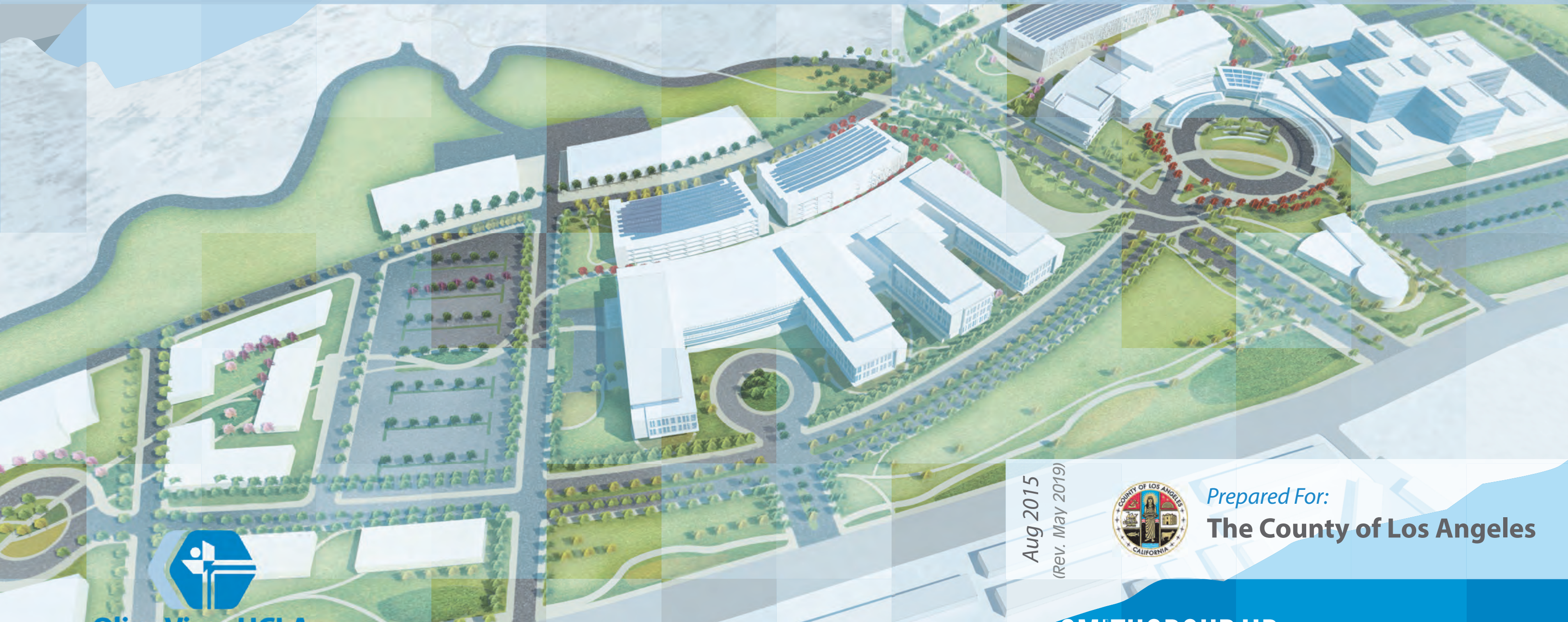


Appendix B
Master Plan

OLIVE VIEW - UCLA MEDICAL CENTER | CAMPUS MASTER PLAN



Aug 2015
(Rev. May 2019)



Prepared For:
The County of Los Angeles

SMITHGROUP JJR



EXECUTIVE SUMMARY

Background

At the request of the County of Los Angeles, the Master Planning team has prepared this report for the development of the Olive View-UCLA Medical Center Campus in Sylmar, California. The medical center campus was originally developed in the 1930s to respond to an overcrowding at the County General Hospital. Because of the dry and warm climate, it was ideal for the treatment of the respiratory disease tuberculosis. In 1970 it was converted to an acute care hospital. Currently, the medical center is a teaching hospital and has a strong relationship with the David Geffen School of Medicine at UCLA providing intern and residency programs in a wide range of medical and surgical specialties. The medical center is a key component in the ValleyCare healthcare network which provides services to residents in the San Fernando and Santa Clarita Valleys, many of who are uninsured or under insured and depend on the County of Los Angeles Department of Health Services.

There are a number of challenges facing the campus such as compliance with code mandated upgrades, a movement towards more outpatient based services, demographic shifts, and site utilization improvements.

The master plan includes analysis and assessment of the existing campus infrastructure and buildings, and future considerations and recommendations for the campus' land use. The existing campus consists of the Main Hospital tower which houses both inpatient and outpatient services. Besides the Main Hospital tower, the density of the campus is very low with small one and two-story support buildings spread across the vast area of the site. The campus has gone through significant and varied changes throughout the development history, and as a result, there is lack of coherence and unity. To resolve these issues, the master plan introduces a series of design guidelines that dictate building placement, form, and materiality.

Challenges

The main goal of the planning effort is to provide flexibility to allow the master plan to adapt to changes over time. There are a number of variables that affect each building component, and the order in which each is constructed. To respond to this need, alternate paths are provided which should guide the development of the campus over time. Given overall healthcare trends and the full impact of the Affordable Care Act, the first priority of the master plan is to move the outpatient services in the existing Hospital into a new Ambulatory Care Center. By locating inpatient and outpatient in dedicated buildings, this responds directly to the overarching goals of the master plan to optimize the quality of care and operational effectiveness.

The future considerations for the existing Hospital are key in developing a flexible, long-range plan for the campus. Four planning options are provided to respond to the budget and time restrictions for this facility. There are various levels of renovation proposed for the existing Hospital from code required minimal renovation to full renovation. Depending on the available funds, the level of disruption during renovation of the existing Hospital, and the ability to provide care to the community, a final option for a hospital replacement is considered.

There are a number of other buildings on the campus that are proposed which relate to the medical center and provide services to the community. These include a new Central Utility Plant, a consolidated Administration Building, rightsized and upgraded Support Buildings, and Long Term Care Residential. In addition, the potential to increase collaboration with the medical center and UCLA has been provided on the site for future development with UCLA Medical Office and Research facilities. There is an opportunity to provide collaboration with the Los Angeles County Department of Mental Health (DMH), geared towards community support and outpatient services. Locations for DMH-related functions are provided in this master plan.

As a result of the input received at the community meetings, there are zones identified in the master plan for more community related functions. These include a Child Care Center/Community Center, Senior Center/Fitness Center, and retail and outdoor opportunities.

Solution

The Olive View - UCLA Medical Center has a history which can be traced back to a more natural setting. Over the course of the development history of the campus, this natural setting and landscape has been lost. Paved areas now occupy an expansive area of the campus. One of the specific goals of the master plan is to create a more community based and patient centered campus. The master plan focuses on providing opportunities for more green space and places for patients, families, visitors, and members of the community to interact. Gardens, courtyards, and quads will help by not only providing places of respite and healing, but also fostering interaction and learning for UCLA. The various open spaces help organize and link the various buildings on the campus. Distinguished entry points are provided for each of the major facilities of the campus to provide clear organization and wayfinding. To help provide relief of the campus to the immediate surroundings, a green belt is introduced along the front edge. This green belt provides an area for community parks and public facilities such as wellness centers and retail shops.

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Sustainability

Brightworks

Fire Protection/Fire Life Safety

AON

Information Technology

Vantage

Materials and Waste Management

Lerch Bates

Signage and Wayfinding

SKA Design

Lighting

Horton Lees Brogden

Cost Estimating

Cumming

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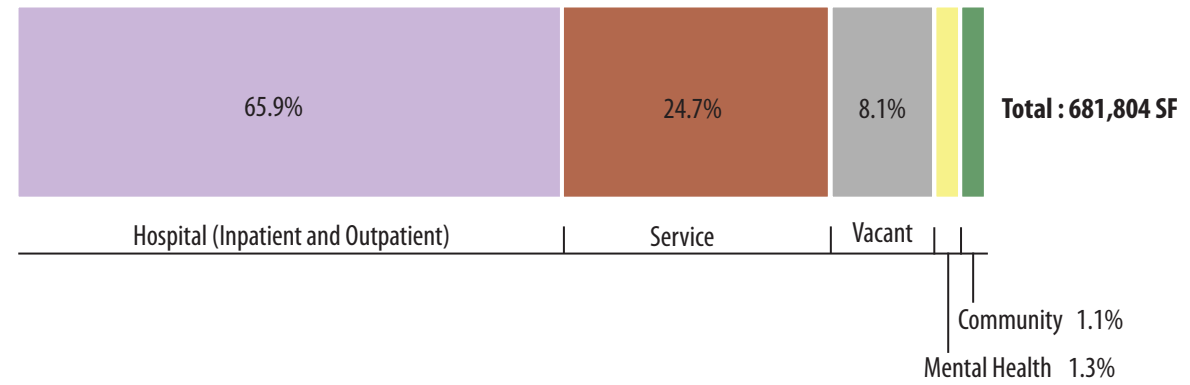
SITE PROGRAM SUMMARY

CRITERIA	EXISTING CONDITIONS	MASTER PLAN
Site Area	230 Acres	
Site Area (Buildable) in Acres	5,603,700 SF	
Building Area	804,200 SF	1,382,000 SF
Floor Area Ratio (FAR)	0.144	0.247
Maximum Building Height/Number of Stories	100 FT/6 Stories	100 FT/6 Stories
Parking		
Stalls in surface parking	2,672 *Count	1,200
Stalls in structure	0	2,000
BUILDING PROGRAM	EXISTING CONDITIONS	MASTER PLAN
Hospital	530,000 SF	530,000 SF ***
Ambulatory Care Center		276,000 SF
UCLA MOB		120,000 SF
Community	9,300 SF	20,000 SF
Administration	99,400 SF	96,000 SF
Retail		40,000 SF
Mental Health	11,000 SF	20,000 SF **
Long Term Care Residential		135,000 SF
Support Services Buildings	35,200 SF	68,000 SF
Central Utility Plant / Facilities / Shops	64,700 SF	77,000 SF
Vacant	65,600 SF	
SUBTOTAL	804,200 SF	1,382,000 SF

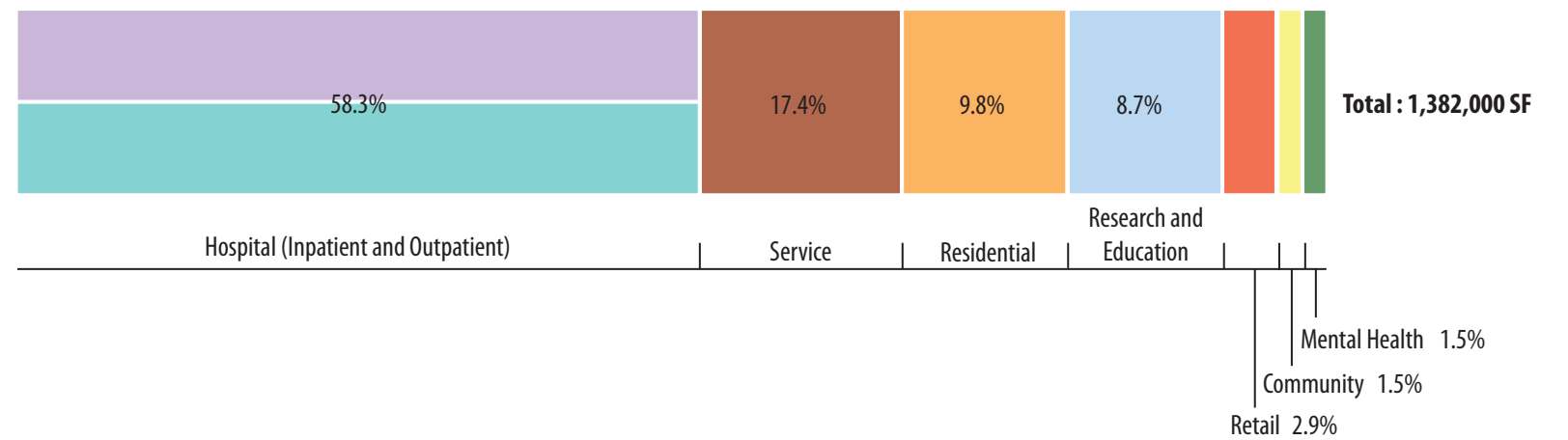
Notes: * Current demand: 2,251
 ** Anywhere from 15,000 to 40,000 SF
 *** This area is for total renovation. If the building is replaced, the area should be closer to 600,000 SF.

BUILDING USE


Existing Conditions



Olive View - UCLA Medical Center Master Plan






Olive View - UCLA Medical Center Campus Site Plan

(Original) SmithGroup JJR, 2015, (Updated) Perkins Eastman 2019



New Ambulatory Care Center and Existing Hospital Drop-off



Future Hospital Entry Plaza and Drop-off

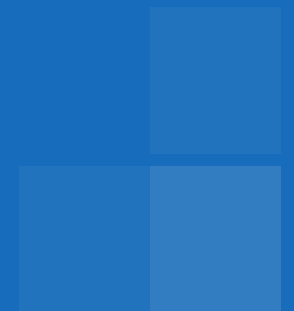


UCLA Research and Education Building



New Ambulatory Care Center Entry Plaza

01 INTRODUCTION



PROJECT DESCRIPTION



OLIVE VIEW - UCLA MEDICAL CENTER

The County of Los Angeles Chief Executive Office is preparing a Campus Plan to guide the reorganization and redevelopment of the Olive View-UCLA Medical Center located in the County's San Fernando Valley Cluster/Valley Care region. The County expects significant restructuring of the existing campus, consistent with the 2035 planning horizon, in order to meet its responsibilities to provide essential health care services. Development of a Campus Plan provides an opportunity for comprehensive strategic planning to meet the needs of the County and the surrounding communities.

The master plan includes analysis and assessment of the current campus, future considerations and recommendations, and proposals for the campus' land use. The master plan is based on existing development, social and economic conditions, surveys, public input, physical characteristics, and planning. The 230 acre Olive View-UCLA Medical Center campus is located near Sylmar, California. The address is 14445 Olive View Drive and is bounded by the Angeles National Forest on the North, Olive View Drive on the South, Wilson Canyon Channel on the East, and Bucher Avenue to the West.

1.01 Map of County of Los Angeles and Project Location

HISTORY

SYLMAR

The history of Olive View Medical Center is very much a part of the history of the community of Sylmar. The area of Sylmar was initially developed as an agricultural outgrowth of the City of San Fernando. The earliest recorded inhabitants of the San Fernando Valley were the Tongva Indians, also known as the Gabrielinos. In 1797, the Spaniards founded Mission San Fernando Rey de España which became a center of regional activity in the Valley. In 1874, the city of San Fernando was founded and two years later Southern Pacific Railroads completion connected the valley with the rest of the nation. The area developed into an agricultural center. Because of the rich soil, steady underground water supply, and ideal warm temperatures, the area around Sylmar produced some of the finest olives and olive oil.



1.02 Historical photo of Sylmar

Sylmar was officially named in 1913 at the same time in which the Los Angeles Aqueduct was completed. The accelerated urbanization and population growth following World War II brought changes to the character and development of the area. The olive oil industry along with other agricultural farms were eliminated. Many of the current residential homes and neighborhoods today were built during this time between 1940 and 1960. Two major freeways, the Foothill and Golden State Freeways, were also built creating more links to the region and attracting new businesses. The 1980s saw a growth in Sylmar's population and housing as well as a transition in demographics from Anglo to Latino population majority.

Due to an overcrowding at the County General Hospital, a tuberculosis sanitarium was established at the current Olive View site towards the end of the 1930s. Because of the dry and warm climate, it was ideal for treatment of respiratory problems. It was then converted into an acute care hospital in 1970. After the 1971 Sylmar Earthquake, the hospital was damaged beyond repair. The hospital was reopened in 1983 and is the current facility for the medical center.



1.03 Historical photo of Los Angeles Aqueduct

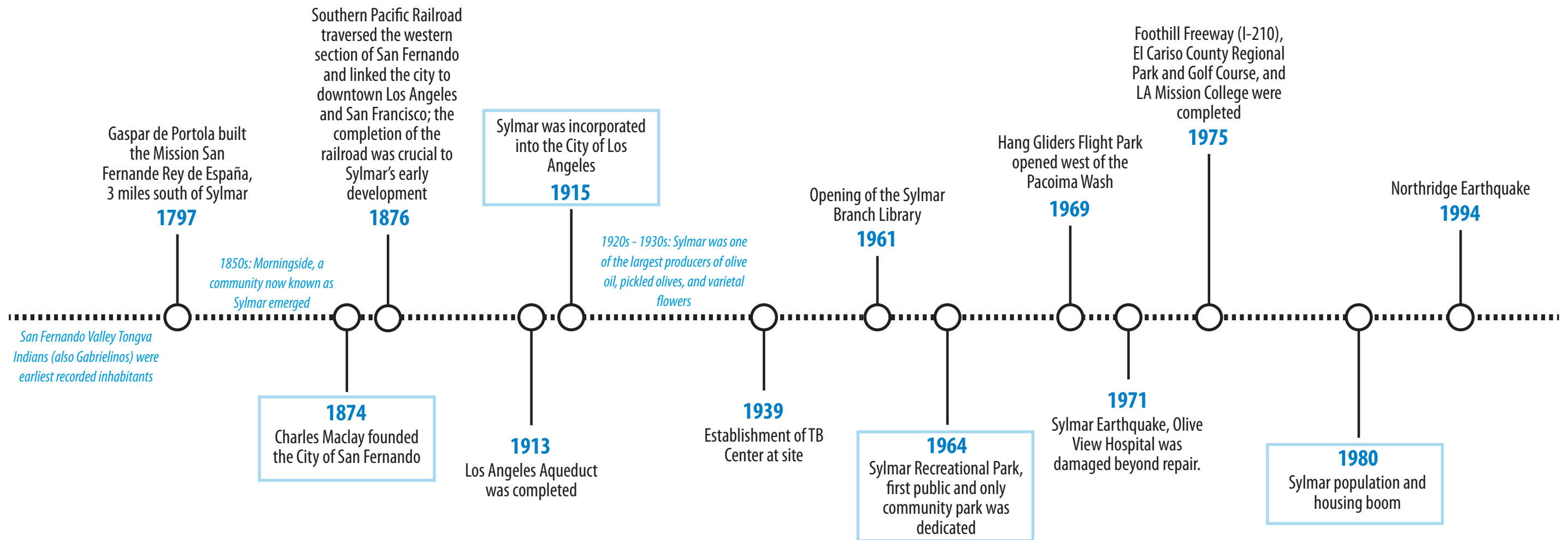
OLIVE VIEW - UCLA MEDICAL CENTER

Olive View incorporated UCLA into its name in 1992 becoming Olive View-UCLA Medical Center. The medical center serves much of the San Fernando Valley, Santa Clarita, and Antelope Valley providing a full-range of inpatient and outpatient services including Emergency Medicine, Internal Medicine, Neurology, Pediatrics, Obstetrics and Gynecology, Surgery, Radiology, and Psychiatry. The medical center is a teaching hospital, affiliated with the David Geffen School of Medicine at UCLA, with all physician faculty having academic appointments. In addition to the many residency programs in a variety of specialty areas, the medical center also operates an on-campus School of Nursing. In 1997, the medical center became a part of the ValleyCare system, which maintains responsibility for residents in the San Fernando and Santa Clarita Valleys.



1.04 Photo of Olive View-UCLA Medical Center

HISTORICAL TIMELINE

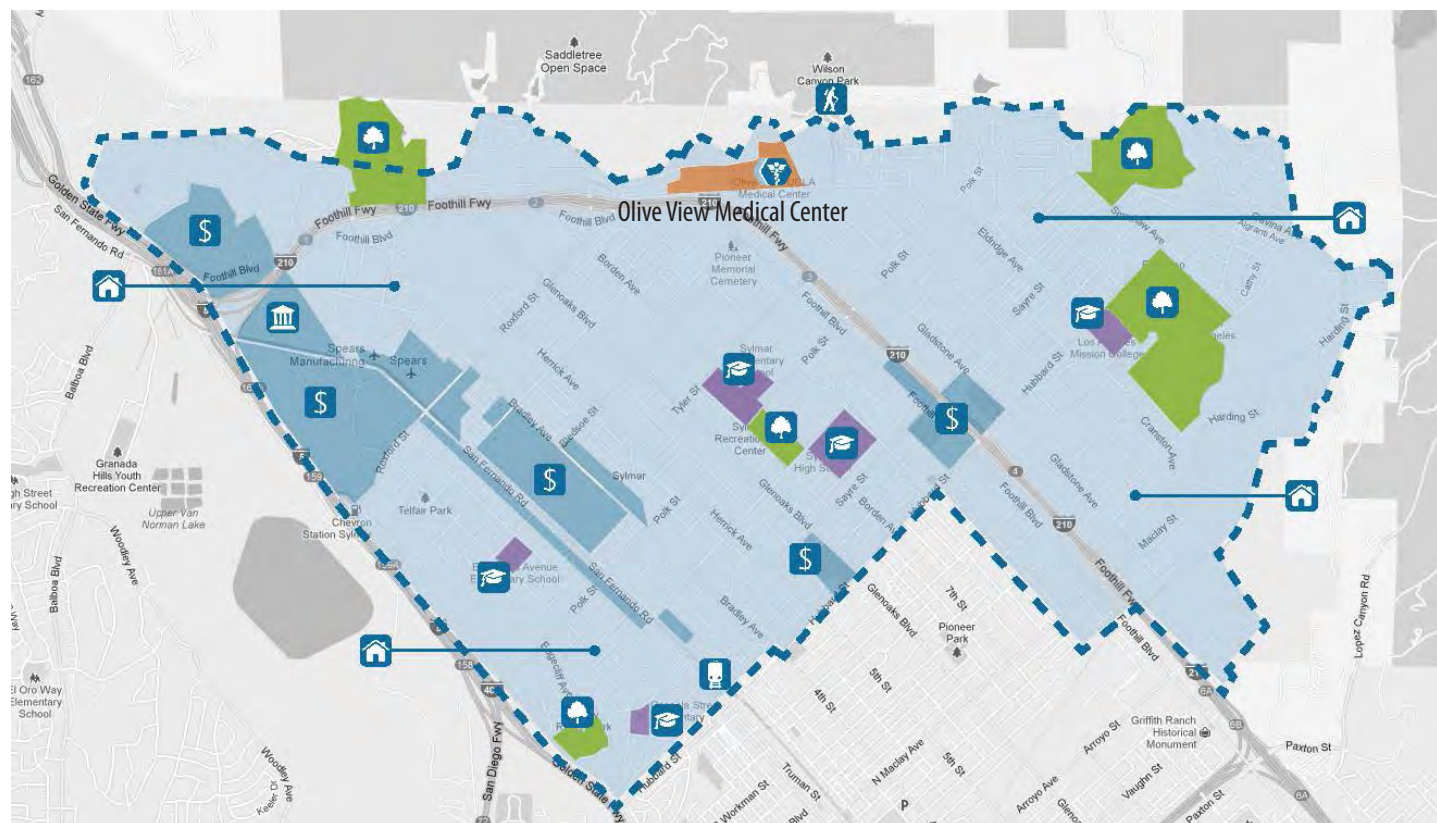


1.05 Timeline of Sylmar and City of Los Angeles

CONTEXT

SYLMAR

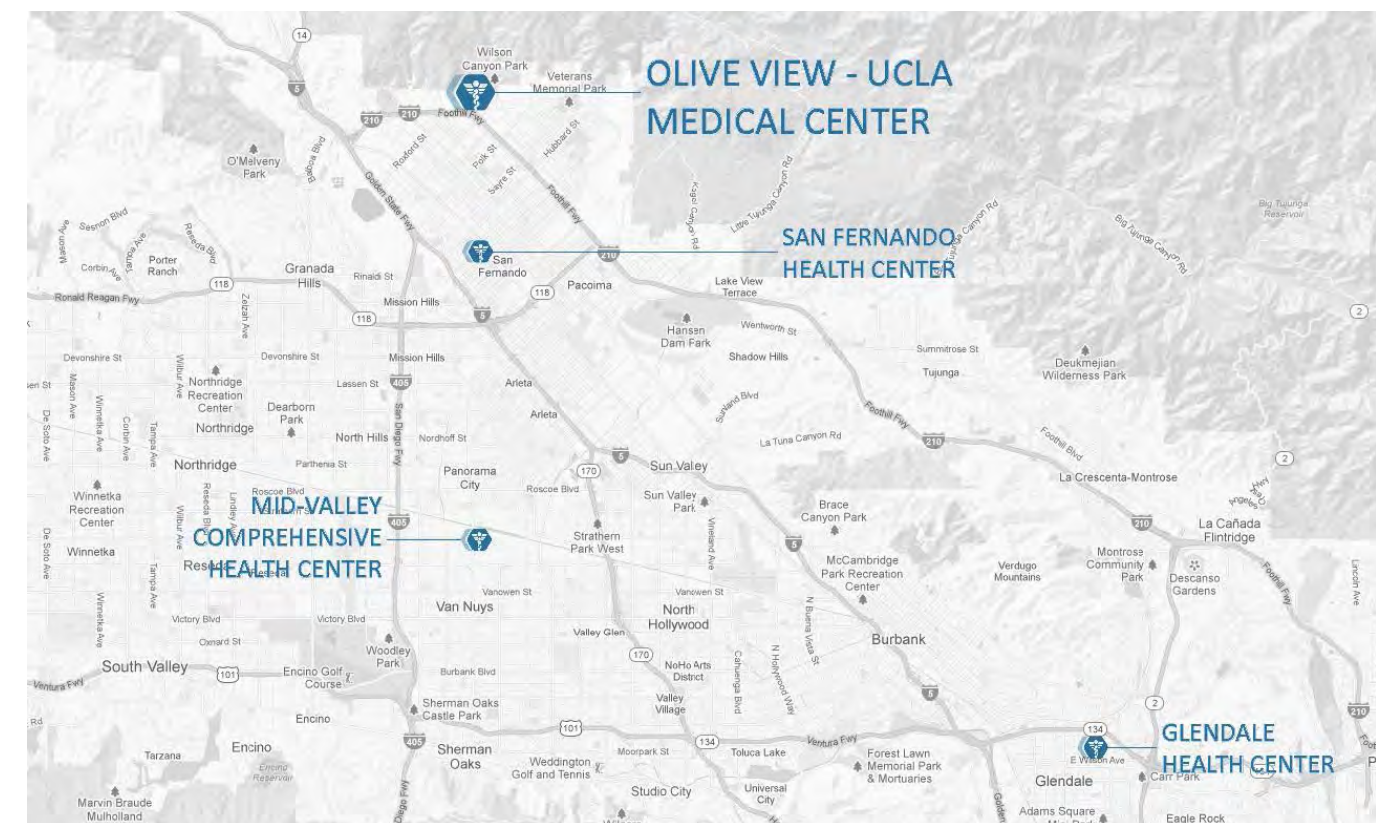
Family residences make up the majority, but distributed in the Sylmar area are also commercial and industrial centers, courthouses, public parks and schools. The Olive View-UCLA Medical Center lies on the northern edge of Sylmar.



1.06 Sylmar Community Plan Map

REGIONAL VALLEY CARE LOCATIONS

The Olive View - UCLA Medical Center serves as the hospital for the Valley Care wellness community. In the city of Sylmar, the campus contains a mix of inpatient, outpatient, teaching and support services that serve the entire Valley Care network. The map below identifies the Olive View campus and the other regional health centers that comprise Valley Care.



1.07 Map of Regional ValleyCare Locations

MASTER PLAN GOAL



1.08 Panoramic view of Olive View - UCLA Medical Center from San Gabriel Mountains

The County is **committed to** redeveloping the Olive View-UCLA Medical Center campus to provide an **integrated healthcare** delivery model **in the County's San Fernando Valley** Cluster/Valley Care area.

MASTER PLAN OBJECTIVES

Adopt a Campus Plan that is compatible with the inherent site conditions, and provides for **development opportunities** that are consistent with the goals and policies of the County's General Plan.

A fundamental reorganization, expansion, and integration of outpatient services with the specific goals of being more **community based** and **patient centered**.

Locate **inpatient and outpatient** services into **dedicated buildings** to optimize the quality of care and operational effectiveness, while reducing administrative, operational and maintenance costs.

Ensure that operative costs are reduced in accordance with the prescriptions of the federal injunction.

Comply with the seismic safety regulations developed by the Office of Statewide Health Planning and Development.

Identify feasible opportunities to exceed state energy requirements and pursue green building **sustainable design** to the maximum extent possible.

Develop resources that are consistent with the needs of the **2035 planning horizon**.

