezes. Buildings may also be designed to open to prevailing breezes, providing an effective means of naturally cooling interior spaces.



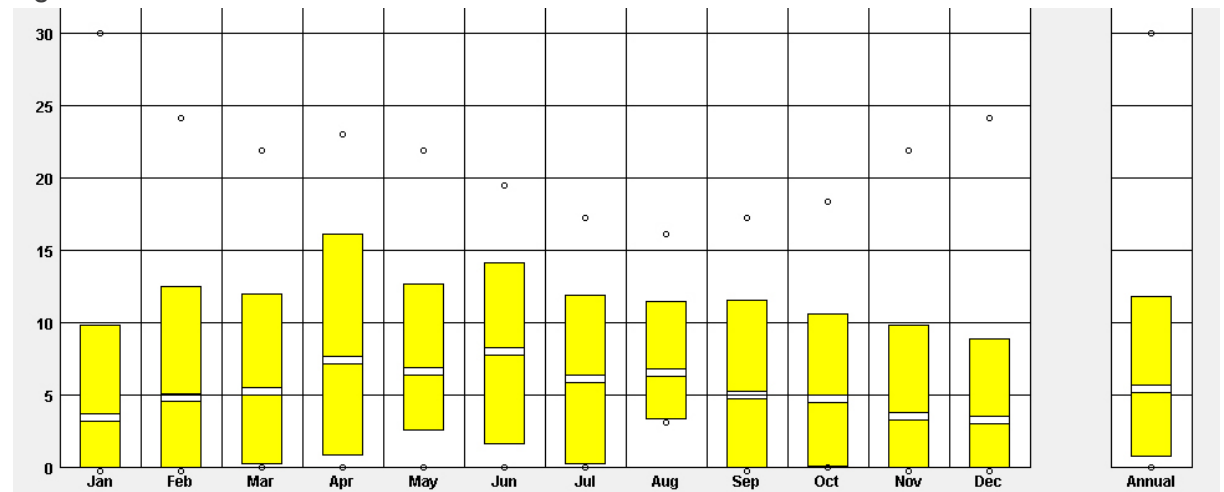
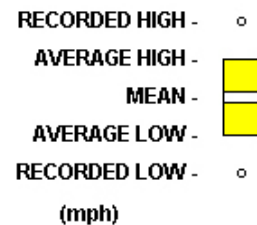
MAXIMUM & MINIMUM WINDS

Figure 3.05c



AVERAGE WIND VELOCITY

Figure 3.05d



ANALYSIS & PARAMETERS

3.05

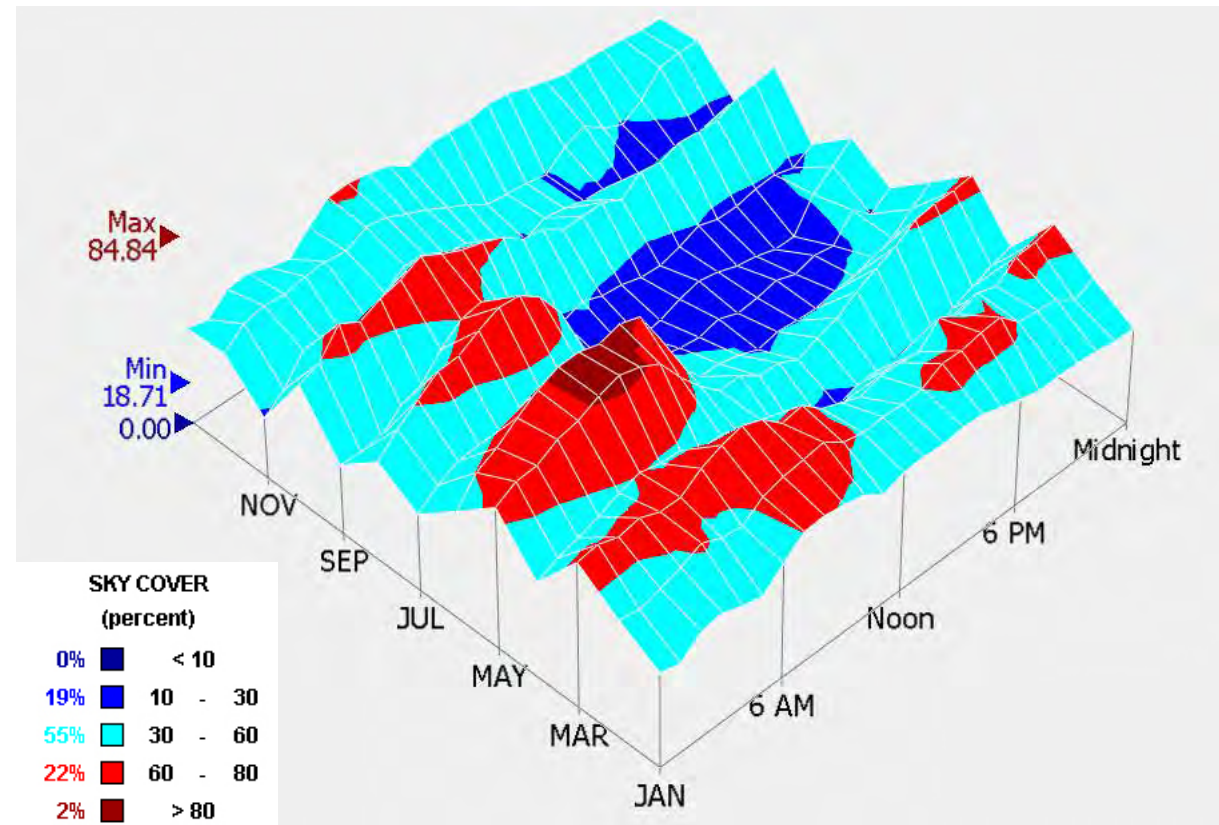
CLIMATE CONDITIONS (cont'd)

SOLAR EXPOSURE

The Minimum and Maximum Cloud Cover (Figure 3.05e) and the Annual Cloud Cover Range (Figure 3.05f) show the percent of the sky that is covered by clouds over the course of the day and year. The cloud cover charts indicate that the ATEP Site experiences less than 50% cloud cover annually. Clear conditions generally prevail between 11 am and 5 pm from May to September. However, the site experiences over 60% cloud cover during the morning hours from May to September. Cool morning conditions support the potential for ambient cooling and natural ventilation. Local conditions indicate solar photovoltaic energy generation systems (particularly those that track the sun, as opposed to static systems) would be an effective source of energy.

MAXIMUM & MINIMUM CLOUD COVER

Figure 3.05e



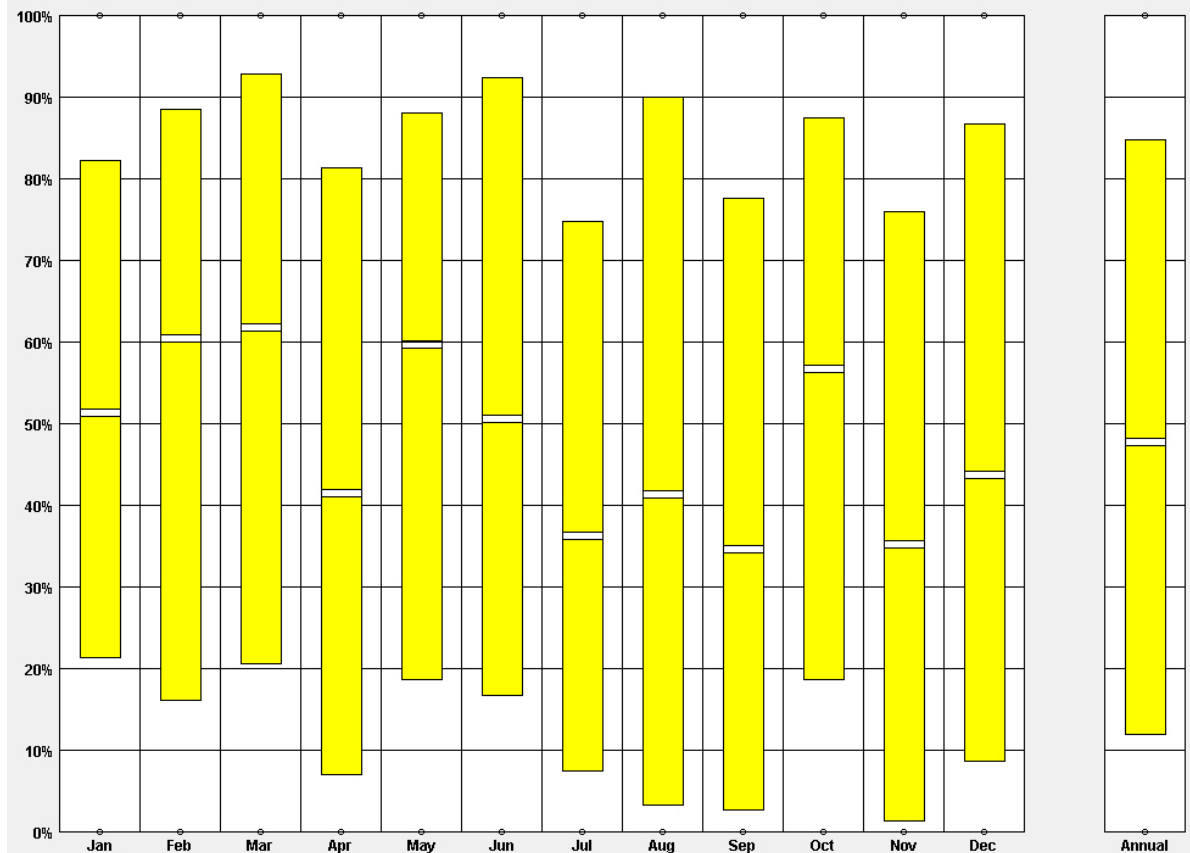
SOLAR ACCESS & SHADING

Although cloud cover can occur during the morning hours from May to September, the ATEP Site receives ample solar exposure throughout much of the year. These conditions support comfort in outdoor spaces and opportunities for natural lighting within buildings, as well as solar power generation.

Total Cloud Cover 100%
 RECORDED HIGH - ○
 AVERAGE HIGH - 
 MEAN - 
 AVERAGE LOW - 
 RECORDED LOW - ○
 Clear Skies 0

ANNUAL CLOUD COVER RANGE

Figure 3.05f



ANALYSIS & PARAMETERS

3.05

CLIMATE CONDITIONS (cont'd)

CLIMATE-INDICATED DESIGN STRATEGIES

The Comfort Design Strategies Chart (Figure 3.05g) on the opposing page is a tool that helps identify building comfort strategies that are well suited for a specific set of climate conditions. The chart reflects the conditions at the ATEP Site with the dots representing each hour, over the course of a year, charted in accordance with the prevailing outdoor temperature and humidity levels. The colored boxes capture the hours (dots) during which indoor or outdoor comfort can be achieved by implementing the correspondingly colored design strategies.

The chart helps designers prioritize strategies according to their impact on comfort. Factoring in the life-cycle cost and energy usage associated with each potential strategy will provide the information needed to select the most environmentally and financially sustainable approach that will achieve the desired comfort level.

During the summer, the chart indicates that for 23% of the time, thermal comfort can be achieved without any intervention at all. Passive cooling strategies such as sun shading of windows, thermal mass, and natural ventilation will effectively mitigate heat gains during the warmer months. Controlling internal heat gains by managing the use of appliances and electrical lighting will also help to maintain cooler indoor temperatures.

During the winter, the chart indicates that heating is needed 95% of the time to achieve thermal comfort. Effective passive heating strategies include direct-gain thermal mass and optimization of solar radiation through windows. In addition, capture of internal heat gain by preventing heat loss through the building envelope will help to maintain thermal comfort. High-performance building insulation and high-performance low-e window glass is recommended. To maintain comfort during the winter, these strategies must be supplemented by mechanical heating at least 46% of the time.

Further study is recommended to find mechanical systems that work well with the climate, occupancy type, and frequency of building use. Such a study will help prevent oversizing of systems and highlight opportunities for synergies with passive design strategies.

Figure 3.05g



ANALYSIS & PARAMETERS

3.06
PLANNING PARAMETERS

The Development Agreement, which vests SOCCCD’s right to develop the ATEP Site, sets forth the allowable land uses, density, and vehicle trips. Key sections of the agreement are summarized on the following pages.

PERMITTED LAND USES

Category 1 Uses (Educational)

- Education related facilities (classrooms, labs, administration, student support, food service, bookstore, dormitories and student housing, health services, security and maintenance facilities, etc.) for public and private non-profit or for-profit institutions
- Facilities for extension programs, advanced degrees, and vocational and job training
- Supportive uses (minor support commercial, office, retail, medical, industrial/commercial incubators, and studios) allowed for up to 10% of educational space
- Live performance facility/amphitheater associated with Educational uses

Category 2 Uses (Non-educational)

- Non-educational, income-producing private or public sector uses
- Auto research/design/development facilities
- Full range of science, information technology, medical, and R&D labs/office/manufacturing facilities
- General office/corporate headquarters
- Industrial/commercial incubator (flex space)
- Motion picture and recording studios

PROHIBITED USES

- Residential/commercial mixed-use (unless student housing)
- A single commercial retail center over 15,000 sf
- Grocery stores, mini-markets
- Hotels/motels
- Congregate care
- Entertainment uses (i.e., commercial motion picture theaters) unless associated with Educational uses
- Drive-throughs (for retail/service commercial uses)
- Auto/RV sales, rentals, repair
- Jail

REQUIRED RATIOS AMONG USES

The Development Agreement regulates the ratio between total building areas devoted to Educational (Land Use Category 1) and Non-educational uses (Land Use Category 2). At build-out, at least fifty-one percent (51%) of the building area must be devoted to Educational uses. Prior to build-out, the minimum percentage of building area that must be devoted to Educational uses, in relation to Non-educational uses, is set forth below, in the *Table of Required Ratios*. A higher percentage of space for Non-educational uses is allowed in the early stages of development. These ratios were used to guide in the planning and phasing of the *ATEP Development Framework*.

TABLE OF REQUIRED RATIOS

Source: Exhibit G, Development Agreement
Table 3.06a

Land Use Category 1 Space Commenced		Land Use Category 2 Space Authorized		Ratios	
Required Square Footage	Required Cumulative Sq. Footage	Authorized Square Footage	Cumulative Authorized Sq. Footage	Category 1 SF To Total SF	Category 2 SF To Total SF
30,000	30,000	150,000	150,000	17%	83%
30,000	60,000	100,000	250,000	19%	81%
252,000	312,000	50,000	300,000	51%	49%

ANALYSIS & PARAMETERS

3.06

PLANNING PARAMETERS (cont'd)

DEVELOPMENT REGULATIONS

- Maximum development alternatives
 - Alternative 1: 100% Educational = 1,710,780 square feet
 - Alternative 2: 51% Educational + 49% Non-educational = 1,088,000 square feet, approximately, based on number of trips generated
- Maximum building height: 100 feet (six stories)
- Maximum Floor Area Ratio: 0.38 to 0.59 depending on land use mix and trip budget
- Maximum trip generation: 10,472 average daily trips
- Minimum building setbacks (measured from edge of right-of-way):
 - Red Hill Avenue: 40 feet
 - Valencia Avenue: 25 feet
 - Armstrong Avenue: 20 feet
 - Lansdowne Road: 15 feet
- Minimum distance between buildings: 10 feet
- Corner setback of 60 feet at Armstrong Avenue/ Valencia Avenue for intersection treatment

TRIP CONSTRAINTS

A significant influence on site development is an average daily trip (ADT) budget, which was established through the Specific Plan.

The trip budget for the Specific Plan is disaggregated to various sub-areas, of which the ATEP Site is one. The allotment for the ATEP Site is 10,472 ADTs. The uses contemplated on the ATEP Site are deemed by the City to generate the number of ADTs per unit of area, as set forth in the *Trip Generation Rate Schedule* (Exhibit H, Development Agreement), which is included in the *Appendix*. The *Trip Generation Rate Schedule* provides ADT rates for two uses planned at the ATEP Site; however other uses could be built at the ATEP Site as described in the previous narrative.

- Education – 6.12 ADT's / 1,000 square feet
- General Office – 13.27 ADT's / 1,000 square feet

There is a range of potential uses that fit within the specified trip budget. Previous studies completed for the ATEP Site concluded that two potential land use configurations could be implemented:

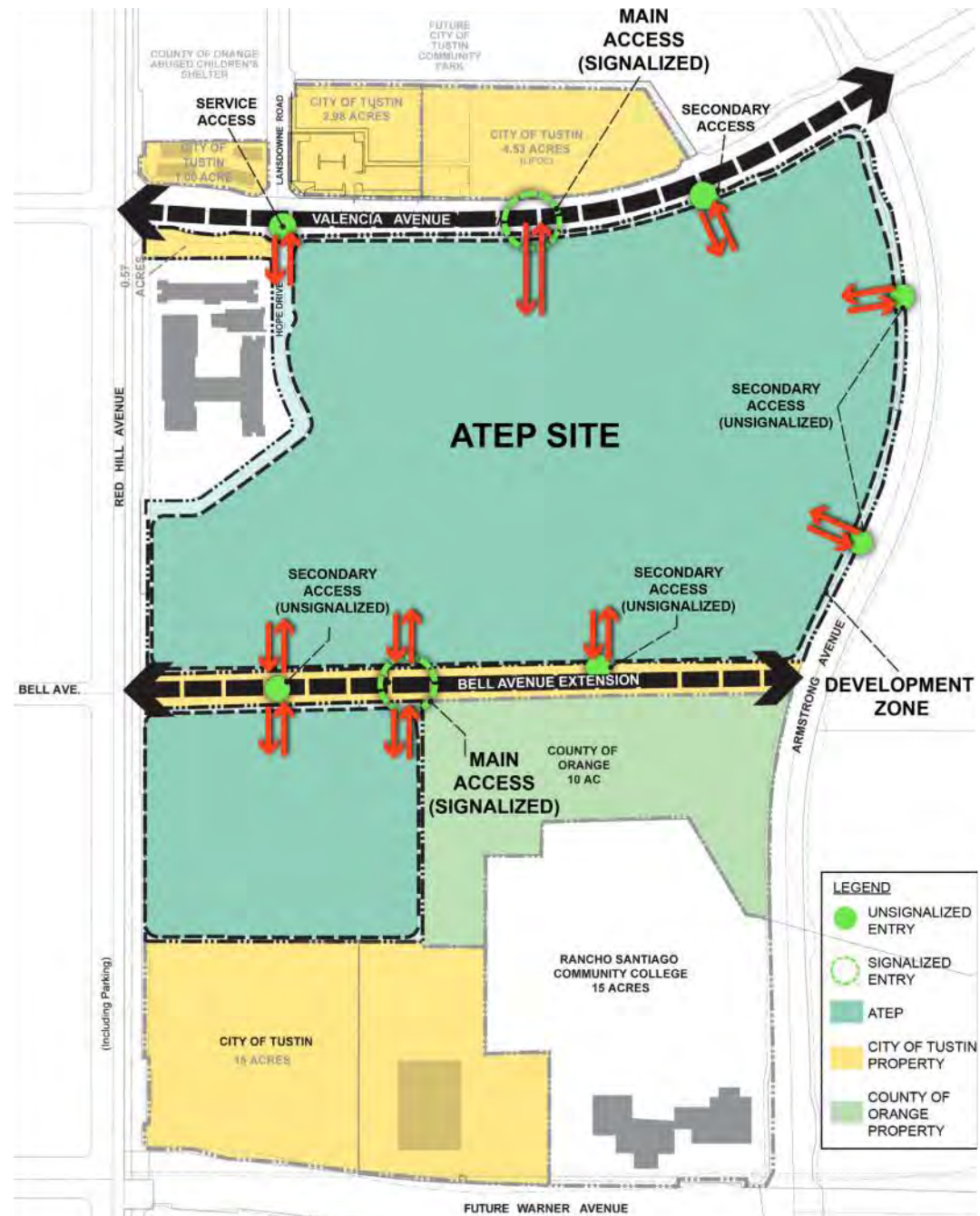
- 555,000 square feet of Educational use with 533,000 square feet of Non-educational use
- 1,710,780 square feet of Educational use

LAND USE & ACCESS PLAN. Source: ATEP Development Agreement
Figure 3.06a

VEHICLE ACCESS POINTS

Analysis of vehicular access to the ATEP Site determined the following:

- Two primary access points, one each along Bell Avenue and Valencia Avenue, will be signalized and will provide full access (left and right turns in/ left and right turns out).
- Secondary access points will be provided along Bell Avenue, Valencia Avenue, and Armstrong Avenue for a total of six secondary access points. These locations will be restricted to right-turn in/right-turn out operation.
- Although no direct access will be provided from Red Hill Avenue, sufficient access from Red Hill Avenue will be provided via the Bell Avenue extension.



ANALYSIS & PARAMETERS

3.06

PLANNING PARAMETERS (cont'd)

PARKING REQUIREMENTS

A significant influence on the design and development of the ATEP Site is the parking requirement imposed by the Specific Plan. For schools, the same rates apply to institutions of all types. The City requires that parking be provided at the following ratios:

- 1 parking space per 3 students
- 1 parking space per 2 faculty/staff
- 4 parking spaces per 1,000 square feet of office uses

Assuming the full build-out of the site at 51% Category 1 use to 49% Category 2 use and the application of the City's parking requirements, 7,804 total parking spaces would be required.

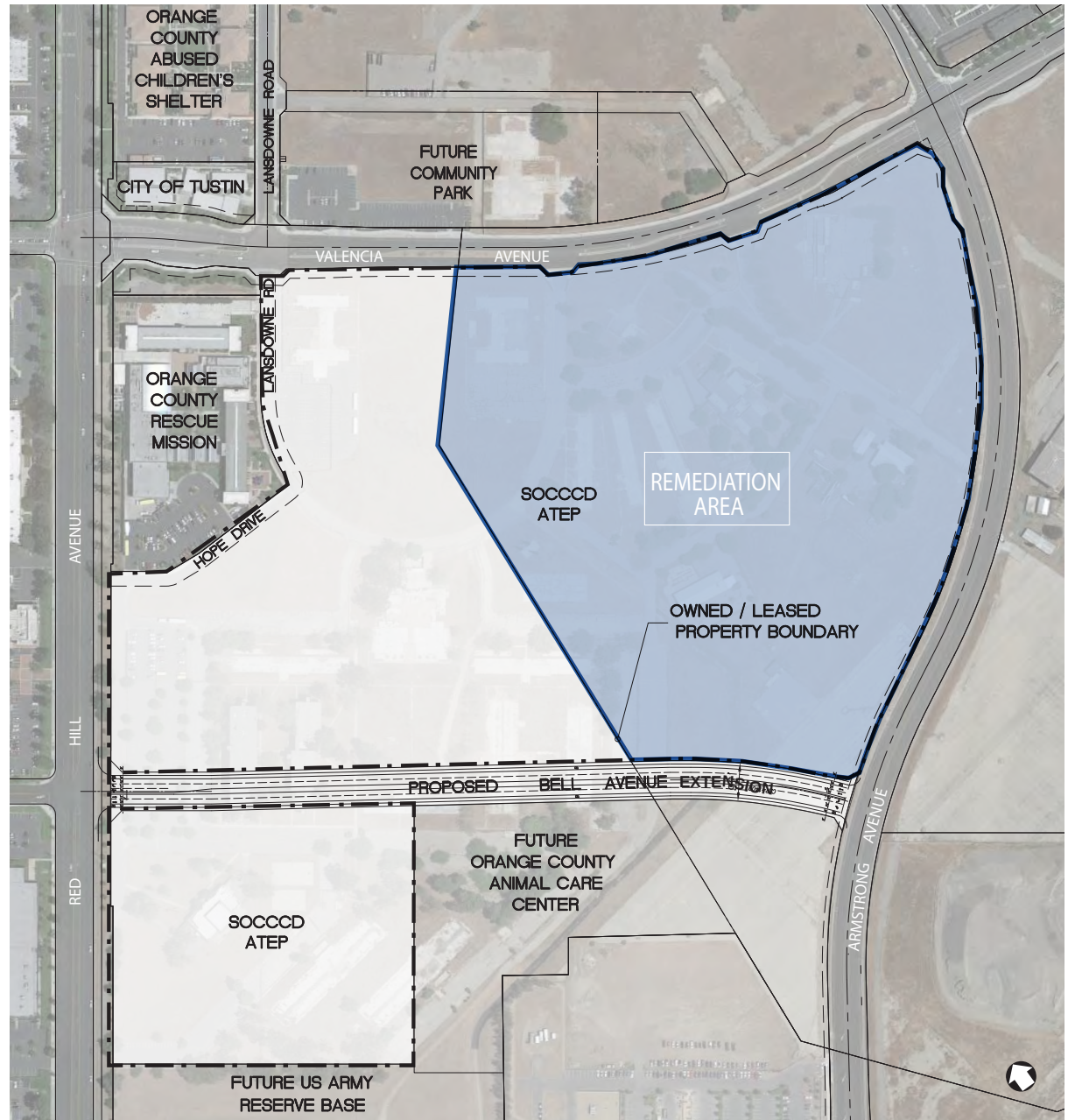
If these 7,804 spaces were distributed throughout the site as surface parking, the land required to accommodate them is more than the total site area. Therefore, some parking will have to be provided in parking structures.

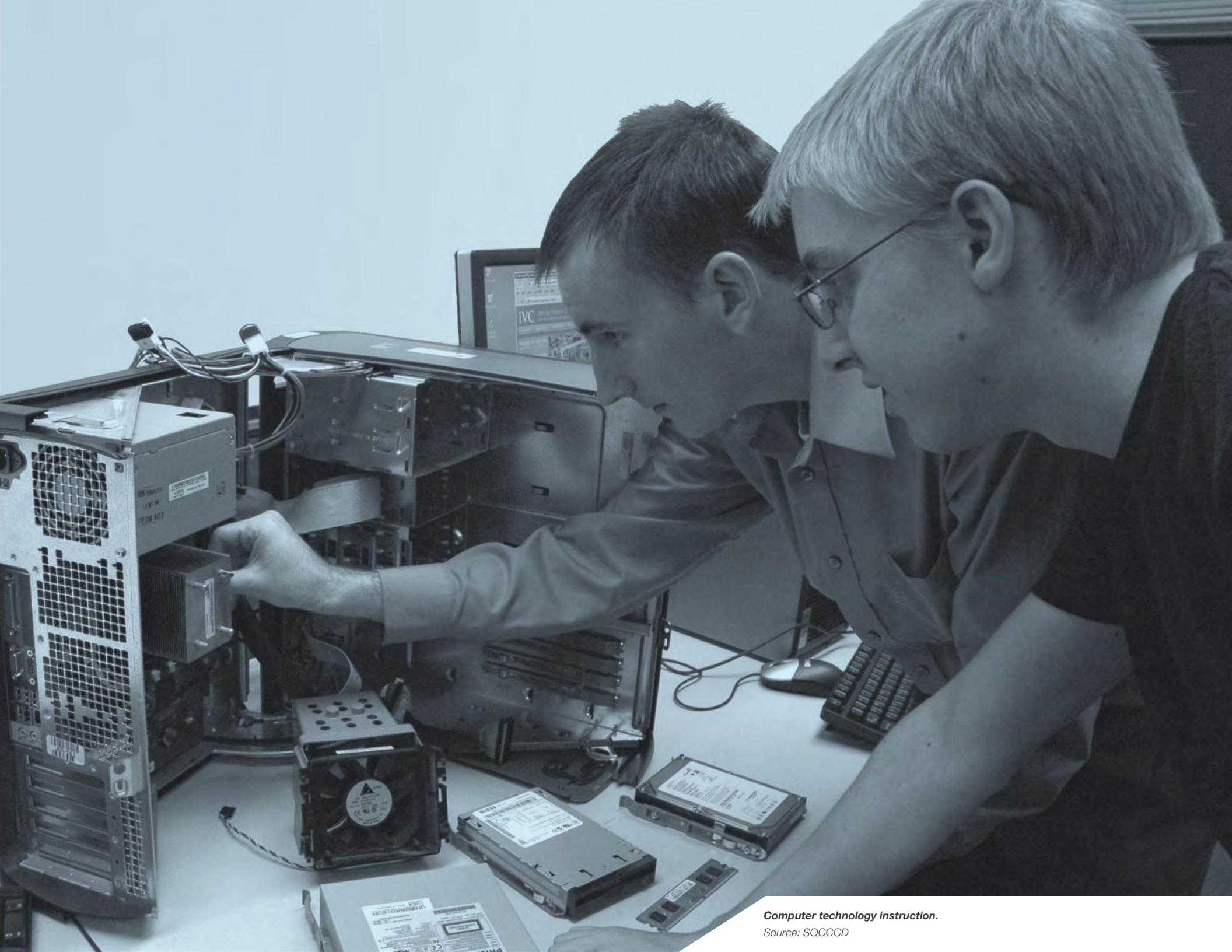
The *ATEP Development Framework* proposes surface parking for the earlier phases of development and parking structures in the last phase. Applying this approach, 40 acres of the total site area of 62 acres will be allocated to parking, with 31 acres of surface parking and 9 acres of parking structures.

REMEDIATION AREA. Source: ATEP Development Agreement
Figure 3.06b

REMEDIATION AREA

The eastern portion of the ATEP Site, depicted in blue on Figure 3.06b, comprises the Remediation Area. The Remediation Area comes with certain restrictions and use limitations related to the existing groundwater contamination and cleanup; for example, there is a restriction on the use of groundwater. These restrictions are not expected to significantly affect the ability to successfully develop the ATEP Site.





Computer technology instruction.
Source: SOCCCD

Chapter four

Market Assessment

The market assessment describes the real estate market environment as it relates to opportunities for the development of collaborative working and learning environments that support the ATEP vision.

- 4.01 **Purpose of the Market Assessment**
- 4.02 **ATEP Competitive Market Environment**
- 4.03 **Land Use Assessments**

MARKET ASSESSMENT

4.01

PURPOSE OF THE MARKET ASSESSMENT

The development framework process included a preliminary market assessment in order to evaluate development opportunities that are consistent with the ATEP goal of attracting corporate partners to provide internship opportunities for students, synergistic collaborations, and workforce development. The assessment focused on evaluating the real estate market environment as it relates to potential demand over the ATEP Site's long-term development life cycle.

BACKGROUND

In 2007, SOCCCD engaged the Orange County Business Council to prepare an Occupational Report. This report identified trends in occupational growth and decline, future job training requirements, top employers, and new business startups.

Based on the findings of the report, six main industries were targeted as employment opportunities for students. These are Computer/Technology, Business/Financial Services, Biomedical/ Biotech, Aerospace, Healthcare, and Tourism. Many of these industries align with the academic focus identified by each of the Colleges in their plans for ATEP.

With occupational trends becoming more technical, the advanced technology objective for ATEP is on target. The report's conclusions support the ATEP objective of creating an environment that nurtures corporate partners, through the exchange of information and ideas from internships and other joint educational programs.

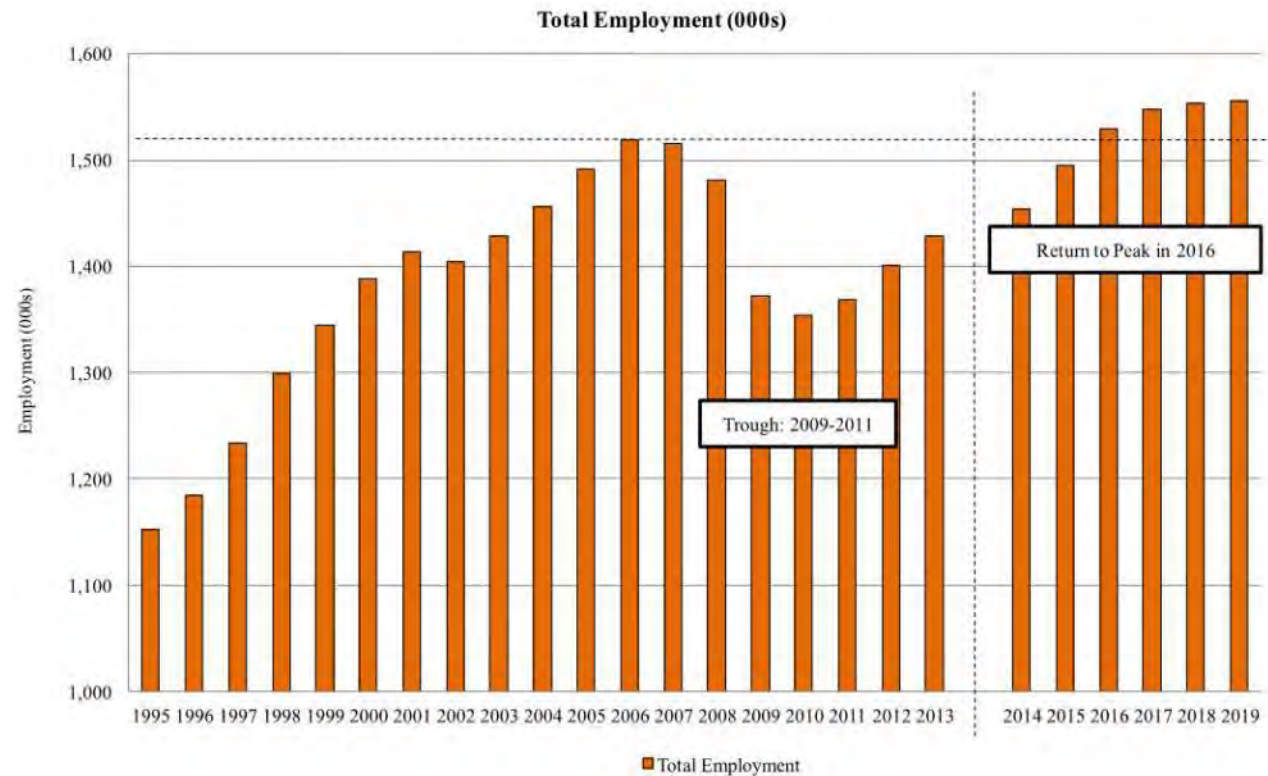
The Development Agreement allows a mix of Educational and Non-educational uses with a ratio of 51% to 49% respectively. The allowed Non-educational uses will provide potential corporate partners with opportunities for office, R&D, and light industrial space. Space for Non-educational use will be capped at about 535,000 square feet depending on the square footage of specific Non-educational uses. "Office/Flex" space use (R&D or light industrial with a significant office component) allows for a higher amount of Non-educational use space, as long as the 51% to 49% ratio is not exceeded. Although other Non-educational uses are permitted, they are not expected to have a significant presence. The proposed amount of office space and associated acreage will create excellent opportunities for corporate partners.

ATEP COMMERCIAL REAL ESTATE ENVIRONMENT

The ATEP Site enjoys a central location within the overall Orange County market. The area's attractiveness to corporate tenants stems from the high quality of life and access to a skilled labor pool. Prior to the last recession, Orange County's desirability led to rapid growth in employment, much of it consistent with the industries identified in the Occupational Report.

Employment growth drives real estate demand and development as was demonstrated by the strong development that occurred prior to the last recession. According to data released from CBRE Group (a commercial real estate brokerage firm), more than 15 million square feet of office space was built in Orange County in the ten-year period from 1999-2008. Actual growth was higher because CBRE Group does not track corporate owner-user space in its data. After 4 years of little development activity, construction is beginning to resume and is expected to accelerate as employment expands past pre-recessionary levels in 2016.

EMPLOYMENT ORANGE COUNTY. *Source: Moody's Economy*
Figure 4.01a



As the demand for new development grows, ATEP is well positioned to benefit from corporate users that desire a central Orange County location but are faced with a diminishing supply of viable sites.

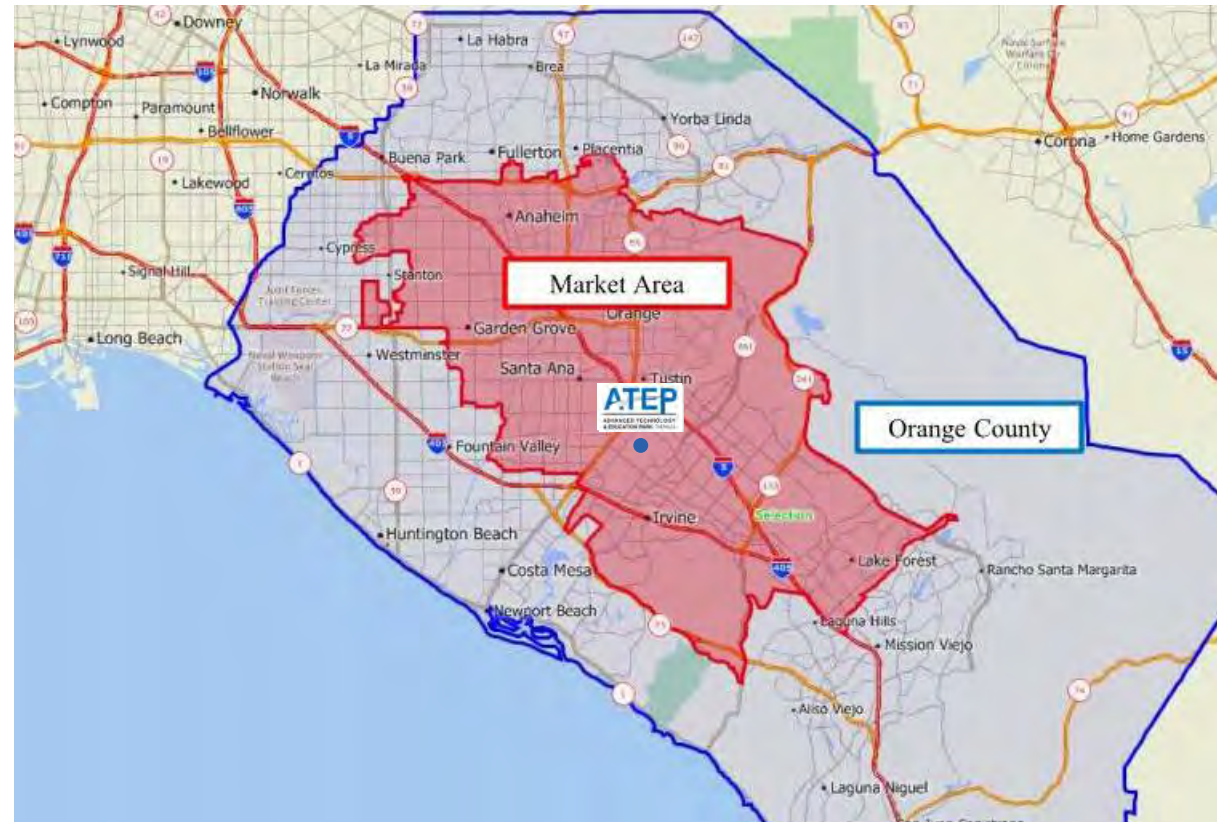
MARKET ASSESSMENT

4.02

**ATEP COMPETITIVE
MARKET ENVIRONMENT**

The ATEP Site's market area is defined by ZIP code and includes the cities of Irvine, Santa Ana, Anaheim, Tustin, and Orange. The market area represents the commercial heart of Orange County. Demand for space at the ATEP Site is expected to emanate from companies and businesses with presences or ties to the market area. The adjacency to John Wayne Airport-Orange County (SNA) presents a unique opportunity to draw from a much larger audience, thereby expanding the market area that is defined in this preliminary assessment.

The primary competition for ATEP's land will come from the competitive land supply in the southern end of the market area, primarily from Tustin and Irvine. Most of this area is already fully developed. The most notable exception is the Cornerstone project at Tustin Legacy, which has 95 acres in two phases that are planned for up to 2.1 million square feet of office space less than ¼ mile southwest of the ATEP Site, as shown on Figure 4.02b. The first phase of four lots totaling 35.1 acres is being marketed now to potential ground lessees and will accommodate over 800,000 square feet of office space. The remaining 60 acres is being held for future development.

ATEP MARKET AREA*Figure 4.02a*

Other areas with competitive office and office/flex land include up to about 2 million square feet of identified future office development in the Irvine area and future potential development in the OC Great Park complex.

While more than 4 million square feet of identified potential competitive space is significant, as previously mentioned, Orange County absorbed more than 16 million square feet of office space in the ten-year period prior to the recession. With growing strength in the economy, demand for developable land should be strong for the foreseeable future.

ATEP COMPETITIVE LAND EXHIBIT

Source: CBRE. Figure 4.02b



MARKET ASSESSMENT

4.03

LAND USE ASSESSMENTS

Based on the anticipated needs of ATEP corporate partners, the evaluation of Non-educational uses focuses on Office and Office/Flex (light industrial/R&D with a heavy office component) uses. In addition, Student Housing is currently in high demand throughout Southern California. The following is an assessment of those uses.

OFFICE

Office uses for the ATEP Site are favorable in the near term, but face growing competition in the medium and long term as the rest of Tustin Legacy develops with similar product. Tustin Legacy development and Irvine industrial land redevelopment are competitive with ATEP office development. Despite the presence of competing office developments in Tustin Legacy, the ATEP Site is well suited for “owner-user” tenants (companies who own and use their entire buildings) who see the value in being next to an educational complex. Smaller scale office uses, such as creative and incubator space, with uses synergistic to ATEP programming are also ideal. Establishing ATEP’s unique identity as a technology destination will drive demand.

OFFICE/FLEX

Office/Flex uses at the ATEP Site, defined as a mix of Industrial/Office space with between 50–80% of space allocated to Office Use, are favorable in the near term and will continue to grow more favorable in the long term, largely due to future growth in Orange County employment. Typically, as employment grows, the market responds with further deliveries of office space. However, these deliveries have not yet materialized, which has led to a strain on current supply. Additionally, emerging technology, design, hardware, and software jobs (all typically associated with flex space) will capture a larger share of this job growth.

Flex space at the ATEP Site should be designed to accommodate and support technology-oriented companies. Companies will be drawn to the ATEP Site if they perceive synergies with their mission and the ATEP programming. Furthermore, parcels for freestanding companies will draw businesses that need their own space and value being part of ATEP.

STUDENT HOUSING

Multi-family housing uses are limited to student housing on the ATEP Site. Student housing uses are very favorable given market conditions and the lack of student housing product in the area. The international student enrollment at SOCCCD has potential to drive demand for student housing in an area where supply is constrained and where purpose-built student housing is unavailable. There are some concerns about future supply, with roughly 750 units planned for Tustin Legacy and many other apartment projects in the development pipeline in the Market Area. However, student-focused housing in a mixed-use setting could provide a competitive distinction.



Chapter five

Vision for the Development Framework

This chapter describes the visioning, criteria, and assumptions that were developed to provide a shared understanding and basis from which to review planning options. In addition, it describes the preliminary and developed options that were reviewed and discussed in workshops, meetings, and college forums.

- 5.01 **Visioning**
- 5.02 **Goals & Evaluation Criteria**
- 5.03 **Preliminary Framework Concepts**
- 5.04 **Phasing Assumptions**

VISION FOR THE DEVELOPMENT FRAMEWORK

5.01 VISIONING

Early in the development framework process, workshop participants engaged in exercises to develop a shared vision for the ATEP Site. Words and images were collected to describe the experiences desired. The results led to the development of Core Planning Principles (discussed in *Section 6.01*) to guide the exploration of options.

The ideas generated are summarized and grouped into four categories.

- First Impression
- Experiential
- Identity
- Organization

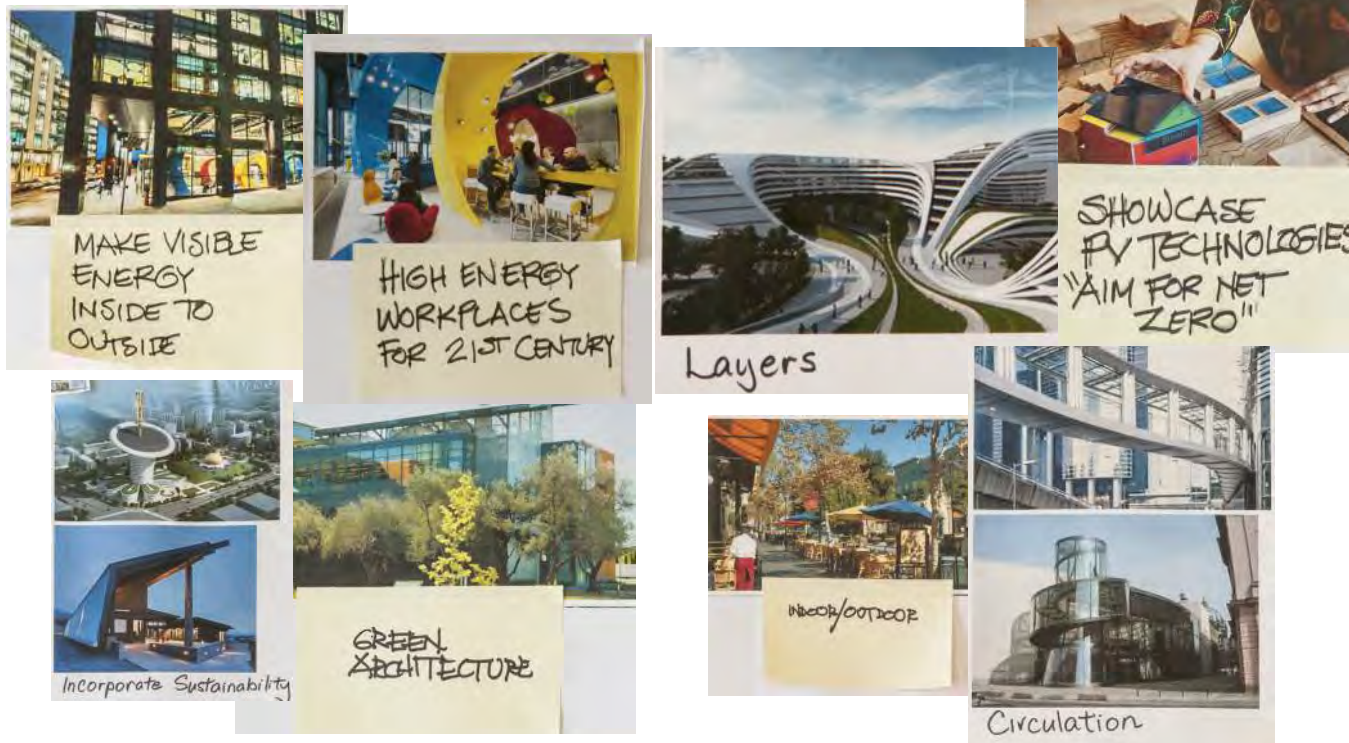


FIRST IMPRESSION

- Welcoming
- Inviting
- Recognizable
- Destination
- Cutting Edge
- Quality

EXPERIENTIAL

- Engaging
- Fun
- High energy
- Inspirational
- Experiential learning
- Campus feel
- Indoor/Outdoor



IDENTITY

- Partnerships
- Green
- Unique
- Integrated
- Innovative
- Non-traditional
- Competitive

ORGANIZATION

- Seamless
- Pathways
- Accessible
- Connected
- Walkable
- Evolving

VISION FOR THE DEVELOPMENT FRAMEWORK

5.02

GOALS & EVALUATION CRITERIA

Before exploring options, the input from the discussions held at Workshop #1 and other meetings was gathered and studied. Site-specific input was distilled into a list of goals that had to be satisfied by each option before it was presented for consideration.

Figure 5.02a illustrates the ATEP Site with surrounding roads and neighboring land uses. The blue triangles on the graphic represent views that are to be maintained between the ATEP Site and its surroundings. The view from Red Hill Avenue, the most traveled transportation route that adjoins the site, is a significant public view of the ATEP Site. Important visual connections will also be maintained between the site, Valencia Avenue, and the future community park.

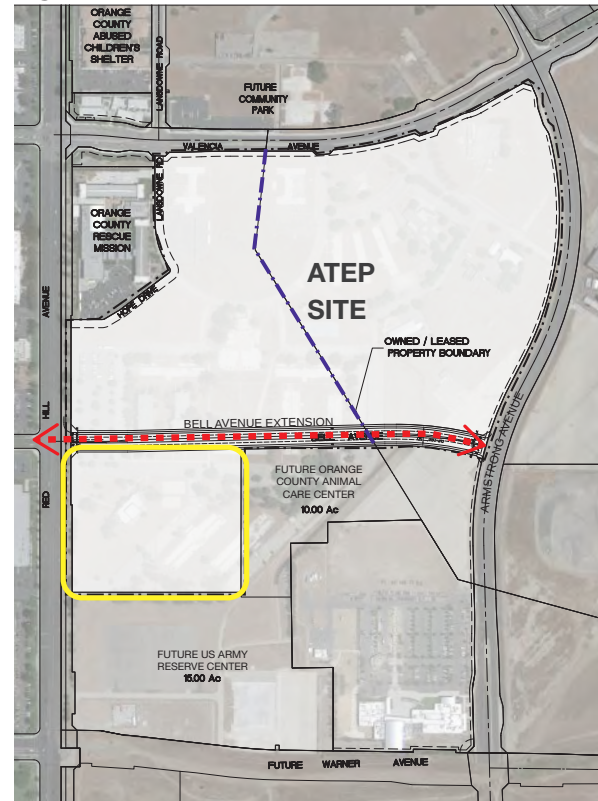
The gold outline highlights the portion of the ATEP Site that lies to the southwest of the Bell Avenue extension, which is shown with the red dashed line. This area is an appropriate location for land uses with less need for integration with the rest of the ATEP Site.

GOALS

- Create visual access into the ATEP Site from Red Hill Avenue.
- Accommodate views out of the ATEP Site looking toward the north and east.
- Develop the site to coordinate with identified vehicular access points.
- Minimize conflicts between pedestrians and vehicular traffic.
- Keep vehicle traffic to a minimum in the interior of the ATEP Site.
- Devote the area southwest of Bell Avenue to uses with less need for integration.
- Delay building in the Remediation Area until the later phases of development.

ILLUSTRATION OF CONSIDERATIONS FOR GOAL-SETTING

Figure 5.02a



EVALUATION CRITERIA

The goals were examined further through the lens of the ATEP visioning priorities to develop a set of criteria to guide the evaluation of development framework options.

- First Impression

- Is a contemporary site that inspires and attracts students, partners, and others.
- Is welcoming, engaging, fun, high energy, and cutting edge.
- Provides open views into and out of the site.
- Provides safe and well-designed site access and internal circulation for pedestrians, cyclists, and drivers.
- Provides for an identifiable gateway in Phase 1.

- Identity for ATEP

- Presents opportunities to create a recognizable high-tech identity.
- Supports high-performance, sustainable site design and operation.
- Supports experiential learning, both inside and outside the classroom.
- Supports strong indoor/outdoor physical connections.
- Fosters a sense of community as well as connectedness to Tustin Legacy.

- Framework Organization

- Provides an organizational vision to integrate the facilities of multiple, differently sized, and diverse educational and non-educational partners.
- Considers building orientation as a passive sustainable planning strategy.
- Plans for the appropriate use of each part of the site.
- Connects to off-site uses and amenities.
- Adapts to changing needs over time.

- Phased Implementation

- Makes a strong start and looks complete at each phase.
- Allows for phased implementation of Educational and Non-educational uses as allowed by the Development Agreement.
- Allows for cost-effective incremental development of infrastructure and support services.
- Reserves suitable sites for partners.
- Considers the development parameters of the Remediation Area and identifies appropriate interim uses (such as parking or landscaping).

- Marketability

- Fosters strong educational program/training partnerships in the early phases.
- Provides commercial partners with visibility, access, and identity.
- Competes in the surrounding market and attracts potential partners.
- Provides a vision to develop space in a range of sizes that will attract a diverse mix of partners.

VISION FOR THE DEVELOPMENT FRAMEWORK

5.03

PRELIMINARY FRAMEWORK CONCEPTS

DEVELOPMENT OF OPTIONS

Informed by the analysis of existing conditions and parameters and guided by the vision of workshop participants, Preliminary Options A, B, and C were developed. These options were presented and evaluated at Workshop #2 and the resulting feedback led to further refinement in Options D and E, described on page 5.8.

PRELIMINARY OPTIONS

Preliminary concepts were discussed following Workshop #1 and developed further prior to being presented to stakeholders in Workshop #2. The discussion of planning concepts was guided by the goals and evaluation criteria that were established for this purpose and are described in *Section 5.02*. Preliminary Options A, B, and C are shown in Figure 5.03a. All preliminary options include the building area and parking capacity that are shown in *Section 5.04, Phasing Assumptions*.

The following summarizes the evaluation of preliminary concepts in Workshop #2.

- The stakeholders said that ATEP must feel open and connected to its neighborhood. The required parking capacity was visualized in Preliminary Options A, B, and C and it became apparent that a significant portion of the ATEP Site would be occupied by parking structures. The distribution and location of these parking structures affect the openness of the site. Workshop participants favored the approach illustrated in Preliminary Option A, the Interior Promenade, which concentrates parking in fewer large structures in order to leave the rest of the site open. Option A creates strong visual and physical connections at both the western and eastern ends of the site.
- The level of internal vehicular circulation and the degree to which it interacts with pedestrian circulation was important to stakeholders. Onsite vehicular circulation was seen as necessary to facilitate access to and among parking areas and provide service and delivery access to support a wide variety of commercial and educational activity. The opportunity to build connections to the developing Education Village neighborhood consists of walkable streets that also favor a degree of onsite vehicular circulation. Preliminary Option B, the Urban Grid, and Preliminary Option C, the Academic Village, both fulfill this objective.
- The stakeholders said that the ATEP Site must evoke a strong sense of place. They expressed a desire to organize the ATEP Site around an active pedestrian-oriented outdoor space. Outdoor space is seen as functional connective tissue and an important venue for experiential learning. The right degree of both openness and containment is needed to define and differentiate outdoor spaces. In this respect, Preliminary Options A and C best embodied this vision by providing larger, connected outdoor spaces. Preliminary Option B, which organizes the entire site into city blocks around a grid of streets, provides for smaller open spaces that are distributed over the site.
- The height, massing, and placement of buildings relates to the distribution of outdoor space and the opportunity to integrate different uses and partner facilities on the ATEP Site. Preliminary Option A concentrates the allowable building area in fewer, taller buildings, maximizing the area of outdoor space, but limiting the number of buildings, as well as interior spaces, with a presence on the ground floor. The placement of buildings in Preliminary Option A aligns best with the ideal solar orientation. Preliminary Options B and C distribute space amongst more and shorter buildings that are adjacent to many other buildings, increasing the opportunities for partners to establish their identities and forge connections with others.

PRELIMINARY OPTIONS

Figure 5.03a

OPTION A: INTERIOR PROMENADE



Includes larger interior garden spaces framed by taller buildings.

- Integrates with the regional park.
- Is inward facing with no internal vehicular circulation.
- Has limited parking opportunities.

Cornell/NYC Tech Campus



OPTION B: URBAN GRID



Includes a series of town squares organized by a street grid. Lower buildings distribute space more widely and activate the internal streets.

- Integrates with the surrounding neighborhood with no formal campus boundary.
- Vehicular circulation is fully integrated throughout the site.

UC Merced



OPTION C: ACADEMIC VILLAGE



Includes an "Academic Village" organized around a central outdoor collaboration space. Lower buildings distribute space more widely and activate the internal streets.

- Strong axial quad framed by signature buildings.
- Vehicular routes extend into the academic village and circulate around a vehicle-free core.

Harvard University



VISION FOR THE DEVELOPMENT FRAMEWORK

5.03

PRELIMINARY FRAMEWORK CONCEPTS (cont'd)

DEVELOPED OPTIONS

Options D and E were developed after listening to and incorporating input for Preliminary Options A, B, and C from College and SOCCCD stakeholders. The plans for Options D and E, shown in Figure 5.03b, indicate building use and phasing by the color of building zones. Participants encouraged the planning team to use the best ideas from all three preliminary options. Options D and E provide for onsite vehicular circulation.

Parking structures are concentrated in two areas on the site in order to maintain desirable views and pedestrian connections. Both options feature buildings that are oriented favorably for sun shading, harvesting daylight, and maximizing passive solar heating. They also provide a large central outdoor space, as well as many smaller outdoor gathering places that are proximate to the adjacent buildings; in effect becoming extensions of the buildings and creating usable “indoor/ outdoor” spaces. Buildings range from one- to four- stories in height, striking a balance between the amount of outdoor space and the number of building opportunities.