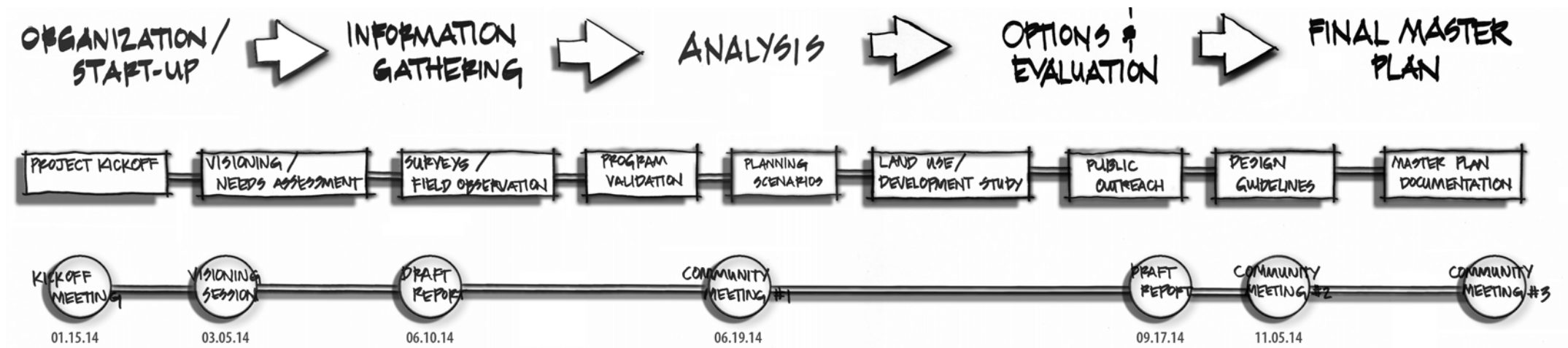
PROCESS

SmithGroupJJR and the consultant team developed a parallel process for working on the Master Plan. The team developed focus groups for Design, Planning and Technical issues. This allowed each consultant to focus on their area of expertise while staying connected with the greater team. Each focus group met with relevant campus user groups to learn about the current state of facilities and operations on campus. This information was used to develop a baseline from which to begin the master plan. In subsequent meetings, the focus groups worked with user teams to identify future possibilities and goals for the campus including re-use of existing facilities, construction of new facilities, improved operational processes and campus design standards.

Using this parallel process as a basis, the master plan was divided into separate phases. The first phase involved an Initial Start-Up which included such activities as a Project Kickoff and Executive Visioning Session with the design team and members of the County of Los Angeles. Once the vision and needs of the master plan were understood, this then led to the next phase of Data Gathering. During this phase, the design team conducted site visits to the campus and hospital facilities, held meetings with Facilities and Hospital staff, and collected documents and drawings of the existing campus. The third phase involved an analysis of the data collected including validation of the campus and hospital departments, and development and understanding of the site constraints and campus facilities. Based on the existing conditions assessment and analysis, planning scenarios and land use studies were developed to organize possible options for the master plan. This fourth phase subsequently led to the final phase of the master plan, the proposed vision for the medical center campus.

COMMUNITY INVOLVEMENT

An integral part of the master plan process was engaging with members of the community. Community meetings were held at key stages of the master plan effort which allowed the team to appropriately respond to the needs of the medical center and surrounding community. At each meeting, presentations were given for the proposed designs of the campus in addition to focused group and question and answer sessions to engage with individual members of the community.



1.09 Diagram showing Master Plan Process

Organization / Start-Up

- Project Kick-off with entire Master Plan team
- Executive Visioning Session with Key Stakeholders of the County of Los Angeles
- Establish goals and objectives

Information Gathering

- Meet with key facility personnel and medical center staff
- Review zoning requirements, parking, traffic, wayfinding, and other items related to urban planning
- Interview key stakeholders to determine interest in future campus development and programs including UCLA, Department of Mental Health, and Department of Health Services.
- Conduct on-site investigations of the existing Hospital and support buildings to determine the current state of the campus

Analysis

- Identify key infrastructure needs and improvements
- Based on current state of campus, identify priorities for short and long term campus development
- Based on current utilization of the Hospital departments, identify planning strategies for implementing master plan

Options and Evaluation

- Using a variety of organizational and planning strategies informed by the data gathered and assessed for the existing facility, provide a series of site planning and design options for evaluation by the community and key stakeholders within the County

Final Master Plan

- Establish zones for land use development of the campus
- Address and make proposals for campus circulation, public transit, parking, site utility distribution, materials management, fire and life safety, landscape design, and sustainability
- Prepare a preliminary phasing plan which provides a road map for the future development of the campus
- Create design guidelines to guide proper implementation of the master plan
- Establish standards for building form, shape, materiality, and color, landscaping and open space, wayfinding and signage, and lighting

DESIGN STRATEGY

The Olive View – UCLA Medical Center has a rich history and can be traced back to a more natural setting and a scale that blended with a spectacular backdrop of the Angeles National Forest. The vision for the Master Plan is to **re-capture the natural setting of the campus**.

Unique to this campus is the expansive area which has over time been consumed by surface parking lots to accommodate the growing population that it serves. The result has placed more emphasis on paved areas rather than landscaped areas. The natural setting has been lost and the challenge of this master plan effort is to carefully plan opportunities to incorporate **more green spaces and places for patients, families, staff and the community**.

The design philosophy is rooted in understanding culture and place. The culture at Olive View is dedicated to serving the community and the partnership with UCLA ensures the best care is at the forefront. As a teaching hospital there is a commitment to an open exchange of learning from bedside to classroom which ultimately leads to a collaborative environment of providing excellent care. Providing opportunities for **casual interaction** much like collegial campuses do with **quads, courtyards and gardens** is an overarching goal to reinforce the culture.

The master plan provides an unparalleled opportunity because of the expansive site that nestles at the base of a natural resource along the northern edge. The remainder of the site is surrounded by major thoroughfares and residential communities. A major goal in planning and designing healthcare environments is to **reduce the inherent stress** found in medical centers. This site offers that rare opportunity to provide a transition zone to de-compress as one approaches the facilities because of the expansive land. Introducing a natural edge to the southern edge of the campus will mitigate the transition between arrival and destination. This new edge will serve as an **inviting message to the community** as well as provide a buffer to the built environment. There is a great opportunity to introduce community parks and or public facilities such as health and wellness centers.

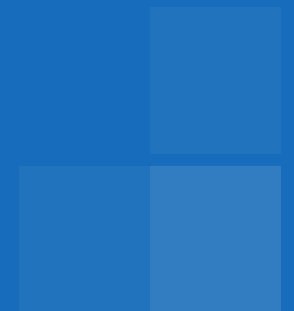
The prominent existing Inpatient and Outpatient tower dominates the campus. This valuable resource will play an important part in the development of the master plan. Although this structure will remain for many years, the master plan investigates opportunities to transform the structure to enhance the patient experience and overall image to the community. Ways to bring more natural light into the first two floors will be explored by strategically removing building mass to create courtyards. Also, ways to enhance the energy performance of the tower that may include re-cladding the exterior envelope will be investigated. The goal will be to preserve the structure but transform it both in appearance as well as program efficiency and use.

A successful master plan needs to have a long view but also an initial phase that begins to re-shape and begin the transformation of place making. One of the key ingredients to the initial phase will include a landscaping strategy that sets the stage for re-claiming the spirit of the place. The master plan seeks to overlay a **series of connected outdoor spaces** and environments that will serve as an armature to the various functions and places that are foreseen for a campus setting.



1.10 Examples of green spaces, connection between indoors and outdoors, informal gathering spaces, community activities and engagement

02 OUTREACH

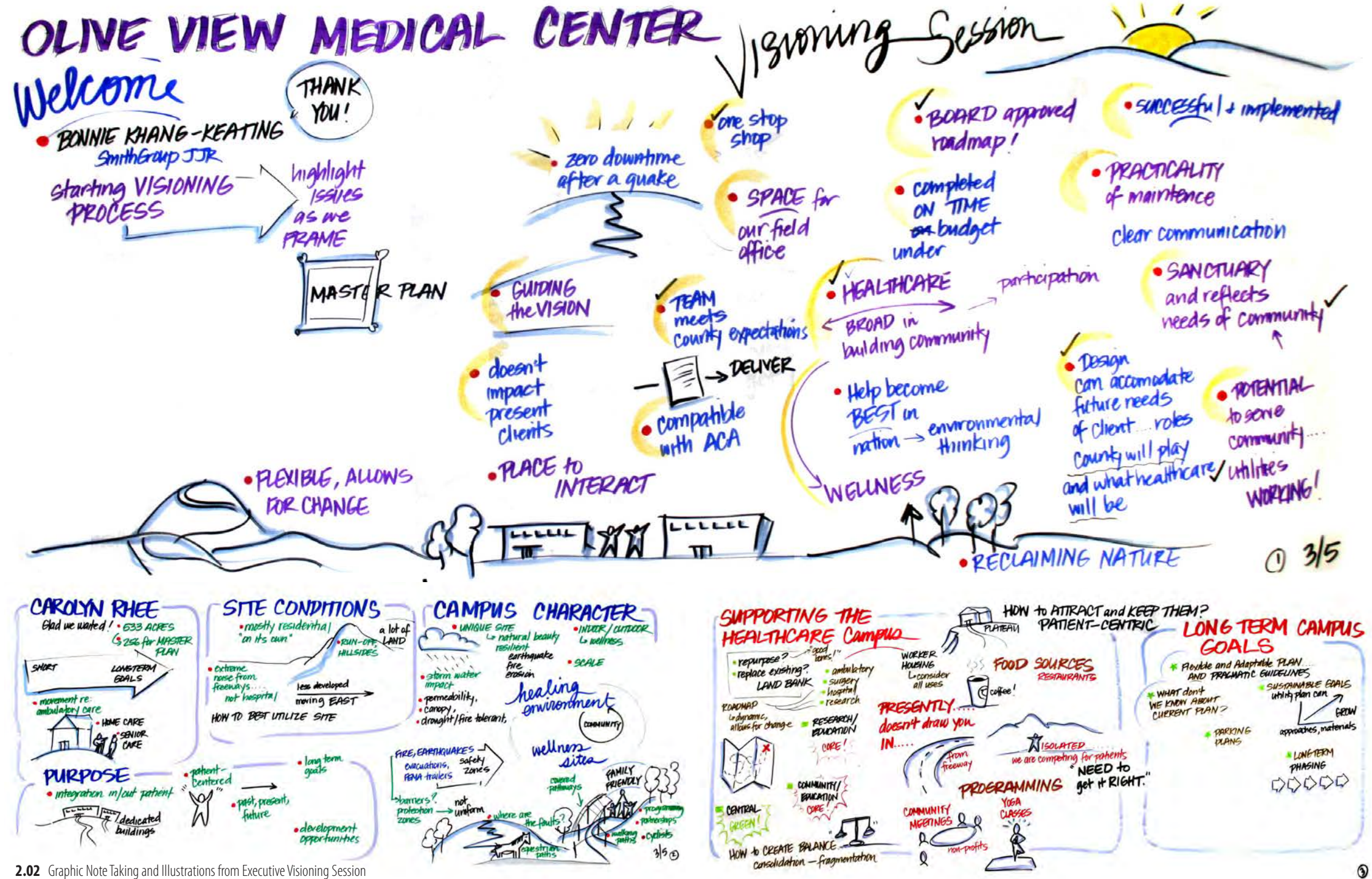


EXECUTIVE VISIONING SESSION

At the onset of the project, a visioning session was held to help establish the goals and objectives for the master plan. The key stakeholders that attended the visioning session included members of the Chief Executive Office, Department of Public Works, Department of Health Services, and representatives from the Board of Supervisors. The key topics that were discussed included a background on the campus, defining the character for the campus, supporting the healthcare campus, and long term goals for the campus.



2.01 Photos from Executive Visioning Session



2.02 Graphic Note Taking and Illustrations from Executive Visioning Session

Olive View UCLA Medical Center

EXISTING

Zoning **General Plan Land Use**

Site Context / Community **Healthcare Networks**

Existing Campus Use plan **Existing Campus Plan - Site Constraints**

Existing Campus Plan - Circulation

OLIVE VIEW - UCLA MEDICAL CENTER SMITHGROUPJJR

EXISTING Site Photos

VISION

Community Based Design **Sustainable Design**

2030 Planning Horizon **Consolidate Inpatient & Outpatient**

Developmental Opportunity

OLIVE VIEW - UCLA MEDICAL CENTER SMITHGROUPJJR

PROCESS

Vision / Work Scope **Program / Needs Assessments** **Campus Planning Scenarios**

Campus Concept

Family Plaza **Shared Community Plaza**

Nature's Edge

OLIVE VIEW - UCLA MEDICAL CENTER SMITHGROUPJJR

DESIGN

Phasing **Design Guidelines**

Character / Scale

Campus Vision

OLIVE VIEW - UCLA MEDICAL CENTER SMITHGROUPJJR

2.03 Illustration Boards used for the Project Kick-off Meeting and Visioning Session

COMMUNITY MEETINGS

A successful master plan is one that responds to the vision and goals of the community. A major focus of the master plan effort was to learn from, reflect on, and respond to the needs of members of the community. At key intervals during the master plan effort, meetings were held at the campus to get feedback and comments from the various members of the community. These meetings were held at the Olive View-UCLA Hospital Auditorium. Advanced notice was given to the various members of the community through various types of outreach media.

COMMUNITY MEETING 01

The first community meeting was held at the Olive View Hospital Auditorium on June 5th, 2014. A presentation was given by SmithGroupJJR including a description of the history of the campus, existing site conditions, the master plans goals and objectives, planning strategies, and campus design strategies. Following the presentation, a question and answer session was held, and then community members broke into small groups to discuss specific topics with members of the design team.

COMMUNITY MEETING 02

The second community meeting was held at the Olive View Hospital Auditorium on November 5th, 2014. After an initial introduction on the results and findings of the first community meeting and master plan effort to date, SmithgroupJJR presented the planning scenarios for the medical center and two preliminary campus master plan design schemes. A question and answer session was held following the presentation as community members were allowed to participate and share their thoughts. The design team gathered and evaluated all the comments shared at the meeting which helped to shape the development of the master plan.

COMMUNITY MEETING 03

A final community meeting was held at the Olive View Hospital Auditorium on May 21st, 2015 to present the selected campus master plan design. After an introduction and summary of the planning and design effort, SmithGroupJJR presented the selected campus master plan design "Nature's Edge." Following the presentation, opportunities were provided for community participants to share their comments and ask questions. The comments and considerations expressed by members of the community were gathered by the design team to help inform the selected master plan design.



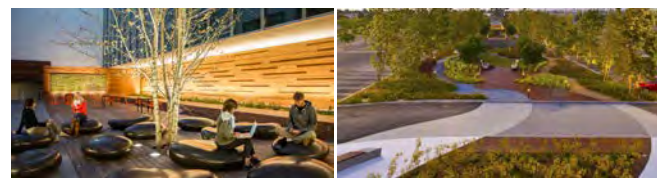
2.04 Photos from Second Community Meeting

OLIVE VIEW UCLA Medical Center Nature's Edge



SMITHGROUPJJR

OLIVE VIEW UCLA Medical Center Nature's Edge



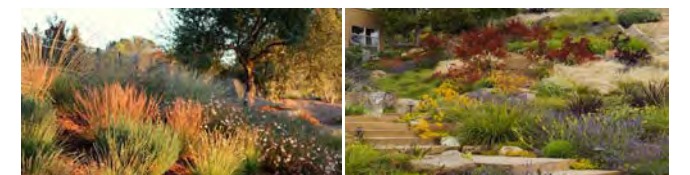
SMITHGROUPJJR

OLIVE VIEW UCLA Medical Center Boulevard



SMITHGROUPJJR

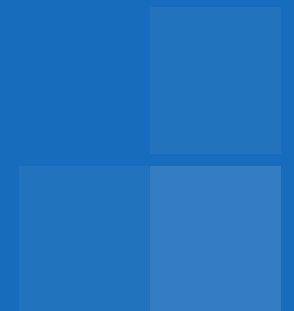
OLIVE VIEW UCLA Medical Center Boulevard

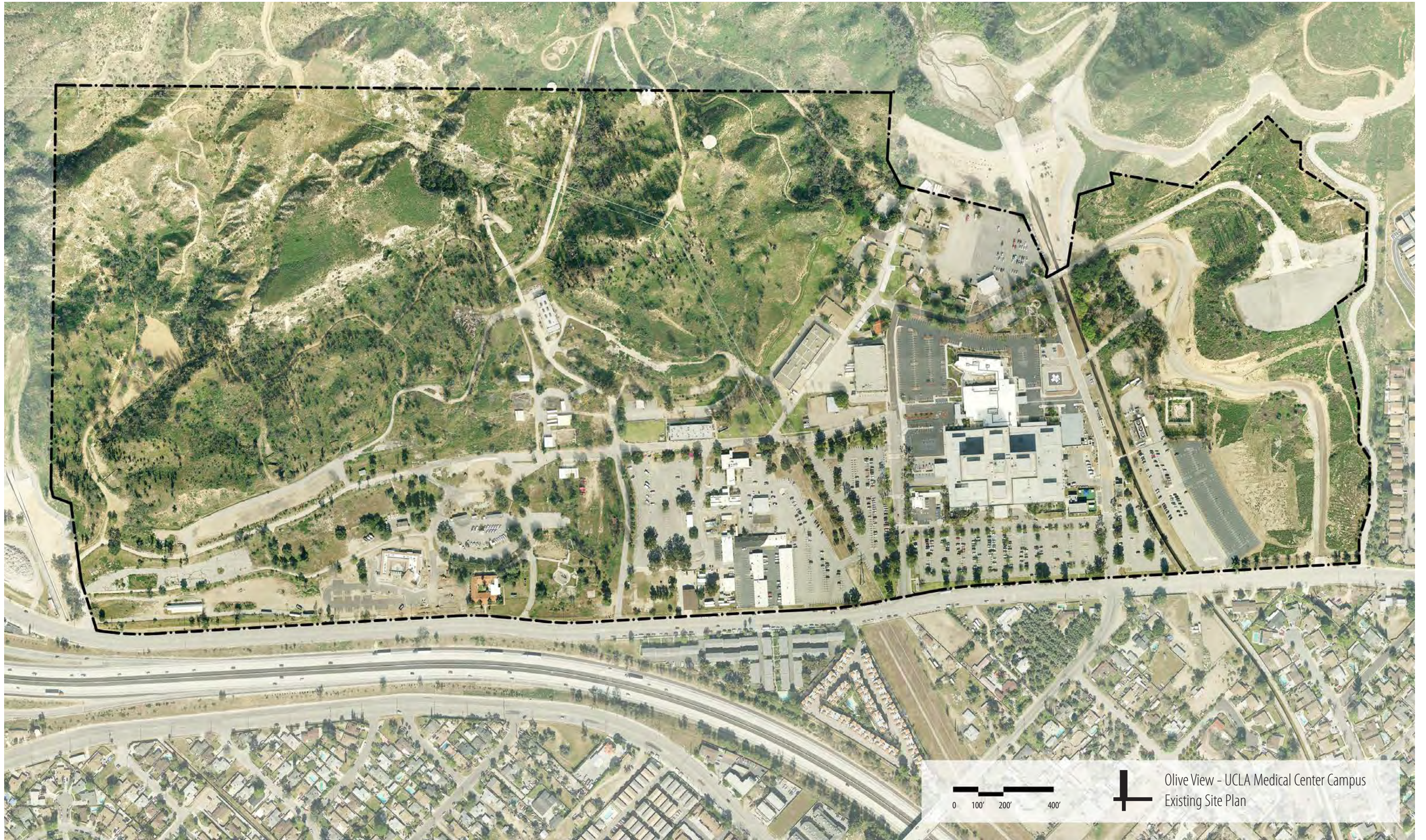


SMITHGROUPJJR

2.05 Illustration Boards used for the Second Community Meeting

03 BACKGROUND





0 100' 200' 400'



Olive View - UCLA Medical Center Campus
Existing Site Plan

EXISTING CAMPUS OVERVIEW

The medical center is surrounded by forests and vegetation. Unique to the campus, horse trails and hiking trails run along the northern edge. All of the parking areas are surface lots. There are designated staff and patient parking areas, but they are not controlled. One of the major complaints of the patients and staffs is the lack of available parking spaces and the large distance to the buildings in which they work.

The existing campus consists of the main hospital tower with one and two story support buildings in the surrounding areas. There are also a number of single story wood structured trailers some of which date back to the 1920s. Some of the original buildings such as the old administration building are vacant and not currently utilized.

The dominant presence at the medical center is the six-story Hospital. Completed in 1987, the Hospital tower is clad with 1/4" tempered vision glass with reflective "solar cool bronze" on all exterior facades from the third floor to the sixth floor. The first and second floor consists of ribbed concrete on all sides. The Central Utility Plant is attached to the Hospital building and serves the aforementioned Hospital and surrounding support buildings. The Emergency Services Building and Isolation Unit are the latest additions to the medical center. The Imaging Center is also attached to the Hospital and serves the radiology department. The support buildings such as the Supply Chain Warehouse, Education Building, and Finance Building are relatively close to the Hospital.

SUMMARY OF SITE ANALYSIS

The following is a summary of the major issues observed during the site analysis effort:

- **There is no comprehensive plan** at the campus which dictates building placement or design aesthetics. As a result, the campus is characterized by buildings with different colors, finishes, and styles.
- **The density of the campus is very low.** The site is mostly comprised of one and two story buildings that are spread across the majority of the site.
- Surface parking is the dominate infrastructure component on the site. There are over a dozen different parking lots scattered throughout the site, and as a result, **wayfinding is very difficult for visitors.**
- Many of the campus roads are geared towards vehicular use, with very **little accomodations made for pedestrians.**
- In terms of landscaping, **there is no coherent palette of trees and planting for the campus.** Landscaping is sparse due in large part to the various surface parking lots. The lack of landscaping and multitude of surface parking creates a dramatic heat island effect increasing the temperature of the campus in the summer months.

Natural Disasters

Olive View Medical Center has suffered a number of natural disasters. The 6.6 magnitude San Fernando (Sylmar) Earthquake in February 1971 significantly damaged the Medical Treatment and Care Building and many other buildings on the campus. In 2008, the campus was threated by the Sayre Fire which damaged a number of smaller buildings. Because of these events, there have been a number of structural upgrades and building repairs to the campus buildings.

Site Constraints

Although the medical center is spread out on a vast 230 acres of land, the site contains several constraints. The 150 feet wide Southern California Edison utility easement dissects the site in two. No buildings are allowed in this easement. The Wilson Canyon Channel at the east end of the project area also divides the site.

Jurisdictions

As the campus is Los Angeles County owned-property, the security of the entire site including the Hospital is under the jurisdiction of the Los Angeles County Sheriffs Department.

Currently, the City of Los Angeles Fire Department has jurisdiction for ground fires at the medical center, and the Los Angeles County Fire Department has jurisdiction for brush fires at the north part of the site. Although there is a County Fire Station on-site, the firefighting for the medical center falls under the City of Los Angeles Fire Department's responsibility.

Utilities

The utilities that serve the campus have seen a multitude of changes and modifications throughout the development history of the campus. Because of the number of changes and the history of development at the campus, a comprehensive utility routing plan does not exist. The major utilities lines are concentrated at the area surrounding the Hospital, Central Utility Plant, and Emergency Services Building. There are a number of other utility lines running throughout the campus which are fed directly from Olive View Drive as opposed to the Hospital which is fed from the Central Utility Plant.

Stormwater Treatment

The stromwater runoff from areas upstream of the campus is being captured and conveyed through the Wilson Canyon Debris Basin located at the northeast corner of the site and Mansfield Canyon Channel located at the southwest corner of the site. The majority of stormwater runoff sheetflows toward a series of on-site catch basins around the site and discharges to the City of Los Angeles storm drain line at Olive View Drive.

THE SITE AND NEARBY AMENITIES

Situated in the neighborhood of Sylmar, Olive View is bound by the Angeles National Forest on the North, a neighborhood of single family houses on the East, the sprawled mostly residential and small commercial-industrial townscape of Sylmar on the South where the Interstate 210 cuts through, and on the West by portions of the mountains and some new residential development flanking the merging point between Interstate 210 and Interstate 5. The Olive View-UCLA Medical Center is the largest public facility in Sylmar.

Part of the greater San Fernando Valley within the city of Los Angeles, Sylmar is a relatively established semi-rural suburban community with a variety of services and amenities. Recent development including those in the commercial and industrial districts are slow but picking up momentum again since growing rapidly in the 1980's and tapering off in the 1990's. The construction of the 1993 Sylmar/San Fernando Metrolink Station revived development interest in the city.

There is a general lack of shared amenities between the neighborhood of Sylmar and the existing medical center facilities. Since Sylmar has very limited commercial accommodations and is too far to walk to the existing hospital, the general feedback from the medical facility users showed little basic service dependence on Sylmar as a community.

Several attributes to this lack of community relationship between the rest of Sylmar and the existing medical facility is also evident in the site's isolation from its immediate neighbors. A potential connection for development between the Sylmar community and the OVMC campus is desirable.



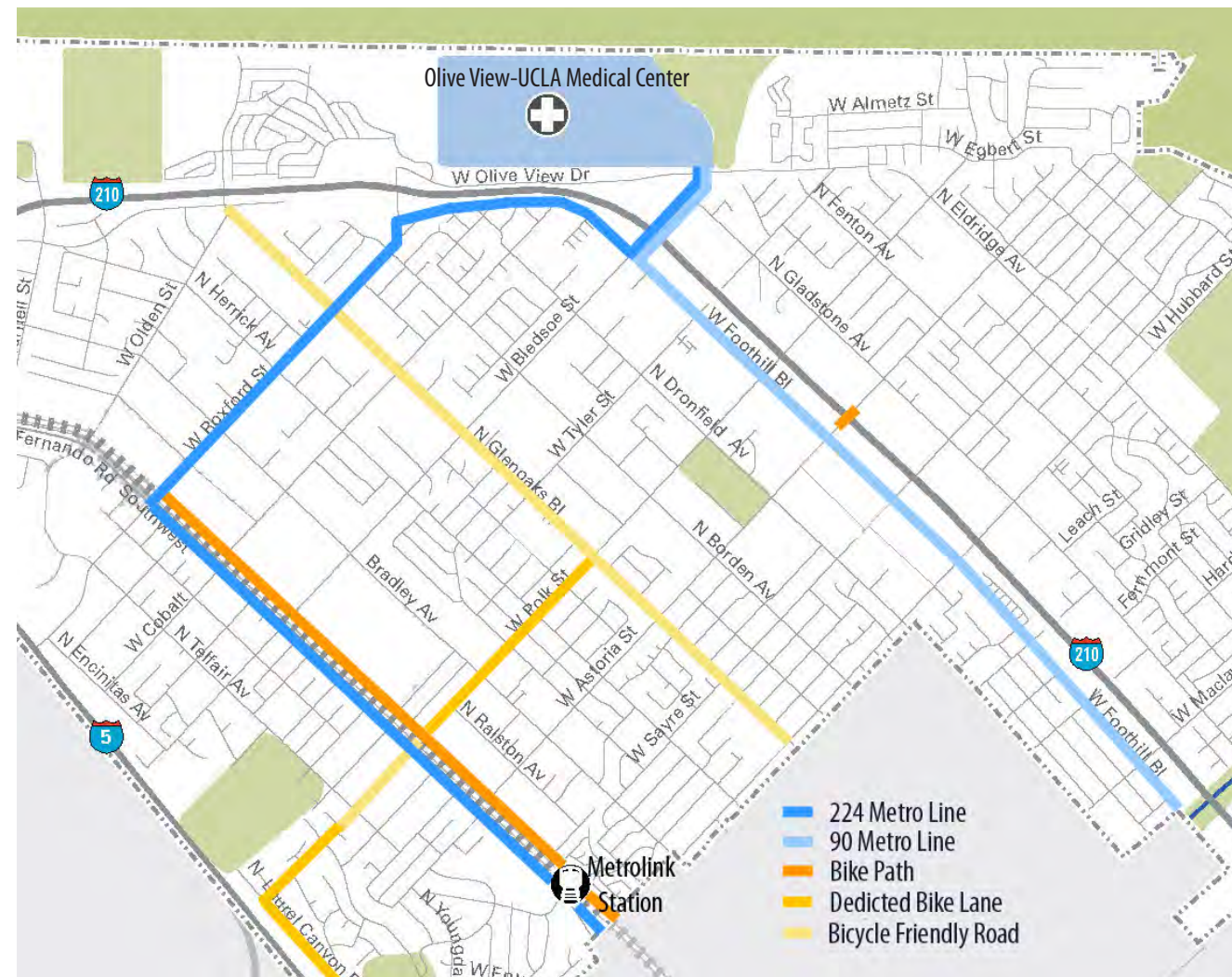
3.01 Amenities Map and Walkable Distance

TRANSIT

The community of Sylmar was reconnected to the rest of Los Angeles when the Sylmar/San Fernando Metrolink Station was constructed in 1993. This rail transit system linked Sylmar to Lancaster and downtown Los Angeles and provided connections to Metro, LADOT, and Santa Clarita Transit bus systems. A number of these transit lines also serve the existing medical center.

Several bus transits serve Olive View:

- 90 - This is a downtown route that serves Downtown LA, Chinatown, Lakeview Terrace, and Sylmar.
- 224 - This is a San Fernando Valley route that serves Sylmar, San Fernando, North Hollywood, and Studio City.



3.02 Sylmar Community Plan Transit Map

LAND USE, PARKS, AND OPEN SPACE

The majority of the land that surrounds Olive View is open space. However, Sylmar's land use is predominantly residential single family at 57% of the land use with occasional multi-family housing at 7% based on the City of Los Angeles Planning data for Land Use Distribution in Sylmar.

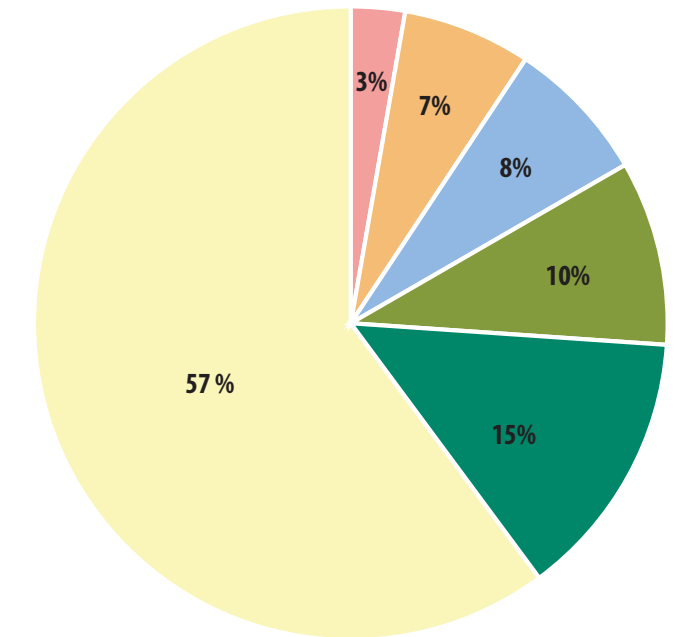
Although suburban sprawl is the main development pattern of Sylmar, the adjacent open space at Olive View adds to the otherwise only 10% of allocated Open Space to the community. Industrial use zone is at 8%. Commercial use zone is at 3%. Public Facilities is at 15%. Olive View site comprises the majority of the community service use zone within Sylmar.

Existing land use within the site is mostly for the medical facility building zones and the central plant areas. Support facilities mostly along the northern edge of the site are comprised of single or low rise bungalows and warehouse/storage type buildings.

North of the site is the southwestern edge of the greater San Gabriel Mountains that form part of the Angeles National Forest. Adjacent open space includes Stetson Ranch on the West and the Saddletree Open Space at north. Immediately East of the site is the access road to Wilson Canyon Park which borders the site on the Northeast.

Sylmar is an equestrian friendly community. Equestrian trails form the nearby amenities within the Stetson Ranch and several existing trails that meander through the northern portion of the site into Wilson Canyon Park. Recreational amenities also include hiking and biking trails within the northern edge of the site and within the surrounding parks.

The nearby community of Sylmar is served by several public parks including El Cariso Regional Park and Veterans Memorial Park, Carey Ranch Park, Sylmar Community Park and Recreation Center, and Telfair Park. A golf course is part of the El Cariso Regional Park approximately 8 miles from the site. Sylmar claims to be the world capital of hang gliding and pilots have been flying hang gliders in the nearby mountains since 1969 at the Flight Park northeast of El Cariso Park.



Land Use Distribution

- Single Family Residential 57%
- Public Facilities 15%
- Open Space 10%
- Industrial 8%
- Multi-Family Residential 7%
- Commercial 3%

3.03 Sylmar Land Use Distribution Chart, City of Los Angeles, Department of City Planning, 2010

LAND USE AND ZONING

The Olive View-UCLA Medical Center is zoned PF-1 Public Facilities Zone per the Sylmar Community Plan, part of the City of Los Angeles General Plan. There are no restrictions to the height of buildings or setbacks. Land use on the property is currently limited to hospital uses, open space, or minimum density housing. The area around the medical center consists of primarily detached one and two family residential dwelling units with some multifamily dwellings. The Wilson Canyon Debris Basin and Channel which runs through the site is classified as OS-1 Open Space Zone.

Residential

- Minimum
- Very Low I
- Very Low II
- Low
- Low Medium I
- Low Medium II
- Medium

Commercial

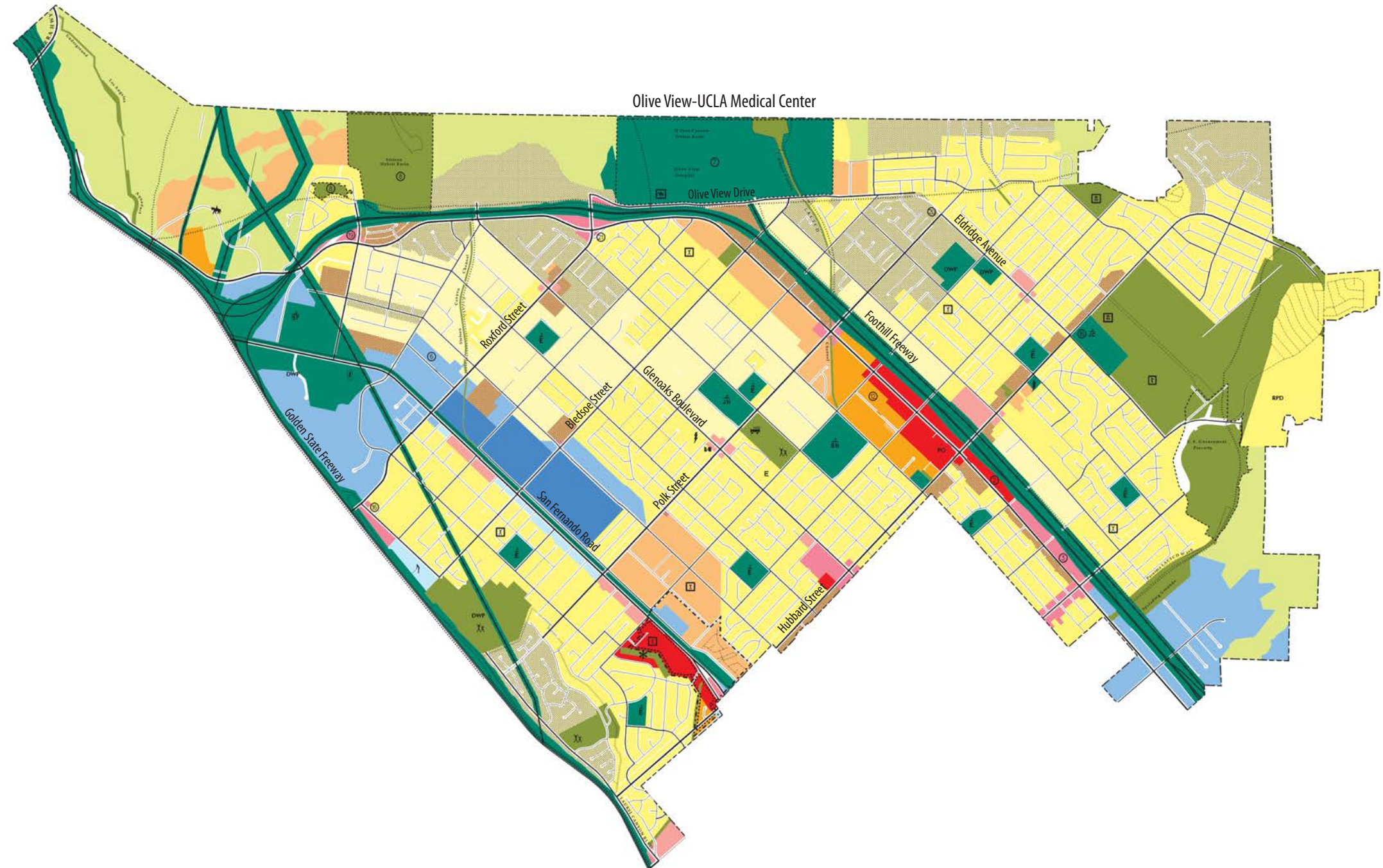
- Neighborhood Commercial
- Limited Commercial
- Highway Oriented
- Community Commercial

Industrial

- Commercial Manufacturing
- Limited
- Light

Open Space / Public Facilities

- Open Space
- Public Facilities



3.04 Sylmar Community Plan Land Use Map, City of Los Angeles, Department of City Planning, 2010

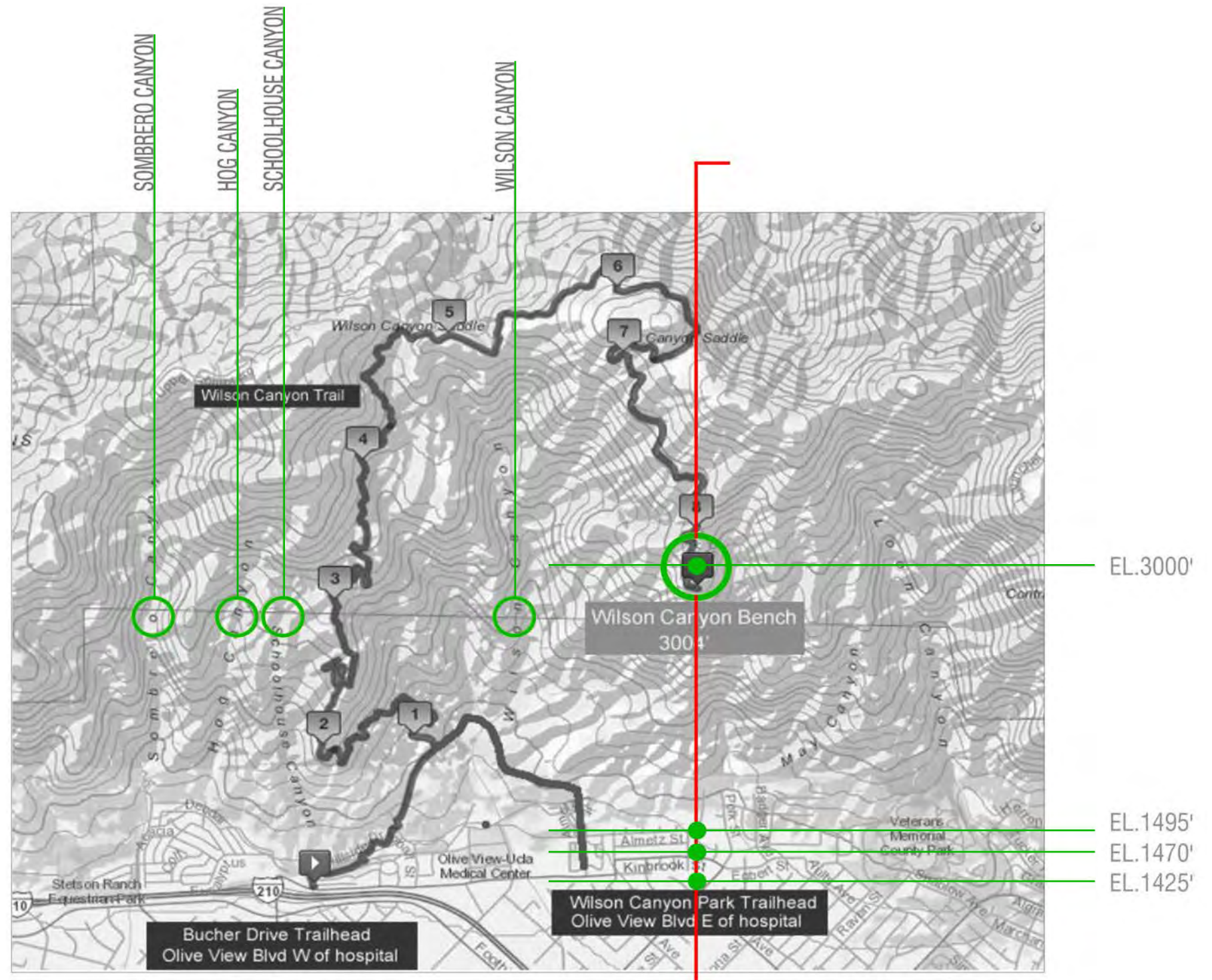
LANDFORM AND TOPOGRAPHY

The San Gabriel Mountains create a dramatic enclosure and an end to vistas from the campus toward that direction from anywhere within the site. Olive View Drive along the southern edge connects the campus to the rest of the adjacent neighborhood.

General soil character is alluvial. This is very good for planting due to high nutrient contents. It is an ideal farming soil but has structural challenges for building foundation systems and hardscape surfacing. The site is a hillside and more than half sits on the foothill of the southwestern portion of the San Gabriel Mountains.

The topography of the campus falls naturally from north to south in a relatively even slope except where developments have occurred. According to the 2012 Topographic Survey, the land elevation rises about 80' high from the midpoint of Olive View Drive and West Way along a 1293' of horizontal distance at West Way toward the mid-northern portion of the hillside. Similar elevation change is indicated by the topographic survey at 1781' of horizontal distance at Kennedy Road next to the existing hospital building toward the hills.

The grade change on the site's eastern portion is immediate along Olive View Drive and the graded pad of the parking area south of the existing hospital. The road and the surrounding paving then gently rise toward the North. The western portion of the site has a more prominent grade change from Olive View to the hillside. The highest elevated graded area of the site, however, is at the northeast portion at about 105' above Olive View Drive at the site's southeast portion of the thoroughfare.



3.05 Canyons and Topography Map

SCALE AND WALKABILITY

Olive View's location at the north end of the Sylmar community provides a quiet campus, but lacks access to basic services such as food, markets, community center, banks, and other commercial/retail services.

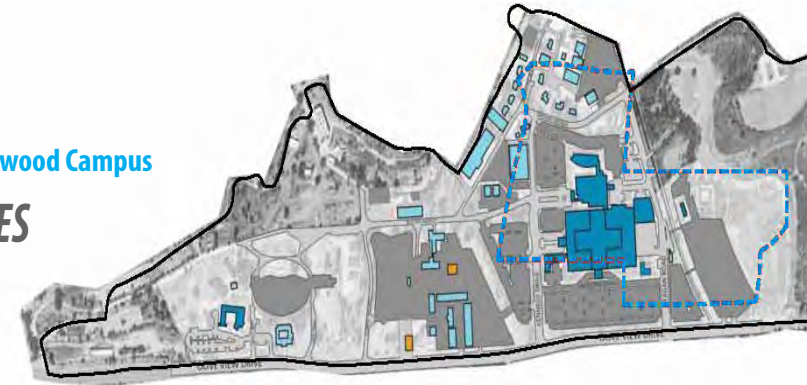
The nearest restaurant or café from the existing hospital (besides the hospital café) is approximately a 2 mile walk from the hospital.

The Olive View site is close to one mile wide East to West and roughly two-fifths of a mile on a straight line vertically North to South. If an average adult can walk about 3.1 miles per hour, the site can be traversed horizontally from the existing Hospital southeast parking to the Northwest end of Hillside Drive in approximately 20 to 25 minutes.

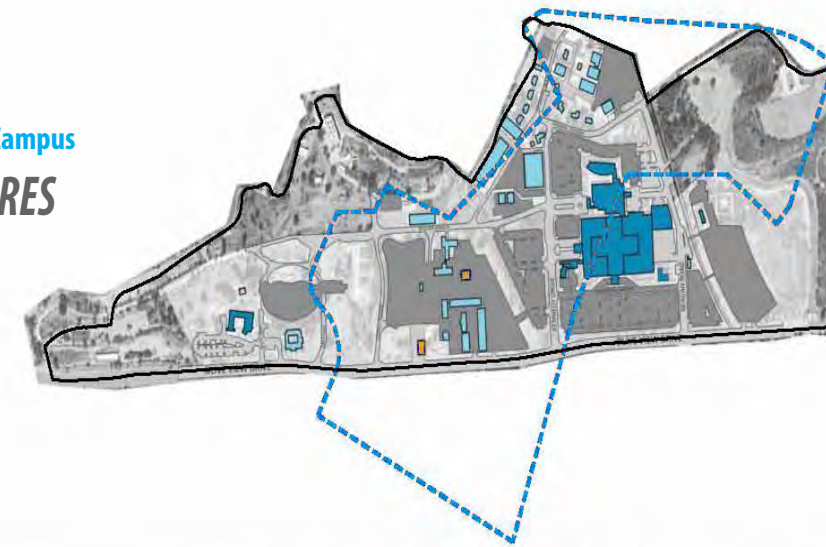
In comparison to the UCLA Westwood Medical Campus, the site is more than twice as big. USC in Los Angeles Campus is roughly less than half of the site. It is roughly one-third the length of the DC Mall.

OLIVE VIEW - UCLA MEDICAL CENTER CAMPUS
230 ACRES

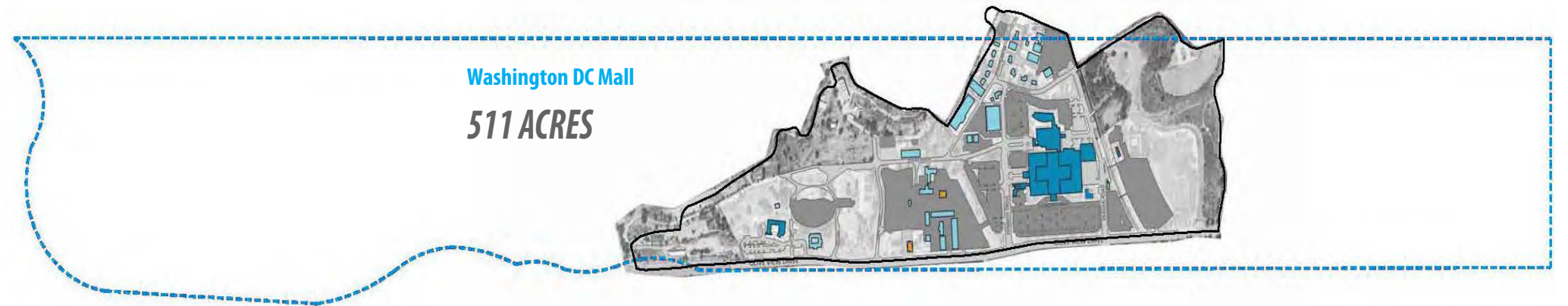
UCLA Westwood Campus
32 ACRES



USC LA Campus
90 ACRES



Washington DC Mall
511 ACRES

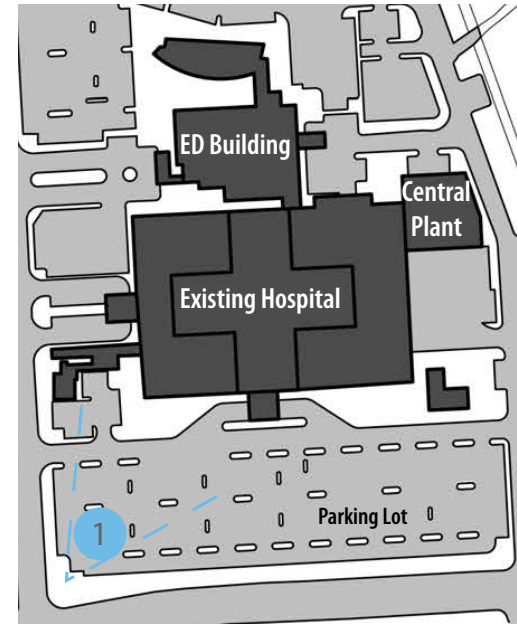


3.06 Site Comparative Scales

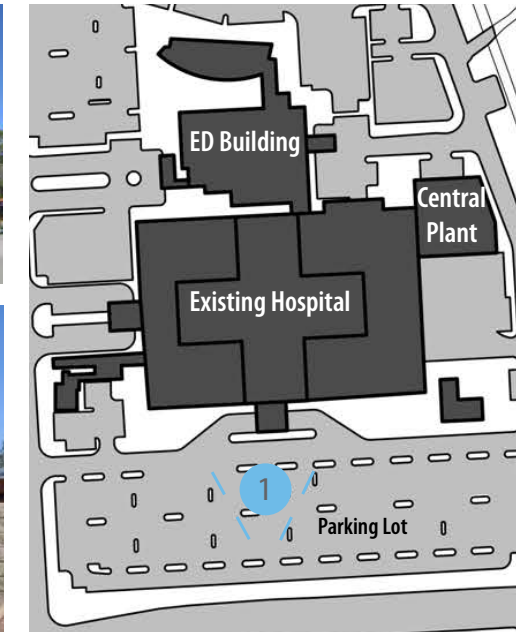
EXISTING SITE PHOTOS



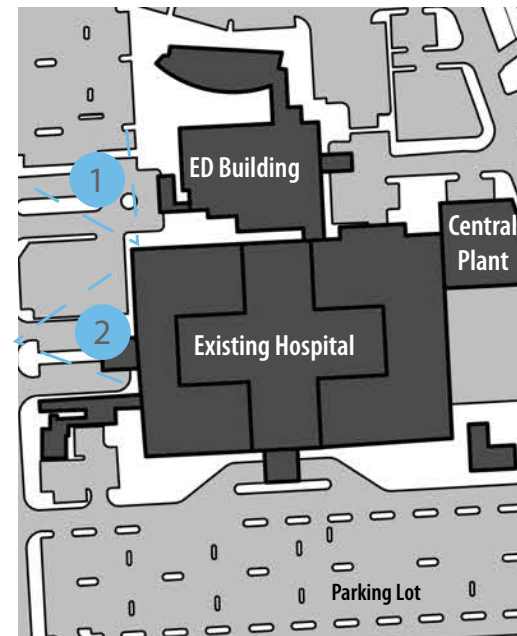
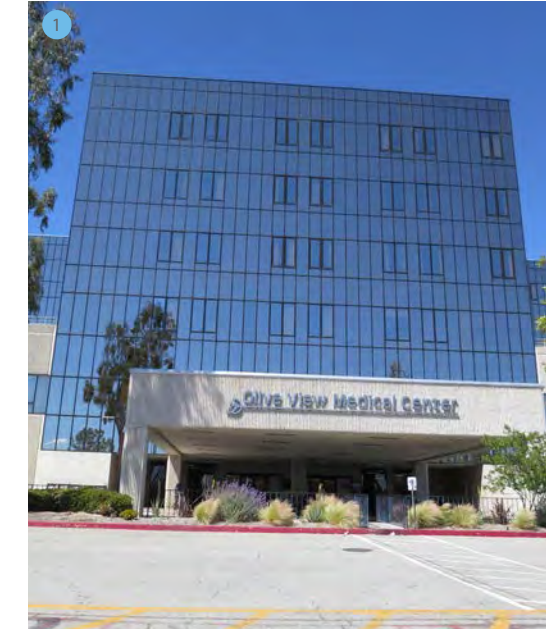
3.07 Key Plan



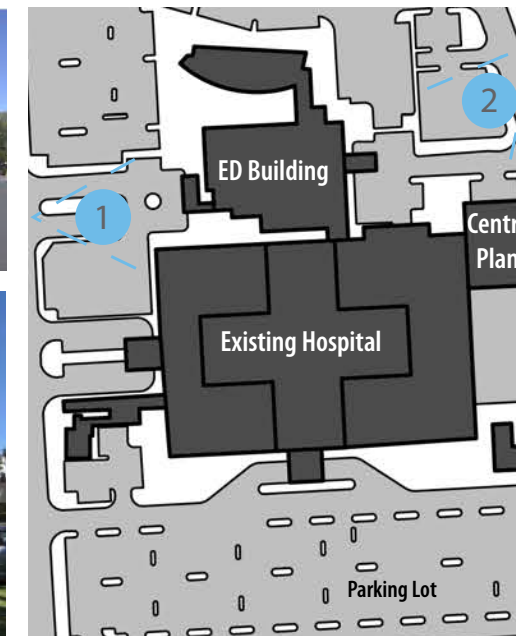
3.08 Main Hospital - Entry from Olive View Drive



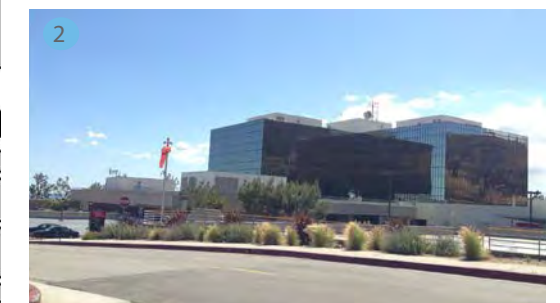
3.09 Main Hospital - Inpatient Entry

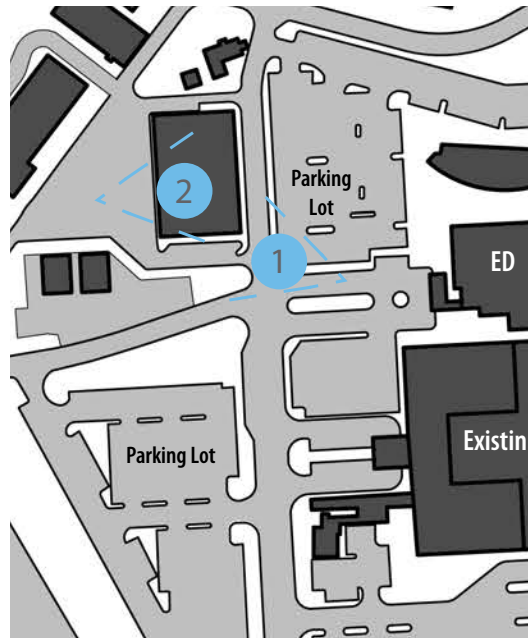


3.10 Main Hospital - Outpatient Entry

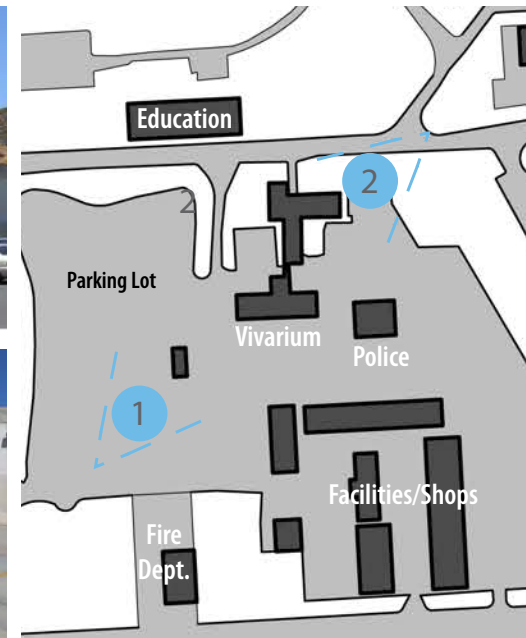
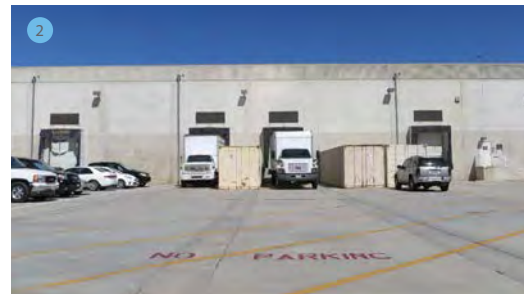


3.11 Emergency Services Building





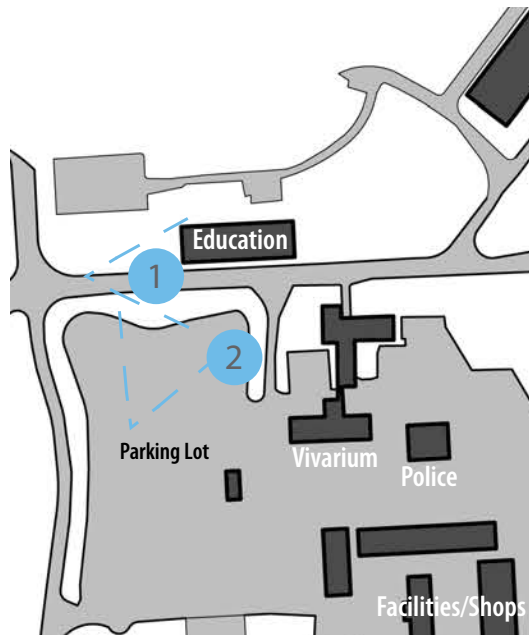
3.12 Service Supply Building



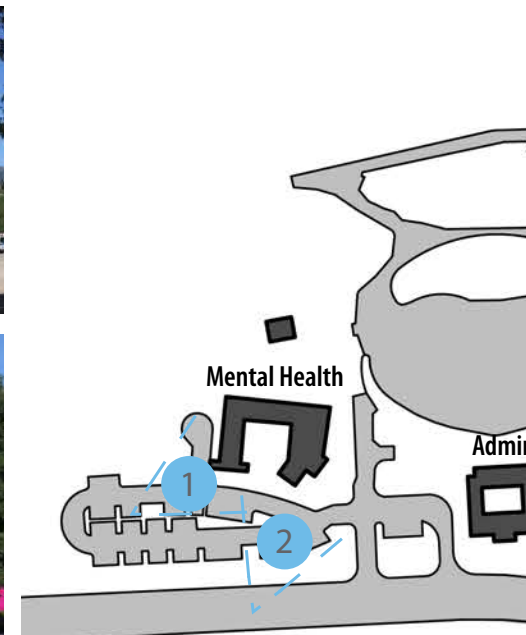
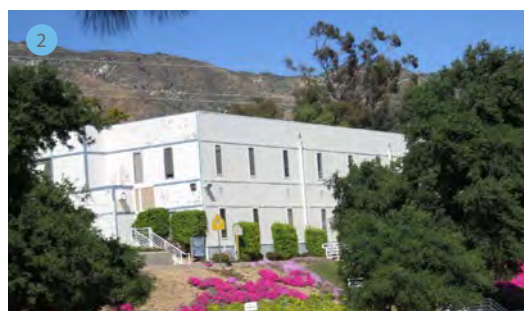
3.13 Old Lab Building and Vivarium