Option D focuses on pedestrian-oriented outdoor spaces and provides a lesser degree of onsite vehicular circulation. A series of linked outdoor spaces is defined by informal clusters of buildings.

Option E also provides a central pedestrian-oriented outdoor space, as well as pedestrian-friendly streetscapes, which use traffic-calming measures to safely incorporate a greater degree of vehicular circulation into the site. Ultimately, Option E was selected for further development into the recommendations shown in *Chapter 6*.

DEVELOPED OPTIONS

Figure 5.03b

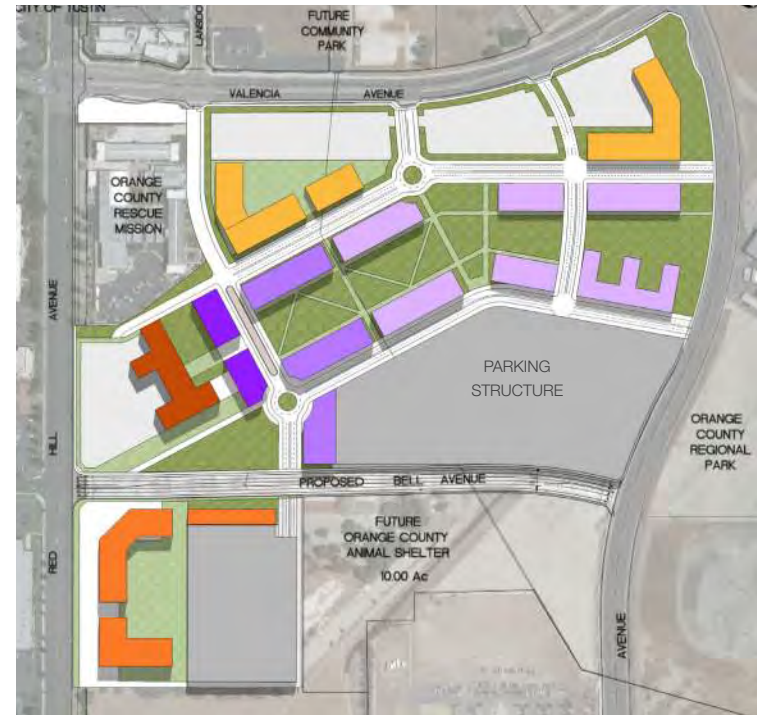
OPTION D



Minimizes vehicular access through the site. Parking structures are adjacent to Bell Avenue. Building zones are clustered to frame a series of semi-discrete open spaces. These open spaces step across the site and provide linkages to a campus entry at Red Hill and Bell Avenues to the west and the regional park to the east.

PH1	PH2	PH3	PH4	
				CATEGORY 1
				CATEGORY 2

OPTION E



Affords a higher, yet still limited, degree of vehicular access through the site, through a series of narrow, pedestrian-friendly streets that provide pedestrian linkages to the surrounding neighborhood. Parking structures are mostly kept adjacent to Bell Avenue. Building zones frame the central open space, which is further articulated by open space design elements.

VISION FOR THE DEVELOPMENT FRAMEWORK

5.04

PHASING ASSUMPTIONS

A series of phasing assumptions was provided to guide the orderly development of the ATEP Site. These assumptions for the amount of building area, parking capacity, and land area needed for parking for each phase are shown on Table 5.04a.

Phase 1 includes the development of two 30,000-square-foot (gross area) buildings for the Colleges and an 80,000-square-foot partner facility. Using the formulas in the Development Agreement, ADTs and required parking capacity were calculated for Phase 1. The required parking capacity was translated into acreage of surface parking and the percentage of the ATEP Site that the acreage will represent.

Phase 2 is identified in the middle step shown in the *Table of Required Ratios*, Table 3.06a. An additional 170,000 square feet of Non-educational space brings the Phase 2 ratio to 19% Educational to 81% Non-educational.

Phase 3 adds 201,000 square feet of Educational space. Phase 4 shows the ultimate build-out in which all 10,470 available ADT's are used and the 51% Educational use to 49% Non-educational use ratio is achieved. This ratio provides the greatest opportunity for commercial partner integration and participation with Career-Technical Education (CTE) instructional programs.

Parking capacity required to maximize the development potential for each phase, will be provided in surface parking lots until the site can no longer accommodate the required surface parking area. The *ATEP Development Framework* demonstrates that the ATEP Site can accommodate the required parking capacity in surface parking lots until Phase 4.

PHASING ASSUMPTIONS

Table 5.04a

TRIP RATES

AVAILABLE ADT'S		10,470
ADT'S/1,000 SF	EDUCATIONAL	6.12
ADT'S/1,000 SF	GENERAL OFFICE	13.27

PARKING RATES

PER SPECIFIC PLAN		
PER STUDENT & EMPLOYEE	EDUCATIONAL	1/3 STUDENTS, 1/2 STAFF
SPACES/1,000 SF	GENERAL OFFICE	4.0

ATEP DEVELOPMENT FRAMEWORK PHASING SCENARIO

51% Educational Use / 49% Non-educational Use

	PHASE 1		PHASE 2		PHASE 3		PHASE 4/BUILD OUT
BUILDING (GROSS SQUARE FEET)	TOTALS	BUILD	TOTALS	BUILD	TOTALS	BUILD	TOTALS
EDUCATIONAL	60,000	0	60,000	201,000	261,000	294,000	555,000
NON-EDUCATIONAL	80,000	170,000	250,000		250,000	280,000	530,000
TOTALS	140,000		310,000		511,000		1,085,000
PARKING CAPACITY (SPACES)							
EDUCATIONAL	597		597		2,598		5,524
NON-EDUCATIONAL	480		1,160		1,160		2,280
SURFACE	1,077		1,757		3,758		3,758
STRUCTURE	-		-		-		4,046
TOTALS	1,077		1,757		3,758		7,804
PARKING LAND USE (ACRES)							
SURFACE PARKING	9		15		31		31
STRUCTURE PARKING	0		0		0		9
TOTALS	9		15		31		40
% OF TOTAL	15%		25%		51%		66%

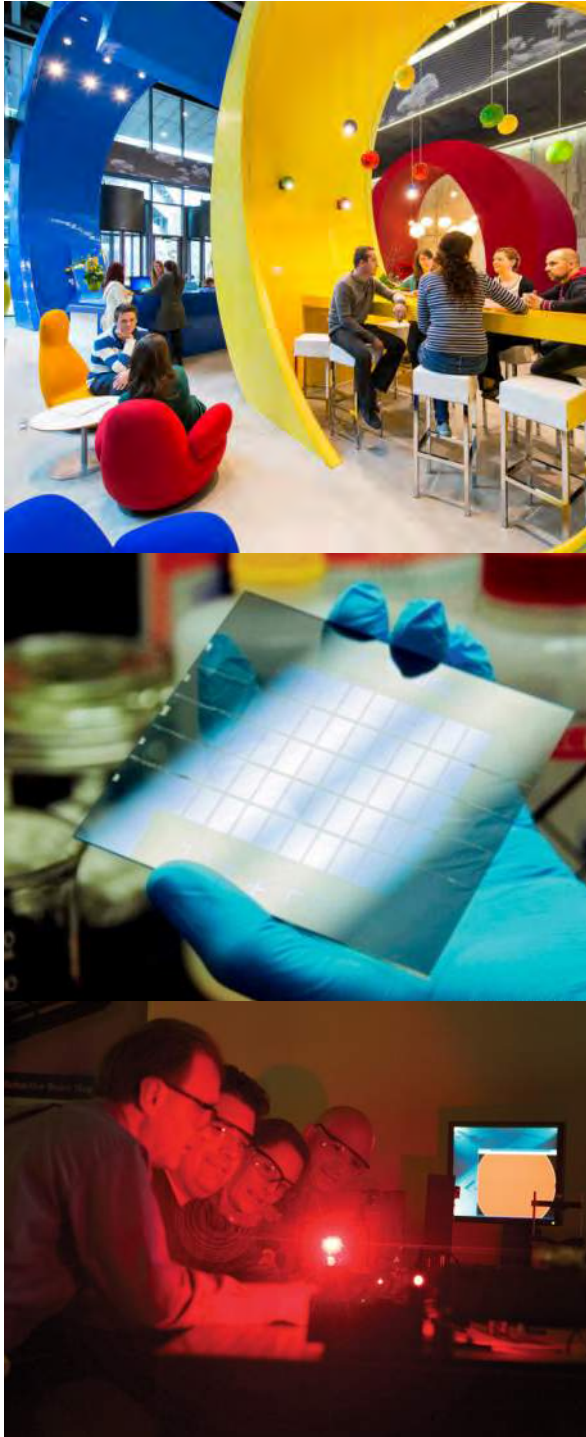


Chapter six

Recommendations

This chapter begins with the core planning principles that express the vision for the ATEP Site. It then presents illustrative drawings followed by phasing plans based on the assumptions described in Chapter 5. The balance of the chapter describes the planning concepts behind the recommendations and suggests strategies that can be used to support their successful implementation.

- 6.01 **Core Planning Principles**
- 6.02 **ATEP Development Framework**
- 6.03 **Phasing**
- 6.04 **Outdoor Environment Recommendations**
- 6.05 **Building Recommendations**
- 6.06 **Infrastructure Recommendations**



6.01

CORE PLANNING PRINCIPLES

The *ATEP Development Framework* recommendations are based on core design principles that were distilled from the collective vision of SOCCCD stakeholders. These core principles are presented as the foundation on which to build the ATEP Site's identity.

CONNECTIVITY

The ATEP Site will **welcome** and **engage** learners and workers through strong connections with its community. It will connect **indoor and outdoor** spaces and provide numerous places for people to gather and interact. Robust infrastructure systems will facilitate the flow of services and information.

COLLABORATION

ATEP will be the setting for **experiential** learning between classmates, colleagues, and partners. Its **high energy** and adaptable indoor and outdoor environments and will engage students and the business community in activities that are all the more memorable for being hands-on, interactive, and **fun!**

INTEGRATION

The design of the ATEP Site will bring **partners** together through the **seamless** integration of educational and business facilities, strong circulation **pathways**, and outdoor space **linkages**. To be designed through an integrated approach, the ATEP Site will be greater than the sum of its parts.

INNOVATION

ATEP's **unique** built environments will inspire innovation. **Flexible** planning principles will be applied to foster a **cutting edge** approach to learning and working. **Green** buildings and outdoor spaces will promote health, comfort, and intellectual achievement.

6.02

ATEP DEVELOPMENT FRAMEWORK*Figure 6.02a*

The *ATEP Development Framework* is a conceptual representation of the collective vision of the many participants in its creation. It will guide future planning and design discussions—setting the ATEP Site on a path to reach its full potential.

While the drawings in this document appear specific, the forms are conceptual and are shown to illustrate the organization of major development components—buildings, outdoor collaboration spaces, circulation, and parking. It is important to note that while these components are shown to scale on the plan, they do not represent specific building footprints, shapes, or architectural treatments. The development components as shown will become more specific as individual buildings are designed and approved.



RECOMMENDATIONS

6.02

ATEP Development Framework (cont'd)



AERIAL VIEW FROM THE WEST, LOOKING EASTWARD

Figure 6.02b



AERIAL VIEW FROM THE SOUTHEAST, LOOKING TOWARD THE NORTHWEST

Figure 6.02c



RECOMMENDATIONS

6.03 PHASING

The phasing plans on the following pages are graphic representations of the phasing assumptions described in *Chapter 5 Vision for the Development Framework*. The approach to phasing supports the evaluation criteria in *Section 5.02*.

Based on input from the stakeholders, the *ATEP Development Framework* phasing plans should:

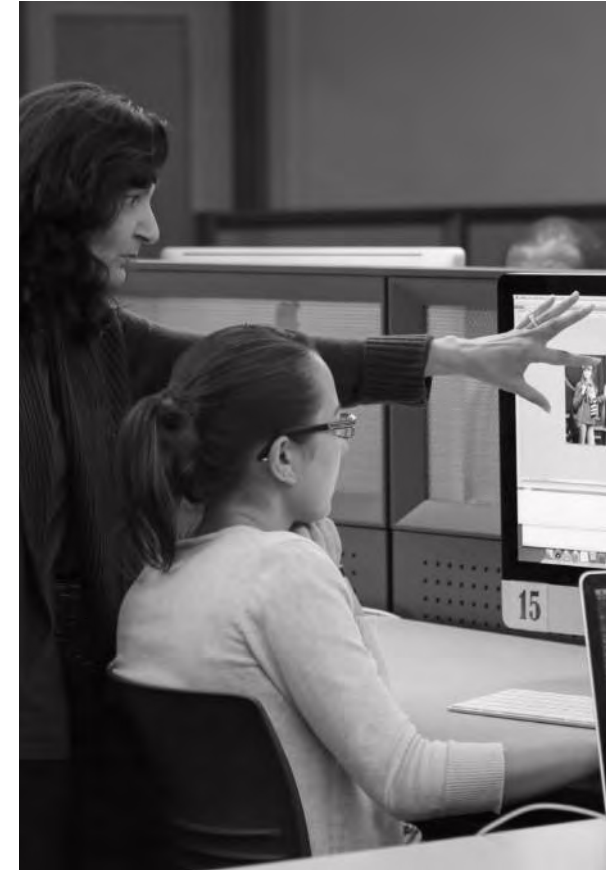
- Make a strong start by maximizing the ATEP Site's presence and identity, beginning in Phase 1.
- Look complete at each phase.
- Maximize the opportunity to create partnerships through the mix of Educational and Non-educational uses in every phase as allowed by the Development Agreement.
- Reserve appropriate sites for partners.
- Support the marketing of ATEP development opportunities to potential partners.
- Foster a sense of community and strong indoor/outdoor connections by developing outdoor collaboration spaces, circulation, and landscaping in every phase.

- Accommodate the parking capacity required for each phase.
- Allow for cost-effective incremental development of infrastructure and support services.
- Consider the development parameters of the Remediation Area and identify appropriate interim uses (such as parking or landscaping).

The purple and orange areas shown on the phasing plans represent building locations that are scaled to accurately represent the potential massing of multi-story buildings and show their general location and orientation.

The building locations are colored to indicate either Educational use or Non-educational use. The colors lighten for each successive phase. Parking is shown as light gray for surface parking lots and dark gray for parking structures. Within the overall plan, the precise location and distribution of buildings and uses is adaptable.

Computer Technology Instruction. Source: SOCCCD



RECOMMENDATIONS

6.03

PHASING (cont'd)

PHASE 1

The diagrams shown in Figures 6.03a, 6.03b, and 6.03c, illustrate scenarios for the first phase of development. Development is concentrated in the areas nearest to Red Hill Avenue, establishing a highly visible presence in the community from the start.

- Two 30,000 square foot buildings are developed, one each for IVC and Saddleback College. A partner facility that does not obstruct views into the ATEP Site is developed in a location with a strong presence on Red Hill Avenue.
- A central outdoor collaboration space begins to take shape, framed between the two College buildings. The collaboration space will be designed for pedestrian circulation and activities and will be closed to most vehicular circulation.
- Internally connected parking lots are developed to accommodate the Phase 1 required parking capacity.

- What will ultimately be a secondary access point is developed on Valencia Avenue at Lansdowne Road, with a gateway feature to provide a visual presence.
- The initial phase of the utilities infrastructure is designed and built with sufficient capacity to extend each system in later phases.

PHASE 1 ALTERNATIVES

Two preliminary alternatives were developed to provide alternative building locations: Phase 1 Alternative B and Phase 1 Alternative C, shown to the right. Input from both Colleges led to the development of Alternative A, shown in Figure 6.03c. The ultimate College building locations and the number of stories for each building will be decided during programming and design.

PHASE 1 ALTERNATIVE B

Figure 6.03a



PHASE 1 ALTERNATIVE C

Figure 6.03b



PHASE 1 ALTERNATIVE A: KEY ELEMENTS

Figure 6.03c

- Educational buildings that bracket the initial section of the central outdoor collaboration space
- A Non-educational building with adjacency to Red Hill Avenue
- Secondary entry and gateway feature on Valencia Avenue
- Primary entry and gateway feature on Bell Avenue
- Surface parking lots that are sufficient to accommodate the required parking ratios
- Initial development of site utilities infrastructure systems
- Deferral of construction of building structures in the Remediation Area

BUILDING	GSF	%
EDUCATIONAL	60,000	43%
NON-EDUCATIONAL	80,000	57%
TOTAL	140,000	

PARKING	SPACES
EDUCATIONAL	597
NON-EDUCATIONAL	480
TOTAL	1,077

PH1	PH2	PH3	PH4	CATEGORY 1
				
				CATEGORY 2
				



RECOMMENDATIONS

6.03

PHASING (cont'd)

PHASE 2

Phase 2 further reinforces the ATEP Site's presence along the Red Hill Avenue and Valencia Avenue frontages. Phase 2 development is predicated on the completion of the Bell Avenue extension. This phase focuses on the development of commercial partner facilities in two prominent locations, one near Valencia Avenue and the other near Red Hill Avenue on the ten-acre parcel that is southwest of Bell Avenue. The ten-acre southwestern parcel is suited for partners that recognize the value of this prominent location and have less need for direct integration with the rest of the ATEP Site.

- Phase 2 continues the deferment of development of the Remediation Area. Surface roads and parking are provided within the Remediation Area, in order to meet the Phase 2 parking requirement.
- Additional Non-educational buildings are developed in visible and marketable locations that are served by adjacent parking. The sites near Red Hill Avenue and Valencia Avenue present potential locations for partners.
- The second primary access point and gateway feature at Valencia Avenue is built.
- The surface parking area expands to accommodate the Phase 2 required parking ratios.
- The utilities infrastructure is further developed and extended to serve the facilities added in Phase 2, while being designed with sufficient capacity to extend each system in later phases.

Healthcare instruction. Source: SOCCCD



PHASE 2: KEY ELEMENTS

Figure 6.03d

- Additional Non-educational buildings with presence on Valencia Avenue and on Red Hill Avenue to the southwest of Bell Avenue
- Landscaped street frontage along Bell Avenue
- Second primary entry and gateway feature on Valencia Avenue
- Expansion for surface parking lots to accommodate the required ratios
- Extension and development of site utilities infrastructure systems
- Deferral of construction of building structures in the Remediation Area

BUILDING	GSF	%
EDUCATIONAL	60,000	19%
NON-EDUCATIONAL	250,000	81%
TOTAL	310,000	

PARKING	SPACES
EDUCATIONAL	597
NON-EDUCATIONAL	1,160
TOTAL	1,757

PH1	PH2	PH3	PH4	
				CATEGORY 1
				CATEGORY 2



RECOMMENDATIONS

6.03

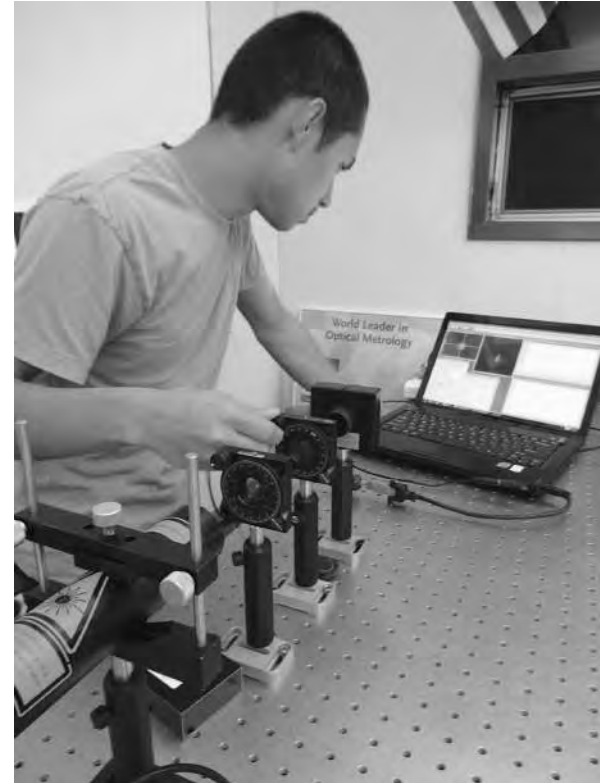
PHASING (cont'd)

PHASE 3

In Phase 3, the development of the ATEP Site expands eastward to the margins of the Remediation Area. Building massing and location increasingly define the organization of the site, leading to the creation of additional outdoor collaboration spaces. Phase 3 focuses on the development of educational facilities in and near the center of the ATEP Site. Surface parking lots are expanded farther into the Remediation Area, in order to meet the Phase 3 parking requirement.

- Additional Educational buildings are developed.
- The area dedicated to outdoor collaboration space is expanded and developed further.
- The surface parking area, including lots to be built on part of the Remediation Area, expands to accommodate the Phase 3 required parking ratios.
- The utilities infrastructure is further developed and extended to serve the facilities added in Phase 3, while being designed with sufficient capacity to extend each system for the full development of the site.

Photonics instruction. Source: SOCCCD



PHASE 3: KEY ELEMENTS

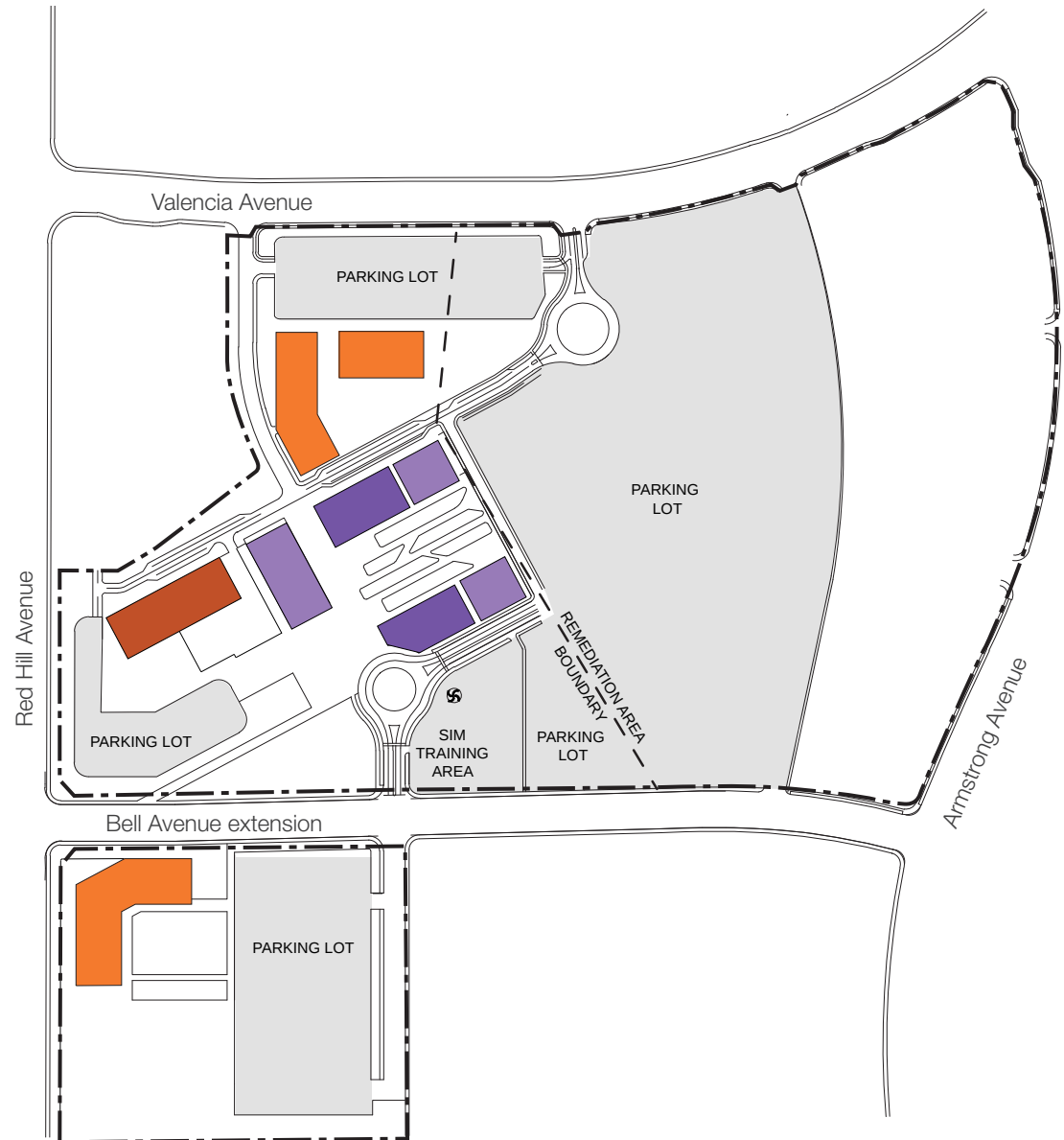
Figure 6.03e

- Additional Educational buildings with increasing presence on the central outdoor collaboration space, and internal streetscapes
- Expansion of surface parking lots to accommodate the required parking ratios
- Extension and development of site utility infrastructure systems
- Deferral of construction of building structures in the Remediation Area

BUILDING	GSF	%
EDUCATIONAL	261,000	51%
NON-EDUCATIONAL	250,000	49%
TOTAL	511,000	

PARKING	SPACES
EDUCATIONAL	2,598
NON-EDUCATIONAL	1,160
TOTAL	3,758

PH1	PH2	PH3	PH4	
				CATEGORY 1
				CATEGORY 2



RECOMMENDATIONS

6.03

PHASING (cont'd)

PHASE 4 FULL BUILD OUT

In Phase 4, as illustrated by Figure 6.03f on the opposing page, the remainder of the southwestern parcel and the former Remediation Area are developed. This final phase continues to focus on strong connections to ATEP's Tustin Legacy neighborhood with open views and circulation linkages at Valencia and Armstrong Avenues. At build out, the development framework fulfills a vision to create a flexible feel and flow.

- Non-educational buildings are developed in prominent locations near the intersection of Valencia and Armstrong Avenues.
- Additional Educational and Non-educational buildings frame the central outdoor collaboration space, which is developed to its full extent.
- View corridors into the ATEP Site from Valencia, Armstrong, and Bell Avenues are framed, as well as views out to the community and regional parks.

- Additional secondary access points are provided along Valencia, Armstrong, and Bell Avenues to provide sufficient circulation to the site. Internal streets, employing traffic-calming measures, are flanked with active pedestrian-friendly streetscapes that link the ATEP Site to the developing Tustin Legacy urban fabric.
- Parking structures are built adjacent to Bell Avenue to accommodate the Phase 4 required parking ratios. Future structures may also be required at various locations to fully accommodate parking requirements for all users. Parking structures are anticipated to be at a practical five-level height.
- The utilities infrastructure is fully developed and extends services to every part of the site.

Electrical Technology Instruction. Source: SOCCCD



PHASE 4/BUILD OUT: KEY ELEMENTS

Figure 6.03f

- Additional Educational buildings with presence on Valencia and Armstrong Avenues
- Additional Non-educational buildings with presence on Red Hill, Valencia, and Armstrong Avenues
- Completion of the central outdoor collaboration space opening onto Armstrong Avenue
- Completion of internal streets
- Completion of surface parking lots and parking structures
- Completion of the site utilities infrastructure
- Development of building structures in the former Remediation Area

BUILDING	GSF	%
EDUCATIONAL	555,000	51%
NON-EDUCATIONAL	530,000	49%
TOTAL	1,085,000	

PARKING	SPACES
EDUCATIONAL	5,524
NON-EDUCATIONAL	2,280
TOTAL	7,804

PH1	PH2	PH3	PH4	
				CATEGORY 1
				CATEGORY 2



6.04

OUTDOOR ENVIRONMENT
RECOMMENDATIONS

With advanced technology providing the foundation for instruction and partnership at ATEP, the design of the outdoor environment takes inspiration from circuit board design, providing a fluid and continuous network of pedestrian and vehicular circulation and site amenities. From large plazas and amphitheaters that may stage events to smaller gardens that function as outdoor laboratory space, the ATEP landscape is intended to be a productive venue to promote ATEP's mission to educate students in advanced technologies and provide career technical workforce training in collaboration with its partners. As previously described in *Section 6.01*, the *ATEP Development Framework* has defined four core design principles, shown in the next column, to shape the site and facilities toward the furtherance of this mission.

The outdoor environment recommendations in this section are organized around the topics listed below, each of which addresses an element that plays an important role in the ATEP vision.

- Outdoor Conceptual Program
- Landscaping Framework
- Pedestrian Circulation
- Vehicular Circulation & Parking

CONNECTIVITY

The outdoor environment vision positions the ATEP Site within its surrounding context. Landscaping defines the site, provides **open views** on all sides, creating **visual extensions** that link perimeter streets and neighboring parks to the ATEP Site.

COLLABORATION

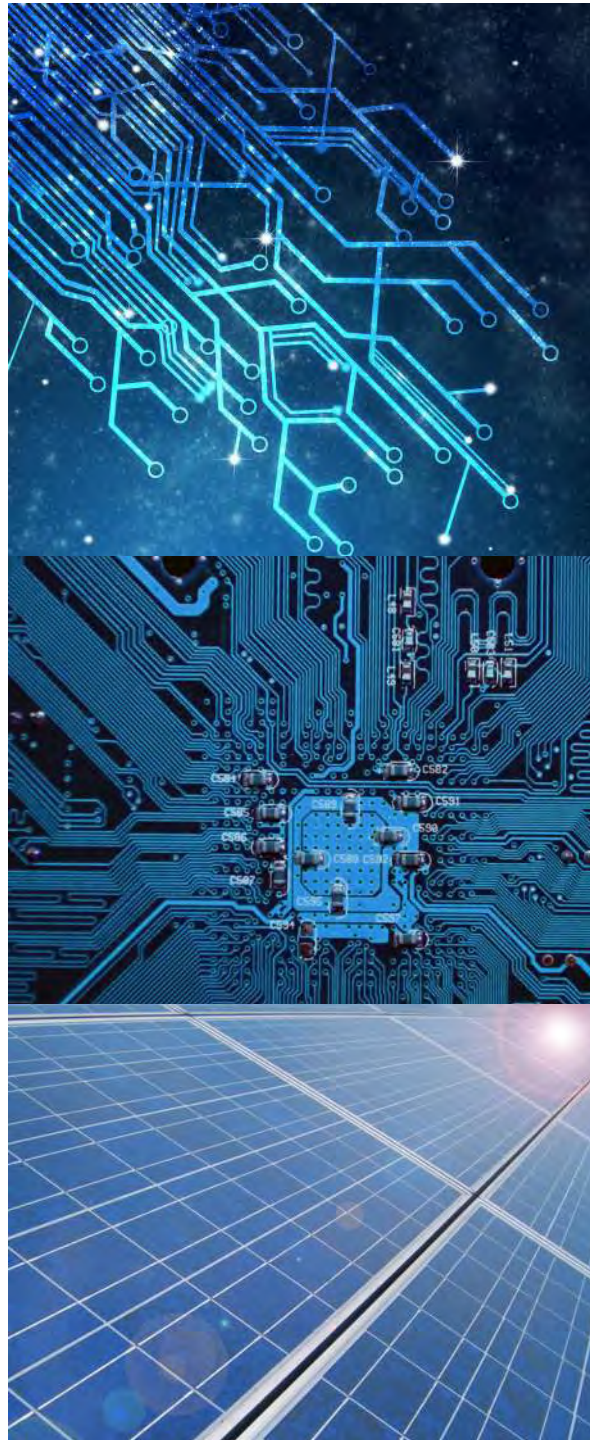
With a variety of different outdoor academic programs proposed for the ATEP Site, the landscape provides meeting spaces for an **informal** lunch with friends or a lecture about the latest environmental technology. **Flexible** event space and gardens encourage new **partnerships** between students, faculty, and commercial partners, on many levels that relate both to **opportunities** within the CTE disciplines and informal **social interaction**.

INTEGRATION

The landscape encourages both **formal** and **spontaneous** interactions in the belief that the best ideas come from open discussions between people from **diverse** backgrounds.

INNOVATION

Photovoltaic shade structures, green energy **prototypes**, and scenic gardens demonstrate principles of **environmental stewardship**. "Real-world" experience arising from partnership opportunities with business partners help **transition** students to that world. Innovative **collaborations** between educational and business partners produce competitive advantages for all.



LANDSCAPING FRAMEWORK

Figure 6.04a

The outdoor environment calls for flexibly designed spaces to accommodate a variety of outdoor programs. The outdoor spaces should be designed to extend instruction beyond the classroom and encourage interaction among students, educators, and business partners. The landscape will define the site and conform to city requirements for Tustin Legacy.

A landscape plan will be developed using trees that are selected with consideration of the following:

- Drought tolerance
- Remediation (not aggravation) of air pollution
- Allevation of heat islands
- Ease of maintenance
- Phytoremediation of the soil
- Compatibility with solar power generating opportunities
- Building shading and passive solar heating strategies



RECOMMENDATIONS

6.04

OUTDOOR CONCEPTUAL PROGRAM

OUTDOOR CONCEPTUAL PROGRAM ACTIVITY MATRIX

LARGE GROUP ACTIVITIES

- Training Simulation
- Integrated Activities
- Competitions (Solar Decathlon, etc.)
- Symposiums
- Conferences (CES, TED, etc.)
- Fairs (Health, Science, Technology, etc.)
- Hospitality Demonstration Areas
- Ceremonies
- Concerts

FORMAL

- Student Exhibitions
- Play Areas (S.T.E.M. Demonstration)
- Solar Charging Stations for Personal Electronic Devices
- Meeting at Sculptural Landmarks
- Picnics

INFORMAL

SMALL GROUP ACTIVITIES

- Outdoor Classrooms
- Outdoor Laboratories
- Competition Space
- Outdoor Meeting Area

FORMAL

- Collaboration Areas
- Small Group Study
- Outdoor Dining
- Food Truck Zone
- Exercise Trails
- Shaded Seating

INFORMAL



Shaded seating areas under an allee of canopy trees



Iconic sculptural elements can be combined with photovoltaic cells

RECOMMENDATIONS

OUTDOOR CONCEPTUAL PROGRAM

Figure 6.04b

The landscape design will facilitate many kinds of outdoor programs by providing collaborative environments that enhance ATEP's mission to provide advanced technology training driven by partnerships. Outdoor training areas will accommodate large groups while more intimate areas allow for small group collaboration. The landscape itself will become a laboratory that highlights new technology and environmental processes through demonstration gardens, exhibits, and environmental sculptures.

- 1 Student Promenade/Exhibit Area
- 2 S.T.E.M. Demonstration Gardens
- 3 Amphitheater
- 4 Collaborative Plazas
- 5 Tree Allee and Shade Gardens
- 6 Flexible Open Space and Outdoor Meeting Area
- 7 Raised Plaza Crosswalk
- 8 Courtyard
- 9 Entry Promenade
- 10 Entry Tree Allee
- 11 Outdoor Simulation Training Area
- 12 Shaded Tree Allee with Seating
- 13 Informal Lawn and Outdoor Meeting Area
- 14 Entry Paseo
- 15 Outdoor Classroom
- 16 Educational Event Space



RECOMMENDATIONS

6.04

OUTDOOR ENVIRONMENT
RECOMMENDATIONS (cont'd)

PEDESTRIAN CIRCULATION

The *ATEP Development Framework* concept for pedestrian circulation is driven by the goal to foster connections among students and partners. Buildings are placed in close proximity and linked by clear and safe circulation pathways through inviting, multi-functional outdoor spaces. Interaction between pedestrians and vehicles is minimized through the use of separate circulation routes.

- The architectural massing creates an internal pedestrian-oriented outdoor space that is defined by signature buildings and creates two separate axes, as shown in Diagram 1.
- Combining these separate axes into a single promenade create a cohesive fabric that will connect the east and west sides of the site, and extend outward to the regional park beyond, as shown in Diagram 2.
- Pathways provide an east-west connection and intersect at a central area that serves as the main outdoor event space. The event space is visually linked to the community park to the north, and the regional park to the east, as shown in Diagram 3.

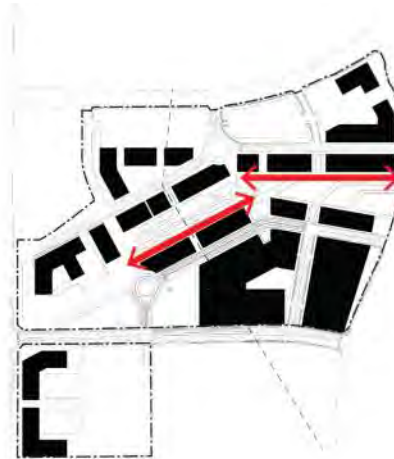


DIAGRAM 1

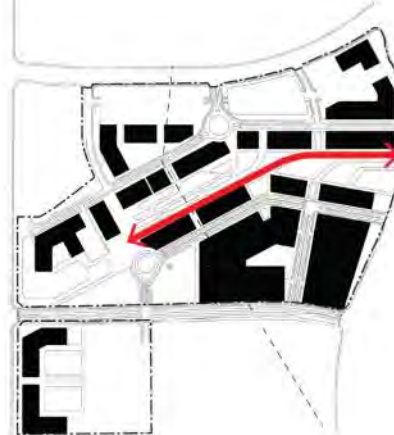


DIAGRAM 2

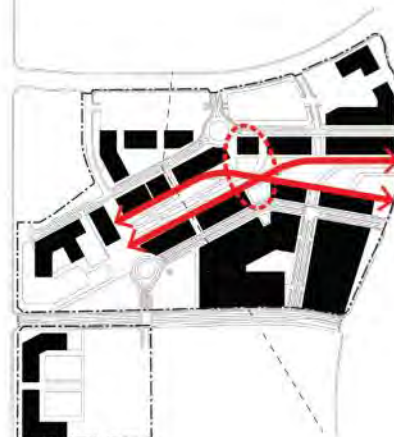


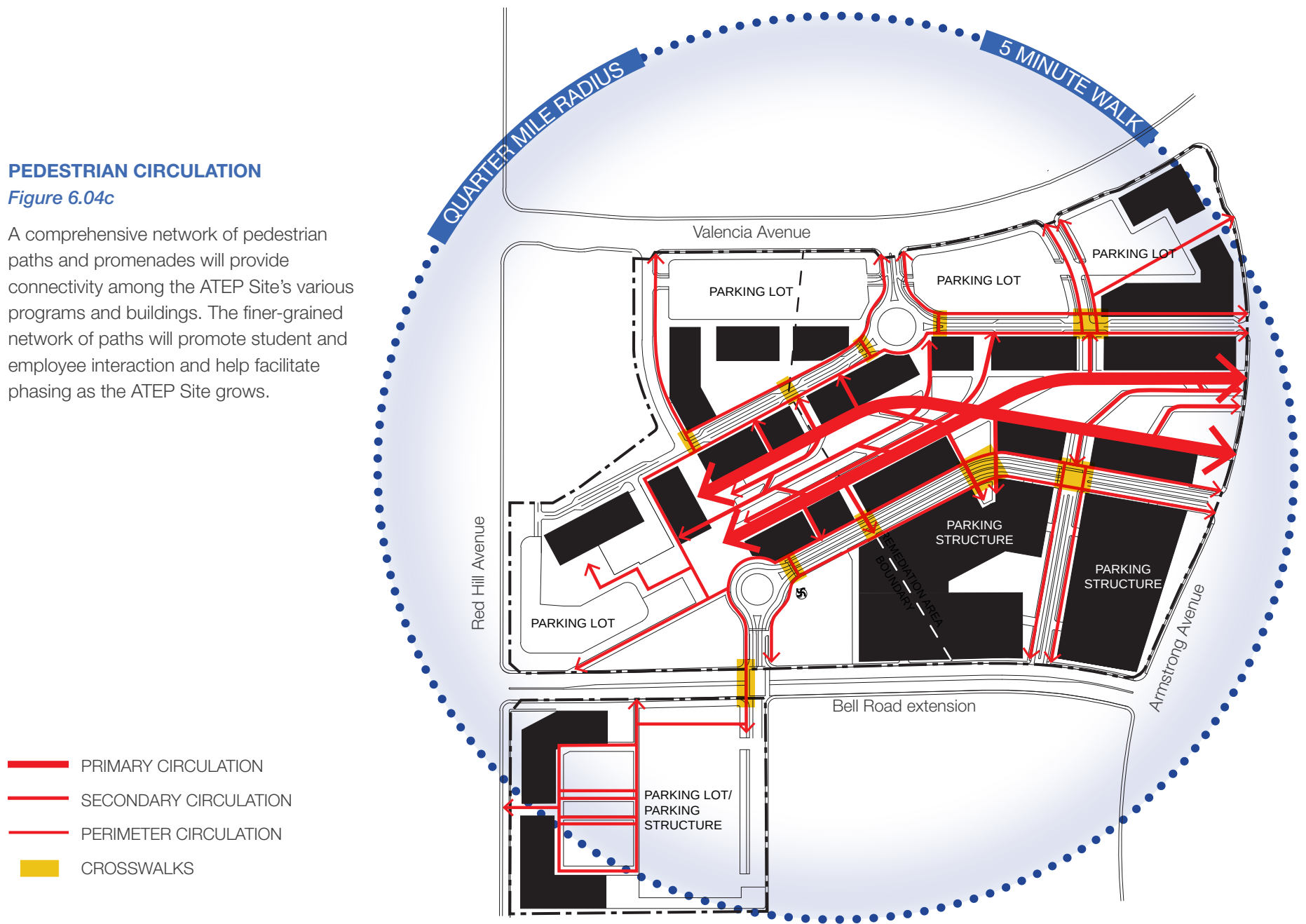
DIAGRAM 3

Pedestrian paths framing open space.*Promenades and plazas provide gathering space for students.*

PEDESTRIAN CIRCULATION

Figure 6.04c

A comprehensive network of pedestrian paths and promenades will provide connectivity among the ATEP Site's various programs and buildings. The finer-grained network of paths will promote student and employee interaction and help facilitate phasing as the ATEP Site grows.



RECOMMENDATIONS

6.04

**OUTDOOR ENVIRONMENT
RECOMMENDATIONS (cont'd)****VEHICULAR CIRCULATION**

The internal vehicular circulation concept for the ATEP Site is intended to provide an environment which offers accessibility for all modes of travel in a safe environment for pedestrians, cyclists, and drivers. A balance between pedestrian and vehicular traffic is achieved through the implementation of traffic calming measures and a robust wayfinding system. Additionally, vehicles will be brought into the site and directed to the parking areas without the need to circulate through much of the site, thereby minimizing conflicts between vehicles and pedestrians.

TRAFFIC CALMING MEASURES

A key component of this circulation scheme is the provision of traffic calming measures throughout the ATEP Site. Examples of such measures include roundabouts, curb extensions, elevated crosswalks, and access controls.

Roundabouts are traffic control devices which can slow down vehicles, more so than traditional devices such as traffic signals or stop signs. Roundabouts produce an even flow of traffic as opposed to the abrupt starting and stopping that might otherwise occur.

A roundabout is planned near both primary entrances so that nearly all of the vehicles entering the site will pass through one of the two roundabouts. To function properly, these roundabouts will be designed with an appropriate inside radius and splitter islands.

Curb extensions, also referred to as bulb-outs, reduce the pedestrian crossing distance at intersections and narrow the roadway width. Curb extensions will be provided at all internal intersections where roundabouts are not provided.

Curb extensions will be paired with elevated crosswalks, which raise the pedestrian 6-12 inches above the roadway surface, thus increasing their visibility to drivers. Working much like a speed bump, elevated crosswalks also slow vehicle speed.

Access control technology will be integrated into the ATEP Site. Access to the various areas of the site will be actively managed in response to changing conditions and needs in order to promote safe levels of traffic throughout the site. Access control could be accomplished through the use of transponders, key cards, or gates staffed by personnel.

Roundabout with splitter islands*Street intersection with curb extensions*

TRANSIT CONNECTIVITY

As noted in the site analysis, there is limited transit access to the ATEP Site currently. Several OCTA bus routes can be accessed by walking to Red Hill Avenue. Providing a more direct connection to the Tustin Metrolink Station with a direct shuttle or local circulator shuttle would be highly beneficial for students, staff, and employees.

Although a definitive route for a circulator shuttle has not been identified, it is important to designate potential locations where transit vehicles may pick up and drop off users on the ATEP Site. Both roundabouts are currently designed with space to accommodate a transit stop.

BICYCLE CONNECTIVITY

Given the extensive existing and proposed public bicycle facilities surrounding the ATEP Site, the *ATEP Development Framework* recommends generous accommodations for bicycle use on all internal roadways and connectivity provided to the external public network. Therefore, if cyclists are on Bell Avenue traveling towards the ATEP Site in the bicycle lane, they will merge onto an onsite bicycle lane at the primary entrance on Bell Avenue and proceed to a secure bicycle storage facility near their destination.

Bicycle use is encouraged by optimizing access to onsite circulation routes and open spaces. An ATEP Site bicycle circulation policy should be adopted, calling for a balance between pedestrian safety and the desire for safe and convenient bicycle access.

EMERGENCY & SERVICE ACCESS

The proposed site plan is designed to maximize access to the site for both emergency and service vehicles. The two main entrances will be signalized, allowing easy access for emergency vehicles on either Valencia Avenue or Bell Avenue. From these entrances, emergency vehicles will be able to access any of the buildings. In most instances, emergency vehicles will park on the street adjacent to the building they need to access.

Service and delivery vehicles may require direct building access, which may not be required for emergency vehicles. This direct access can be accommodated by providing service vehicle pathways which are connected to the internal roadway system. Access to these pathways may be limited by the use of bollards or gates.

Los Angeles Metrolink's crash-absorbing rail cars



Nice Ride Minnesota bike sharing, source: earthuntouched.com



RECOMMENDATIONS

6.04

OUTDOOR ENVIRONMENT RECOMMENDATIONS (cont'd)

PARKING MANAGEMENT

With the amount of parking required to serve the site, it will be critical to manage parking effectively. It is anticipated that Non-educational uses will have separate parking from Educational uses to maximize marketability to Non-educational partners.

Consideration may be given to the implementation of a governance body to oversee all of the parking facilities. Another possibility would be to engage a third party to manage the parking for all users on the site. A joint parking agreement or similar document would address changes in usage over time.

Another key component of parking management is the application of informational systems that can provide real-time updates on parking availability. Informational signage displaying the location of parking facilities and the number of available spaces should be provided at each entrance to the parking structures. These informational signs could then be linked to a system that is accessible via the internet or a driver navigation system.

PARKING DESIGN

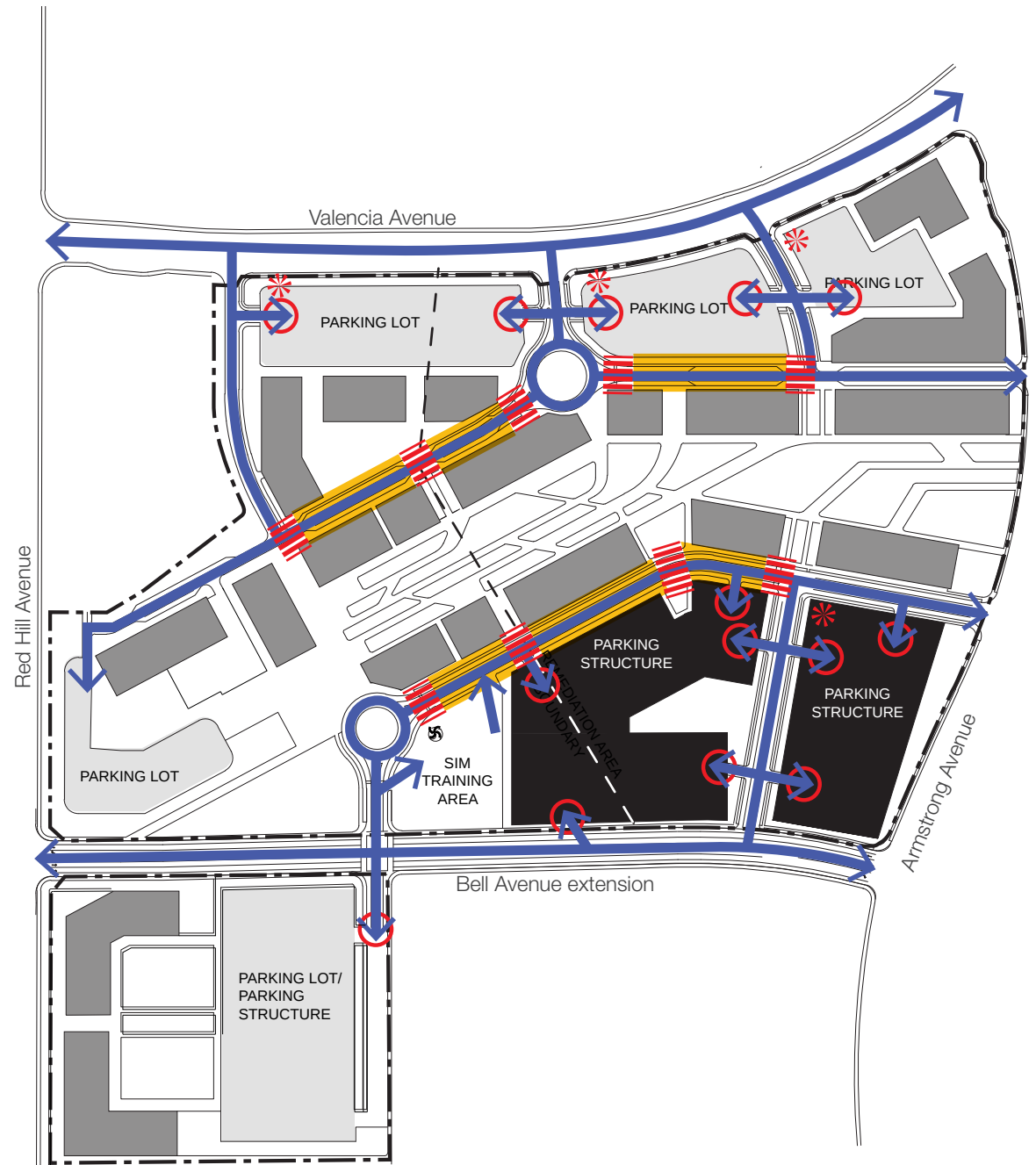
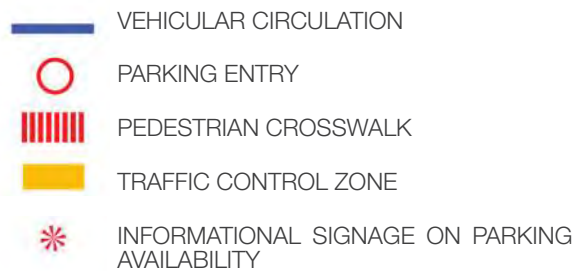
The design of the parking facilities is critical to ensure that persons can easily and safely access the parking structures. Key elements of parking structure design include:

- Multiple entry and exit points
- Appropriate levels of lighting
- Use of security cameras
- Remote payment, through a phone app or at a kiosk, to reduce queuing at exits
- Use of call boxes or other emergency signaling devices for immediate police assistance
- Safe pathways for pedestrians and bicycles

VEHICULAR CIRCULATION

Figure 6.04d

Vehicular circulation and parking will be located around the perimeter of the ATEP Site, leaving the central area for non-vehicular circulation. Speed calming devices and enhanced crosswalks will promote safe circulation throughout the site and connect perimeter parking lots with the internal core.





6.05

BUILDING RECOMMENDATIONS

Buildings will define the character and scale of outdoor spaces. The ATEP Site will feature architectural designs that clearly define ATEP's identity.

The approach described in this section is intended to provide a broad vision for future building design and address the following core principles as they relate to fundamental building performance.



CONNECTIVITY

Foster a sense of **community** with connections between buildings through the creation of physical and **visual linkages** in the outdoor environment. Facilitate a flow of activities between the buildings and **outdoor spaces** to activate both. Present visually rich and varied architecture both **internally** and **outward** to the community.

COLLABORATION

Inspire the initiation of **collaborative** activities that flow between buildings and adjacent **outdoor** activities. Intermingling between the various uses **encourage** chance meetings in amenity-rich public spaces.

INTEGRATION

Accomodate partners of **diverse** sizes, **missions**, and **cultures** to work and learn together. Plan for buildings that are appropriately scaled and **integrated**. Design building facades to support the character and **sense of place** of the **outdoor space** that they define.

INNOVATION

Establish a framework of building design guidelines based on **broad planning-level** principles that allow a breadth of **possibilities** for the organizational **branding** of facilities for individual **partners**. Support the use of **sustainable**, high-performance design solutions that work with prevailing environmental conditions and **minimize** the use of **resources**.

SENSE OF PLACE

Figure 6.05a

The *ATEP Development Framework* is intended to create a place that is instantly recognizable when viewed from both within the ATEP Site and from the surrounding community. Key to this goal is the establishment of visually rich, appropriately scaled, and suitably varied open spaces that are well defined and well supported by the architecture of the buildings that surround them.

In the broad sense of this development framework, the architecture of a building's facade, as it relates to the adjacent open space, can be divided into four basic characters, as illustrated in Figure 6.05a.

-  CENTRAL GREEN ZONE
-  PEDESTRIAN-FRIENDLY STREET ZONE
-  PARKING STRUCTURE CLADDING
-  IDENTITY/EXTERNAL IMAGE ZONE



RECOMMENDATIONS

6.05

**BUILDING RECOMMENDATIONS
(cont'd)****THE CENTRAL GREEN ZONE**

Building facades fronting the central green zone are at the heart of the ATEP Site. They are highly porous in design and emphasize the strong connection between interior and exterior space. Extensive window glazing, especially along interior circulation routes, lobbies, and study spaces, enhances visual connectivity to outdoor spaces and to other buildings fronting the green zone. Articulation, pedestrian arcades, lobbies behind the facade, and primary and secondary entrances along ground level increase opportunities for indoor/outdoor activities that flow between buildings and the adjoining outdoor space. Those who are engaged in these activities can embrace both the safety of the car-free green space and the opportunity for intermingling, unplanned meetings, and collaborating in this inviting outdoor environment.

- **Massing:** Strong building massing delineates the central green space. Common floor plate levels and recessed arcade levels tie the separate buildings together visually as a cohesive whole surrounding the central green space.
- **Scale:** Pedestrian scale is emphasized by use of recessed colonnades, articulation of mass, and building projections.
- **Primary Entry:** Entrances are clearly defined through breaks in building massing with primary entrances addressing major pedestrian arteries and formal open spaces.
- **Facade:** Facades that adjoin the central green space should express the interior building uses where possible via glass facades and displays.



THE PEDESTRIAN-FRIENDLY STREET ZONE

Building facades adjoining the interior streets, as shown in Figure 6.05a, should allow for the creation of a safe, pedestrian-friendly streetscape. Threshold spaces, at openings between building masses, allow pedestrians to circulate freely between the pedestrian-friendly streetscape and the central outdoor green space. Ground floor building spaces that are adjacent to these threshold spaces provide opportunities for student-concentrated uses such as bookstores, computer labs, or retail functions. Building facades that emphasize a comfortable pedestrian scale, are articulated to provide shade and outdoor human-scaled spaces for pedestrians to informally pause and/or gather. Common roof heights and street setbacks create a well-defined streetscape along the pedestrian path of travel. Pedestrians are buffered from traffic flow by generous setbacks and street trees, as well as a variety of traffic calming measures.

- Emphasize and activate the pedestrian-friendly streetscape.
- Develop the building articulation to suit the human scale.
- Utilize threshold spaces for active student-concentrated uses.
- Employ common roof heights and street setbacks to define the form of the streetscape.



RECOMMENDATIONS

6.05

BUILDING RECOMMENDATIONS (cont'd)

PARKING STRUCTURE CLADDING

Multi-level parking structures are shown in Phase 4 of the *ATEP Development Framework*. Facades treated with screens and other fenestration break down the scale of these structures. Cladding articulated at the lower level responds to the human scale and could also reflect the common building floor and roof levels established by adjacent buildings. The goal to enhance the scale and character of the ATEP Site's built environment is achieved by mitigating the otherwise imposing scale of the large parking structures. Parking structure facades are free from many constraints of occupied buildings, and as such, can be more expressive in nature. The use of pattern, rhythm, and variation can provide a dynamic edge to the ATEP Site.