3.16 Key Plan



3.14 Nursing Education Building

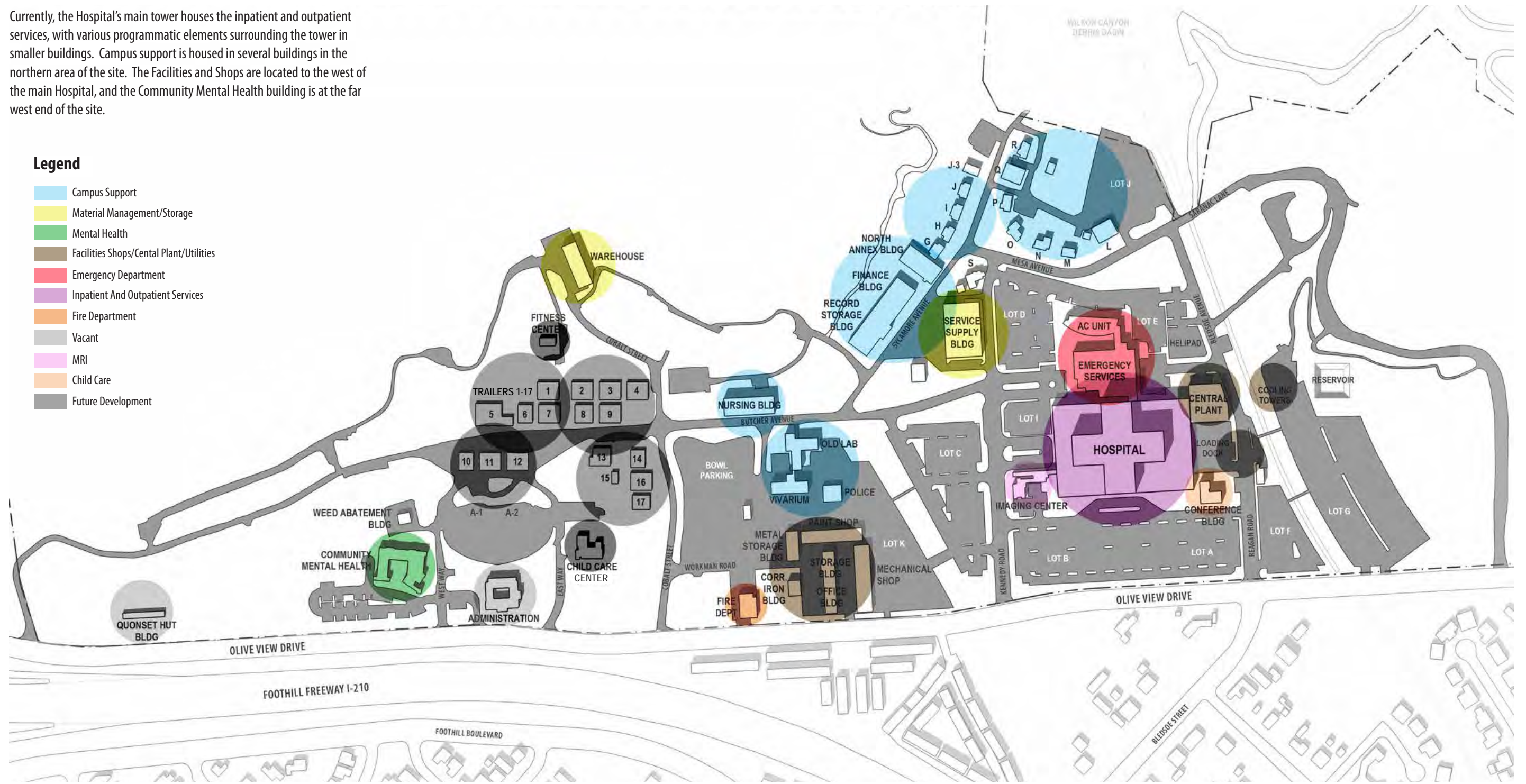


3.15 Community Mental Health



EXISTING CAMPUS LAND USE

Currently, the Hospital's main tower houses the inpatient and outpatient services, with various programmatic elements surrounding the tower in smaller buildings. Campus support is housed in several buildings in the northern area of the site. The Facilities and Shops are located to the west of the main Hospital, and the Community Mental Health building is at the far west end of the site.



Legend

- Campus Support
- Material Management/Storage
- Mental Health
- Facilities Shops/Cental Plant/Utilities
- Emergency Department
- Inpatient And Outpatient Services
- Fire Department
- Vacant
- MRI
- Child Care
- Future Development

3.18 Existing Campus Land Use Diagram

EXISTING CAMPUS AND BUILDINGS

Building Description and Current Uses

There are 31 permanent buildings and 29 trailers and other modular structures at the campus. The major concentration of buildings occurs around the Main Hospital and includes the Central Plant, Emergency Services and Isolation Building, and Service Supply Building. The Central Plant is a two-story building constructed at the same time as the Hospital and is in fair condition. There have been some equipment replacement projects, but for the most part, the plant maintains its original layout. One of the most recent projects at the campus was the construction of the Emergency Services Building and Isolation Unit in 2005. Attached to the Main Hospital on the north, the one-story Emergency Services Building houses the medical center's Emergency Department. Directly attached to this building is the Isolation Unit which functions as a regional treatment center for tuberculosis.

Located north of the Main Hospital are various bungalows and trailers utilized primarily for administrative and hospital support functions. The bungalows are one of the oldest cluster of buildings on the campus dating back to the original tuberculosis sanitarium campus from the 1930s. These are one-story detached dwellings which house administrative, social work, and doctor's offices. Directly west of the Main Hospital is where the Facilities Offices and Shops are located. These buildings were built in the early 1960s and house facility offices, conference rooms, a document control room, maintenance shops, and storage space.

At the far west end of the campus, the Community Mental Health building is located which serves as a psychiatric urgent care center. This one-story building was constructed in 2011. There are a series of trailers which at the time of this master plan are being built northeast of the Community Mental Health Building. There are a total of 17 trailers and the proposed use for these is storage and information systems.

Building Characteristics

The buildings on the campus range in age between 5 years to 80 years old, and, therefore, a wide range of architectural styles exists. The oldest buildings are remnants from the original campus development in the 1930s and have since been repurposed for campus support uses. The modular structures and trailers provide additional space and storage needs for the medical center and are scattered throughout the campus. Spread across the vast 230-acre site, these mostly one-story structures create a fragmented space utilization and appearance which lacks a common architectural expression and identity. This is not unexpected because of the history of development at this campus.



3.19 Photo of Old Lab Building



3.20 Photo of Emergency Services Building Courtyard



3.21 Photo of Trailers



3.22 Photo of Bungalows



3.23 Photo of Bungalows

EXISTING SITE CIRCULATION

Access

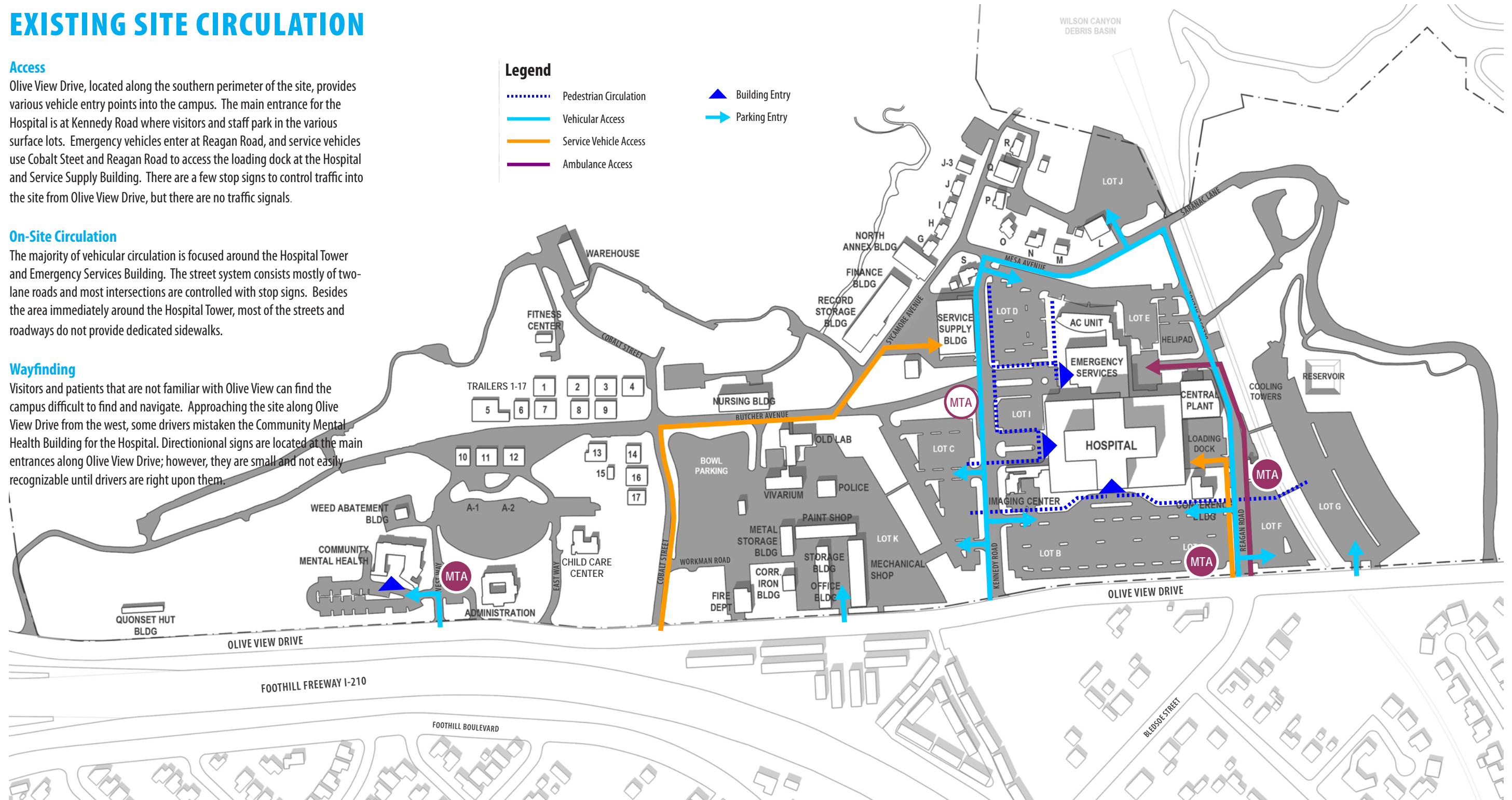
Olive View Drive, located along the southern perimeter of the site, provides various vehicle entry points into the campus. The main entrance for the Hospital is at Kennedy Road where visitors and staff park in the various surface lots. Emergency vehicles enter at Reagan Road, and service vehicles use Cobalt Street and Reagan Road to access the loading dock at the Hospital and Service Supply Building. There are a few stop signs to control traffic into the site from Olive View Drive, but there are no traffic signals.

On-Site Circulation

The majority of vehicular circulation is focused around the Hospital Tower and Emergency Services Building. The street system consists mostly of two-lane roads and most intersections are controlled with stop signs. Besides the area immediately around the Hospital Tower, most of the streets and roadways do not provide dedicated sidewalks.

Wayfinding

Visitors and patients that are not familiar with Olive View can find the campus difficult to find and navigate. Approaching the site along Olive View Drive from the west, some drivers mistakenly find the Community Mental Health Building for the Hospital. Directional signs are located at the main entrances along Olive View Drive; however, they are small and not easily recognizable until drivers are right upon them.



3.24 Existing Campus Site Circulation Diagram

EXISTING PARKING

Existing Parking Inventory

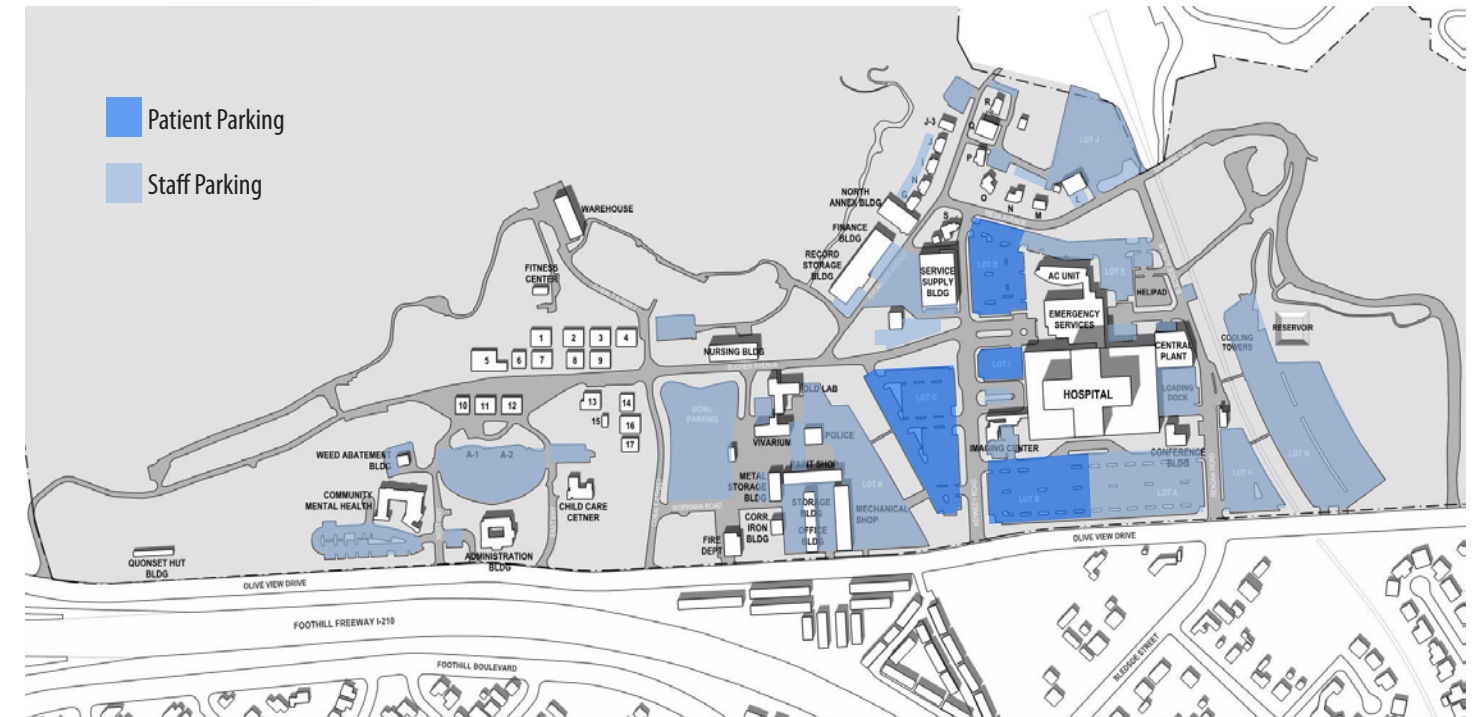
The team visited the Olive View campus on April 4, 2014 to inventory the number of parking spaces available on-site. The campus has several large, named paved lots, in addition to several small, unnamed parking areas. Additionally, there are several small parking areas, generally in the northern part of the campus, that are gravel lots, with loose parking space delineations as well as a few areas around the campus where vehicles were observed parking in the dirt.

It was determined that the number paved/delineated parking spaces in the study area totals 2,672+ as shown in Table 1. This total does not include un-delineated gravel and dirt areas where vehicles were observed parking, nor does it include on-street parking on Olive View Drive since the City of Los Angeles has jurisdiction over on-street parking.

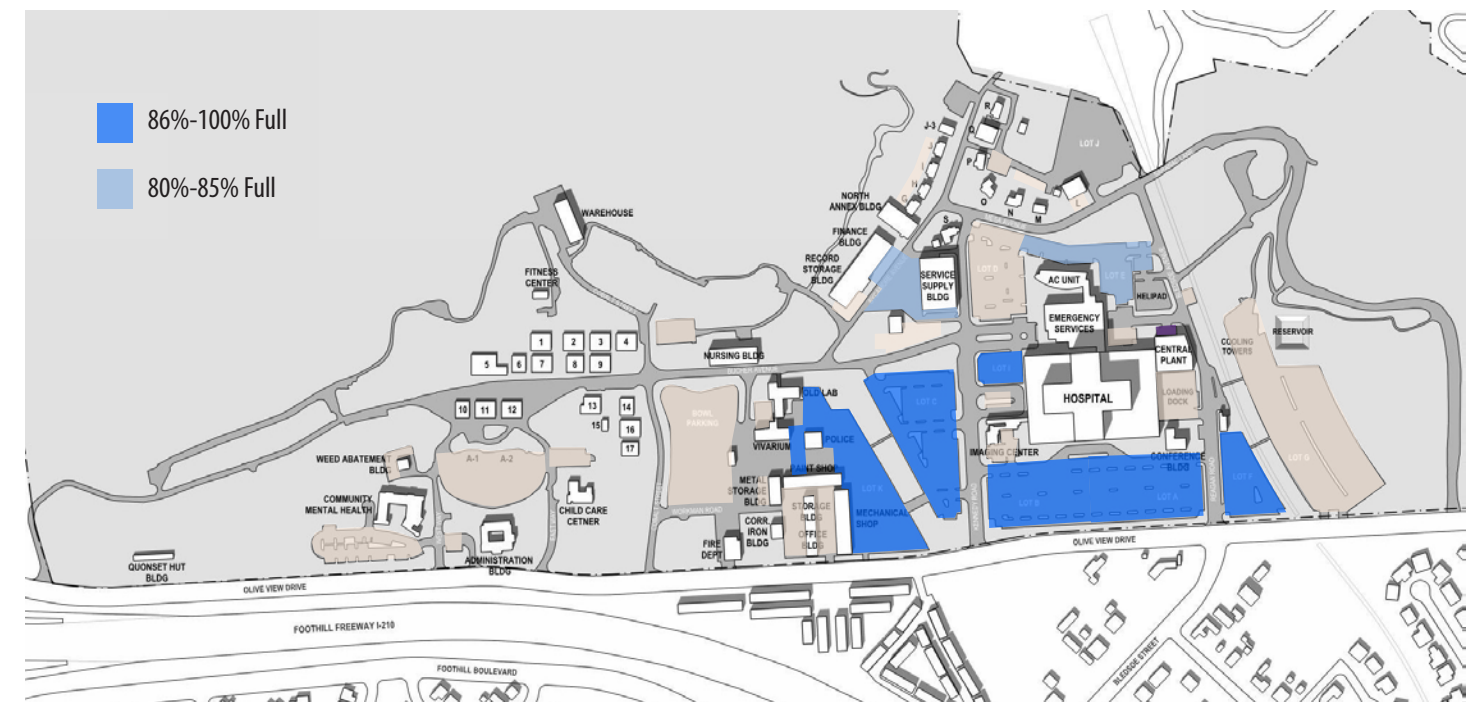
In the four primary visitor Lots (B, C, D & I) there are a total of 629 patient/visitor parking spaces, of which 39 are accessible. Based on the existing inventory, OVMC appears to provide less patient/visitor accessible spaces than required by Federal and State accessibility requirements. These statutes require that hospitals and healthcare centers for ambulatory patients receiving outpatient medical care must devote 10 percent of the patient and visitor parking supply for disabled access ("DA"), of which one in six must be van-accessible.

Parking Lot/Area	Patient/Visitor	Employee	Accessible	Reserved (All Categories)	Timed	Lot Total
Lot A		161	19	3		183
Lot B	190		7	2		199
Lot C	236		13			249
Lot D	147					147
Lot E		103	5	1		109
Lot F		100				100
Lot G		401		9		410
Lot I	17		19			36
Lot J		155				155
Lot K	3	268	4	18		293
Mental Health Center	12	31	8	9		60
Education Center		22	5			32
MRI Lot			13	6		19
All Other Parking Areas			13	6	5	19
Total	652	1,805	126	84	5	2,672

3.25 Campus Parking Inventory Summary



3.26 Patient and Staff Parking Diagram



tv

Existing Parking Occupancy

Based on discussions with Olive View staff, it was determined that Mondays and Tuesdays are generally the busiest days on the campus. A site visit was conducted on Tuesday, April 29, 2014 to collect parking demand counts during the peak periods of parking demand. This day represents a typical busy day for the campus, as there were no special events occurring that would skew demand higher. Counts were collected at 11:00 AM and again at 1:30PM to best capture peak demand, which is generally late morning or early afternoon. Table 3 summarizes peak parking occupancy per lot.

Observed parking occupancy in parking lots peaked at 11:00 AM at 2,251 spaces or 80.5% of the total supply occupied. It should be noted that the observed parking occupancy in Table 2 does not include observed parking in dirt/unpaved areas around the campus as well as observed on-street parking.

A total of 41 vehicles were parked in dirt/unstriped areas on the campus. Based upon field observations, it is estimated that 60+ on-street parking spaces were occupied by staff during the peak period of parking demand. A quick windshield survey showed that many of the vehicles parked on-street had Olive View parking permits (typically for the Bowl, Lot J or Lot G). It should be noted that staff parking on-street is not a violation of any kind and is permitted since there are no restrictions on street parking on Olive View Drive. However, the observed on-street parking is included in the parking occupancy numbers for the purpose of calculating user group demand ratios. It is possible, that in the future, off-street parking could be restricted and become unavailable for staff parking. Therefore it is important to plan in advance for this possibility. Adding in an additional 101 vehicles of parking demand to account for on-street and on-dirt parking, 84.2% of Olive View's parking supply would be occupied.

Peak Parking Occupancy

The parking supply is generally designated for specific user groups. Lots B, C, D & I are patient/visitor lots. Lots A, E, F, G, J, K and the Bowl are assigned to staff, generally based on office location and other factors such as shift time. Olive View does not provide separate 'Physician/MD Only' parking areas. Lots A, E, F, and G are controlled by gated access systems and require a proximity card for access.

Some cross utilization of the visitor parking areas likely occurs, and was observed. For the purpose of this analysis, it was assumed that each lot was occupied by the intended user type.

Parking occupancy in Lot A and Lot B was virtually full (with the exception of accessible spaces in Lot A). Patient parking in Lot C and Lot D was observed to be less than 100% full.

Parking Lot/Area	11:00 AM	1:30 PM
Lot A	177	176
Lot B	199	192
Lot C	231	208
Lot D	114	99
Lot E	92	92
Lot F	327	89
Lot G	35	328
Lot I	129	35
Lot J	269	127
Lot K	30	266
Mental Health Center	24	26
Education Center	15	16
MRI Lot	139	122
All Other Parking Areas	277	260
Total	2,150	2,061

3.28 OVMC Campus Parking Occupancy - April 29, 2014

Parking Lot/Area	Lot Total	11:00 AM Occupancy	Occupancy (%)
Lot A	183	177	97%
Lot B	199	199	100%
Lot C	249	231	93%
Lot D	147	114	78%
Lot E	109	92	84%
Lot F	100	92	92%
Lot G	410	327	80%
Lot I	36	35	97%
Lot J	155	129	83%
Lot K	293	269	92%
Mental Health Center	60	30	50%
Education Center	27	24	89%
MRI Lot	19	15	79%
Parking Bowl	267	139	52%
All Other Parking Areas	418	277	60%
Total	2,672	2,150	80%

3.29 Peak Parking Occupancy

User Group	Supply	Current Peak Occupancy	% Occupancy
Patients/Visitors	693	618	89%
Employees/Physicians	1,979	1,633	83%
Total	2,672	2,251	84%

3.30 Peak Parking Occupancy by User Group

EXISTING LANDSCAPE

Landscape Context

The general landscape character of the Olive View – UCLA Medical Campus lacks an overall cohesiveness and clarity. Most of the landscaped areas do not correspond with the natural setting of the campus, and the plants are not from a region with a similar climate. There is no unique plant palette of Southern California celebrated except at a recent expansion of the emergency wing at the existing hospital building.

The primary reason for this lack of intended landscape relationship between building and the site is that the architecture of the campus is a collection of unrelated structures: one multi-story Main Hospital building and arrays of single story warehouse looking structures placed about anywhere. In addition, a disparate architecture style of several other buildings seems randomly placed where the building fit or where land was available. Where landscape is present, this misplacement creates a 'left over' landscape fabric or planted patches that have no landscape language to express or represent.

On the other hand, the backdrop of the San Gabriel Mountains along the north edge of the site is a strong presence. Despite the many landscape disparities, the experience of the landscape of the mountains creates some kind of a sense of place. Where vegetation has an opportunity to create its own mass - where the topography begins to rise at the toe of the mountain slopes or where old development was intentionally or unintentionally abandoned - the landscape character becomes more pleasing, calm, and picturesque.

The natural character of the surrounding vegetation is essentially suburban hillside – but only at the northern side. Where the site meets the surrounding neighborhood along Olive View, the character is dusty and dry. Except for a number of mature evergreens that line some edges of the most used areas of the site - generally parking lots - there seems to be no prominence or significant landscape to mark the site from outside.

Landscape Character

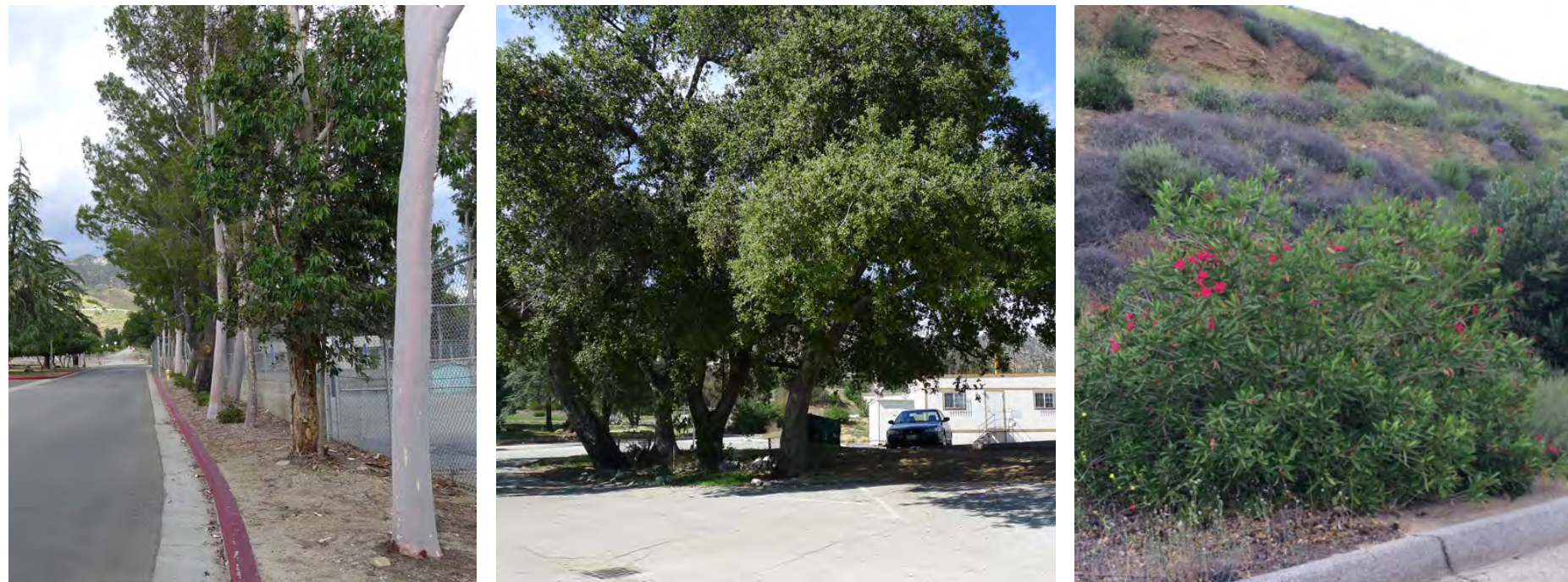
Unfortunately, plants have not played a major role in defining the character of the existing Olive View campus. Except for several mature pines along Olive View and Kennedy Road, there are not many significant tree canopies at the site.

Relative to the building and site, the existing tree distribution is not enough to help fully appreciate and orient one to key buildings and landscape works. This distribution also does not demonstrate if trees have been intentionally used to create landscape spaces and rooms. None of the building scales or transitions between landscape has been created by existing placement of trees and vegetation.

Most of the site has suffered from natural events - earthquakes, erosions, winds, and fires. Erosion, climate, and fires has over time created the state of ecology at the existing medical campus. The tree canopy coverage on most of the developed portion is minimal. Dominant trees species that remain include eucalyptus, pines, and coast live oaks. Hillside trees are not significant except the bottom of the foothill on the east portion of the site.