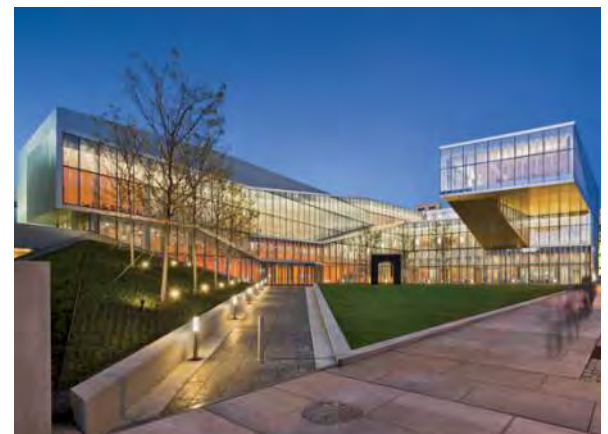
- Facade screening mitigates the building mass and brings it to the pedestrian and vehicular scales.
- Dynamic facades that are complementary to ATEP's building aesthetic should be employed.
- Judicious use of landscaping will soften the massing of parking structures.



IDENTITY/EXTERNAL IMAGE ZONE

Building facades in the Identity/External Image zone are seen primarily from the parking lots and from roads that adjoin the ATEP Site. These facades are the face of ATEP to passersby. Their architectural design presents an opportunity to blend the ATEP identity with partner brands to create a unified high-tech center for innovation and learning. As such, the architectural expression emphasizes the contemporary and exciting character of the academic programming and the commercial activities of industry partners.

- The peripheral buildings set a sophisticated and contemporary tone for the ATEP Site.
- The use of strong and simple forms strengthens ATEP's image.
- Architectural guidelines that allow partners to express their identity, while aligning with ATEP's high-tech identity, should be developed.



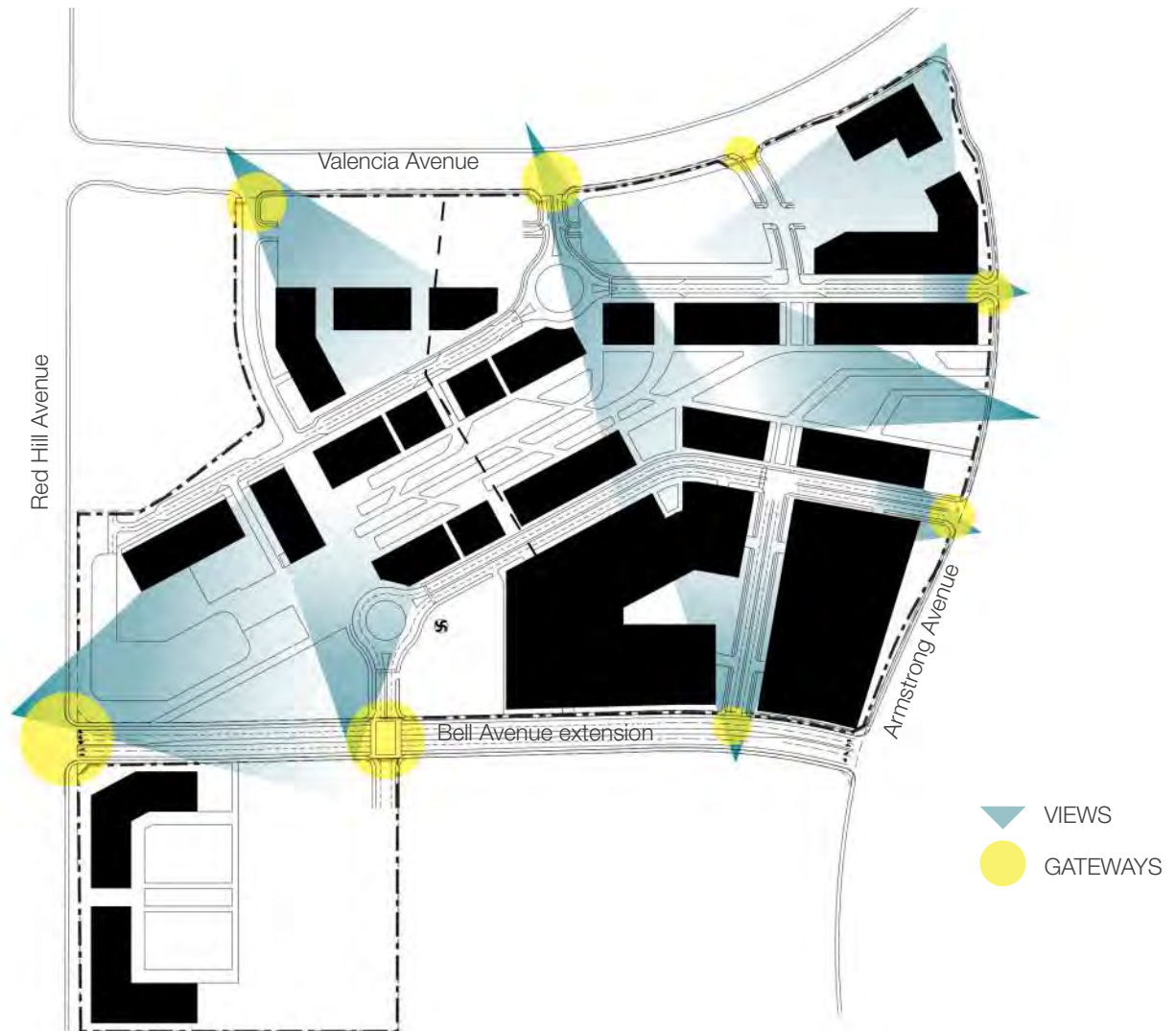
RECOMMENDATIONS

6.05

**BUILDING RECOMMENDATIONS
(cont'd)****VIEWS & GATEWAYS**

The *ATEP Development Framework* maintains views to reinforce ATEP's presence and its recognition by the community. Views into the ATEP Site, as shown in Figure 6.05b, are framed by buildings and align with circulation elements. The design of entry gateways provides opportunities to enhance ATEP's presence with well-placed signage, landscaping, and signature buildings. A prominent view into the ATEP Site from the corner of Red Hill and Bell Avenues clearly establishes ATEP's presence in the community. The intersection is also a key branding opportunity.

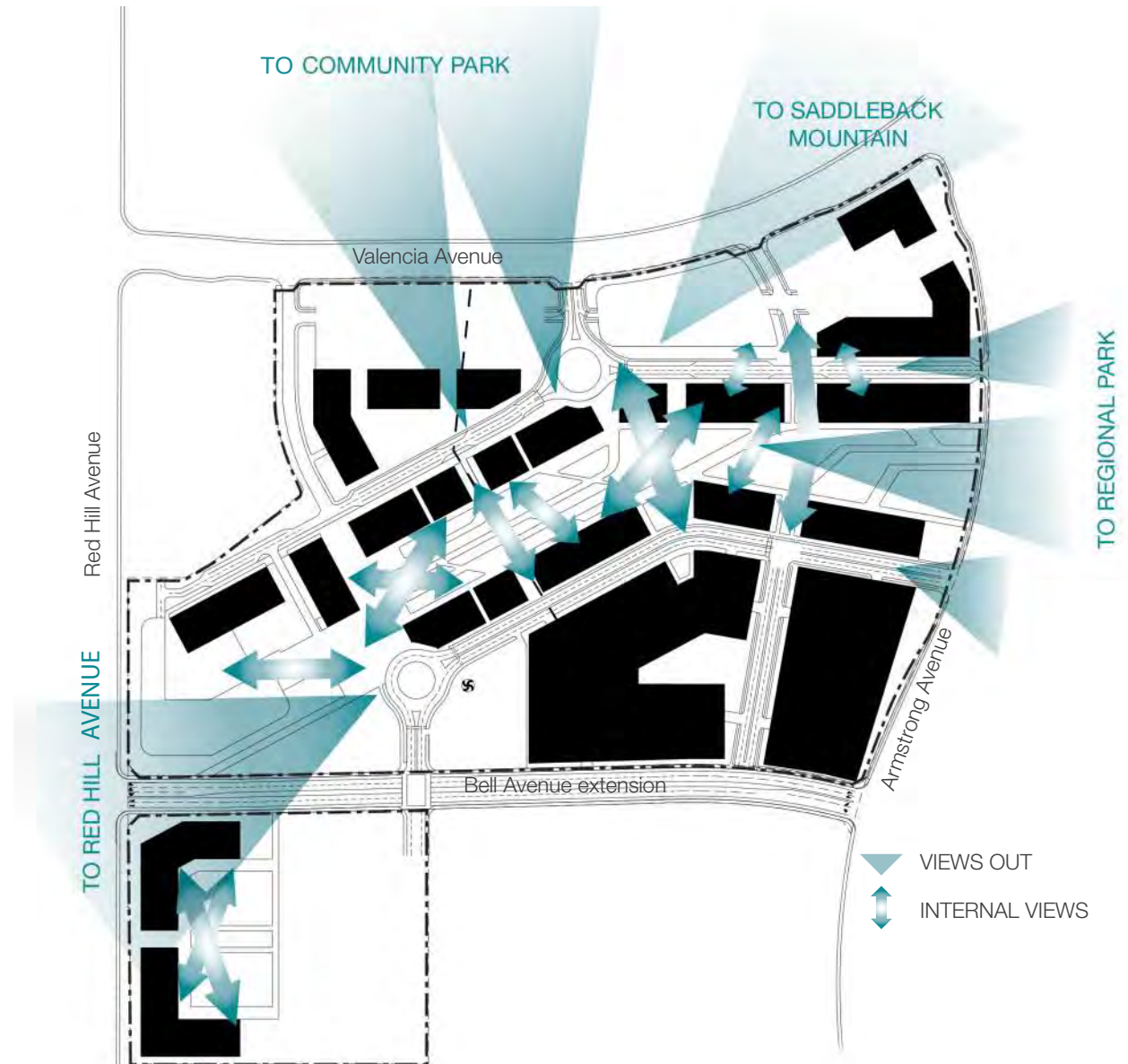
A perimeter road, Valencia Avenue, is expected to be well-traveled. The *ATEP Development Framework* plans for an unobstructed frontage along Valencia Avenue to provide commercial partners with good visibility. The Bell Avenue extension is intended mainly for access to the ATEP Site and its close neighbors and will likely be the least traveled of the surrounding roads. Open views into the ATEP Site from Bell Avenue are planned along the portion of the street frontage that will provide a visual linkage between the northeast and southwest parcels of the ATEP Site. Parking structures are planned for the southeastern portion of the Bell Avenue frontage.

VIEWS IN
Figure 6.05b

VIEWS OUT *Figure 6.05c*

Open views are planned for much of the Armstrong Avenue street frontage, taking advantage of the potential to reach out to the planned regional park and the Tustin Legacy linear park.

As illustrated in Figure 6.05c, the organization of building zones and open spaces frames views within the ATEP Site and out to important landmarks and destinations, such as the future parks. Views help to promote a healthy sense of orientation to the larger social and physical environment. Views to the neighborhood have the potential to encourage interaction among neighbors within Tustin Legacy. Visual connections within the ATEP Site foster awareness of its diverse community of educational and business partners.



RECOMMENDATIONS

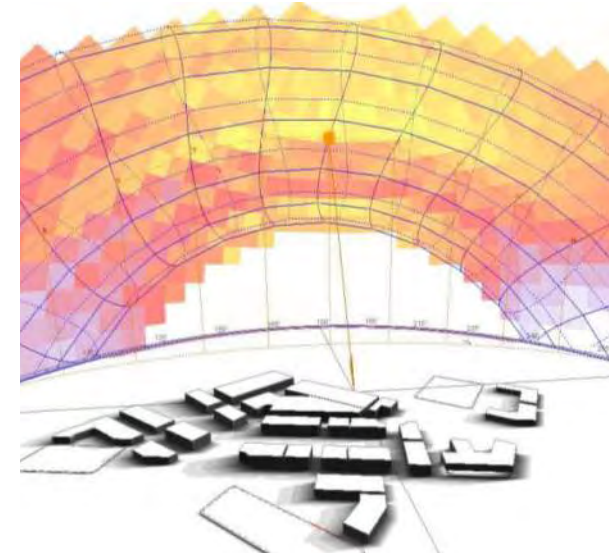
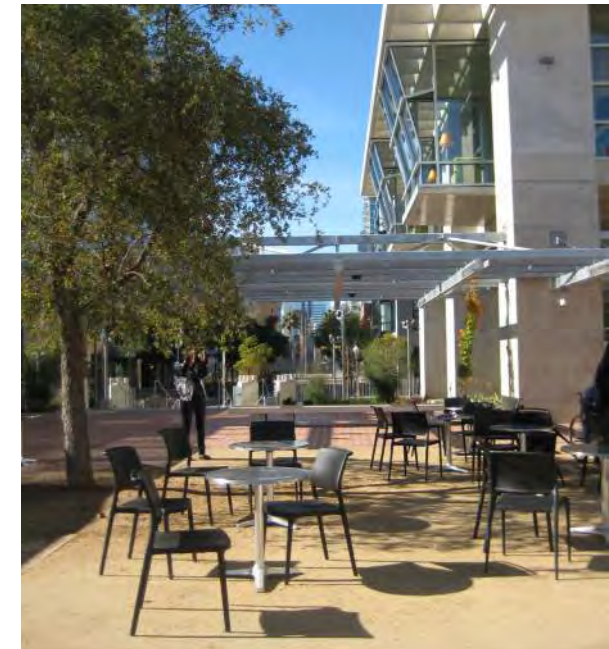
6.05

**BUILDING RECOMMENDATIONS
(cont'd)****SOLAR ORIENTATION**

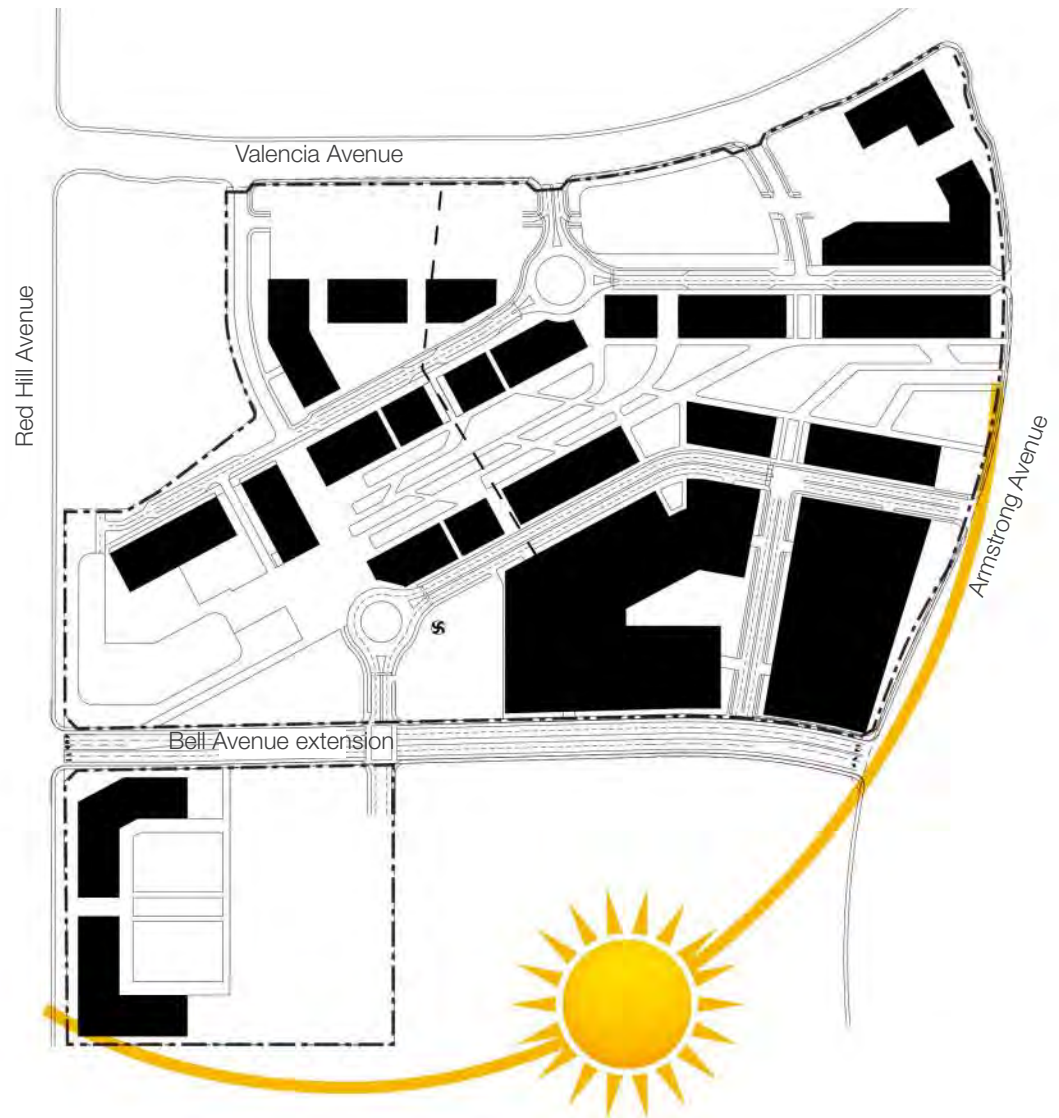
The use of design strategies such as solar shading, daylight harvesting, and passive solar heating is simplified by placing buildings so that their long axis is aligned with the east-west direction. This configuration orients buildings to the movement of the sun across the sky. As illustrated by the Sun Path diagram, Figure 6.05e, the development framework approximates this alignment for most of the building zones and frames many open spaces with the southern exposure that is desirable for comfort in this climate.

Consideration of the radiation intensity patterns throughout the day and year contributes to the exploration of design options that help optimize the ATEP Site for comfort and energy efficiency. The Solar Exposure diagram, Figure 6.05d, shows the path of the sun, as well as the radiation intensity levels throughout the course of the day and year. The intensity of the radiation is indicated by color, with yellow for the highest intensity and purple for the lowest intensity. The level of solar exposure and shading at ground level is indicated by the darkness of the shadows.

Analyzing the effect of building shade on the site across the four seasons allows architects to design for outdoor comfort by providing the desired levels of solar exposure and shading. Courtyards will be adequately shaded during the spring and fall seasons. Additional shade may be required during the summer months. Conversely, during the winter months, these same courtyards may benefit from greater solar exposure, which can be accomplished with deciduous trees and removable shade structures.

SOLAR EXPOSURE, source: Ecotect**Figure 6.05d***Modulating solar exposure and shading. San Diego Central Library*

SUN PATH
Figure 6.05e



RECOMMENDATIONS

6.05

BUILDING RECOMMENDATIONS (cont'd)

CLIMATE CONSIDERATIONS

The analysis in *Section 3.05 Climate Conditions* describes an approach to site and building design that works with site-specific climate conditions to achieve comfort and support the connection and enjoyment of indoor and outdoor spaces. For much of the time, passive design strategies make it possible to achieve comfortable indoor conditions without expending much energy. These climate-indicated planning strategies are illustrated on the following pages.

CLIMATE-INDICATED PLANNING STRATEGIES

- Find opportunities for exterior circulation and gathering spaces—southerly exposure is the most comfortable.
- Protect outdoor gathering spaces from wind.
- Let in the sun! Particularly during winter mornings.
- Provide mid-day and afternoon shade during the warmer seasons.
- Align building masses along the east-west axis.
- Limit building depth to maximize natural ventilation and daylighting opportunities.
- Use landscaping and trees in a way that enhances these climatic strategies.

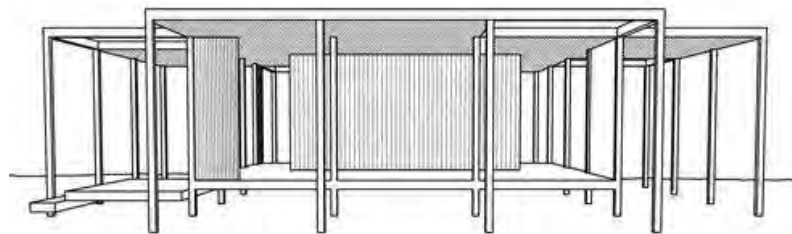
Sunny, wind-protected outdoor spaces can create comfortable areas in enclosed patios and courtyards. CSU San Marcos



Trees should not be planted in front of passive solar windows.



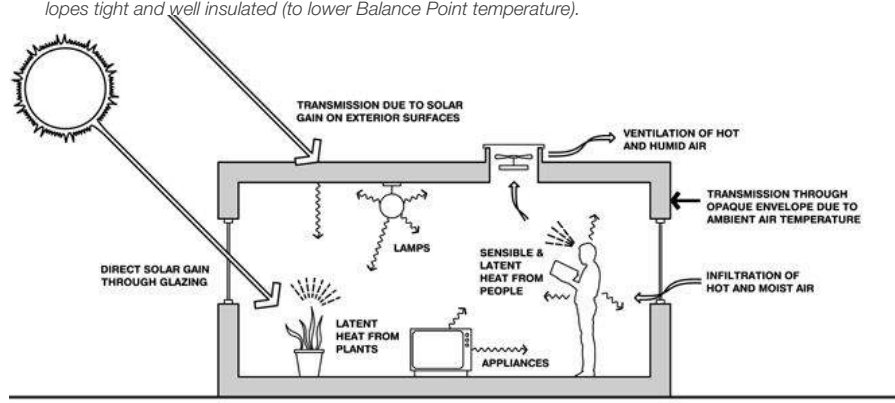
Recommended strategies that do not require the use of energy include shading of exterior walls to prevent overheating in the summer and allow passive solar heating in the winter.



To facilitate cross ventilation, locate door and window openings on opposite sides of building with larger openings facing up-wind if possible.



Heat gain from lights, people, and equipment greatly reduces heating needs so keep building envelopes tight and well insulated (to lower Balance Point temperature).



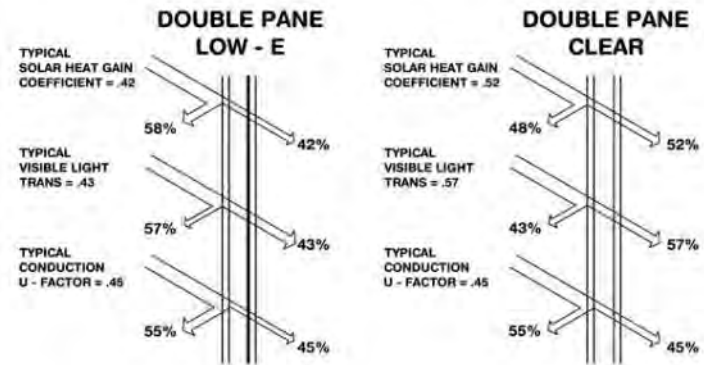
RECOMMENDATIONS

6.05

BUILDING RECOMMENDATIONS (cont'd)

CLIMATE CONSIDERATIONS

Provide double pane high performance glazing (Low-E) on west, north, and east, but clear on south for maximum passive solar gain.



Mechanical-assisted or natural ventilation can store nighttime coolness in high mass interior surfaces (night flushing), to reduce or eliminate air conditioning.

Sunshades and automated blinds. Source: <https://buildingdata.energy.gov>, credit: Gabe Hanson



BUILDING ENERGY USE

SOCCCD desires its ATEP buildings be designed to operate more efficiently than the Title 24 building code baseline requirement. This level of efficiency can be achieved by using climate-indicated thermal comfort strategies, efficient HVAC systems, superior envelope properties, shading devices, daylight harvesting, green technology management, and other proven energy efficiency strategies that are appropriate for the specific building.

Two examples of energy efficient cooling and ventilation are illustrated on this page. Earth tubes take advantage of the nearly constant subterranean temperature to provide a form of passive geothermal cooling. Fresh air is drawn through underground pipes to be pre-cooled before being used to ventilate indoor space.

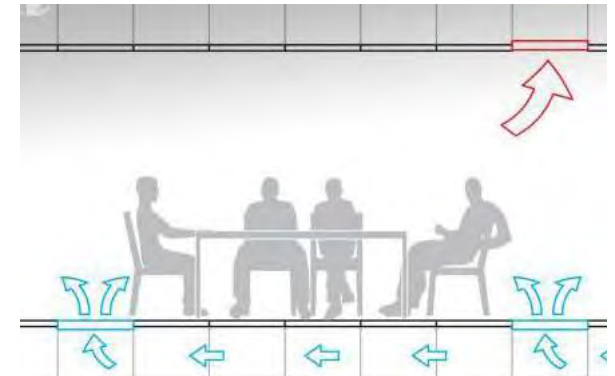
Earth Tubes, source: homeintheearth.com



Earth Tube Section



Displacement ventilation



Displacement ventilation is an energy efficient mode of ventilation that supplies cool air at low velocity into a space at or near floor level. Cool air fills the space and rises as it warms, drawing cool air toward warm objects such as people. Warm air is exhausted at the top of the space, along with contaminants. The low air velocities and use of natural convection lessens the usage of energy, reduces ventilation noise levels, and promotes occupant comfort.

RECOMMENDATIONS

6.05

BUILDING RECOMMENDATIONS (cont'd)

BUILDING ENERGY USE (cont'd)

Designing buildings to let in well-controlled, glare-free natural light saves energy and enhances the quality of the indoor environment.

An energy study will determine the feasibility of specific strategies. A thorough life-cycle cost and energy use analysis using a whole-building model could address the benefits of integrated, sustainable design strategies. This design approach allows for the selection of environmentally and financially sustainable design solutions.

Shade structure. ATEP original facilities



Harvesting daylight through clerestory windows.

UC Davis Memorial Union



BUILDING WATER STRATEGIES

The use of efficient plumbing fixtures helps to achieve a recommended building water use target below the Energy Policy Act (EPA) water usage baseline. By installing the following plumbing fixtures, the ATEP Site would meet the current EPA baseline: 1.28 gpf water closets, 0.125 gpf urinals, 0.5 gpm lavatories, 1.0 gpm sink faucets and 1.5 gpm showerheads.

Buildings plumbed for both potable water and recycled water could further reduce water consumption. Recycled water will be available at the ATEP Site and its use for flushing toilets and urinals may be explored.

Recycled water has proven to be a valuable resource for irrigation.

Source: sanjoseca.gov



Low flow plumbing fixture





6.06

INFRASTRUCTURE RECOMMENDATIONS

The development of the ATEP Site will include a full complement of utility infrastructure systems that extend the backbone mainlines from perimeter public roadways into the ATEP Site, phase by phase. The figures in this section illustrate an expandable network of utility pathways that underlie permanent internal circulation routes. The “wet” utilities infrastructure will include storm drains, sanitary sewer lines, and domestic and recycled water lines. “Dry” utilities include natural gas, electrical, and telecommunication lines.

CONNECTIVITY

Plan ATEP within the parameters of the Specific Plan’s infrastructure plans and for **robust connectivity** to support reliable and flexible service. Provide services to every part of the ATEP Site.

COLLABORATION

Minimize the ATEP Site’s burden on municipal infrastructure and **impacts** on the regional environment.

INTEGRATION

Site-wide systems will take advantage of load/demand **diversity** and **efficiencies** of scale.

INNOVATION

Support emerging **innovative** and **sustainable** solutions for water, energy, communications, and waste management.

DESIGN CONSIDERATIONS

Careful consideration and planning must be given to utility placement and design—with regard to adequate clearance, accessibility, and the impacts of any above ground appurtenances. Design considerations are listed below:

- Design the backbone systems with consideration for ultimate phasing, establishing a logical series of backbone segments.
- Avoid trenching and installation of utilities lines in the Remediation Area until Phase 4 if possible.
- Plan backbone utility corridors or pathways with adequate width.
- Plan lateral locations for each building or parking structure.
- Plan for infrastructure systems that support the sustainable operation of ATEP.

PLANNING INFRASTRUCTURE FOR SUSTAINABILITY

The ATEP Site will endeavor to incorporate low polluting, onsite energy generation. The potential for various types of technologies is discussed in the following pages. The choice of specific technologies will be determined during the design process. Technology continues to advance rapidly and renewable energy technologies will continuously emerge. The ATEP Site provides an opportunity to serve as a living laboratory for new and innovative technologies. By partnering with leaders in the renewable energy industry, the ATEP Site could become a testing ground for energy innovation and entrepreneurship.