The ground vegetation is almost non-existent except at the northern portion of the Edison Easement and at two areas maintained or protected by part of the building – the turf area at West of the Education Center and the small turf area West of the existing Emergency wing of the hospital building. Several fires have damaged trees, yet some still remain in some areas near Wilson Canyon at Saranac Lane and along the west at Hillside Drive. Several stands of olive trees are still evident at the northern edge of the Edison Easement. A small group of Mexican Palms have been randomly placed midway along Bucher Avenue at Sycamore Avenue.

The climate and the hillside topography at the site, like most Southern California valleys lends itself to a dry environment where natural chaparral could thrive. There is a small number of Chaparral vegetation at the bottoms of slopes and where areas have been left undisturbed for quite some time.



3.31 Existing Landscape Site Photos

WILDLIFE AND VEGETATION

Wildlife

Several wildlife species inhabit the San Gabriel Mountains. Documented predominant species of the southwestern portion include coyotes, mule-deers, owls, and Swallowtail butterflies. As with most natural areas, squirrels, particularly the Gray Squirrel, are considered predominant in this area. Wildlife sightings during the day in the developed areas and graded or disturbed portions of the site has been rare.

Vegetation

The developed portion of the site does not represent the natural vegetation of the surrounding landscape of the San Gabriel Mountains. Much of this diverse vegetation has been altered by development along the foothills and most of Sylmar.

The general ecology and vegetation character of the mountains in this area includes conifers and broadleaf forestation at higher elevations. In riparian areas, willows, alder, and cottonwood are found along the stream courses. Deeper into the canyons at higher elevations and as the mountains begin to face the northern exposure, the vegetation is covered by canopies of widespread coulter pines and firs. On a larger scale, coast live oak forests which once covered much of the southern facing foothills and inland valleys of this area are still evident.

This same oak woodland shares the canopy of a diverse ecosystem with bigleaf maple, walnut, and riparian alders on most of the southwestern portions of the mountains. Scrub oaks, ceanothus, and manzanitas are predominant shrubs among these trees and are more widespread especially at lower elevations. Chaparral vegetation along the lower hillsides includes mimulus, phacelia, poppies, salvias, scotchbroom, wild mustard, and yerba buenas that blanket the ground in multitudes of color for most of the spring through summer.

The thriving settlements of the San Fernando Mission at the turn of the century established a center of trade where fruits, vegetable, olives, wine, and livestock were bought and sold. Sylmar and the current site of the medical campus and most of the southeast foothills were agricultural land with most of the olive plantations along the southeast foothills east of the current site. Most of Sylmar's vegetation was agricultural through the 1950's.



3.32 Photos of types of native California wildlife and vegetation

SITE INFRASTRUCTURE

Overview of Existing Conditions

The existing Central Utility Plant (CUP) was reviewed to assess the condition of equipment, to document operational procedures, to identify existing capacities, and to estimate future needs.

The existing CUP is in relatively fair operating condition with sufficient capacity and redundancy for the most part; however, there are some operational challenges due to the aging equipment that either fail or require more frequently scheduled maintenance. The other concern is the amount of energy usage and inefficiencies of major equipment under current operating conditions.

The major equipment in the Central Utility Plant (including CoGen, chillers, cooling towers, heat exchangers, main electrical equipment) is maintained by the Internal Service Department (ISD), which is the Building Maintenance division of Los Angeles County. The Central Plant holds the majority of the equipment except the cooling towers which are located on the other side of Reagan Road and the Wilson Canyon Channel. Underground piping connects the cooling towers to the chillers in the central plant.

The remaining major equipment (including generators, electrical distribution equipment, fuel tanks, fire pump, medical gas and associated systems) in the plant are maintained by the Hospital Facilities staff.

Per the Olive View Facilities staff, no major equipment replacement project is contemplated at this time - with the exception of an emergency generator relocation project.

The Building Automation Systems (BAS) at the CUP is by Allen-Bradley (Rockwell Automation). The BAS controls at the Hospital is by Honeywell. The systems are mostly digital, with some pneumatic operators. There is no integration between

Site Utility Distribution

The diagram illustrated on the opposite page shows the major site utilities that are distributed throughout the campus. Review of existing facility drawings, site visits, discussions with ISD and Olive View Facilities staff, and data collected from various utility companies were used in compiling the existing conditions assessment for the campus.

The highest concentration of underground utilities is focused around the existing Hospital. Domestic water, storm drain, and sanitary sewer lines are routed and collected around the Hospital connecting to main lines at Olive View Drive. These services also extend to the west end of the campus serving some of the outlying buildings such as Facilities/Shops, Nursing Building, and Community Mental Health. Electricity and water is provided for the medical center by the Los Angeles Department of Water and Power (LADWP) local utility company along Olive View Drive. There are two independent electrical feeds, one at each end of the campus. The Hospital, Central Utility Plant, Emergency Services Building, and Service Supply Building are served by the LADWP substation located on Reagan Road. The incoming underground utility feed extends from the LADWP substation to the Main Service Switchboard in the CUP main electrical room. The remaining buildings at the site are fed from a other points of connection by LADWP on Cobalt Street and West Way.

There are multiple connections to the site for fire and water services. The Los Angeles Department of Water and Power provides these services at Olive View Drive.

The backup power for the east side of the campus including the Hospital, Emergency Services Building, and Central Utility Plant is provided by two diesel engine generator sets located inside the CUP. Only 2 of the 4 underground fuel oil tanks that serve the generators are currently being used. There is a plan to install new outdoor generators and associated switchboard. The electrical service to the facility is supplemented by the Cogeneration Plant's turbine generators.

Natural gas is provided for the medical center which runs along Reagan Road and connects to the main gas line along Olive View Drive.

The medical gas system comprises of medical vacuum, medical air, oxygen, nitrogen, nitrous dioxide, and carbon dioxide. The medical air compressors are medical vacuum pumps located in the CUP and were recently replaced with newer equipment. There is a Gas Room at the Hospital loading dock where the oxygen, nitrogen, and other gases are stored.

Storm Water Management

They are currently two watersheds north of project site, the Wilson Canyon Channel watershed and the Mansfield Channel watershed. The runoff from these areas is conveyed through the Schoolhouse Canyon Diversion to the Pacoima Wash located at the southeast corner of the Pacoima Canyon and May Canyon.

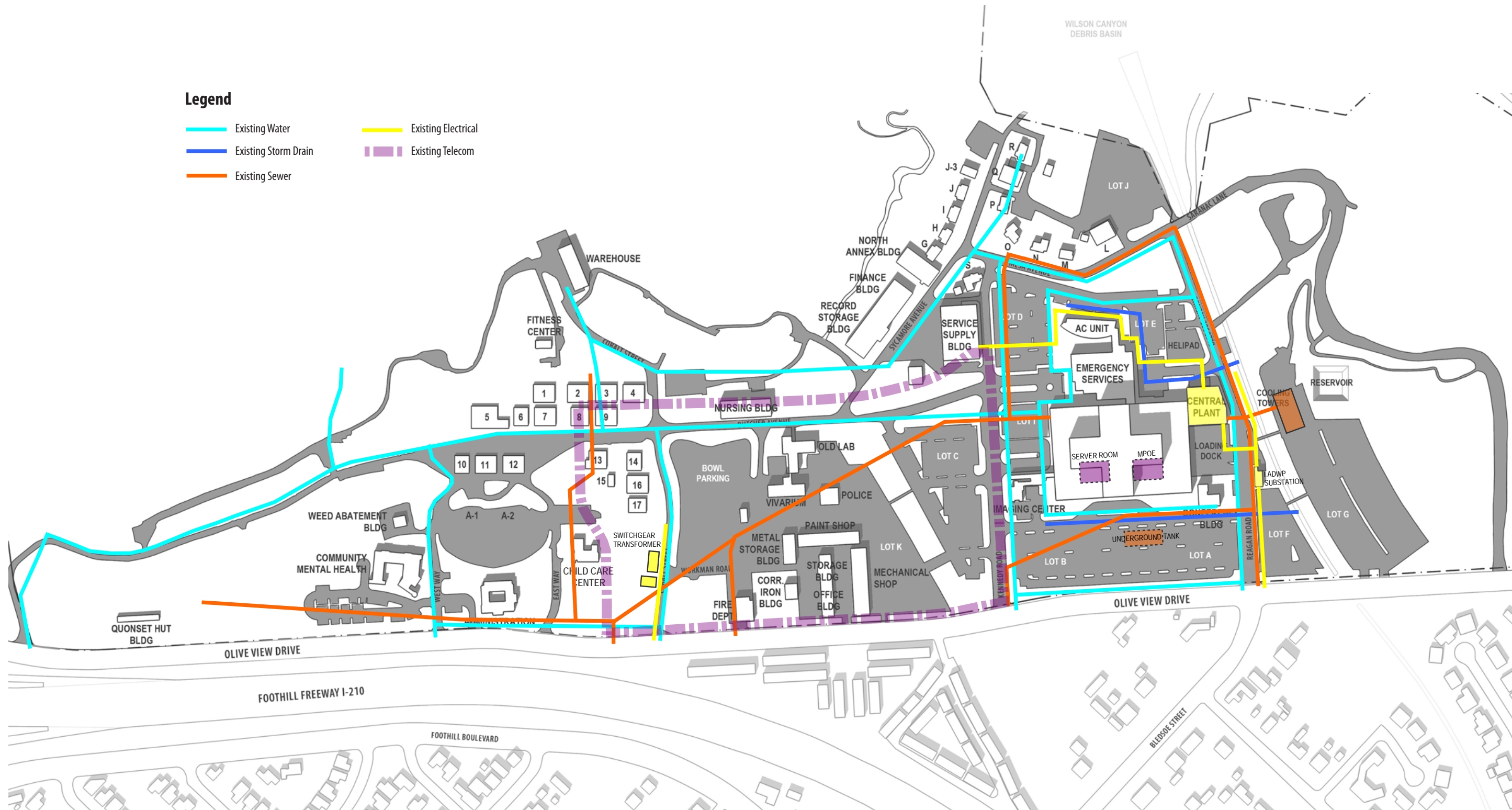
The stormwater runoff from areas upstream of the campus is being captured and conveyed through the Wilson Canyon Debris Basin located at the northeast corner of the site and Mansfield Canyon Channel located at the southwest corner of the site. The majority of stormwater runoff from the developed area sheetflows toward a series of on-site catch basins spread around the site and discharges to the City of Los Angeles storm drain line at Olive View Drive. No stormwater management was observed for the undeveloped area.

Technology Infrastructure

The Data Center, Main Distribution Frame (MDF), and Main Point of Entry (MPOE) Room are all located in the first floor of the existing Hospital. There are multiple Intermediate Distribution Frames (IDF) dispersed in the Hospital and in the outlying buildings and trailers.

The generator upgrade project is in progress and new power lines are being extended to all Technology Rooms and Closets. Once this is completed, power outages will have less of an impact to the IT environment within the Hospital as the generator will power IT equipment in the event of a power outage until power is restored or fuel resources to the generator are exhausted.

The telecommunications fiber network around the campus has been recently repaired within the past two year. The trailers to the west end of the campus all have new conduits provisioned for network connectivity.



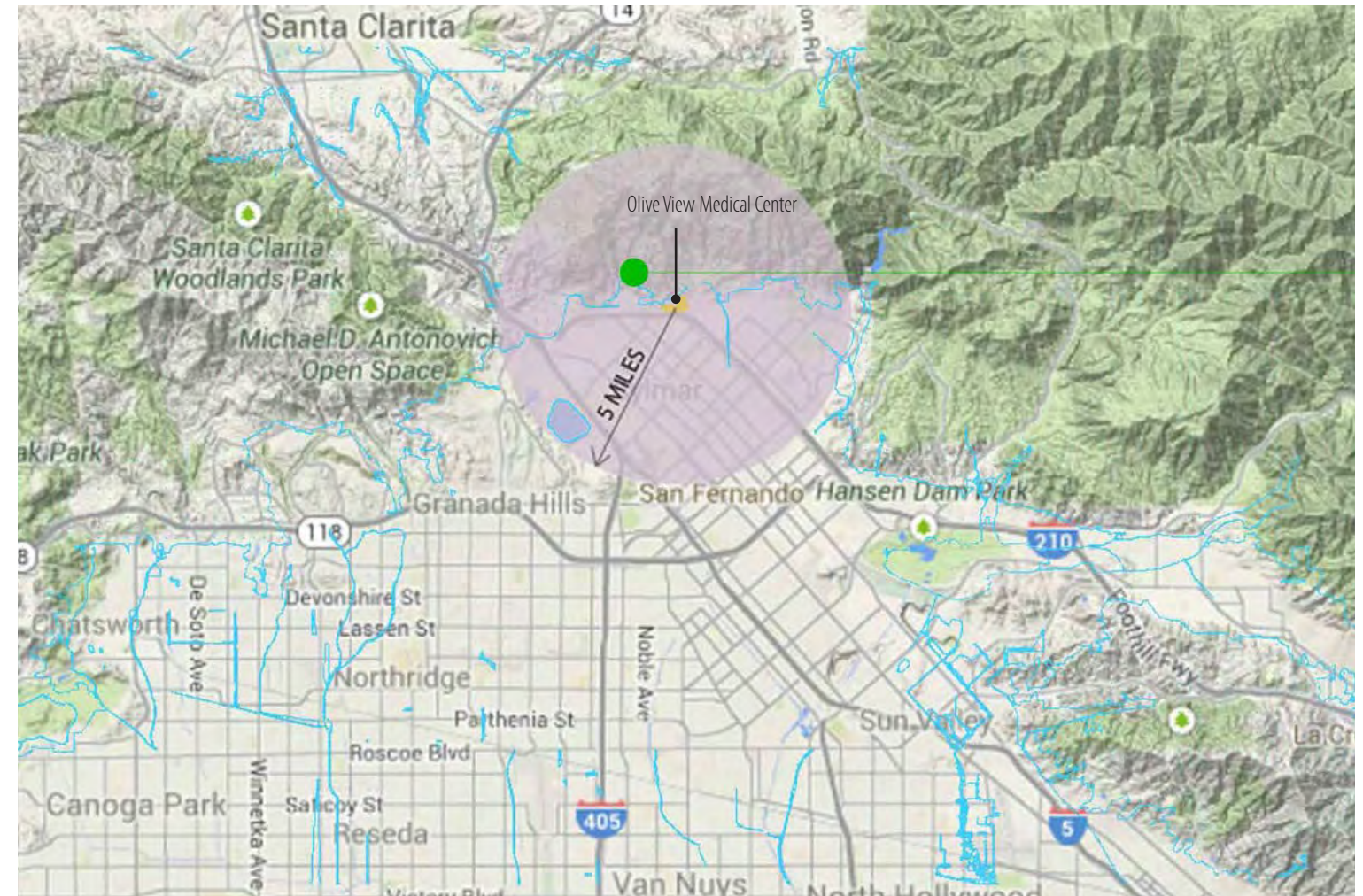
3.33 Existing Site Infrastructure Diagram

WATERSHED

Historically, the canyons of the San Gabriel Mountains fed the watershed of the surrounding lower valley. Numerous springs and water ways found their way to the Los Angeles River in the farther south of the now San Fernando Valley. With the rising demand for agricultural water in the late 1800's, Sylmar saw the construction of the Los Angeles Aqueduct in 1913.

The Los Angeles basin and several areas along the hillsides and the water tributaries were prone to flooding as part of the natural climate and topographic cycle. However, as the valley area grew and population increased, the immediate response during the early 1900's through the 1960's was to channel these tributaries for flood control. Similar to almost every concrete channeling of water ways in the Los Angeles area, storm management was primarily the reasoning behind the two water and debris basins adjacent to the site. The Schoolhouse Debris Basin, completed in 1962, is on the western end of the site and is part of the Mansfield Channel. It is designed to store 19 acre-feet of debris and drain an area of 0.28 square miles. On the northwest edge is the Wilson Debris Basin. Constructed in 1961, the 50 feet high and 666 feet length basin is designed to store 84 acre-feet of debris and drain an area of 2.6 square miles. The Wilson Debris Basin is on the Wilson Canyon River portion of the surrounding watershed.

According to the 2012 Topographic Survey and Easement Plan, water flows generally in two directions within the site – either westward down to the channel coming out of the Schoolhouse Debris Basin and the eastern channel from the Wilson Debris Basin. Occasional flooding occurs over the natural surface slope of the hillside but more prominently northeast of the existing Community Mental Health building.



3.34 Watershed Map

STRUCTURAL

A structural assessment of the existing building inventory at the Olive View – UCLA Medical Center was performed with the primary focus on buildings providing acute care services which are regulated by the Office of Statewide Health Planning and Development (OSHPD). The structural assessment was performed based on the following:

- cursory review of as-built drawings for the existing buildings
- Review of prior seismic evaluation reports
- Brief visual observation of the building conditions
- Review of the SB1953 legislation requirements
- Review of the fault rupture hazard investigation report for the site
- Understanding of the future needs of the medical center

OSHPD SB1953 Seismic Compliance Overview

Senate Bill 1953 (SB 1953) was introduced on February 25, 1994 and signed into California law on September 21, 1994. The bill is an amendment to and furtherance of the Alfred E. Alquist Hospital Seismic Safety Act of 1983. The Alfred E. Alquist Seismic Safety Act established a seismic safety building standards program under OSHPD's jurisdiction for hospitals built on or after March 7, 1973. The Act was initiated because of the loss of life incurred due to the collapse of hospitals during the Sylmar earthquake of 1971. The Act emphasizes that essential facilities, such as hospitals, should remain operational after an earthquake. Hospitals built in accordance with the standards of the Act resisted the January 1994 Northridge earthquake with minimal structural damage, while several facilities built prior to the act experienced major structural damage and had to be evacuated. However, certain nonstructural components of the hospitals did incur damage, even in facilities built in accordance with the structural provisions of the Act. The provisions and subsequent regulation language of SB 1953 amended the Act to address the issues of survivability of both nonstructural and structural components of hospital buildings after a seismic event. Therefore, the ultimate public safety benefit of the Act is to have general acute care hospital buildings that not only are capable of remaining intact after a seismic event, but also capable of continued operation and provision of acute care medical services after a seismic event.

One of the main provisions of SB 1953 is the development of earthquake or seismic performance categories, specifically the Structural Performance Categories (SPC) and the Nonstructural Performance Categories (NPC). These include seismic performance categories for new and existing general acute care hospital facilities

rated on a scale from 1 to 5, with a rating of 5 representing those buildings capable of providing services to the public after a seismic event and a rating of 1 representing those buildings at significant risk of collapse and represent a danger to the public. See the Appendix for tables with a description of the structural performance categories and nonstructural performance categories defined by OSHPD. These tables also specify the timeframes for which each general acute care hospital building must meet each seismic performance category. Legislation enacted subsequent to the original SB 1953 has provisions for facilities to apply for seismic compliance extensions to these timeframes.

Summary of Buildings Assessment

The Main Hospital Building has a structural seismic performance rating of SPC-4 which allows the building to continue operation providing general acute care services indefinitely beyond the year 2030. From a nonstructural seismic performance perspective, the building has an NPC-3 rating which means that all nonstructural systems in the critical care areas of the building have been upgraded to comply with the California Building Code. With an NPC-3 rating, the building is in compliance with current OSHPD SB 1953 timeframe requirements, however, prior to the year 2030, it is required that the remaining nonstructural systems in the building be upgraded in order for the building to provide acute care services beyond the year 2030.

The Central Co-Generation Plant and the Cooling Towers also have SPC-4 and NPC-3 seismic performance ratings meaning that these building are currently in compliance with OSHPD SB 1953 regulations. Similar to the Main Hospital Building, the remaining nonstructural systems in these building are required to be upgraded to NPC-4 prior to the year 2030.

The Emergency Services Building and the Tuberculosis Isolation Building both have an SPC-5 and NPC-4 seismic rating which means that both buildings are in compliance with OSHPD SB 1953 regulations to provide acute care functions beyond the year 2030.

It should be noted that the campus will be required to meet NPC-5 requirements before the year 2030. This involves upgrading campus facilities to provide 72 hours of onsite water supply, sewage holding and emergency electrical power to the buildings that will remain functional providing OSHPD acute care services beyond the year 2030.

MATERIALS MANAGEMENT

Materials Management Building

The Material Management Building or Service Supply Building was originally constructed in 1982 with some additional structural retro-fitting of the building done following the 1994 Northridge Earthquake. The building is located across from the Emergency Services Building entrance. The majority of all incoming supplies and equipment are delivered to, and received at the four truck bays. Linen, Food and Pharmacy supplies are delivered to, and received at the Main Hospital Loading Dock. Supplies and equipment are transported from the Material Management Building to the Main Hospital Loading Dock via facility owned box trucks.

A new Warehouse / Inventory Management System, which will utilize scanning and bar-code technology, was due to be implemented on or by July 1, 2014. Once implemented, MM staff will take over the inventory and replenishment function for the clinics. Speed and accuracy of the supply replenishment function should be greatly improved with the use of this system.

Electric "Golf-cart" vehicles are used to deliver smaller items to the Main Hospital and other out-lying buildings. The space inside the Material Management Building incorporates the following elements: Receiving / Breakout area which includes three receiving desks / PC work stations, and open floor space for supply break-out and staging. The space appears adequately sized, however staged new and / or salvage equipment can encroach on the space.

Main Hospital Loading Dock

The Main Hospital Loading Dock incorporates six (6) truck bays. Two of the dock positions are utilized for delivery and handling of various Food/ Kitchen, Pharmacy, and other non-related medical supplies. In addition, other docks are used for facility trucks to deliver clinic supplies and deliveries from the Material Management Building. Clean and soiled linens are exchanged daily to the staging rooms adjacent to the loading dock. Waste Management is provided at the Hospital Loading Dock including equipment and the necessary staging space.

LIGHTING

Existing Exterior Site Lighting

As a result of this progressive construction and development, the light fixtures installed on the medical center campus vary greatly in visual appearance, lamping, color temperature, performance, and energy efficiency. While LED light fixtures are being installed in specific locations to test the effectiveness of their use on the campus and newly constructed areas have achieved a more regular vocabulary in terms of fixture style, the campus still has an eclectic visual appearance, and many fixtures could benefit from replacement with more energy efficient and efficacious sources.

The new master plan will support the project goals of creating a sense of place and community, reclaiming and celebrating nature, creating visual hierarchies and special areas within the campus, assisting in wayfinding, promoting sustainability and energy efficiency, and unifying the campus through design.

Night Site Lighting Survey

Currently, the light levels on the campus vary widely from well lit areas (such as the main entries of the Emergency Services Building and the newly updated parking lots) to very dimly lit or unilluminated areas (service areas behind the bungalows and loading dock facilities). The variety of light sources that have been installed over time include extremely warm Low Pressure Sodium (bungalow area), High Pressure Sodium (poles and wall mounts in Maintenance areas), HID (newly updated parking lots and facades), and Fluorescent (maintenance areas and Main Hospital) which create challenges for people navigating the paths and roadways. Much of the signage is not illuminated, which increases the difficulty of wayfinding.

From an energy standpoint, it was also noted during the site visits that in many support facilities (trailers and bungalows), all the interior lighting was illuminated even though the buildings did not appear to be occupied. Controls such as dimming, timeclocks, and occupancy sensor devices now mandated by Title 24 can help the campus achieve greater energy savings.

The development of a cohesive vocabulary, a family of light fixtures, with consistent light sources and color temperatures will significantly reduce visual inconsistency and clutter, and enhancing lighting for deficient areas and wayfinding elements will provide a greater ease of circulation and feeling of security on the campus.



3.35 Photos of Existing Site Lighting

SIGNAGE

Introduction

This section contains an analysis of the existing signage at the campus addressing both interior and exterior signage. The process was as follows:

The site plan of existing conditions was reviewed and notes were made related to traffic flow, parking lot locations, identification points and public transportation access points. A site visit was conducted, and a thorough photo survey of all existing signage, both exterior and interior was prepared. Locations of exterior signage are located on a key plan and referenced to the photos.

Using these documents and findings, a review of specific signage issues was documented. Signs were grouped into functional categories with areas of concern noted next to applicable photos.

See Appendix for photo documentation of all existing signage types and locations.

Initial Observations

The following is a summary of the initial observations related to the signage:

- There is a mix of signage designs spanning decades, with no consistency.
- Branding / identity on each sign is inconsistent.
- There is no standard font for signage.
- There is no criteria for the use of all caps, or upper and lower case text.
- There is no standard for sign color, arrow design, message alignment or position.
- Sign placement is inconsistent and random. Signs are needed at some key decision points.
- Many signs are run down and /or damaged.
- Many directional signs contain too much text, making legibility difficult.
- Some signs lack sufficient contrast for maximum visibility.



3.36 Photos of Existing Exterior Signage

FIRE AND LIFE SAFETY

Existing Fire Life Safety Analysis

The life safety evaluation of the site included a review of the applicable codes and standards, primary construction types and occupancies, exit discharge locations, paths of travel leading to public ways, and fire department access roads.

The Authority Having Jurisdiction (AHJ) include the Los Angeles County Fire Department (LACFD), the City of Los Angeles Fire Department (LAFD) and the Office of Statewide Health Planning and Development (OSHPD). The LACFD reviews all projects located on site. Group I occupancies are under the jurisdiction of OSHPD. All fire department access roads are under the jurisdiction of the LAFD, since the LAFD responds to all incidents on site.

Since the age of the existing buildings located on site has a wide range, the codes and standards applicable at the time of construction varies for each building. However, all new buildings and renovations, alternations and additions to existing buildings should conform to the applicable provisions of the following:

- California Building and Fire Codes.
- Los Angeles County Building and Fire Codes.
- City of Los Angeles Fire Code.

The primary occupancies on site include Group B, F, I and S. All buildings discharge directly to grade and each building is provided with unobstructed paths of travel leading to the private roads serving the site. Safe dispersal areas are not utilized. Fire apparatus access roads provide the LAFD with access throughout the site. See Appendix for life safety plans depicting the fire apparatus access roads.

Fire apparatus access roads provide the LAFD with access throughout the site. Upon arrival at the site, the LAFD is typically met by the sheriff and escorted to the area of incident on site. The hospital administration conference room (2C159) is used by the LAFD as an emergency command center. However, in the event of a brush fire, the LACFD will be the first responders.



04 STRATEGIC PLANNING AND PROJECTIONS



MARKET SHARE ANALYSIS

OVERVIEW

Various data sources were used to help develop a range of healthcare utilization and demographic drivers as the initial step in the planning process for the master plan. Using these data sources and analysis, future projections were established to identify the appropriate number of key spaces needed for the medical center. This analysis allowed the master plan team to estimate future space and area needs by departments and to compare this with available space at the existing facility. The conclusions of this market analysis are used as a guide to develop a space program for the various components to the master plan.

The current hospital was originally built in 1987 with a total of 377 acute and specialty care beds. Currently, there are 355 licensed beds that can be activated, and of those, there are 285 beds of all types set-up, available for use, and staffed. Data gathered and analyzed for the existing Hospital services shows:

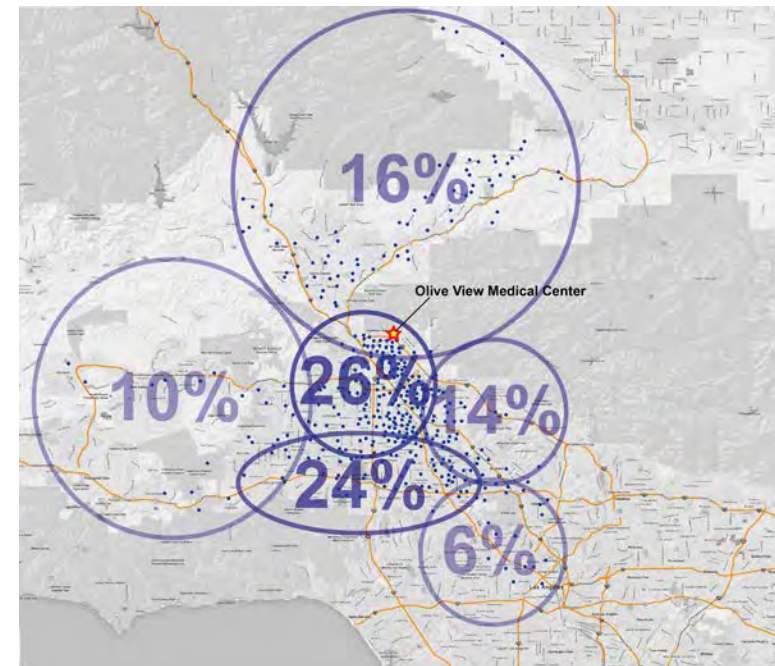
- Staff Medical/Surgical beds and Intensive Care beds capacity are reasonably aligned with the estimated bed need.
- Labor and Delivery births have fell steadily in the past few years.
- The Neonatal Intensive Care Unit (NICU) continues to see a large portion of high-risk births
- The Pediatrics unit has low capacity with typical seasonal variation
- The Acute Psychiatric unit is readily filling to capacity and the ED overflow area is highly utilized.

Key ancillary services including Emergency, Surgery, and Imaging, as well as other clinical and support functions, all appear to be running at reasonable capacity levels with moderate projected growth. The major focus for growth in the future is expected to be in outpatient and related support services given overall healthcare trends and the full impact of the Affordable Care Act.

A review of patient utilization at other community hospital campuses in the greater San Fernando Valley was conducted. Of all annual patients days generated by these extended/nearby Valley facilities, Olive View serves 9% of the total volume. The greatest overall volumes – in the range of 10% to 14% each – are captured by the larger Glendale Adventist, Providence Holy Cross and Burbank, and Northridge Medical Centers.

Looking specifically at the MediCal and County indigent payer categories, the Olive View-UCLA Medical Center serves the largest percentage (22%) of all such patients for the entire catchment area. For Olive-View-UCLA Medical Center, 83% of its entire patient volume falls into the MediCal and County indigent categories.

Given overall options available for healthcare in the catchment area and Olive View's status as the only county-sponsored hospital option in this large northern Los Angeles County region, it must be assumed that this market share and balance of workload focus will continue. Additional future programs, such as initiatives with UCLA program residents and physicians can bring some variation; however, a primary focus and mission of Olive View is assumed to be the key regional provider for low income and indigent patients.



4.01 Map of Los Angeles showing Patient Origin by Percentage in the Catchment Area

TRENDS AND FORECASTS

California state, local LA County and communities, and recent academic study data has been reviewed and analyzed to provide the master plan team with population trends in the County of Los Angeles. The data shows a marked departure in recent years from the historical growth pattern of the last sixty years displayed in the San Fernando Valley and beyond. Population growth has slowed overall, and this very minor growth is expected to continue in the areas served by the medical center.

Still, the most significant factor driving the overall bed need projection is the change in the population count and age mix. Total population for the areas served by Olive View is projected to increase 10.44% overall by 2035. Most notably, the age group over 64 years will increase by 128%. As a result, Olive View would see an increase in patient days of 10.4% by 2035 and an added increase of 6.8% due to the aging population. Other trends in patient care and the shift to outpatient care is expected to moderate these increases in patient volume. The Staff Medical/Surgical beds show a decrease in admissions and patient days. This is in alignment with trends in general acute care over the past five years and is expected to continue at a steady but slow rate as managed care grows, re-admissions reduce, and the shift to outpatient care increases. Intensive Care has increased significantly for the over 64 year patient population. Finally the drop in birth rates seen at Olive View over the past five years appears to be leveling off and very slow increases can be expected.

These trends yield a projection for 2035 of 193 ADC (Average Daily Census) and 251 total beds needed when utilization rates are applied.

PLANNING STRATEGIES

OVERVIEW

The scope of this master plan is to create a path for the campus development on the site with the year 2035 as its planning horizon. There are, however, a great number of variables that affect the site and all of the activities that may play out over the long term, much beyond the year 2035. One of the cornerstones of a master plan is to set the stage, so that decisions made in the short term do not interfere with the potential long term development of the site. In order to address the primary charges of the master plan, namely the Outpatient and Inpatient services, this study widened the perspective to address the components surrounding these functions. Using a flexible response will allow the medical center campus to adapt to changes over time, as circumstances require.

With regard to medical center development, the planning team undertook two primary activities.

The first was a careful evaluation of the site and buildings currently employed by the medical center. Each building and department was evaluated with regard to its physical condition and how well it served current operational and functional requirements of the particular service using a given space or building. The planning team worked closely with the consultant team to establish a thorough understanding of the physical condition of each building with a focus on determining not only how well the building served current needs, but how much longer could the building be used for such functions. This information is a critical component in understanding the levels of renovation likely required, the construction costs incurred, and levels of disruption caused to building occupants to keep the building operational. Evaluations included area and physical interior conditions, mechanical and electrical systems, structure, site utilizes, central plant, and civil engineering.

The second activity was an evaluation of the programmatic needs for each department or service. The planning team evaluated current department capacity and space, benchmarking against accepted standards to determine current deficiencies. Once the workload projections were completed, future capacity and space needs were developed and used as the basis for planning.

The programming and planning teams met frequently with medical center leadership and department leadership to better understand current issues and future needs. Additional planning meetings were held with members of the County of Los Angeles and UCLA to gain a further understanding of other campus occupants and how their likely future needs could be enhanced with an integrated planning response. Key meetings included the Chief Medical Officer of the LA County Department of Health Services (DHS), the Vice chancellor for UCLA Health Sciences and Dean of the David Geffen School of Medicine at UCLA, the Director of Community Health & Integrated Programs, and the Director of Housing for Health LAC DHS. The projected space needs for these other site occupants are used as placeholders for planning purposes. These projections will need to be verified when the projected buildings become more likely to occur. The master plan will then need to be updated with the new information.

In early conversations with medical center leadership and Department of Health Services, several priorities we clearly stated:

- Provide for a new Ambulatory Care Center in the near term.
- Provide options that include continued reuse of the existing hospital building.

IMPLEMENTATION

To address the points identified by DHS and Olive View leadership, the team has suggested a total of four planning options. All of these options began with the new Ambulatory Care Center as the first step, coupled with a replacement Central Utility Plant (CUP). Of the four, three options respond to the priority of continued reuse of the existing hospital. Each of these renovation options require progressively more complete and extensive levels of remodel, including replacement of the building mechanical and electrical systems, and upgrades to bring the building in compliance with current codes and community standards of care. Although described as renovation options, each option suggests the eventual hospital replacement at some point in the future. The master plan goal is to reserve an area of the campus to accommodate a future hospital replacement.

Because of concerns about years of disruption to hospital operations to accommodate the projected remodels, the team developed a fourth option of hospital replacement. The new Hospital will be located within the center of the campus to provide necessary connections to other building programs on the campus including the New Ambulatory Care Center. The master plan team does not make any recommendations with regard to the future of the existing Hospital when it is replaced by the new hospital. The building could either be repurposed with building upgrades and remodels or demolished, creating an area for future medical center development.

The campus master plan identifies alternate locations for the Administrative Building, the Central Utility Plant, and the Materials Management Building. This is in response to the issue of timing. If the decision is to continue reuse of the existing hospital for an extended period of time, it will be necessary to provide a replacement CUP to support the existing hospital and the new Ambulatory Care Center. Eventually, when the hospital is replaced, a second new CUP will be built closer to the new hospital. The Materials Management Building is a regional asset providing service to both the hospital and regional DHS clinics. The building should be located to create logical relationships with both the existing hospital and future new replacement hospital.

PLANNING STRATEGIES

INPATIENT SERVICES

In order to provide a roadmap of options for the existing building to meet the deadline to comply with seismic safety regulations mandated by OSHPD, there is a considerable amount of area in need of upgrades.

There are several options to meet the compliance deadline which depend on the decisions reached by the County of Los Angeles administration, in combination with the stakeholders in the project, and on the level of development and long term investment in the facility. The three renovation options are:

1. Minimal Renovation
2. Partial Renovation
3. Complete Renovation

The first step of the master plan in all of these options is to decant and consolidate outpatient services into a single, robust, Outpatient Services Center, complete with outpatient surgery, imaging and diagnostic and treatment areas. The preference of the OVMC Hospital is to have a possibility for direct connection between the inpatient and outpatient services buildings.

The decanted areas in the existing hospital building are essential to enable renovation work. All the options will involve disruption to existing hospital functions which should be considered in terms of several factors including phased displacement, noise/vibration concerns, infection control and construction waste management, disruption to patient and staff flow, life safety, replacing mechanical and electrical systems, and code compliance.

The County may also choose to invest in a new long term facility, in which case the functions and elements of the hospital would be relocated into a new building. For the purpose of this master plan, this option is called:

4. Replacement Hospital

1 MINIMAL RENOVATION

- Only renovate areas in need of seismic compliance upgrades
- Maintains existing semi-private / private bed accommodations

2 PARTIAL RENOVATION

- Identify specific areas to renovate in addition to those in need of seismic compliance upgrades
- Prioritize areas found to be operationally constrained or space challenged
- Reuse available space with limited disruption as much as operationally feasible
- Potential use of "empty chair"

3 COMPLETE RENOVATION

- Renovate entire existing hospital building to house inpatient services
- Take advantage of areas made available after moving outpatient services to a separate building
- Provide a higher standard of care (e.g. all private patient rooms) with robust building systems
- Invest capital into extending useful life of existing building

4 REPLACEMENT

- Build a complete replacement to house the Inpatient services in a single phase
- Create an opportunity to integrate Inpatient and Outpatient services
- Minimize operational costs and downtime
- Improve operational performance
- State of the art facility to provide care to the community

4.02 Planning Options for Inpatient Services

Option 1 - Minimum Renovation

The scope of the 'Minimal Renovation' option is defined by the amount of renovation work needed to meet the requirements to upgrade the existing hospital building to comply with seismic safety regulations as mandated by the Office of Statewide Health Planning and Development (OSHDP). The areas that are relocated into the Ambulatory Care Center can be used as future program area depending on the needs of the facility.

All existing patient bed units, including semi-private rooms, remain unchanged. The majority of the renovation consists of upgrades to the MEP systems, for which a considerable amount of the work will be performed inside the ceiling plenums and/or utility rooms and chases. A considerable amount of disruption to the existing hospital functions is expected.

These upgrades have to be completed before January 1, 2030. If the hospital is upgraded to comply with these renovations by the deadline, there are currently no additional requirements beyond that point. Project duration is expected to be the shortest among the proposed planning options, but it should be noted that the duration could vary greatly depending on the existing conditions.

Option 2 - Partial Renovation

'Partial Renovation' includes the renovation described for 'Minimal Renovation' in addition to specific areas found to be operationally constrained or space challenged. Some of these spaces include Surgery and Perioperative, Intensive Care Units, Radiology and Inpatient Pharmacy, and the Inpatient Mental Health nursing unit.

These areas will be upgraded, either in place, or by using the space that is available from decanting outpatient services into a new building. In order to control costs, the renovations of these spaces should be kept to as minimal as technically feasible. Similar to the 'Minimal Renovation' option, most existing semi-private inpatient beds remain in their current configuration.

The limits of this renovation option are variable and depend on such things as the availability of funds, the timing of disruption, and the priorities established by the County of Los Angeles and the medical center. Construction and disruption times vary greatly depending on the extent of renovation.

These upgrades have to be completed before January 1, 2030. If the hospital is upgraded to this renovation by the deadline, there are currently no additional requirements beyond that point. In contrast to the 'Minimum Renovation' option, this renovation option gives the hospital more leverage to meet patient volume demand over a longer timeframe, and also improves customer/staff satisfaction.

Depending on the extent of renovation work and upgrades, the hospital may not need further renovation for a longer time span. However, maintenance work will be an ongoing challenge especially for mechanical and electrical systems. Project duration is expected to be longer than the 'Minimal Renovation' option. Therefore, if chosen, the renovation should start earlier.

Option 3 - Completion Renovation

Unlike the previous two options, the 'Complete Renovation' option consists of renovating the entire building, with a focus on functional upgrades. The upgraded facility will be able to effectively house and operate the inpatient services program until the planning horizon for this master plan of 2035.

The OSHDP compliance deadline for the projects still remains January 1, 2030. Project duration is expected to be longer than the previous two options, and therefore construction would have to start the earliest. The finished facility will provide a higher standard of care (e.g. all private patient rooms), and provide robust building systems to complement current medical practice standards.

Considerable improvements are possible in addition to all private patient rooms and updated Diagnostic and Treatment areas. Some of these areas include all nursing units, consolidated and updated imaging, and rightsized support and administrative services.

Similar to both previous options, the renovation of the building is expected to be completed in phases, starting with the areas vacated after the outpatient services move to a new dedicated building.

Construction and disruption times, however, will vary greatly depending on the construction phasing, the extent of scope available to each phase, and the functional support available. Areas impacted by renovation will require temporary facilities, or departmental shuttering, which may considerably affect schedule.

Option 4 - Replacement

Each of the renovation options represent a consideration investment in an aging facility, which will eventually need to be replaced. The master plan team studied the very long term development of the site, beyond the 2035 planning horizon. In order to provide a master plan which maintains the best use of the land and long term interests of the campus, the master plan includes the 'Replacement Hospital' as the fourth option.

The triggers to implement a new facility vary depending on the approach. For example, after doing 'Minimal Renovation,' the hospital will be limited to cope with the patient volume demand. Further renovation will be required in the short term, so a new replacement building may be more economically feasible. Looking at the 'Complete Renovation' option, the life of the facility will be extended by several decades. After this, however, the building would be nearing the end of its useful life, and renovation will no longer be possible. It is also possible that the available time is too short to complete a renovation in time to meet the OSHDP deadlines, in which case a replacement building would provide a shorter construction schedule with the longest lasting investment.

The replacement building provides the Hospital the most flexibility in terms of construction, layout, operations, and schedule. It creates a new platform on which to improve operational performance, minimize operational costs and downtime, and integrate all inpatient services in a state of the art facility to provide care to the community, built in a single phase. Construction is unencumbered, and disruption times are limited to the relocation of services to the new building.



05 OPTIONS EVALUATION



OPTIONS EVALUATION

All of the options were evaluated and reviewed with the Client and Consultant Team to understand the benefits and disadvantages of each. A matrix was produced for evaluating each option for the factors most critical to meeting the goals and objectives of the master plan.

The following parameters were considered:

- Improves land use flexibility
- Sustainability
- Enhanced circulation and wayfinding
- Accommodates phased development
- Optimizes future inpatient zone
- Proximity to other program components
- Optimizes key program adjacencies
- Engages with community
- Provides opportunities for development partnerships
- Maximizes greenspace
- Supports development partnerships with UCLA
- Minimizes travel distance to parking

In addition to the evaluation based on performance criteria, the entire Consultant Team provided feedback and comments for each of the four concepts. The concepts were reviewed for traffic and wayfinding, utility routing, demolition and retention of existing buildings and infrastructure, stormwater management, parking demand and projections, site lighting, structural design, grading, logistics and material management, and cost impacts.

Understanding the strengths and weaknesses of each option provided for the Team the selection of the preferred option.

SITE PLANNING OPTIONS

BOULEVARD

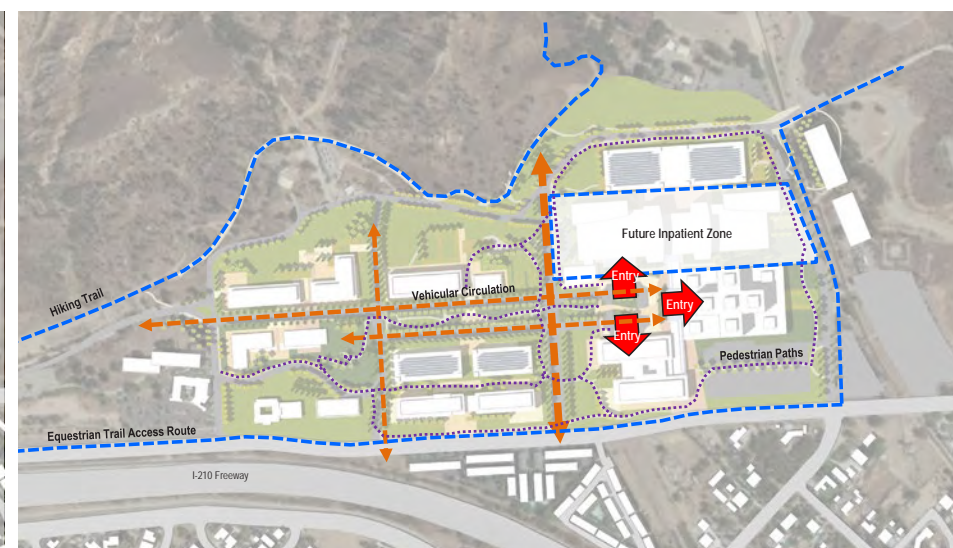
Serving as the central organizing element, the Boulevard unites the campus as a whole providing a clear organizational strategy. The Boulevard concept focuses development of the medical center around the existing Hospital Tower providing a direct link between the existing and future services. All of the building uses are located around this central spine with similar building functions being further defined within zones or blocks. At each zone, there is a dedicated entry plaza for patients and visitors to be directed to their destination. The main street includes a winding path where visitors and staff can walk through the various gardens and open spaces. Because the placement of buildings creates a more urbanized environment, there is an opportunity to use the land to the west and east of the campus for other development uses.



5.01 Boulevard - Site Plan



5.02 Boulevard - Buildings and Open Space Diagram



5.03 Boulevard - Circulation Diagram

NATURE'S EDGE

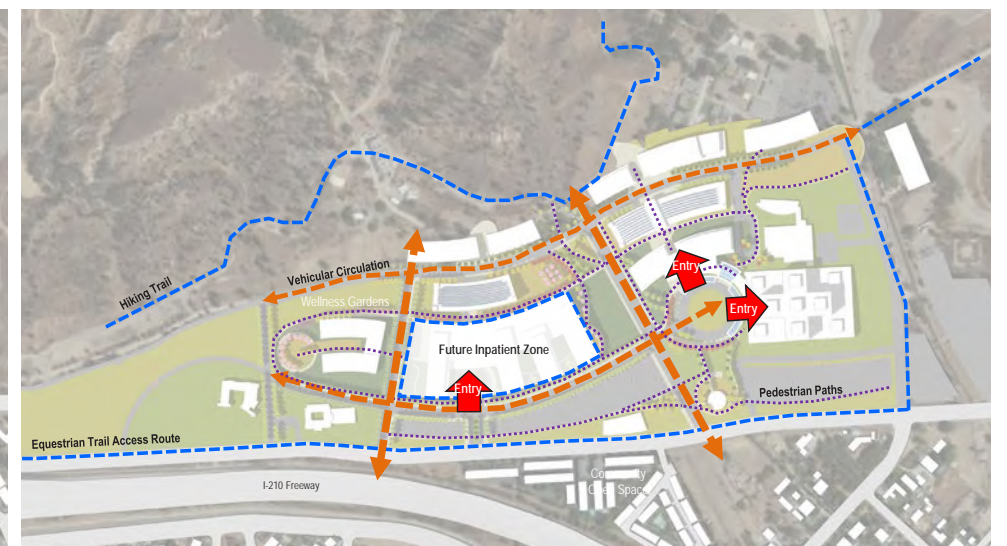
Nature's Edge uses the natural terrain and landscape to dictate the placement of buildings and provide opportunities for open space. A green belt is introduced along the front edge of the site where community and retail functions can be located. By introducing this green edge with opportunities for community-oriented development, Nature's Edge re-establishes the link to the site's natural environment as well as fosters a better relationship with the community. The layout of Nature's Edge is much less concentrated as compared to the Boulevard concept. The Future Hospital is located across the Edison Easement. The new Ambulatory Care Center is located adjacent to the existing Hospital and also provides a close connection to the Replacement Hospital.



5.04 Nature's Edge - Site Plan



5.05 Nature's Edge - Buildings and Open Space Diagram



5.06 Nature's Edge - Circulation Diagram



5.07 Compact - Site Plan

COMPACT

The Compact concept is the most dense and urban approach. Both the outpatient and inpatient services are focused around the existing Hospital Tower. Because this concept is very dense, there is an opportunity to use the remaining land for other development opportunities. By concentrating the buildings in close proximity to one another, the height of the building becomes an issue creating tall structures in an otherwise suburban context.



5.08 Compact - Buildings and Open Space Diagram



5.09 Compact - Circulation Diagram

TERRACE

Similar to Nature's Edge, the Terrace concept utilizes the natural slope of the site to create a playful arrangement of landscape areas.

The landscape becomes one with the building, blurring the distinction between the ground plane and the building base. The new Ambulatory Care Center is placed directly in front of the west facade of the existing Hospital to give it prominence as well as provide a new front door and entry point for the campus.



5.10 Terrace - Site Plan



5.11 Terrace - Buildings and Open Space Diagram



5.12 Terrace - Circulation Diagram



5.13 Wilson Canyon - Site Plan



5.14 Wilson Canyon - Buildings and Open Space Diagram



5.15 Wilson Canyon - Circulation Diagram

WILSON CANYON

The Wilson Canyon scheme locates the Future Hospital Zone to the east of the existing facility. The advantage to this scheme is that the future hospital zone is located outside of the Alquist-Priolo earthquake fault zones. The Ambulatory Care Center is located along Olive View Drive and directly connected to the existing Hospital. The other campus uses such as UCLA Medical Office Buildings, Mental Health, and Long Term Care are located to the west end of the campus.



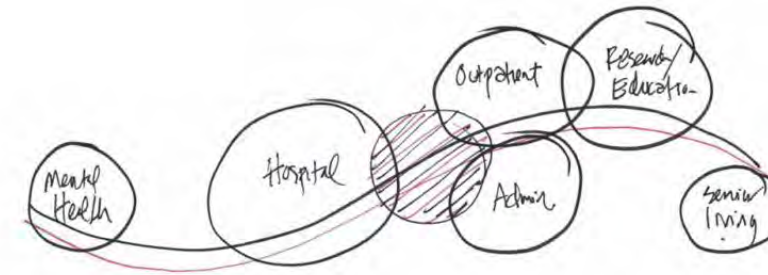
06 CAMPUS MASTER PLAN



PREFERRED MASTER PLAN CONCEPT

NATURE'S EDGE

Nature's Edge is about reclaiming nature and reviving the spirit of Olive View -UCLA Medical Center from when it was first developed in the 1920s. With the backdrop of the San Gabriel Mountains to the north, the natural topography of the site is used to help elicit a site response that creates a strong connection between each of the different program components as well as re-establishing the connection to nature. Different gardens can be discovered along the various walking paths and linkages are provided throughout the campus to help one rediscover this connection. Each garden celebrates a different type of native landscape found in California from woodlands to grasslands and wildflowers.



6.01 Nature's Edge Concept Diagram



6.02 Examples of green spaces, connection between indoors and outdoors, informal gathering spaces, community activities and engagement



Olive View - UCLA Medical Center Campus Site Plan

(Original) SmithGroup JJR, 2015, (Updated) Perkins Eastman 2019



6.03 New Ambulatory Care Center and Existing Hospital Drop-off



6.04 Future Hospital Entry Plaza and Drop-off



6.05 New Ambulatory Care Center Entry Plaza



6.06 UCLA Research and Education Building

DESIGN PRINCIPLES

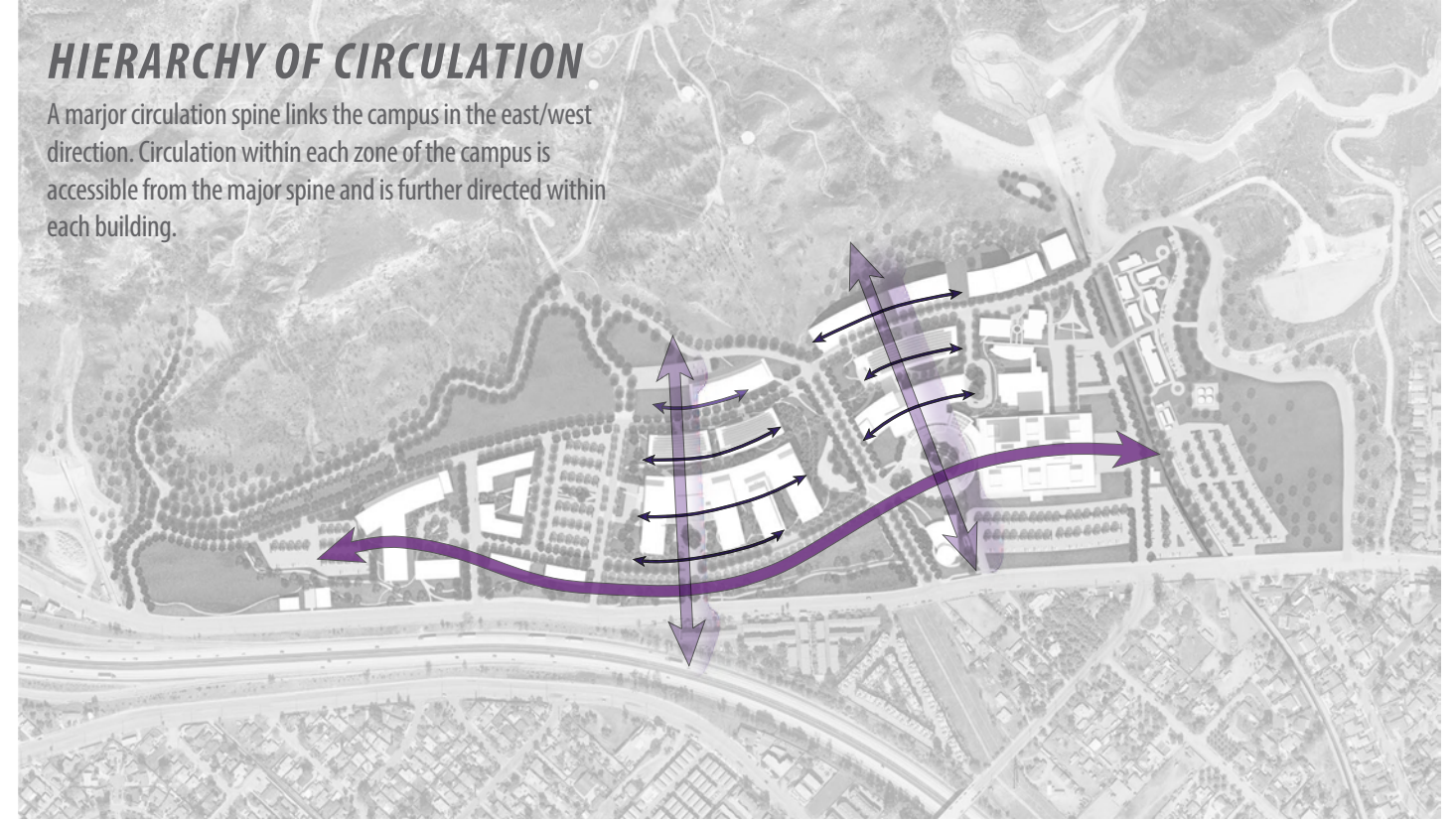
IDENTITY

There is a unique identity for each of the major components of the campus. This provides for clarity of organization as well as ease of wayfinding.



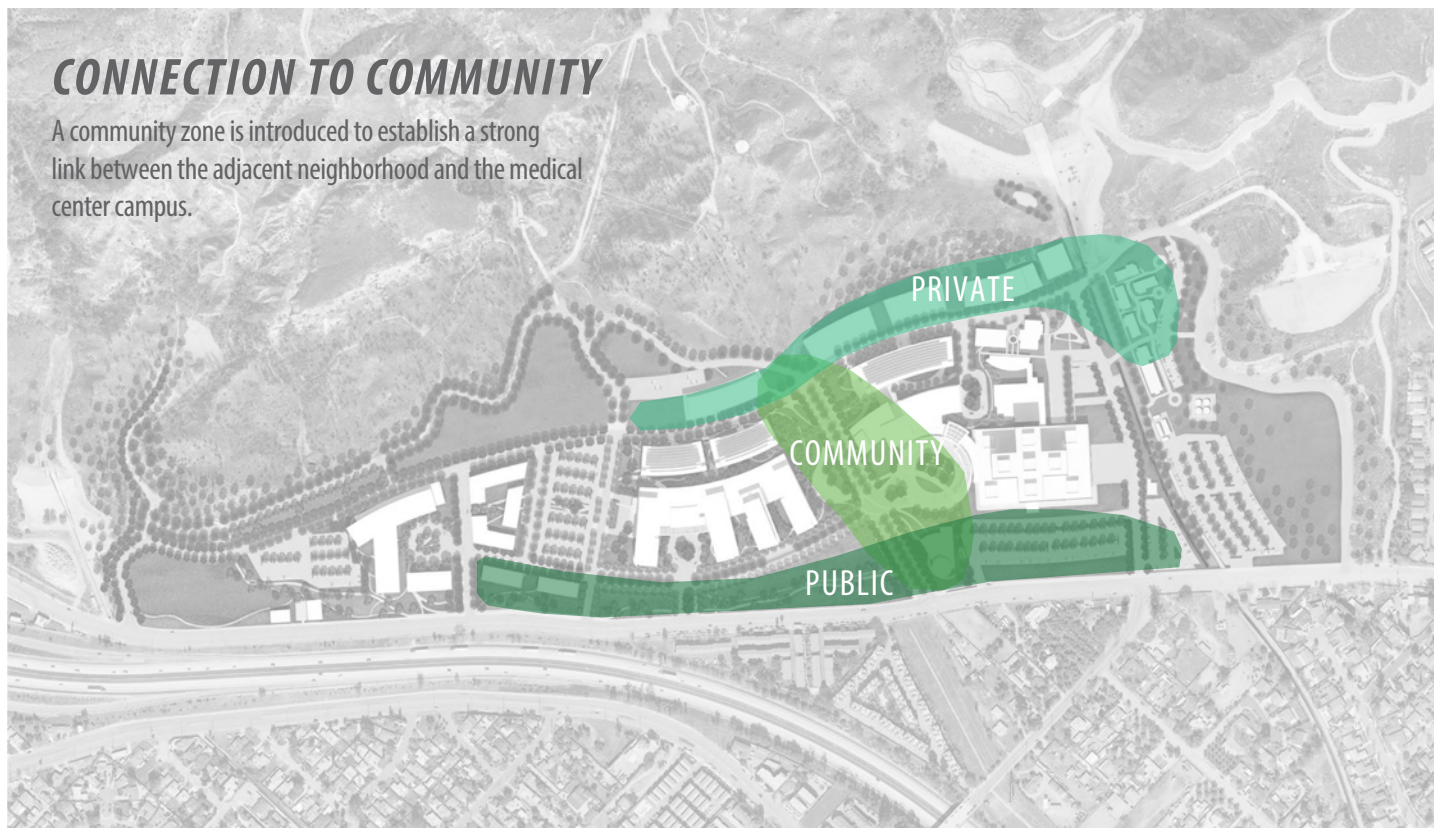
HIERARCHY OF CIRCULATION

A major circulation spine links the campus in the east/west direction. Circulation within each zone of the campus is accessible from the major spine and is further directed within each building.