The infrastructure recommendations took the following into consideration:

- Sustainable Energy
- Storm Water/Water Quality
- Recycled Water
- Grading & Topography

Healthcare instruction. Source: SOCCCD



RECOMMENDATIONS

6.06

INFRASTRUCTURE
RECOMMENDATIONS (cont'd)

SUSTAINABLE ENERGY

In addition to minimizing the amount of energy needed to operate the ATEP Site, the *ATEP Development Framework* plans to explore the use of renewable energy sources, especially those that can generate energy on the ATEP Site. Several potential sources are presented on the following pages.

SOLAR POWER POTENTIAL

To estimate ATEP's solar power potential, it was assumed that 50% of building rooftops, 85% of parking structure decks and 15% of parking lots could be used for photovoltaic systems. Assumptions for generating capacity used the National Renewable Energy Laboratory's calculator, PV Watts. The calculations take into account:

- System and array type: Fixed module type
- System losses: 14%
- Location: John Wayne Airport-Orange County (SNA) weather station
- Degree tilt of photovoltaic system: 20 degrees
- Azimuth: 180 degrees
- Utility provider: Southern California Edison

A study of the ATEP Site across each of the four phases was conducted in order to assess the solar power potential, based on the assumed system areas. The following system capacities could be achieved. At full build out, ATEP will have 430,727 square feet of area that may be dedicated to PV panels, or 25,123 panels, which equates to a 6,909 kW system. A system of this size will produce 10,959,405 kWh of electricity annually, which could supply 74% of the energy required by ATEP's buildings.

In order to compare the ATEP Site's solar power potential to its future building electrical power needs, a value for energy use intensity (EUI) in kBtu per square foot was assumed for the buildings in each phase. It was further assumed that buildings will be designed to use less energy with each successive phase.

The following EUI values were assumed.

Phase 1: 70 kBtu/Square Foot

Phase 2: 60 kBtu/Square Foot

Phase 3: 48 kBtu/Square Foot

Phase 4: 36 kBtu/Square Foot

PHASE 1, 50% of building rooftops:

- 534 kW system producing 847,303 kWh/year
- Offset energy use by 29%

PHASE 2, 50% of building rooftops:

- 813 kW system producing 1,290,000 kWh/year
- Offset energy use by 36%

PHASE 3, 50% of building rooftops:

- 962 kW system producing 1,526,000 kWh/year
- Offset energy use by 42%

PHASE 4, 85% of parking structure rooftops and 15% of surface parking

- 4,598 kW system producing 7,295,000 kWh/year
- Offset energy use by 74%

SOLAR POWER

Figure 6.06a



Photovoltaic panels installation

-  PHASE 1: 534 kW system
-  PHASE 2: 813 kW system
-  PHASE 3: 962 kW system
-  PHASE 4: 4598 kW system
- FINAL: 6908 kW system



RECOMMENDATIONS

6.06

INFRASTRUCTURE RECOMMENDATIONS (cont'd)

ENERGY (CONT'D)

WIND POWER POTENTIAL

With an average wind velocity of 6 to 7 miles per hour, the wind speed at the site does not warrant the use of wind turbines on a large scale. However, smaller scale wind turbines, such as those integrated with site lighting can be very effective in open parking lots and similarly exposed areas. These pole fixtures incorporate a small wind turbine, as well as a solar panel, to power site lighting without an external power source. These small wind turbines use a vertical axis design, which allows the turbine to catch wind flows from multiple directions. This technology is especially useful in parking lots. In addition to site lighting, demonstration wind turbines may also be used for educational purposes. Turbines designed to be mounted on building parapets may be considered, although the power generation potential will be modest.

Rooftop wind turbine, source: inhabitat.com



Hybrid Wind/PV street lighting, source: urbangreenenergy.com



Fuel cells, Adobe Headquarters, San Jose, CA, Source : blog.adobe.com



FUEL CELLS

Fuel cells, which convert fuel into electricity through a clean electro-chemical process rather than combustion, are becoming widely used in the technology industry. This technology is especially attractive for process-intense power consumers such as ATEP. Although they represent a considerable initial capital investment, fuel cells requires less maintenance and space and produce more energy than conventional solar and wind power installations.

COGENERATION

Cogeneration is the process whereby a single fuel source, such as natural gas, is used to produce both electrical and thermal energy. By definition, an onsite cogeneration system is more efficient than a utility operated central power plant since thermal energy that would otherwise be wasted is captured for use at the facility. The result is a much more efficient use of fuel which can generate substantial savings. Conventional electrical generation by a utility power plant is only about 35% efficient compared to the 90% efficiency of a cogeneration unit. Cogeneration operates on a very basic concept: electrical generation produces heat and cogeneration equipment captures that heat and uses it to supply hot water, steam, space heating - even cooling. Thus, what is otherwise a byproduct of electrical generation becomes a highly useful commodity.

BIODIGESTERS

Biodigesters can take waste produced on the ATEP Site and convert it into usable energy. Biodigesters rely on anaerobic digestion, which is the controlled breakdown of organic matter without air. It is a biological process that produces energy-rich biogas that can be used as a fuel.

MICRO-GRID

A micro-grid may be used to distribute and manage electrical power from the grid and from onsite sources, essentially helping to create a mini-utility for the ATEP Site. This will allow ATEP to rely less on energy from the grid and serve as its own utility provider. A micro-grid allows the electrical power supply to be managed for optimal efficiency, quality, and reliability by tailoring it to meet the needs of ATEP's end users. An additional benefit would be evident during prolonged power outages, when power that is stored and/or generated onsite would be made available for use through the micro-grid.

Capital costs must be considered, however, and the feasibility of a micro-grid for the ATEP Site depends on many factors. It is recommended that potential inclusion with the site be studied.

RECOMMENDATIONS

6.06

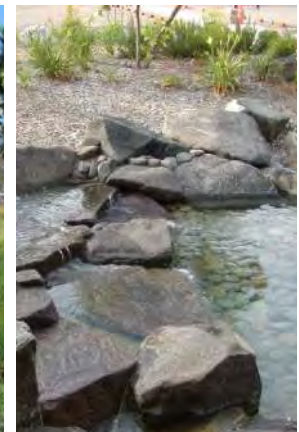
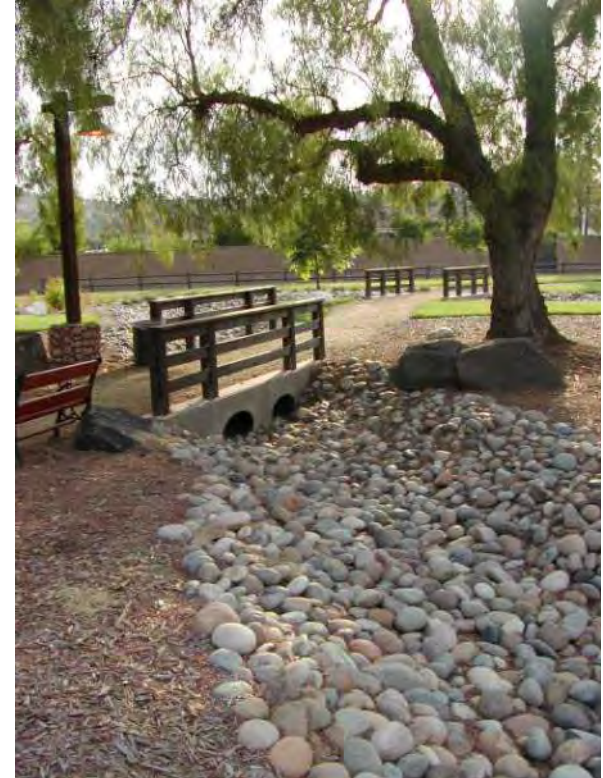
**INFRASTRUCTURE
RECOMMENDATIONS (cont'd)****STORM WATER/WATER QUALITY
STRATEGIES**

ATEP will employ Low Impact Development (LID) best management practices (BMPs) for storm water management. The Environmental Protection Agency describes LID as applying certain designs and practices in development to manage stormwater by minimizing impervious cover and by using natural or man-made systems to filter and recharge stormwater into the ground. Roads, parking lots, and other types of impervious cover are the most significant contributors to stormwater runoff.

Commonly used BMPs include creating bio-filters and retention, detention, and infiltration structures. The Storm Water Retention Concept Diagram, Figure 6.06b, illustrates opportunities for implementing BMP's on the ATEP Site.

Each of these methods has both advantages and disadvantages and cost implications. Planned parking and roadways cover a large portion of the site and offer many options to mitigate storm water run-off. Porous pavement can be employed in various ways. For instance, a hybrid approach for parking lots combines permeable parking stalls with impermeable road beds. Overflow parking lots, which create a flexible option for parking during the peak demand periods, can be constructed using turf blocks, which are even more permeable than porous concrete. Small basins, street trees, and covered trash containers are best practices recommended to manage the quality of storm run-off. No one strategy will address every need. Instead, many strategies will be employed.

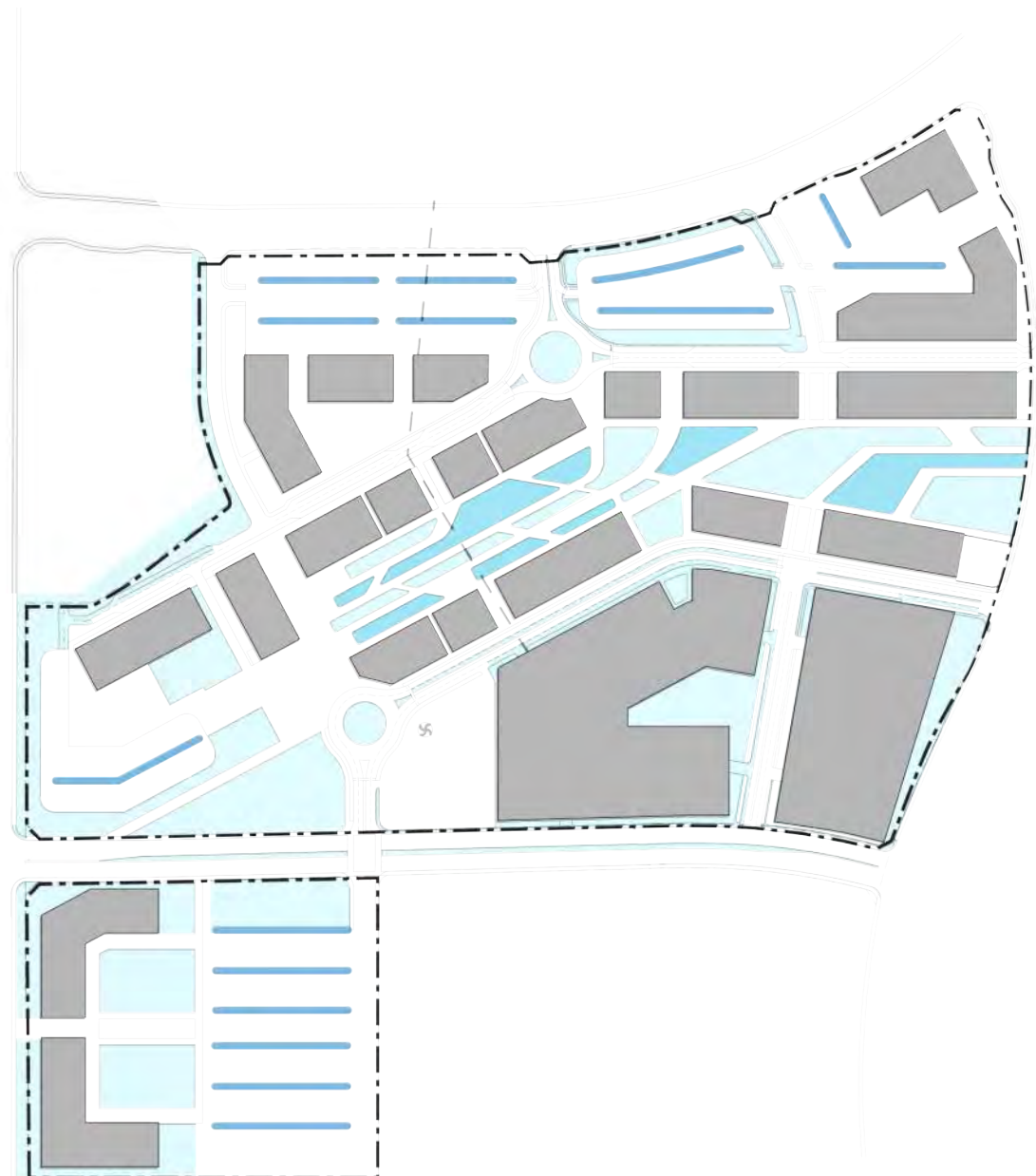
*Infiltration creek bed (top and lower right)
and road-side bio swale (lower left)*



STORM WATER RETENTION CONCEPT

Figure 6.06b

- FLOW-THROUGH PLANTER IN PARKING AREAS
- BIO-SWALE / RAIN GARDEN
- PERVIOUS SURFACES



RECOMMENDATIONS

6.06

INFRASTRUCTURE RECOMMENDATIONS (cont'd)

RECYCLED WATER

Irvine Ranch Water District (IRWD) installed the infrastructure to supply recycled water throughout Tustin Legacy and the opportunity to connect to this supply is available at the ATEP Site. SOCCCD currently uses recycled water for more than just landscape irrigation. Dual plumbed buildings can use recycled water to operate toilets and urinals. This practice reduces utility costs and conserves water. Awareness of this opportunity led to the recommendation to provide distribution mainlines that will make recycled water available throughout the ATEP Site.

*Irvine Ranch Water District, Michelson Water Recycling Plant,
source: irwd.com*



GRADING CONCEPT

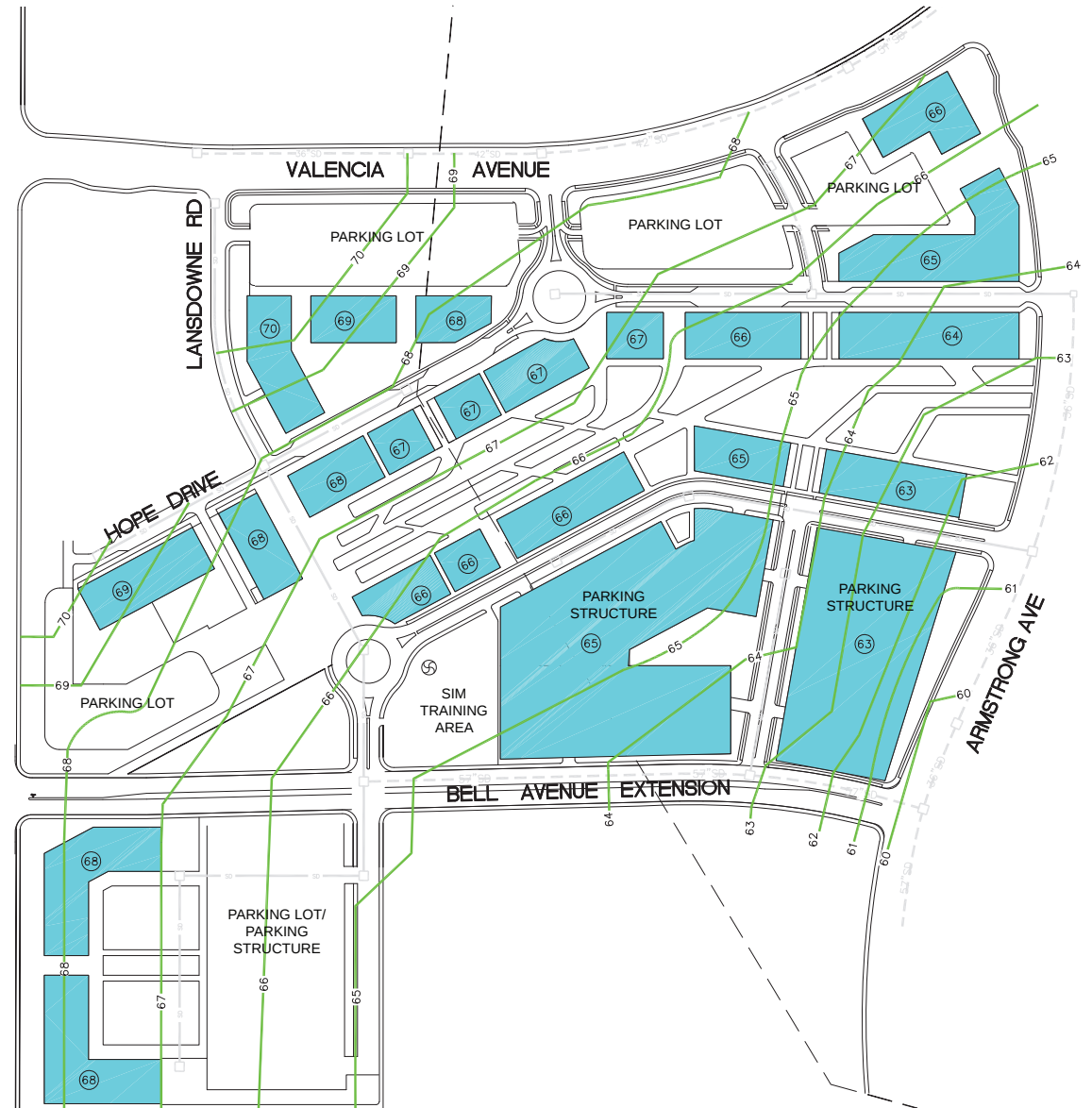
Figure 6.06c

Topography is an important consideration for land development with regard to identification of building sites, designing accessible pedestrian connections, managing storm water, and designing gravity-fed site utilities.

The ATEP Site is located on an open coastal plain. It drains towards the south-southeast, with a differential of about 10 feet in elevation across the site. The topography presents no challenge to the site's full development or to pedestrian circulation.

The ATEP Site will be graded by phase, as development progresses. The design contours have been established to closely match the natural fall of the existing topography with the goal to balance the movement of earth onsite for each phase. Therefore, no major import or export of material is anticipated during the development of the ATEP Site.

The infrastructure for gravity-fed systems, such as storm water and sanitary sewer systems, will be designed to flow with the topography.



Elevations are shown in feet above sea level



6.06

INFRASTRUCTURE RECOMMENDATIONS (cont'd)

INFRASTRUCTURE PHASING

The Tustin Legacy project includes plans for the development of utilities infrastructure to support the planned land uses. These plans established the size and capacity of the backbone mainlines for storm water, sanitary sewer, domestic water, recycled water, and dry utilities. The existing utilities infrastructure that is currently in place and planned utilities infrastructure for the Bell Avenue extension that will serve the ATEP Site and other properties in Tustin Legacy are described in *Section 3.03 Utilities Infrastructure*. The utilities infrastructure recommendations may be modified based upon the City's pending design of the Bell Avenue extension.

The *ATEP Development Framework* provides conceptual plans for the phased development of utilities infrastructure. The plans on the following pages describe an approach intended to align with the goals, evaluation criteria, and phasing assumptions that are described in *Chapter 5*.

Phasing plans for the systems listed below are shown on the following pages:

- Storm Water
- Sanitary Sewer
- Domestic Water
- Recycled Water
- Dry Utilities

RECOMMENDATIONS

6.06

INFRASTRUCTURE
RECOMMENDATIONS (cont'd)

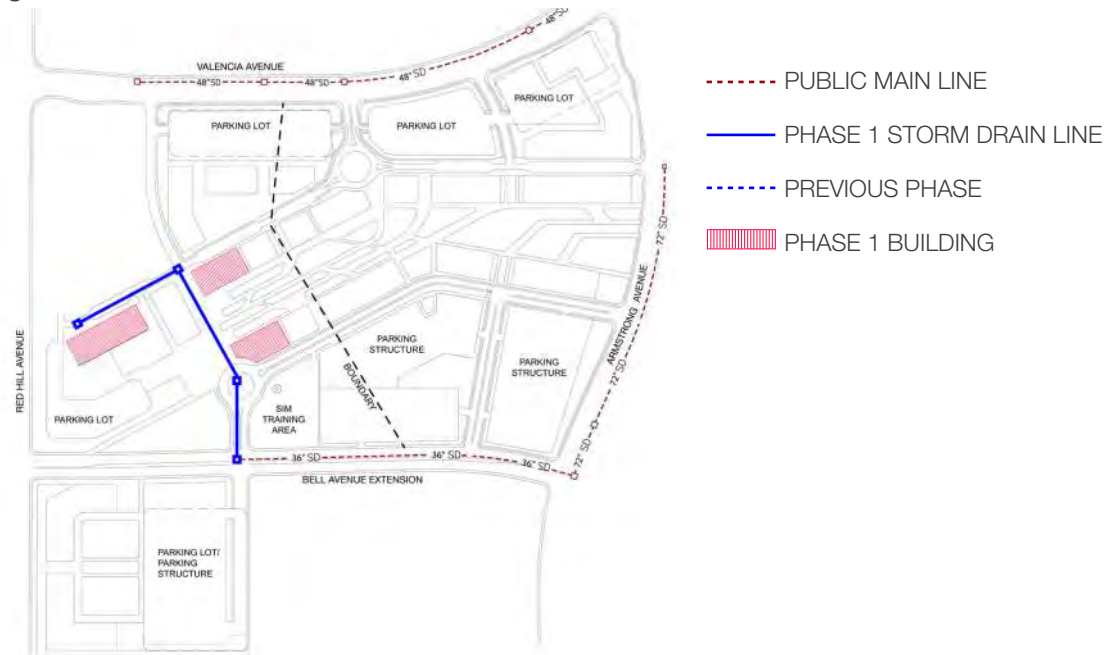
STORM DRAINAGE

Based upon the Specific Plan's backbone infrastructure plan for storm drainage, it is recommended that the ATEP Site be served through the 72" Armstrong Avenue mainline. It is anticipated that the City will extend a 36" mainline in the Bell Avenue extension, which may be used to connect a portion of the ATEP Site to the drainage system. A connection to a Bell Avenue mainline could support the development of Phases 1, 2, and 3. This approach is preferred to the installation of an onsite line through the ATEP Site's Remediation Area.

On the ATEP Site, internal pipes will be sized to take advantage of reductions arising from the use of onsite storm water best management practices (BMPs).

STORM DRAIN PLAN - PHASE 1

Figure 6.06d



STORM DRAIN PLAN - PHASE 2

Figure 6.06e

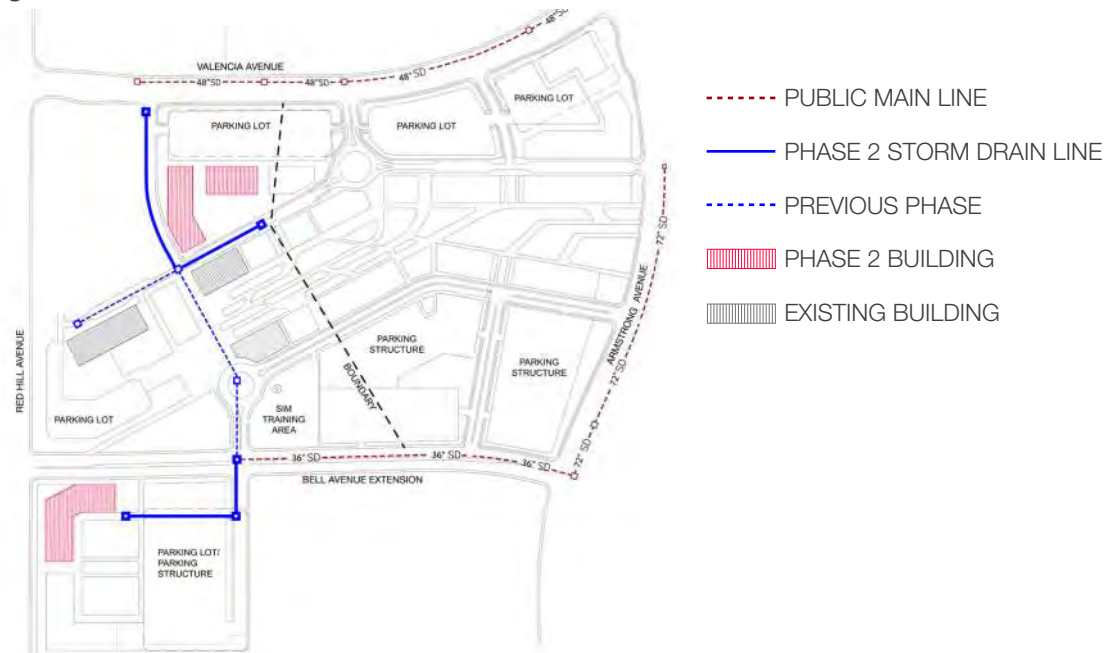


Figure 6.06f

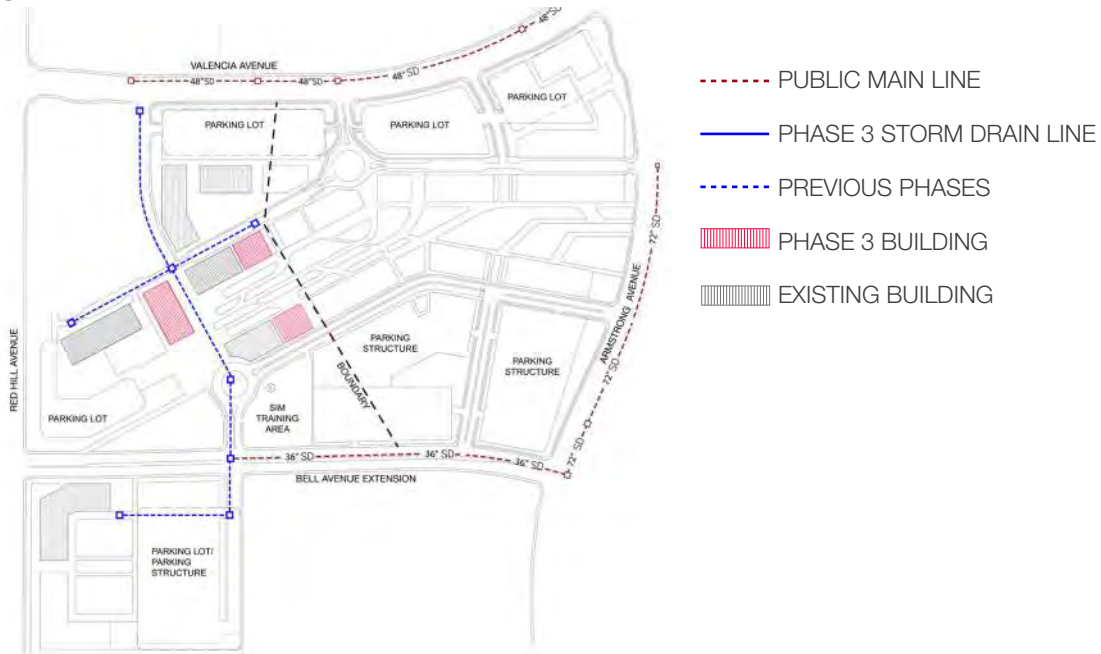
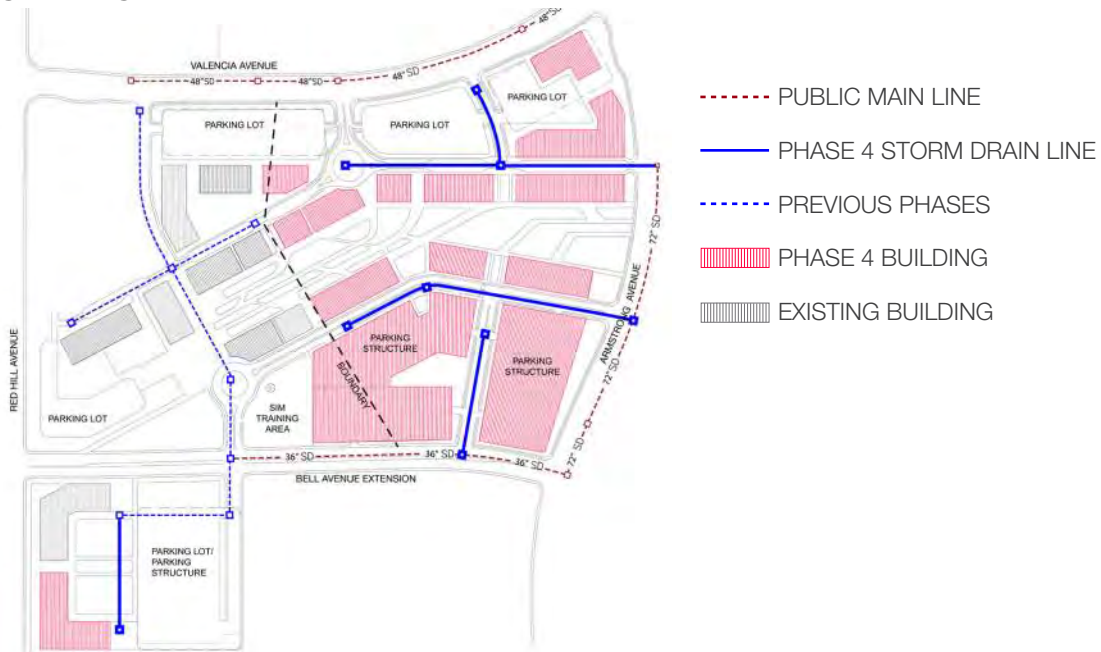


Figure 6.06g



RECOMMENDATIONS

6.06

INFRASTRUCTURE
RECOMMENDATIONS (cont'd)

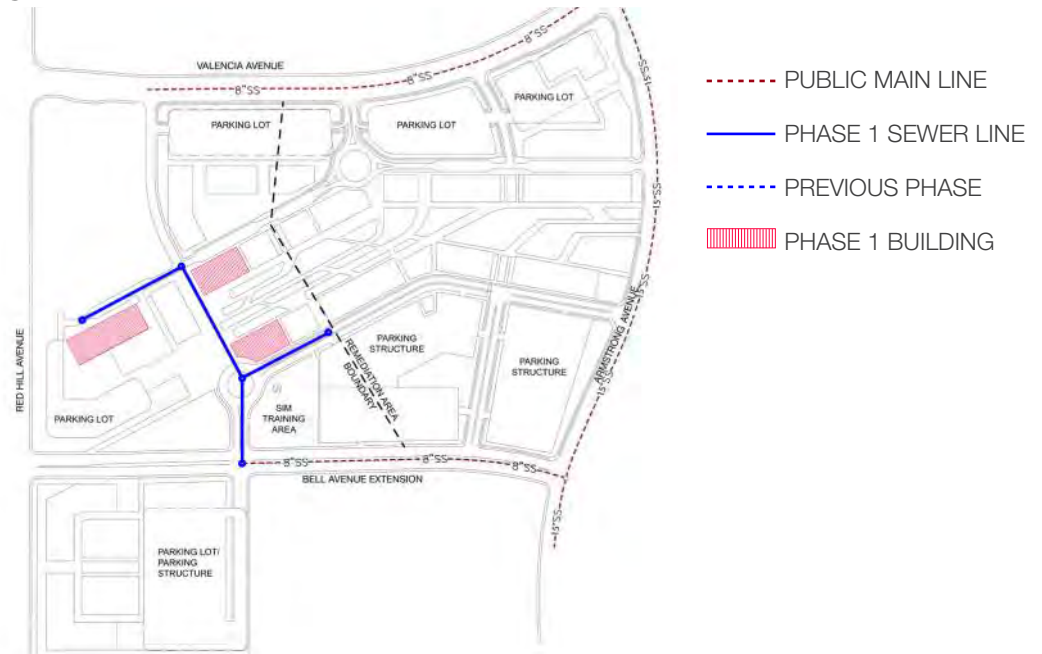
SANITARY SEWER

The ATEP Site could partially be served through the 15" Armstrong Avenue mainline. It is anticipated that an 8" or larger mainline will be provided in the Bell Avenue extension, which may be used to connect a portion of the ATEP Site to the sewer system. A connection to a Bell Avenue mainline could support the development of Phases 1, 2, and 3. This approach is preferred to the installation of an onsite line through the ATEP Site's Remediation Area.