CONNECTION TO COMMUNITY

A community zone is introduced to establish a strong link between the adjacent neighborhood and the medical center campus.



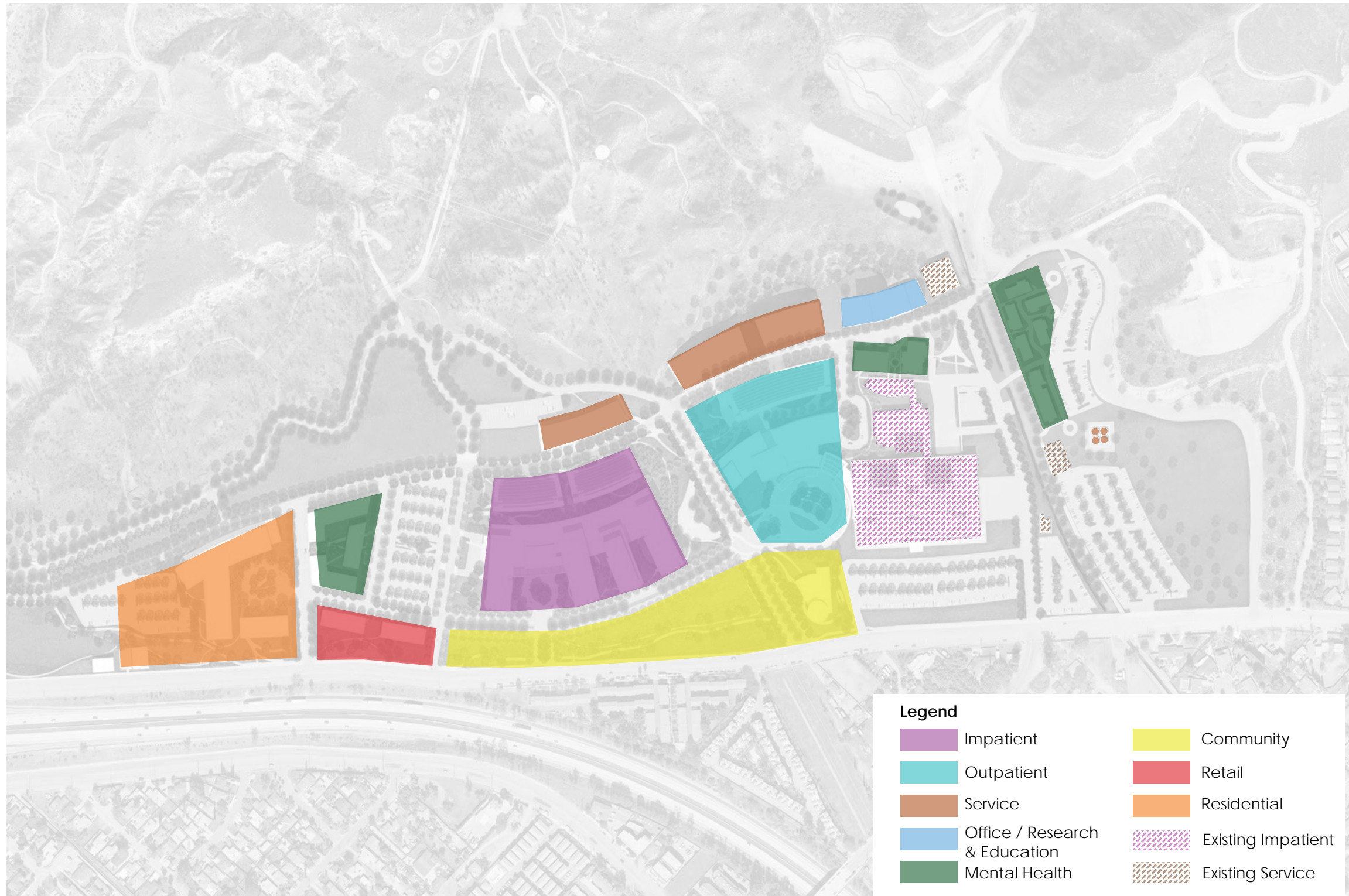
STRING OF GARDENS

A string of gardens are located throughout the campus accessible from various pedestrian and bicycle paths.



CAMPUS ZONING

The center of the site is reserved for the Olive View Medical Center services as this is the major component to the master plan. In this zone, the inpatient, outpatient, and UCLA uses are placed. The east end of the medical center zone is reserved for the future Inpatient Hospital and associated service buildings. Outside of this zone, the various other uses are located including administration services and campus support. At the east end of the campus, the Mental Health and Assisted Living uses are located. The front of the campus along Olive View Drive is intended for community and retail uses to help link the campus to the surrounding neighborhood.



6.08 Campus Zoning Diagram

(Original) SmithGroup JJR, 2015, (Updated) Perkins Eastman 2019

BUILDING USE AND PROGRAM SUMMARY

SITE PROGRAM SUMMARY

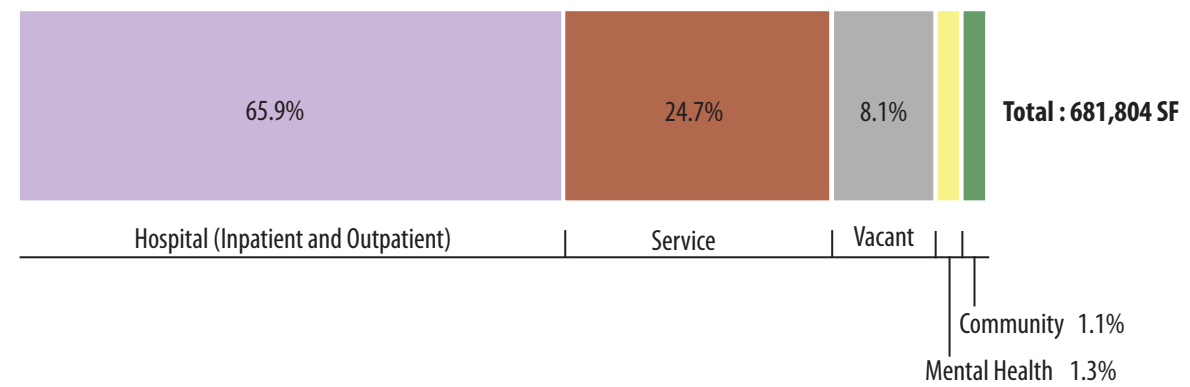
CRITERIA	EXISTING CONDITIONS	MASTER PLAN
Site Area	230 Acres	
Site Area (Buildable) in Acres	5,603,700 SF	
Building Area	804,200 SF	1,382,000 SF
Floor Area Ratio (FAR)	0.144	0.247
Maximum Building Height/Number of Stories	100 FT/6 Stories	100 FT/6 Stories
Parking		
Stalls in surface parking	2,672 *Count	1,200
Stalls in structure	0	2,000
BUILDING PROGRAM	EXISTING CONDITIONS	MASTER PLAN
Hospital	530,000 SF	530,000 SF ***
Ambulatory Care Center		276,000 SF
UCLA MOB		120,000 SF
Community	9,300 SF	20,000 SF
Administration	99,400 SF	96,000 SF
Retail		40,000 SF
Mental Health	11,000 SF	20,000 SF **
Long Term Care Residential		135,000 SF
Support Services Buildings	35,200 SF	68,000 SF
Central Utility Plant / Facilities / Shops	64,700 SF	77,000 SF
Vacant	65,600 SF	
SUBTOTAL	804,200 SF	1,382,000 SF

Notes: * Current demand: 2,251
 ** Anywhere from 15,000 to 40,000 SF
 *** This area is for total renovation. If the building is replaced, the area should be closer to 600,000 SF.

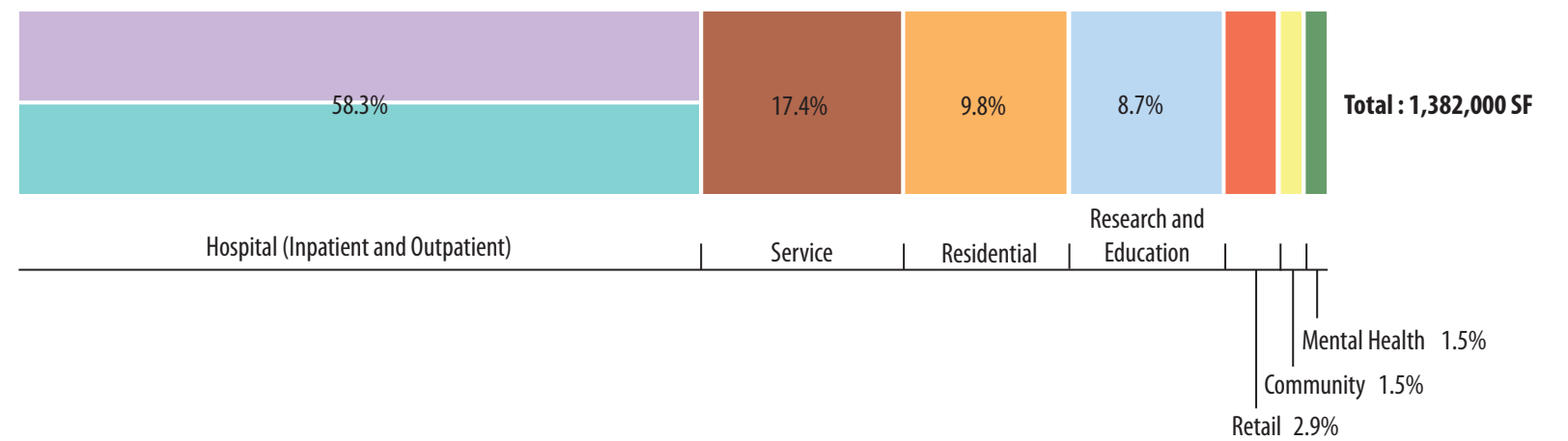
6.09 Site Program Summary

BUILDING USE

Existing Conditions



Olive View - UCLA Medical Center Master Plan



6.10 Building Use Chart



6.11 Building Use Diagram

(Original) SmithGroup JJR, 2015, (Updated) Perkins Eastman 2019

BUILDING USE

The building use plan shows a more detailed arrangement of the different uses on the campus as they correspond to each of the buildings. Immediately adjacent to the existing Hospital, the Ambulatory Care Center will house clinics as well as diagnostics and treatment services. Once the need arises for a new Inpatient Hospital, the zone directly east of the Ambulatory Care Center can be used for this new facility. The Mental Health and Long Term Care / Recuperative Care building are located at the east end of the campus. A Community Center is located immediately in front of the main entry from Olive View Drive.

SITE CIRCULATION

VEHICULAR CIRCULATION

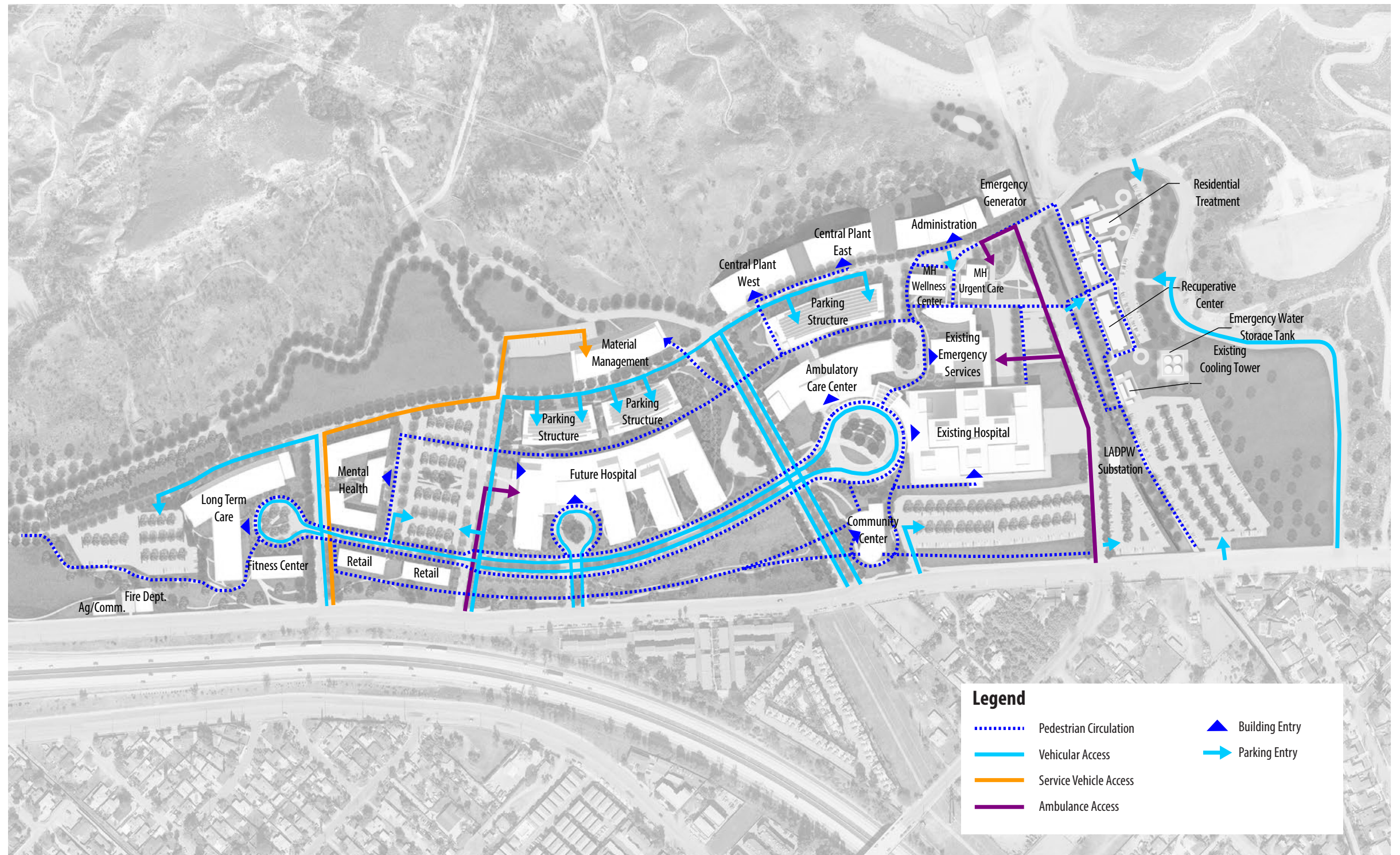
Because the medical center is only accessible from Olive View Drive to the south, it is important for the master plan to provide a clear system of roadways for each of the different users of the campus. Intermingling of different users is expected, but the goal is to provide clear and direct entries to points of destination.

Each zone of the campus has a dedicated entry point from Olive View Drive which will be supplemented by directional signage and landmarks. In addition, drop-off areas are located at each of the major buildings on the campus with the intent of being immediately visible upon entering the campus. Parking structures and surface lots are placed at various locations adjacent to the buildings.

Access for service vehicles is dedicated to minimize traffic for visitors and patients. Similarly, emergency vehicles are provided a direct route to the emergency department.

PEDESTRIAN CIRCULATION

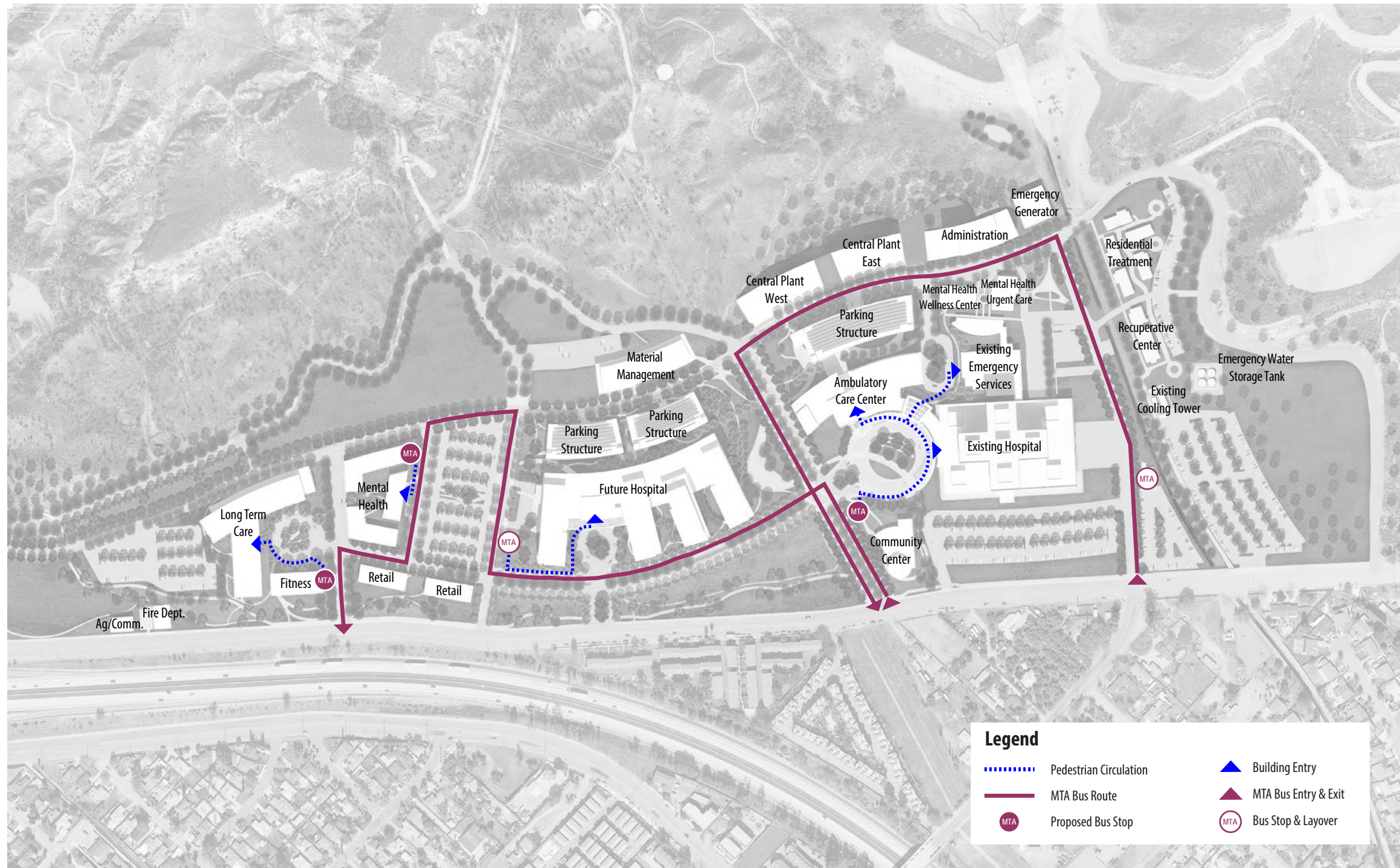
There are various walking, biking, and equestrian paths that are introduced into the new master plan to make the campus more inviting to the various users of the campus and members of the community. These paths provide access to the different building uses on the campus as well as connections to the various gardens and open spaces. In addition to providing a better experience for the users, the campus circulation also minimizes travel distances between buildings and to parking.



6.12 Site Circulation Diagram

(Original) SmithGroup JJR, 2015, (Updated) Perkins Eastman 2019

PUBLIC TRANSIT



6.13 Public Transit Diagram

(Original) SmithGroup JJR, 2015, (Updated) Perkins Eastman 2019

WELLNESS TRAILS

Olive View visitors and members of the adjacent community are connected to open space, both existing and new, through a woven system of bike, equestrian, and pedestrian trails.

The extensive Wellness Trails promote activity and bring the user closer to nature, while providing transitions between vehicular traffic and hospital facilities, making it safe and convenient to move throughout the campus.

Access to existing trails in the mountains and canyons that encompass the north side of the site is increased, by drawing these trails down into the campus, extending the experience for bikers, pedestrians and the prevalent equestrian community.

Throughout the campus, the Wellness Trails serve as the link between buildings, the community, and the string of gardens that make Olive View a place that heals both people and the natural land.

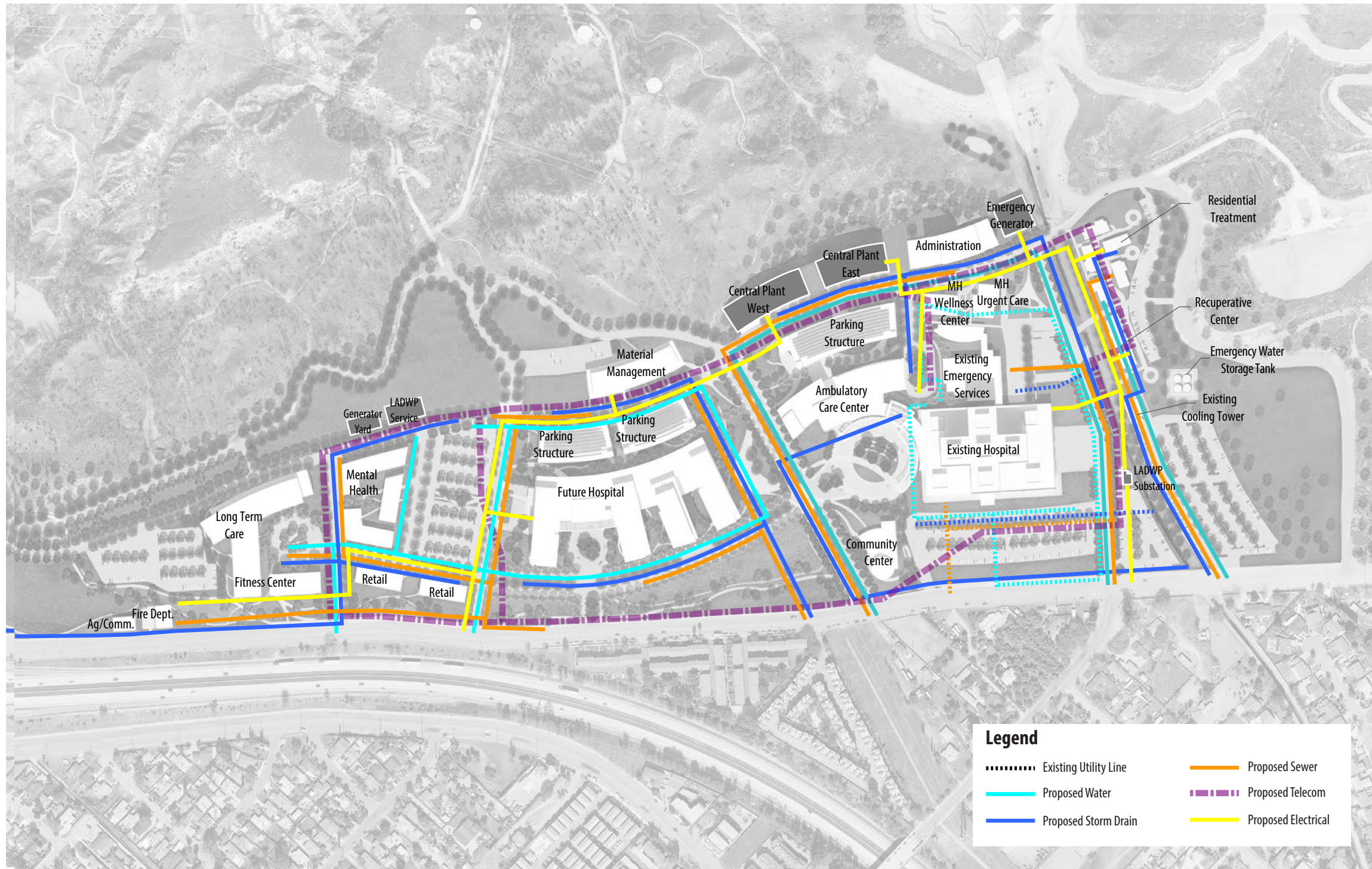


- | | | | | | | |
|------------------|----------------|------------------|-----------|------------------|------------------|------|
| Community Events | Gathering Area | Camp Site | Gardens | Nature Discovery | Quiet Space | Bike |
| Sensory/Habitat | Wild Flowers | Dog Friendly | Family | Healing Garden | Picnic / Seating | |
| View Deck | Riparian | Active / Fitness | Trailhead | Retail | Visitor Center | |

6.14 Wellness Trails Diagram

(Original) SmithGroup JJR, 2015, (Updated) Perkins Eastman 2019

UTILITY INFRASTRUCTURE



6.15 Site Utility Infrastructure Diagram

(Original) SmithGroup JJR, 2015, (Updated) Perkins Eastman 2019

PARKING

There are various parking structures and surface lots provided in the master plan to serve the various users on the campus. The majority of patient and visitor parking is provided in the parking structures which are located immediately adjacent to the buildings they serve for ease and proximity of access. These parking structures are supplemented by surface lots. In addition, drop-offs are provided at each of the major building entries to help reduce walking distances.

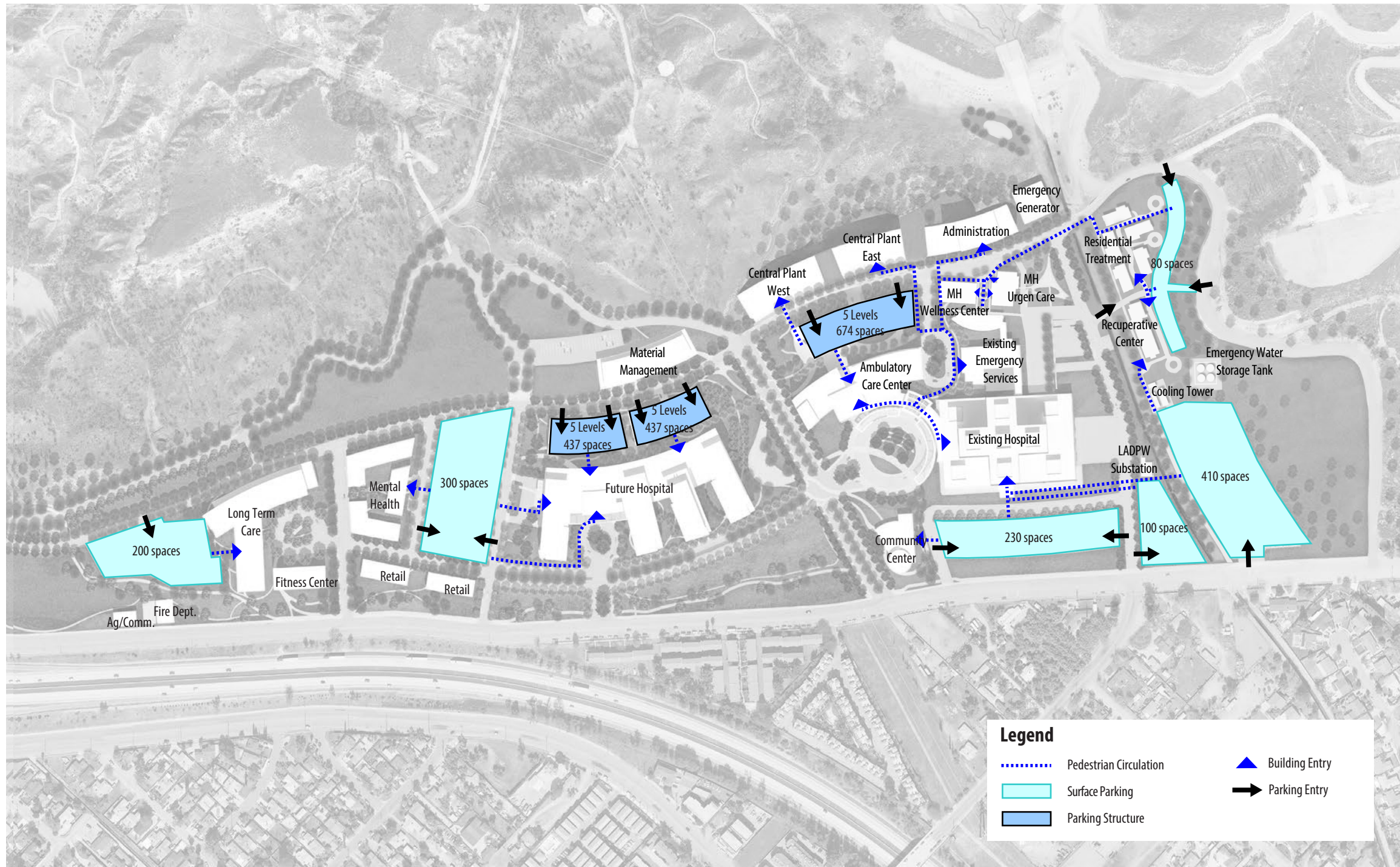
Parking for staff and physicians is provided in the surface lots as priority is given to visitors and patients. Because the parking structures are located behind the buildings in which they serve, it is important that signage and wayfinding provide clear directions for visitors and patients.