An 8" pipe size is recommended for ATEP's internal sanitary sewer backbone system, with 4"-6" laterals to each building. The ATEP Site's sanitary sewer will be provided by the IRWD.

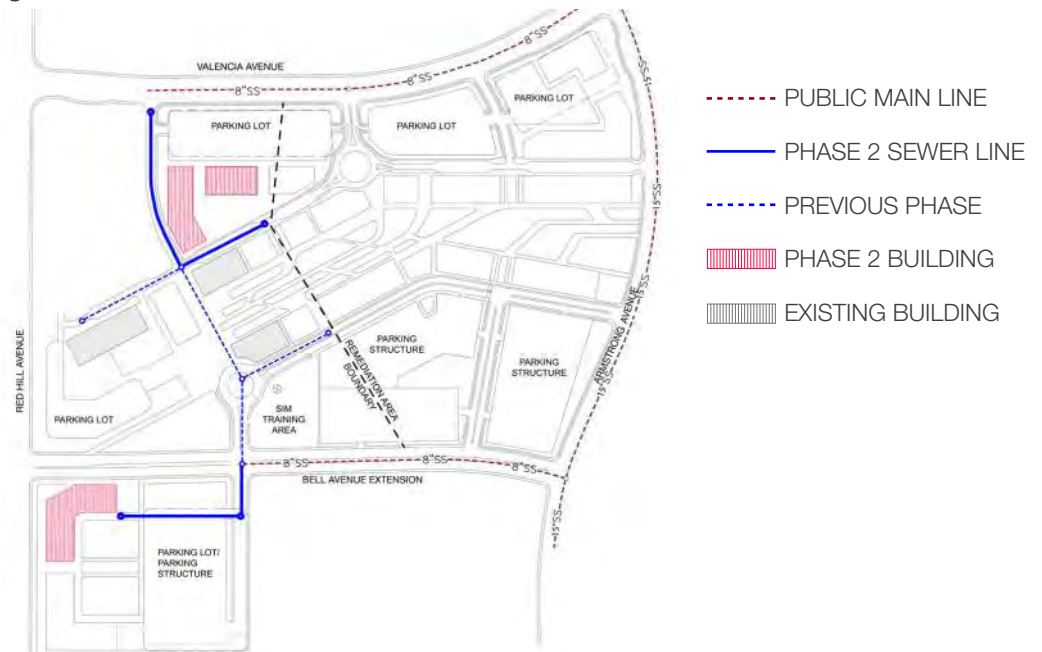
SANITARY SEWER PLAN - PHASE 1

Figure 6.06h



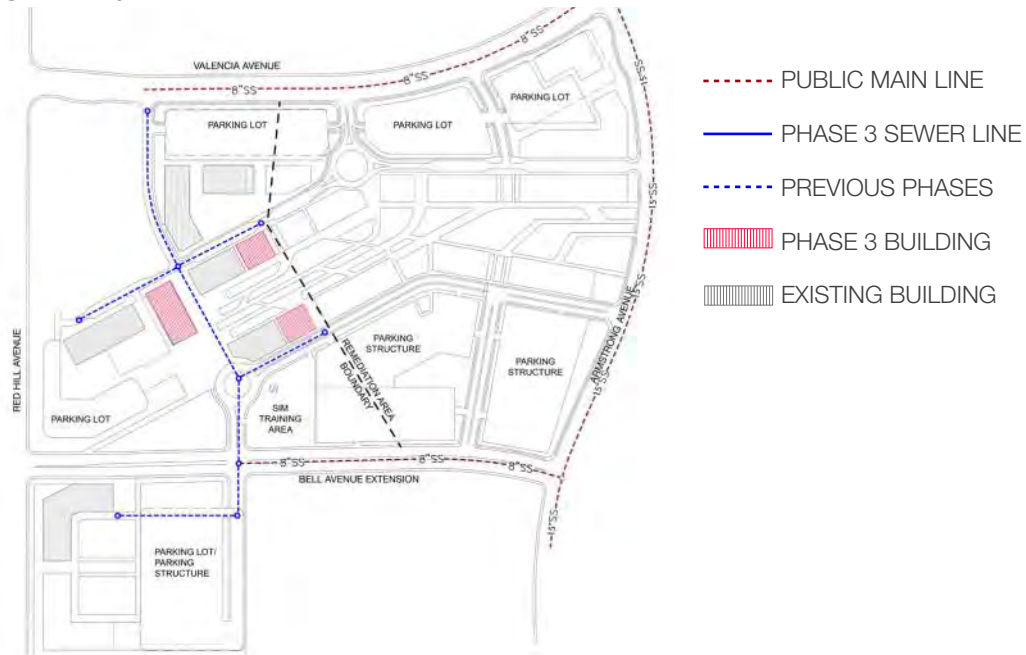
SANITARY SEWER PLAN - PHASE 2

Figure 6.06i



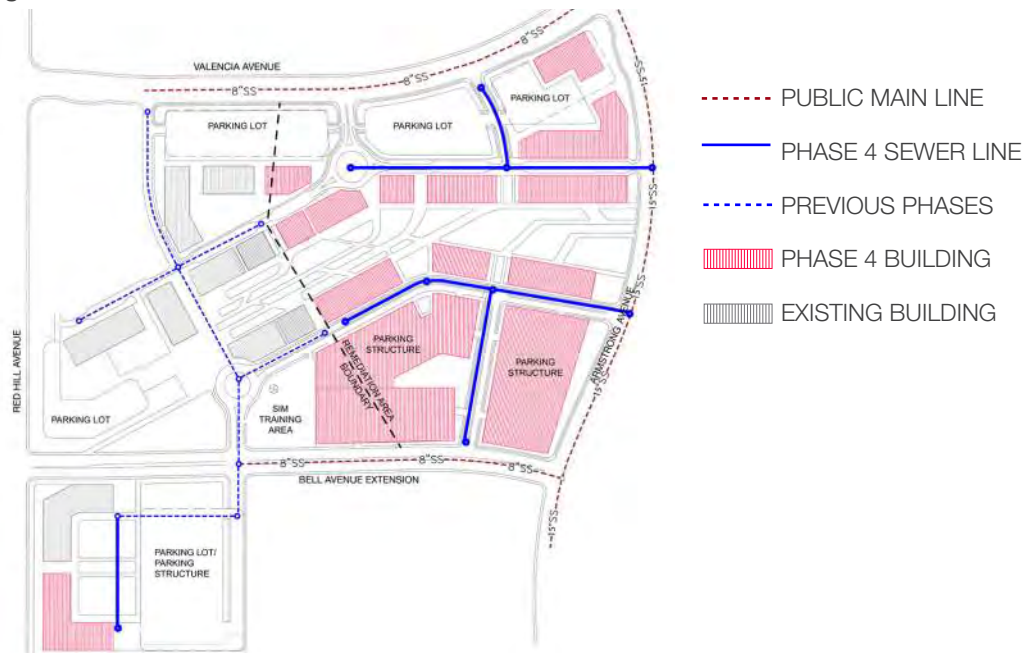
SANITARY SEWER PLAN - PHASE 3

Figure 6.06j



SANITARY SEWER PLAN - PHASE 4

Figure 6.06k



RECOMMENDATIONS

6.06

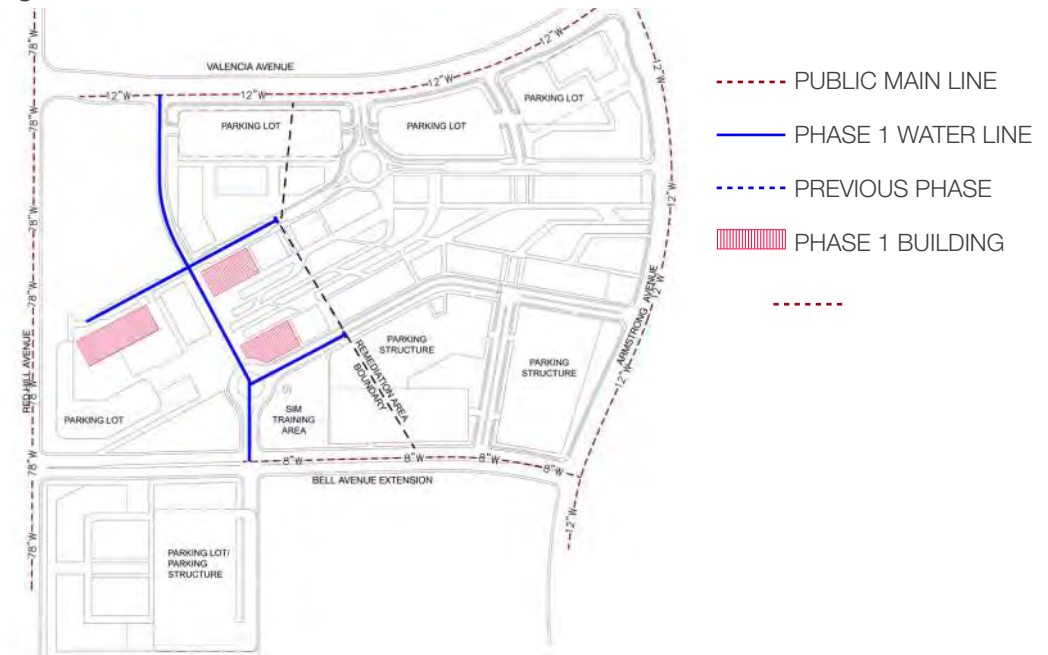
INFRASTRUCTURE
RECOMMENDATIONS (cont'd)

DOMESTIC WATER

Domestic water service could be provided to the ATEP Site through connections to one or both of the 12" mainlines in Valencia Avenue and Armstrong Avenue, as well as to an 8" mainline that is anticipated in the Bell Avenue extension. The ATEP Site's domestic water will be provided by the IRWD.

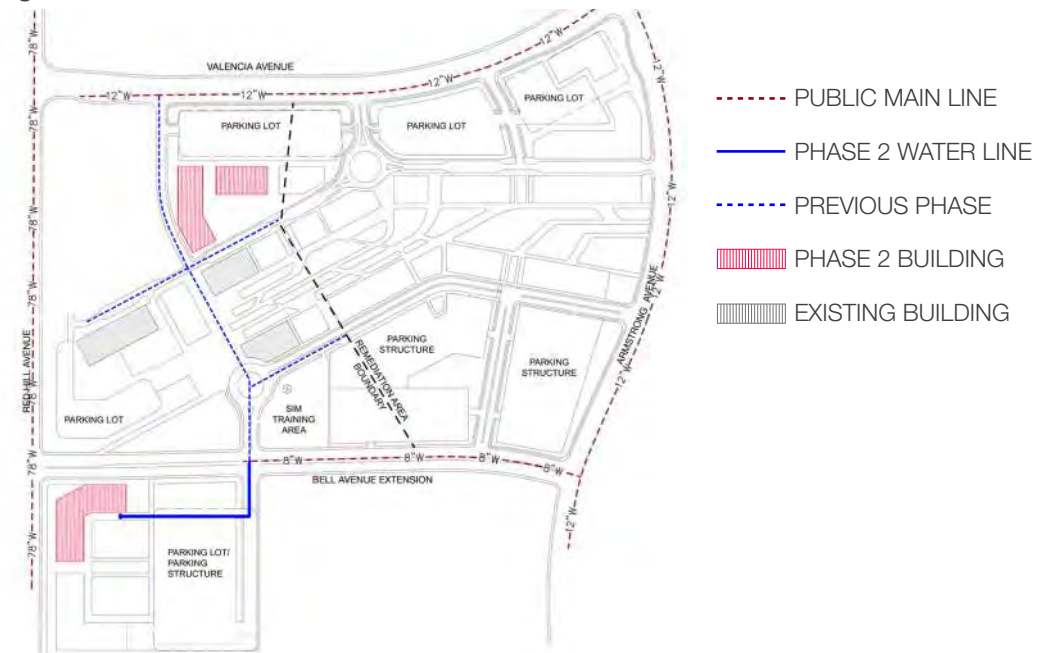
DOMESTIC WATER PLAN - PHASE 1

Figure 6.06l



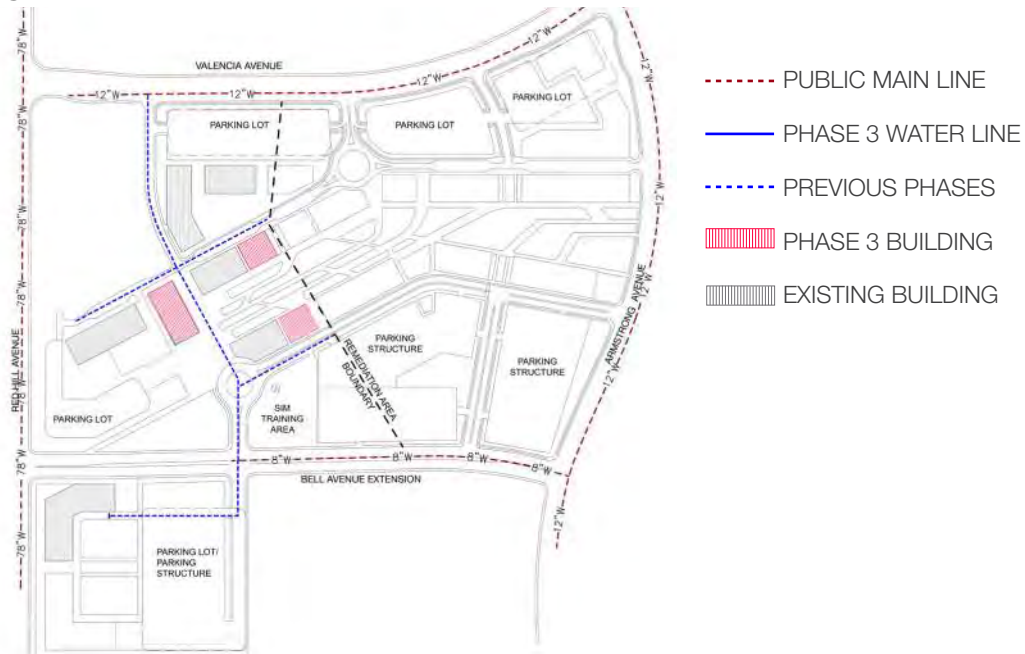
DOMESTIC WATER PLAN - PHASE 2

Figure 6.06m



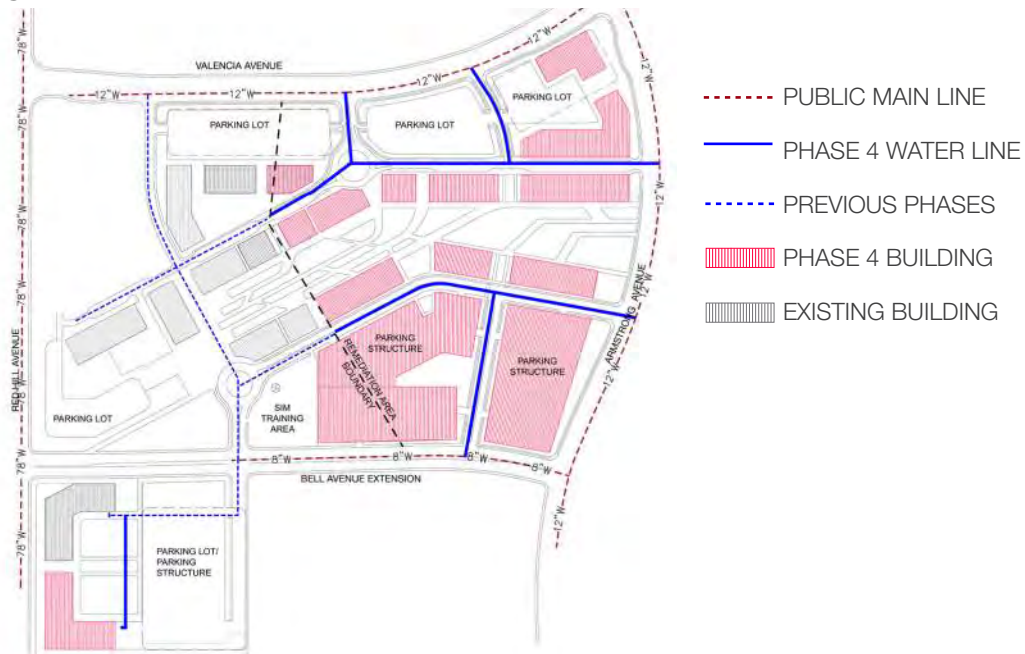
DOMESTIC WATER PLAN - PHASE 3

Figure 6.06n



DOMESTIC WATER PLAN - PHASE 4

Figure 6.06o



RECOMMENDATIONS

6.06

INFRASTRUCTURE
RECOMMENDATIONS (cont'd)

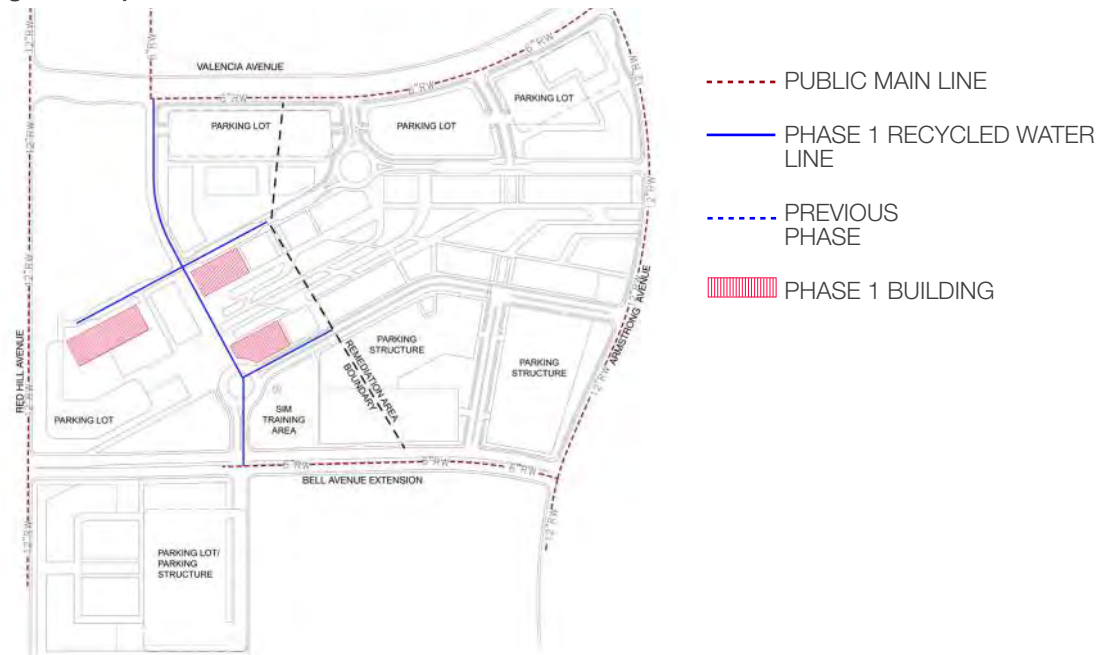
RECYCLED WATER

Recycled water service may be provided to the ATEP Site through connections to the 6" mainline in Valencia Avenue and/or the 12" mainline in Armstrong Avenue, as well as to a 6" mainline that is anticipated to be installed in the Bell Avenue extension.

The ATEP Site's irrigation demand is included in the designed capacity of the Tustin Legacy recycled water system and potable water need not be used for irrigation. Recycled water will be provided by the IRWD.

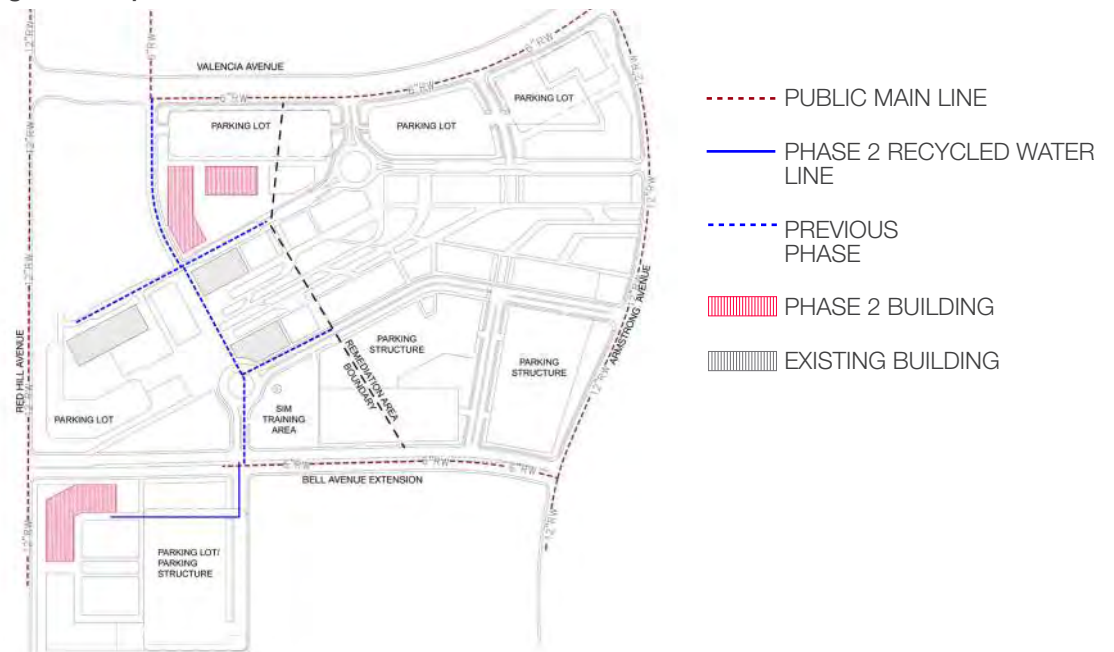
RECYCLED WATER PLAN - PHASE 1

Figure 6.06p



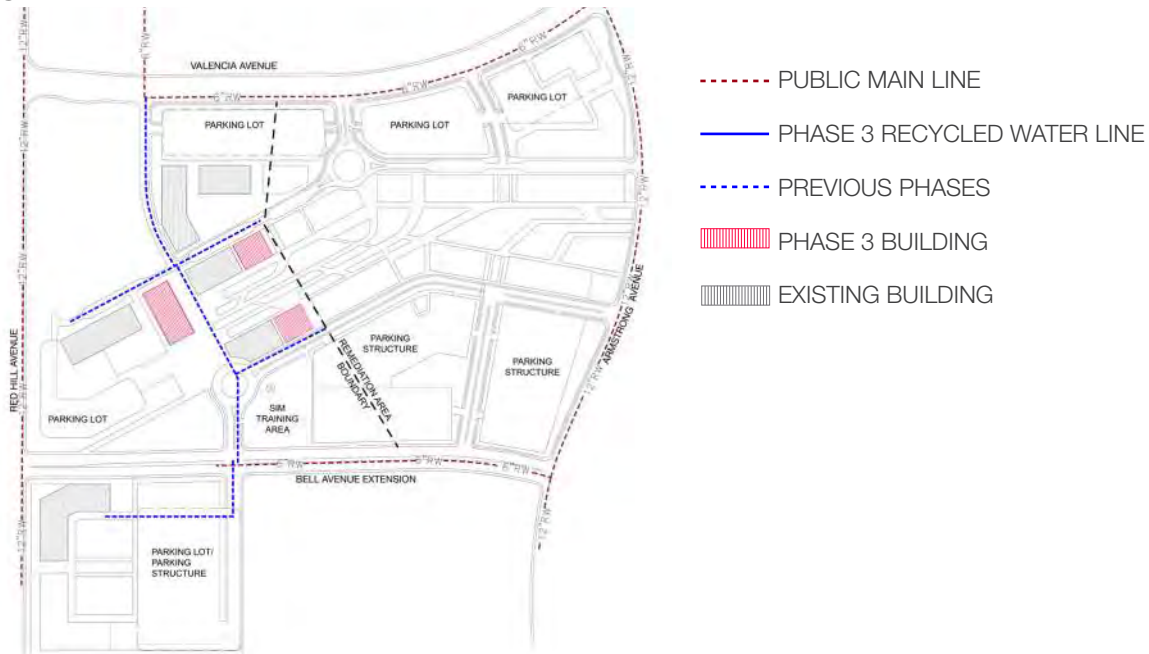
RECYCLED WATER PLAN - PHASE 2

Figure 6.06q



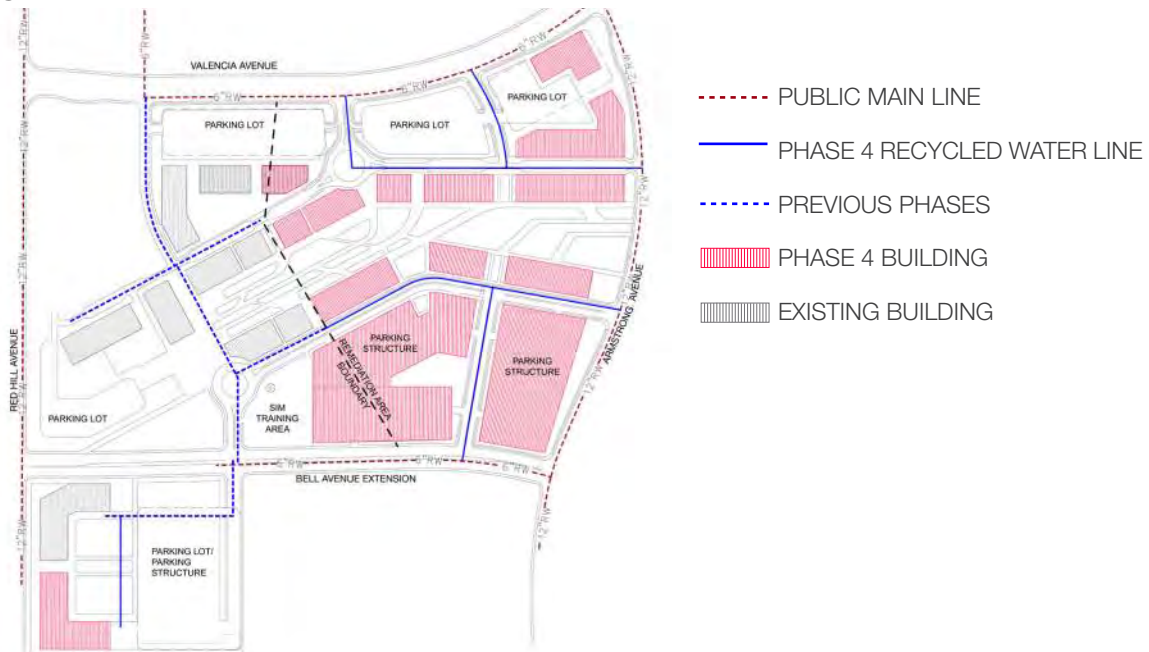
RECYCLED WATER PLAN - PHASE 3

Figure 6.06r



RECYCLED WATER PLAN - PHASE 4

Figure 6.06s



RECOMMENDATIONS

6.06

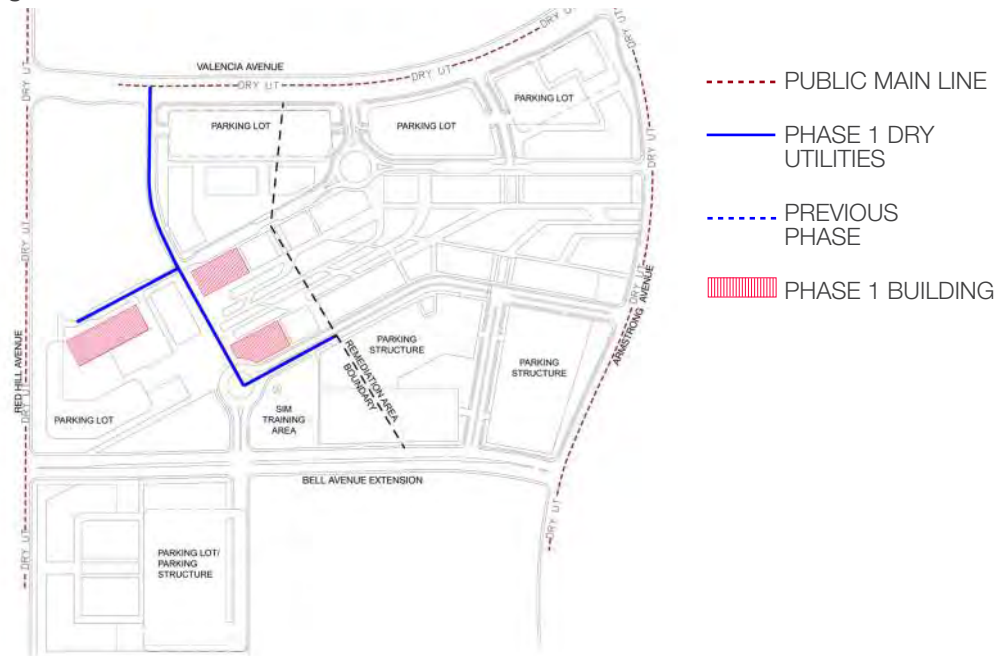
INFRASTRUCTURE
RECOMMENDATIONS (cont'd)

DRY UTILITIES

Dry utilities include telephone, natural gas, and electricity. Typically, these utilities are combined in a dry utility joint trench, and together comprise a utilities backbone system. Valencia and Armstrong Avenues include typical underground backbone systems. The ATEP Site may be served from any of these backbone systems. The consideration of a micro-grid for the management and distribution of electrical power is described on page 6.47.

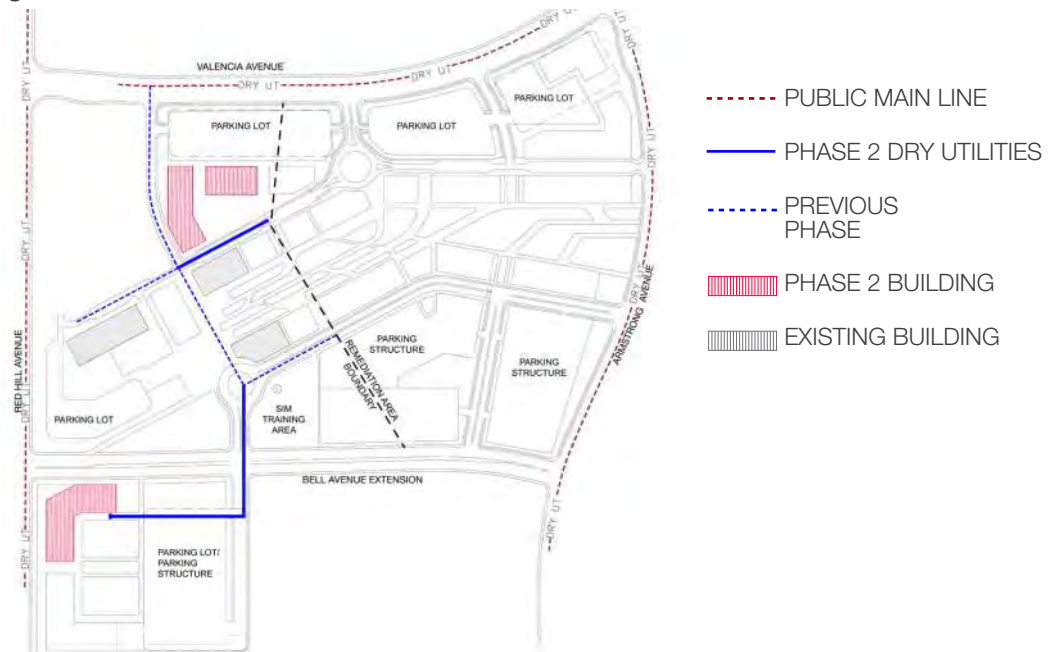
DRY UTILITIES PLAN - PHASE 1

Figure 6.06t



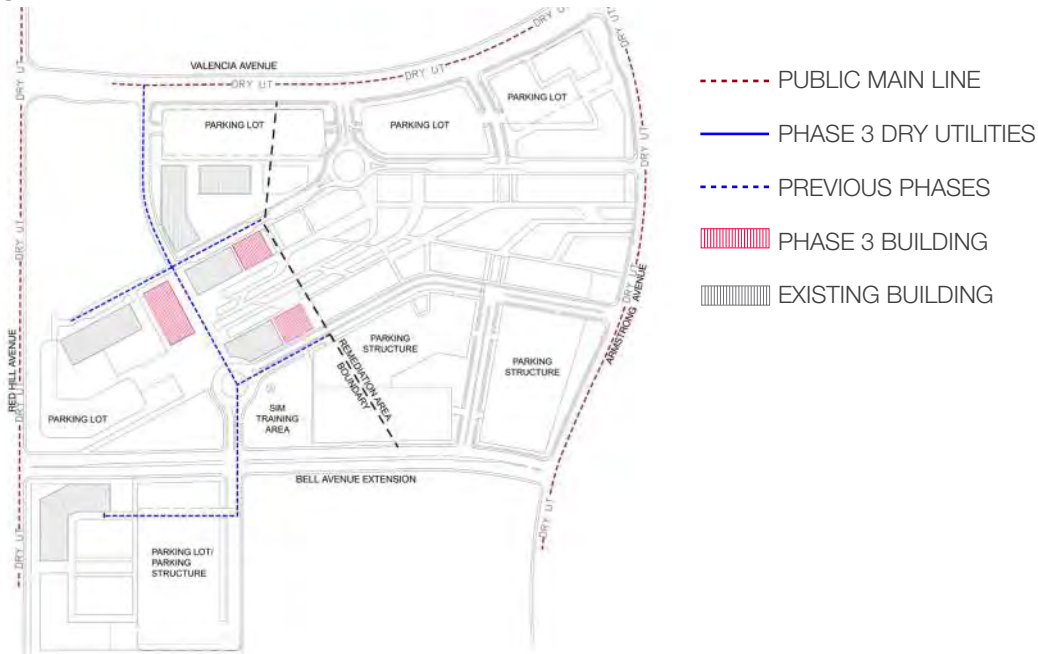
DRY UTILITIES PLAN - PHASE 2

Figure 6.06u



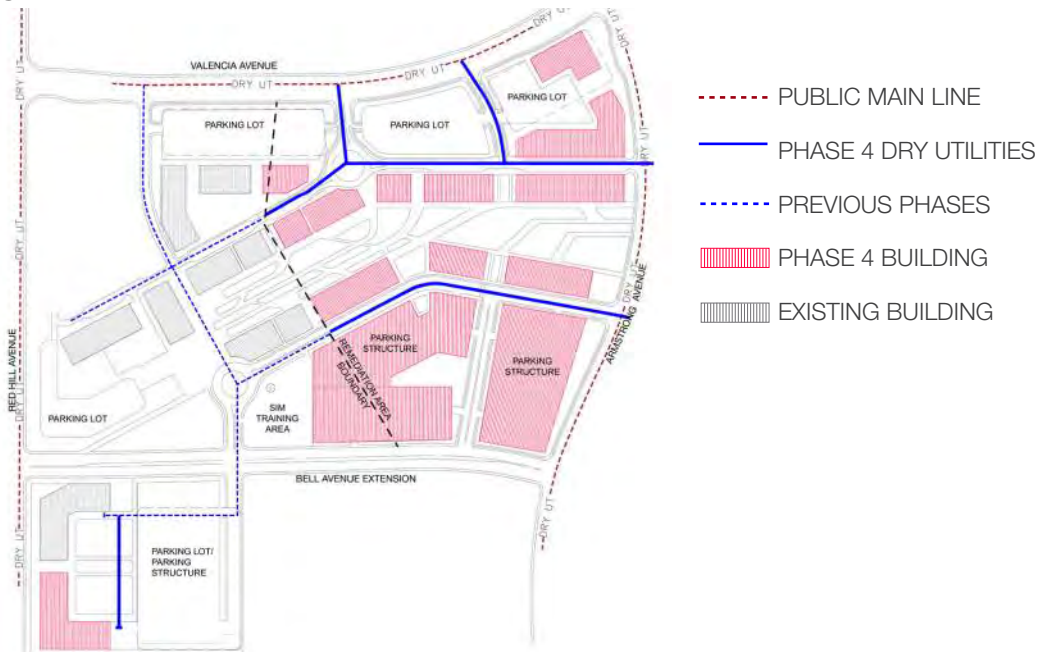
DRY UTILITIES PLAN - PHASE 3

Figure 6.06v



DRY UTILITIES PLAN - PHASE 4

Figure 6.06w



TELECOMMUNICATIONS

As with all utilities, the telecommunications backbone pathways will be extended with each phase. There will be a choice of secure and flexible modes of service to meet the needs of both Educational and Non-educational partners.

Robust, secure, and accessible baseline infrastructure with redundant connections to the service gateway will assure reliable service.



Chapter seven

Next Steps

This chapter describes the purpose for and objectives of planning studies that are recommended for the next step in the development of the ATEP Site.

- 7.01 **Design Criteria**
- 7.02 **Covenants, Conditions & Restrictions (CC&R's)**
- 7.03 **Sustainability & Energy**
- 7.04 **Parking & Transportation**

NEXT STEPS

7.01

DESIGN CRITERIA

The Design Criteria will provide clear direction for the look and feel of future site and facilities development. The criteria are needed to ensure a cohesive identity that supports the ATEP vision while allowing for creative expression and innovative design solutions. It will provide guidance to SOCCCD and its partners and inform decisions and design directions during the development of the ATEP Site.

The Design Criteria are intended to provide the following:

- Site and building design guidelines
- Building materials, systems, and equipment performance standards
- Design standards for space types, building types, open spaces, circulation, parking, and infrastructure
- Signage and wayfinding standards

7.02

COVENANTS, CONDITIONS & RESTRICTIONS (CC&R'S)

A Declaration of CC&R's will be prepared and recorded against the ATEP Site. The purpose of the CC&R's will be to act as a "constitution" for the governance of the ATEP Site, establishing the general parameters of authority and the allocation of rights and obligations as appropriate to implement the Design Criteria and to manage the operation of the ATEP Site as it may evolve over time. The CC&R's will deal with the following subjects, among others: (a) maintenance of common areas within the ATEP Site (such as landscaping, parking areas, and other facilities that are used in common by SOCCCD and other ATEP partners); (b) establishment of the methodology and procedures for the recovery of common area maintenance and other operating expenses;

(c) creation of access and use easements over the common areas for the benefit of SOCCCD and each ATEP partner; (d) creation of the right to establish a process for the review and approval of architectural plans (as well as the review of as-built plans) in order to confirm compliance with design guidelines; (e) implementation of use restrictions (consistent with the Specific Plan and the Development Agreement) that will be binding on all occupants of the ATEP Site; and (f) establishment of enforcement and dispute resolution procedures.

7.03

SUSTAINABILITY & ENERGY

SOCCCD will develop a request for proposals for Sustainability Services aimed at identifying best practices for ATEP. The California Community College Board of Governors (BOG) approved the Energy and Sustainability Policy in January 2008 with specific goals for reducing energy consumption and applying measures to meet minimum efficiency standards for construction projects. BOG emphasized energy independence citing the purchase and generation of renewable power, conservation through the energy efficient projects, sustainable building practices, and physical plant management as methods to achieve the goal.

Current regulations that act as guiding principles include:

- Executive Order S-3-05's long term goal of reducing greenhouse gas emission to 80 percent below 1990 levels by 2050;
- Executive Order S-14-08, requiring that 33 percent of total electricity sales be generated from renewable resources by 2020;
- Senate Bill X7-7 requiring all water suppliers to increase water use efficiency with a goal of 20% use reduction by 2020;
- AB 341 establishing a statewide goal of 75% diversion of solid waste to landfills; and
- AQMD requirements to meet federal and state air pollution requirements set by the Clean Air Act and to develop regulations to achieve the necessary public health standards.

While SOCCCD's actions are triggered by the need for compliance with state policies and regulations, they are driven beyond compliance by the belief that sustainability can provide environmental, economic, and social benefits to all of its facilities.

7.04

PARKING & TRANSPORTATION

The parking requirements set forth in the Specific Plan presented a significant challenge for the design of the *ATEP Development Framework*. The ATEP Steering Committee recommends that SOCCCD commission a study to gain a better understanding of future parking needs and how they can be best managed.

The study will establish the parking demand at each of the SOCCCD campuses and analyze those demands against findings at other regional community colleges. The study will incorporate a comprehensive analysis of mass transit opportunities, including bus and train lines located nearby. SOCCCD will explore the possibility of providing a bus transit hub at the ATEP Site, a strategy used at both SOCCCD campuses to encourage the use of public transportation. This strategy, among others, will help to maximize the opportunities provided by the Tustin Metrolink Station, which was designed to serve all of Tustin Legacy, including the ATEP Site.



Appendix

- A.01 **List of Participants**
- A.02 **Reference Documents**
- A.03 **Trip Generation Rate Schedule**
- A.04 **List of Abbreviated Terms**
- A.05 **List of Figures & Tables**

APPENDIX

A.01

LIST OF PARTICIPANTS

WORKSHOP

PARTICIPANTS – as invited by the College Presidents

Barbara Blanchard, Irvine Valley College	Tamara Rice, Saddleback College
Tod Burnett, Saddleback College	Glenn Roquemore, Irvine Valley College
Elizabeth Cipres, Irvine Valley College	Camila Srefein, Irvine Valley College
Corine Doughty, ATEP	Matt Suarez, ATEP
Jennifer Forouzesh, Saddleback College	Bob Urell, Irvine Valley College
David Gatewood, Irvine Valley College	Kathy Werle, Saddleback College
Will Glenn, Irvine Valley College	Chris Wilkinson, Saddleback College
Cathleen Greiner, Irvine Valley College	Lianna Zhao, Irvine Valley College
Carol Hilton, Saddleback College	ATEP Development Framework Steering
Jeff Hurlbut, Irvine Valley College	Committee (see page A.4)
Craig Justice, Irvine Valley College	
Davit Khachatryan, Irvine Valley College	
Anthony Maciel, Saddleback College	
Mary Opel, SOCCCD	
Peter Pham, Irvine Valley College	
Pamela Prince, ATEP	
Donna Rane-Szostak, Saddleback College	

IRVINE VALLEY COLLEGE

FLEX WEEK PRESENTATION – open to all faculty and staff

Elizabeth Cipres, Irvine Valley College	Glenn Roquemore, Irvine Valley College
Patricia Carlson, Irvine Valley College	Todd Schmaltz, Irvine Valley College
Brandye D'Lena, SOCCCD	Kathy Schmeidler, Irvine Valley College
Melissa Dobczyk, Irvine Valley College	Tim Sohn, Irvine Valley College
Corine Doughty, ATEP	Matt Suarez, ATEP
John Edwards, Irvine Valley College	Lisa Wang, Irvine Valley College
Karima Feldhus, Irvine Valley College	Stephen Woodard, Irvine Valley College
Debra Fitzsimons, SOCCCD	Lianna Zhao, Irvine Valley College
Linda Fontanilla, Irvine Valley College	
David Gatewood, Irvine Valley College	
Cathleen Greiner, Irvine Valley College	
Craig Hayward, Irvine Valley College	
Craig Justice, Irvine Valley College	
Davit Khachatryan, Irvine Valley College	
Brett McKim, Irvine Valley College	
Pamela Prince, Irvine Valley College	
Jim Rogers, Saddleback College	

SADDLEBACK COLLEGE
FLEX WEEK PRESENTATION – open to all faculty and staff

Mary Anstadt, Saddleback College	Blake Stephens, Saddleback College
Kim Branch-Stewart, Saddleback College	Glen Stevenson, Saddleback College
Don Busche, Saddleback College	Pat Sullivan, Saddleback College
Tod Burnett, Saddleback College	Cheryl West, Saddleback College
Brandye D'Lena, SOCCCD	Christopher Wilkinson, Saddleback College
Corine Doughty, ATEP	Jim Wright, SOCCCD
John Edwards, Irvine Valley College	
Debra Fitzsimons, SOCCCD	
Lawrence Grihalva, Saddleback College	
Randy Hardick, Saddleback College	
Carol Hilton, Saddleback College	
Mike Javanmard, Saddleback College	
Mary Opel, SOCCCD	
John Ozurovich, Saddleback College	
Donna Rane-Szostak, Saddleback College	
Tamera Rice, Saddleback College	
Jim Rogers, Saddleback College	

SADDLEBACK COLLEGE
PARTICIPATORY GOVERNANCE MEETING – as invited by the President

President (Chair; non-voting)

Vice President of Instruction

Vice President of Student Services

Vice President for College Administrative Services

Academic Senate President

4 additional Academic Senate Representatives

Classified Senate President

CSEA Representative

1 additional Classified Representative

ASG President

1 Additional ASG Representative

2 Deans

Director of Planning, Research, and Accreditation

1 External Affairs Representative

1 Additional Classified Management representative

APPENDIX

A.01
LIST OF PARTICIPANTS (cont'd)

IRVINE VALLEY COLLEGE
PARTICIPATORY GOVERNANCE MEETING – as invited by the President

Vincent Cooper
John Edwards
Arleen Elseroad
Stephen Felder
Karima Feldhus
Linda Fontanilla
Will Glen
Cathleen Greiner
Bruce Hagan
Craig Hayward
Jeff Hurlbut
Sandy Jeffries
Davit Khachatryan
Heather Mendoza
Richard Morley
Diane Oaks
Glenn Roquemore
Kathy Schmeidler
Keith Shackelford
Tiffany Tran
Bob Urell

CHANCELLORS EXECUTIVE
COUNCIL PRESENTATIONS

Robert Bramucci, SOCCCD
David Bugay, SOCCCD
Tod Burnett, Saddleback College
Debra Fitzsimons, SOCCCD
Randy Peebles, SOCCCD
Gary Poertner, SOCCCD
Glenn Roquemore, Irvine Valley College
ATEP Development Framework Steering
Committee

ATEP
DEVELOPMENT FRAMEWORK
STEERING COMMITTEE

Brandye D'Lena, SOCCCD
John Edwards, Irvine Valley College
Debra Fitzsimons, SOCCCD
Greg Gotthardt, Alvaraz & Marsal
Jeremy Krout, EPD Solutions
John Ozurovich, Saddleback College
Randy Peebles, ATEP
Jim Rogers, Saddleback College
Nader Shah, Hudson Pacific Services Inc.

**JACKSON DEMARCO TIDUS
PECKENPAUGH**

Andrew Bernstein
Ronald DeFelice
Sally Enriquez
Alene Taber

**ATEP
PLANNING TEAM**

The Concord Group
Fehr & Peers
HMC Architects
PlaceWorks
Psomas
SWA Group

APPENDIX

A.02

REFERENCE DOCUMENTS

SOCCCD References

- *In Board action 2-20-2008 and subsequent California Community College's Board of Governor's action/approval, a waiver of California Education Code section 81390 et seq. was approved in relation to the development of the ATEP Site. This waiver concerns certain procedural requirements that would otherwise be applicable to the lease and/or sale of the ATEP property.*
 - REFERENCE: Board action, Item 6.2, February 20, 2008
- *The Board has determined that future ground lease partners (Educational and Non-educational) must provide positive connections, synergies, and partnerships to the Colleges and SOCCCD (i.e. education articulation, full and part time jobs, internships, etc.).*
 - REFERENCE: Board actions, Items 6.13 and 6.14, April 25, 2011
- *The Board has determined that ATEP will be used and assigned to both colleges with approximately equal space. Initial buildings could be 30,000 square feet each.*
 - REFERENCE: Board action, Item 6.2, January 23, 2012
- *The Board in 2011 set aside initial funds for ATEP construction totaling \$12.5M. These funds remain available and both college buildings appear on the SOCCCD five-year construction plan.*
 - REFERENCE: Board action, Item 6.5, updated February 24, 2014
- *The Board has allocated funds to complete all demolition, the construction of the Bell Avenue extension, and site preparation including grading and storm drains.*
 - REFERENCE: Basic Aid report, Board Item 7.3, February 24, 2014
- *A five-year planning calendar depicts the timing and milestone phases required to plan, construct, and occupy the first building.*
 - REFERENCE: Board approval, Item 7.2, February 27, 2012
- *As part of the SOCCCD's Education and Facilities Master Plan development, two separate Architectural Programming plans were developed for each college and were completed in February 2012.*
- *ATEP Function Map sets forth SOCCCD Services and College division of responsibilities, updated on November 2, 2012*

Agreement References

- *Development Agreement with the City of Tustin dated May 22, 2013, as ammended (available on the SOCCCD website)*
- *City ordinances and regulations (with certain exceptions) have been frozen for the ATEP Site until April 29, 2034.*
- *SOCCCD/County of Orange Land Exchange Agreement dated February 7, 2012, as ammended*
- *SOCCCD/City Lease Agreement for temporary campus and parking lot dated August 8, 2013, as ammended*
- *Bell Avenue Agreement between SOCCCD and the City of Tustin dated May 22, 2013*

Planning Document References

- *MCAS Tustin Specific Plan: Land Use and Development Regulations, section 3.3 Neighborhood A/ Planning Area 1, provides some of the development standards and regulations for the ATEP Site.*
- *2004 Tustin Legacy Runoff Management Plan (ROMP)*
- *Orange County Parks, Concept Plan for the proposed 84.5 acre Regional Park in Tustin Legacy, approved on February 28, 2012*
- *Tustin Community Development Department Year in Review 2013*

APPENDIX

A.03

TRIP GENERATION RATE SCHEDULE

The ATEP Development Agreement sets forth the allowable number of average daily trips (ADTs) by vehicles that may be generated by the uses on the ATEP Site. The Development Agreement describes how the ADTs are calculated for each allowable use in Development Agreement Exhibit H, the *Trip Generation Rate Schedule*, which is shown on the opposing page. Refer to *Section 3.06 Planning Parameters, Trip Constraints* for more information.

TRIP GENERATION RATE SCHEDULE - EXHIBIT H

Source: ATEP Development Agreement

Land Use Trip Categories	Allowed Use Examples	Average Daily Trips (ADT) per 1,000 SF
Land Use Category 1 Learning Center	- Child Care or Nursery - Public School, community college, educational campus or other educationally oriented use - Private School - Support commercial, office, retail service uses - Museum, cultural center, interpretive center, and/or educational and cultural facility - Live performance facility/ amphitheater - Art and cultural facilities - Other permitted uses per Sections 5.1.1.1 and 5.1.1.2 of this Agreement	6.12
Land Use Category 2 Neighborhood Commercial	Mix of commercial uses within a strip or smaller shopping center with a total size of approximately under 100,000 SF.	111.82
Land Use Category 2 General Office	- Corporate headquarters/office - General offices for: advertising agency, economic consultant, insurance companies, escrow companies, interior decorator, real estate, public utilities, personnel agency, management consultant, collection agency - Medical clinics - Medical offices/healthcare centers - Professional offices for: architect, accountant, attorney, chiropractor, contractor, dentist, doctor, engineer, optometrist, land planner, and other similar professions.	13.27
Land Use Category 2 Light Industrial / R&D	MCAS Tustin SP allowed uses as listed under "Industrial"	8.11

APPENDIX

A.04
LIST OF ABBREVIATED TERMS

ADT
Average daily trip

ATEP
Advanced Technology & Education Park

Base Closure Act
Defense Base Closure and Realignment Act of 1990

BMP
Best management practice

BOG
California Community Colleges Board of Governors

City
City of Tustin

Conveyance Agreement
Agreement for the Conveyance of a Portion of MCAS Tustin to SOCCCD and the establishment of an Advanced Technology Educational Campus

County
County of Orange

CTE
Career-Technical Education

EIR
Environmental Impact Report

FAR
Floor area ratio - the ratio of total gross building floor area to the total land area of the lot

FTE
Full-time equivalent

IRWD
Irvine Ranch Water District

IVC
Irvine Valley College

LID
Low Impact Development - An approach to storm water management and design

LIFOC
Lease in Furtherance of Conveyance

LRA
Local Redevelopment Agency

MCAS Tustin
Marine Corps Air Station Tustin

Navy
Department of the Navy

Redevelopment Act
Base Closure and Redevelopment Act of 1994

Remediation Area
The portion of the ATEP Site composed of the aggregate of the LIFOC Area and the County parcel

ROMP

Run Off Management Plan

SAMP

Sub-area Master Plan

SOCCCD

South Orange Community College District

Specific Plan

Tustin Legacy Specific Plan/Reuse Plan for the Marine
Corps Air Station (MCAS) Tustin

Tustin Legacy

Project site area covered by the Specific Plan

APPENDIX

A.05

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