At the time of this master plan, detailed forecasts of employee, patient, and physician growth was not available. Instead, growth rates implied from the key programming drivers has been used to project future demand. A further study of parking needs and capacity should be done to confirm compliance to code as the various buildings are designed and carried out in the master plan.

Building	Use	Area (S.F.)	Beds	LA County Zoning Code	
				Parking Rate	Parking Required
Existing Hospital	Inpatient	530,000	270	2 spaces per 1 bed	540
Replacement Inpatient Hospital	Inpatient	605,000	251	2 spaces per 1 bed	502
Ambulatory Care Center	Outpatient	276,000		1 space for 250 S.F.	1,104
UCLA MOB	Outpatient	120,000		1 space for 250 S.F.	480
Administration	Office	96,000		1 space for 400 S.F.	240
Support Services	Storage	68,000		1 space for 1,000 S.F.	68
Central Utility Plant	Utility	77,000		1 space for 1,000 S.F.	77
Recuperative/ Long Term Care	Housing	135,000		1 space for 1,000 S.F.	135
Community Center	Assembly	20,000		1 space for 250 S.F.	80
Retail	Commercial	40,000		1 space for 400 S.F.	100
Mental Health	Outpatient	20,000		1 space for 250 S.F.	80
Total for Renovation Option		1,382,000			2,904
Total for Replacement Option		1,457,000			2,866

6.16 Minimum Parking Required per LA County Zoning Code

PARKING



6.17 Parking Diagram

(Original) SmithGroup JJR, 2015, (Updated) Perkins Eastman 2019





LOGISTICS

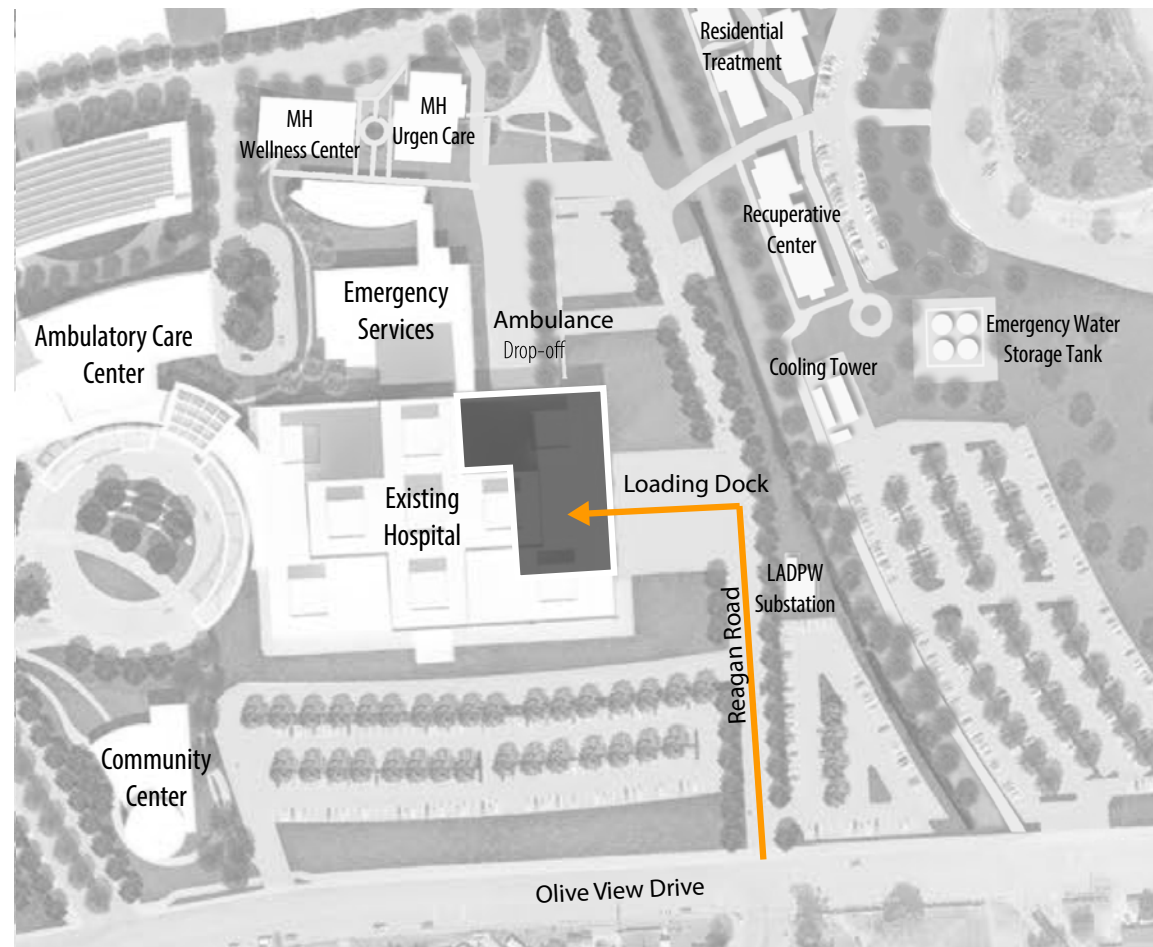
RENOVATION OPTION

As already mentioned in the Site Facilities Planning section of this report, there are two options for how the material and waste management for the future campus can be organized. If the decision is made to renovate the existing Hospital, the existing loading dock can remain in operation. A new Materials Management building will need to be built as the current facility will be displaced by the new Ambulatory Care Center. It is suggested that this new Materials Management building be located in close proximity to the new Central Plant so that loading dock facilities can be shared.

This configuration clearly separates service vehicles from patients and visitors, and it maintains Reagan Road as the main service entry point into the campus. In addition, this layout optimizes the delivery method of periodic deliveries to and from the Materials Management building to the existing loading dock.

Legend

-  Service Vehicle Access
-  Service Vehicle Dock Entry
-  Tunnel Connection
-  Materials and Waste Management Program Area

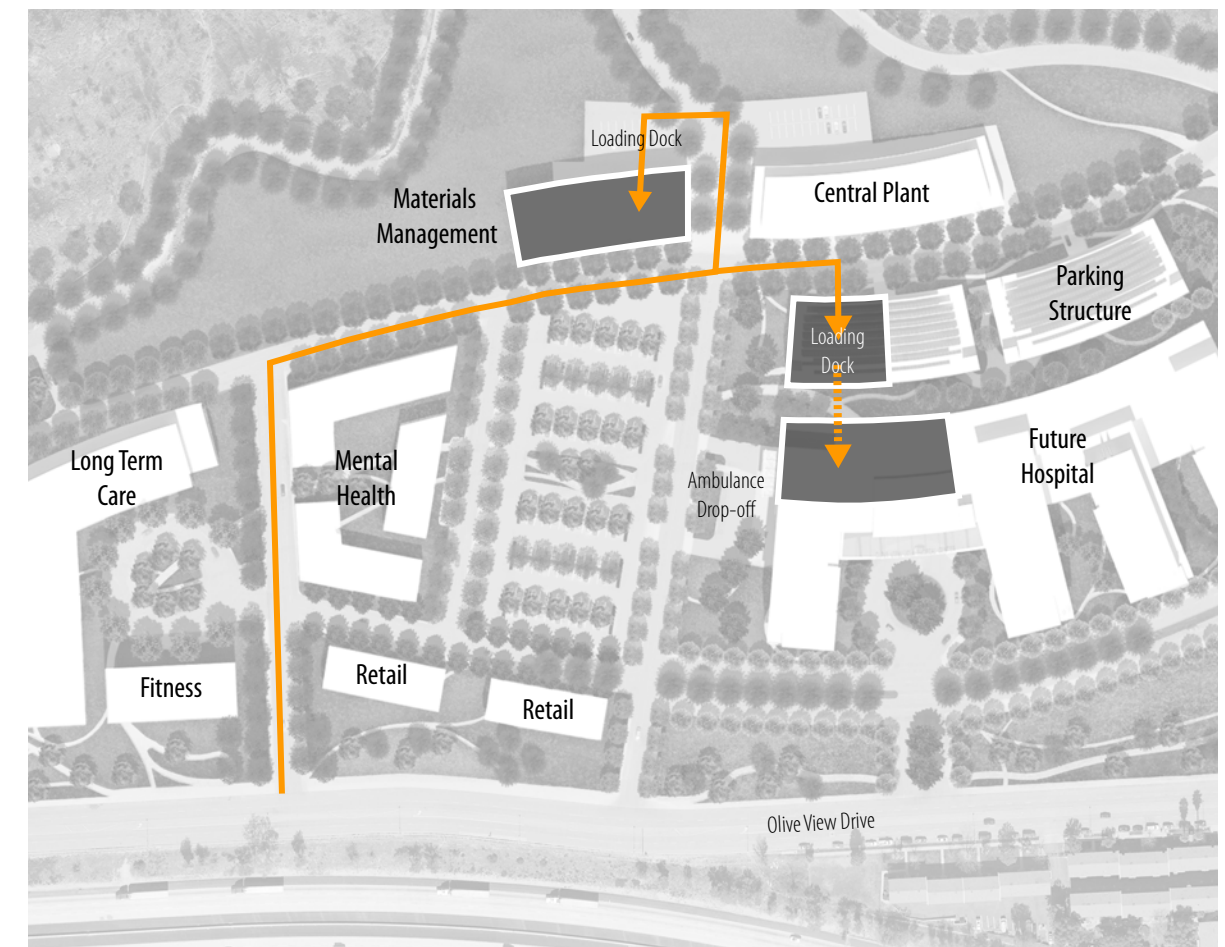


6.18 Enlarged Site Plan - Renovation Option Logistics Diagram (Original) SmithGroup JJR, 2015, (Updated) Perkins Eastman 2019

REPLACEMENT OPTION

Alternatively, if the decision is made to build a replacement Hospital, it is still suggested that the existing material and waste management system be used. Similarly to the renovation option, it is suggested that the new Central Plant and Materials Management building be co-located so that loading dock facilities can be shared. Large truck deliveries will be made to the new Materials Management building where storage will be provided. Small truck deliveries will be made from this building to the future Hospital.

In addition to the satellite building, a loading dock will be required at the future Hospital for waste management and other needs such as food service. A dedicated path must be provided in the design of the Hospital to allow for a direct connection to this loading dock. This recommendation should be verified during the design of these facilities.

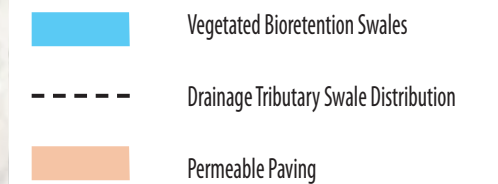


6.19 Enlarged Site Plan - Replacement Option Logistics Diagram

LOW IMPACT DEVELOPMENT

Being at such a key point in the greater Los Angeles Basin watershed, the management of runoff is critical and should be slowed and treated at every opportunity. Using Low Impact Development (LID) strategies, wherever possible, the new design helps water flow from the adjacent mountains into vegetated bioswales, allowing water to return to the ground, filtered by plants and soil. Bioswales help mitigate runoff, improving groundwater quality, while taking advantage of the natural flow, using the shape of the land to direct water to the landscape and reducing the need for irrigation. The revegetated areas at the base of the mountains, allow water flow to slow and infiltrate the ground before it reaches the campus perimeter, also naturally stabilizing the slope, minimizing erosion.

Once geotechnical determinations are made and should the soil be found suitable for infiltration, the LID methodology should be further established and applied. Methods may include use of permeable paving in parking and hardscape areas.



6.20 Low Impact Development - Bioretention Plan

(Original) SmithGroup JJR, 2015, (Updated) Perkins Eastman 2019

LANDSCAPE DESIGN

The landscape for the master plan was developed in response to the campus' dramatic topography, where the foothills of the San Gabriel Mountains meet the flatlands of suburban Sylmar. Organized by the contours of the land, the landscape is a gradient from most garden-like and cultivated along the south, at the city edge, to most rugged and natural along the northern perimeter of the site. The long term goal is to preserve green open space along Olive View Drive, creating a transition between the facility and the neighborhood, offering the neighborhood needed shared park and recreational space.

A HEALING CAMPUS THAT HEALS THE LAND



6.21 Examples of California landscapes and open spaces for community and public use

LANDSCAPE SITE PLAN



(Original) SmithGroup JJR, 2015, (Updated) Perkins Eastman 2019

SITE ECOLOGY



RIPARIAN WOODLAND



MOUNTAIN FOREST



PINYON JUNIPER WOODLAND



JOSHUA TREE WOODLAND



WILD FLOWER



CHAPARRAL



COASTAL SAGE SCRUB



VALLEY AND FOOTHILL WOODLAND

6.23 Photos of various California plants and ecologies

The new landscape should **expand and restore** native plant communities, helping to heal the local ecology, bolstering plant life and habitat that has been lost and degraded. Water-wise plants that naturally thrive in the area will blend the campus with the ecology of the surrounding mountains and canyons. The carefully selected plant palette will **complement both architecture and open space**, varying throughout the chain of gardens to create a unique feel and sensory experience between and within each space. Vegetation will transition appropriately, moving from a suburban context at the face of the site with swaths of bright, lively and inviting wildflowers to a more natural and native feel at the outermost edges of the campus.



6.24 Example of landscaped space used for informal gatherings



6.25 Example of view points and vistas to outdoor spaces

SITE SENSITIVE DESIGN

Taking advantage of such a unique and ecologically invaluable site, the master plan aims to emphasize the design of a selected thematic (whether naturalistic or informal, campus or park framework) typology and planning concept that will establish a character for the site's **sense of place**. The master plan demonstrates several planning typologies and defines landscape character of the future healthcare campus.

A way in which this can be achieved is to identify all outdoor areas as **distinct and relevant open spaces**, with no leftover or unusable outdoor space, through plantings and hardscape elements. In addition, maximizing the site's topography by creating **vistas and view points** as trail destinations and site amenities as well as showcasing the aesthetic value of the developed campus in relation to its hillside context is important.

INTEGRATED LANDSCAPE



6.26 Example of courtyards within interior of buildings



6.27 Example of bringing nature into interior spaces

By **bringing the landscape in** and providing **critical views** to the landscape, indoors and outdoors are connected and intertwined. This allows all patients and visitors to experience nature and benefit from the healing properties that it provides. The landscape along the trails and in the gardens continues into the common areas of the hospital and may be integrated by way of green walls and interior plants in public gathering areas within buildings. Windows frame the campus trees and the natural areas beyond, **connecting the viewer to the land** around the buildings.

RECREATION

Opportunity for recreation by way of **bike and equestrian trails** connects the community to the site. Acting as an extension of the existing trail along the Wilson Canyon Channel and the natural open space at north, the **Wellness Trails stitch the community to nature** through the parks that punctuate the campus. Linkage through the trailheads can also serve as an important connection to the existing Rim of the Valley Trail system, the Wilson Canyon Trails, and the Stetson Ranch Equestrian Trails.



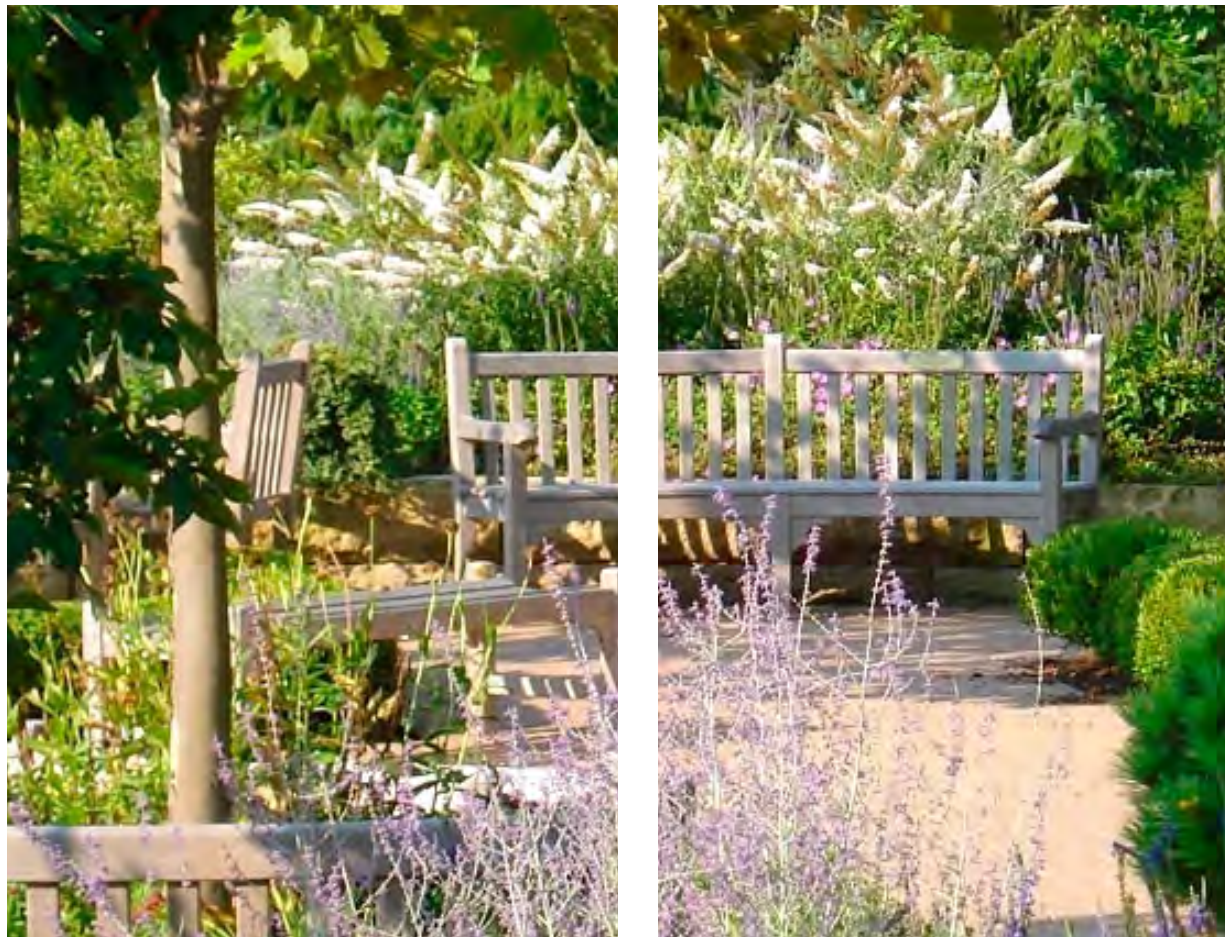
6.28 Photo of equestrian trail



6.29 Photo of bicycle and pedestrian paths

HEALING

The master plan will create a healing landscape that also heals the land, providing opportunities for **re-vegetation**, returning **native California plants** including Oaks, Sycamores, Walnuts, Toyon, and improving degraded soil, increasing **soil recharge** capacity and improving site drainage and the site's ability to handle flooding. Provisions will be made for **habitat restoration** that will encourage presence of wildlife including the swallowtail butterflies, birds, and several animal species that were once more prevalent in the hillsides.



6.30 Example of healing and wellness gardens

COMMUNITY



6.31 Examples of community open spaces used for a variety of functions

To encourage a sense of community and place, the master plan aims to provide multiple and varied **opportunities for interaction** between the surrounding community and the community of Olive View. Educational, fitness and intergenerational components and amenities will serve a large and diverse audience. Create a **welcoming, active** and compelling space for gathering and interaction that will draw people in and will attract visitors and residents making the spaces **dynamic, useable and safe**.

CONNECTIVITY & ENGAGEMENT

A system of Garden & Wellness Trails as shown on the master planning concepts private outdoor areas specific to medical use immediately adjacent and with direct access to medical building entry. They are also viewed from patient rooms and bed towers.



6.32 Example of trail through different gardens

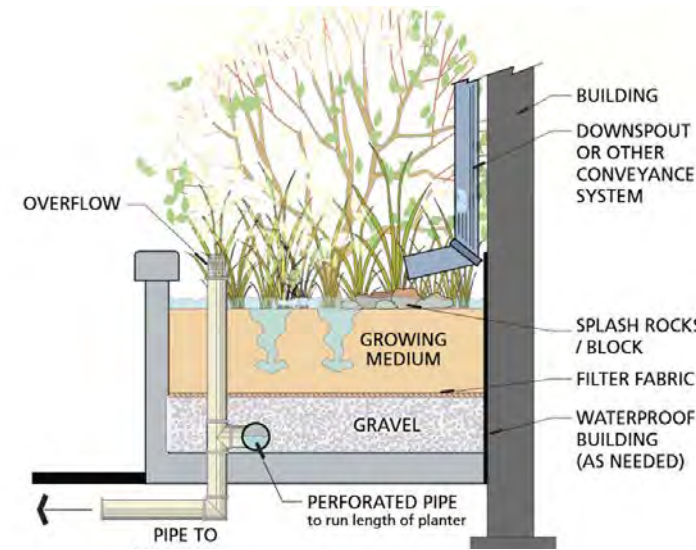


*Provide paths and walkways that have **purpose, direction, destination, and varying experience** when traversed as passage moves from building to building, from one outdoor space to another.*

LANDSCAPE SUSTAINABILITY

A number of different strategies can be incorporated into the landscape design for this master plan including:

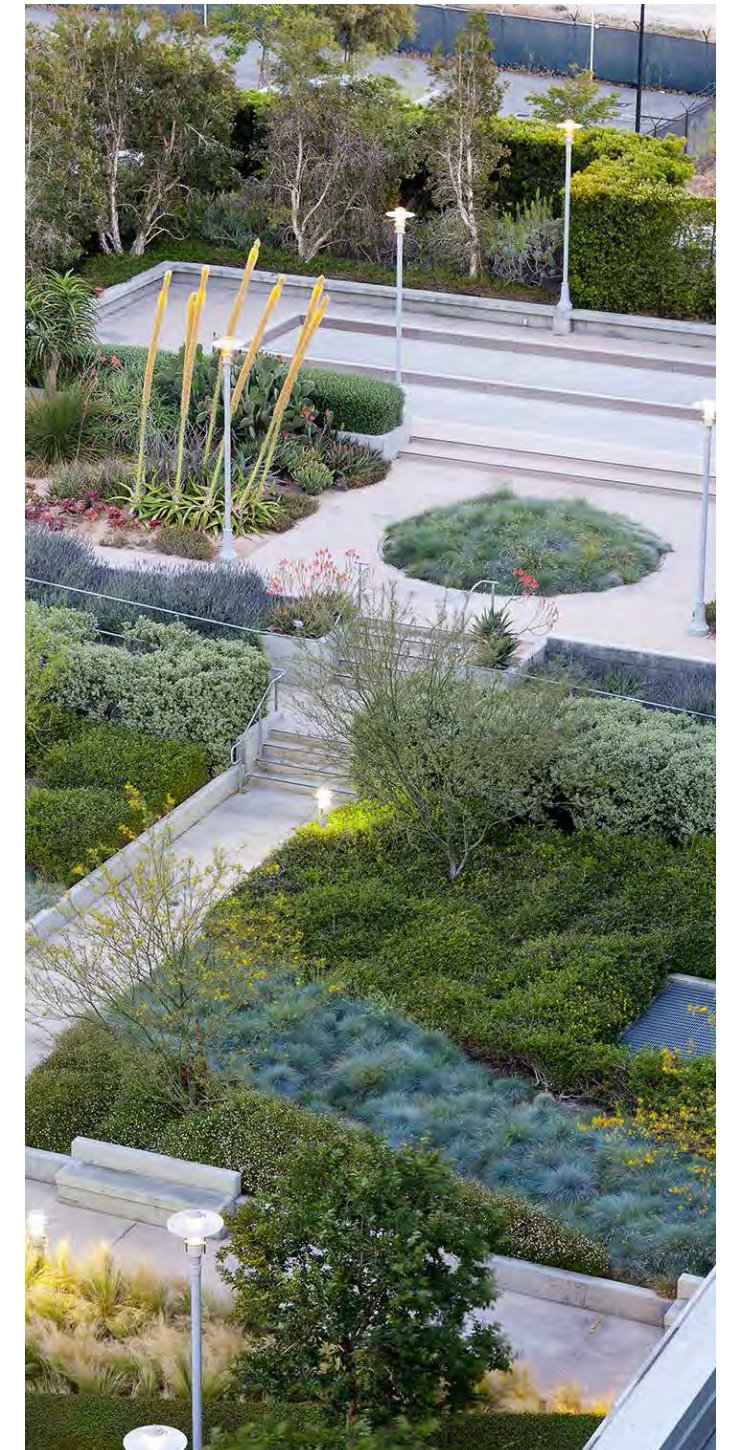
- Integrate sustainable development strategies that prioritize water conservation, restoration of the natural vegetation, stormwater management, and promotion of the site's recreational outdoor element as part of the healing campus – healing people, healing the land.
- Water features should be integral part of building systems and stormwater management elements and should use re-circulated water from building and landscape.
- Stormwater management as part of the landscape planting strategy and design is a critical factor in organizing open spaces and planting selection. Bioretention area plantings can be used to clean and reduce run-off in vegetated swales, raised open-bottom planters, or similar low-impact development strategies.
- New site development and landscape design, installation, and maintenance should meet the highest possible sustainable design standards and measures including incorporating LEED design strategies and where applicable to specific site areas aim to meet minimum certification under the LEED rating systems for site development and landscape including Sustainable Sites, Water Efficiency, Energy and Atmosphere, and Material Resource criteria.
- A selection of bioswale planting is suggested in the plant Exhibit and should be appropriately planted for the type of bio retention planter, whether for open bottom, or infiltration type planters.
- Promote stormwater harvesting practices to reduce the demands on water systems for irrigation, capturing the water in surface basins or underground storage tanks and at the same time reducing runoff and increasing on-site infiltration. Identify the specific feasibility of the master plan proposed location areas for rainwater collection during the design process at each future development phases of the campus build-out.
- Hardscape permeability should be prioritized wherever possible at all paved areas including parking, streets, sidewalks, walkways, paved courtyards and other paving intense outdoor development areas
- Locate new deciduous trees on the north and south sides of buildings to reduce the heating and cooling demands of the buildings during the winter months.



6.33 Section showing treatment of stormwater from building



6.34 Example of roof gardens used for stormwater harvesting and treatment



6.35 Example of using native landscaping and bioswales to handle stormwater

SUSTAINABILITY

A sustainable system is reliant upon the healthy interaction between its parts to comprise a healthy and regenerating whole. At present, both locally and globally, rates of growing population, resource consumption and urbanization are out of balance with the capacity of our local ecosystems and our planet to regenerate. The Triple Bottom Line, summarizes this paradigm to mean, in response we must achieve a successful **balance between social, economic and environmental priorities**, where historically decisions have been dominated by only the economics. The United Nations follows the definition, “Meeting the needs of this generation **without compromising** the ability of future generations to meet their own needs”. At the master plan scale it can be clarifying for all OVMC stakeholders involved to have these common frameworks upon which to set expectations for a envisioning a future medical campus that is socially just, ecologically restorative, and economically responsible.

GOALS FOR THE CAMPUS

At the beginning of the Master Planning effort, the Design Team met with Olive View leadership in order to determine the sustainability goals of the County and hospital. The overarching goal is to incorporate sustainable strategies that will meet the long term needs of the campus with an emphasis on Community, Transportation, Site, Water, Energy, and Occupant Wellness. The sustainability guidelines set forth in the Master Plan will address each of these overarching goals and provide a plan for future implementation. The guidelines are organized by metrics and the strategies in which to move those metrics forward.

Community

Development has the potential to create a connection and sense of community. OVMC leadership has stressed the importance of creating a sense of place and strengthening this connection with the community while ensuring security and safety for its patients and staff. By creating a medical campus with a diverse mix of uses at a scale that is appropriate for the site, OVMC has the potential to really engage with the surrounding community and host services that meet a multitude of community needs complimentary to a primarily healthcare use.

Transportation

As a county-run facility, OVMC is subject to complying with the Air Quality Management District (AQMD) and has taken measures to reduce single ridership among its staff. Currently carpooling is the main means of alternate transpiration with public transportation and bicycle commuting being underutilized. As a way to continue meeting the AQMD guidelines, OVMC has expressed a desire to increase transportation mode split and reduce single occupant vehicle commuter trips. The master plann focuses on public transportation infrastructure, bicycle amenities, and incentives.

Site

There are vital relationships between all buildings and their surrounding eco-systems but healthcare campuses offer unique opportunities to integrate the qualities of site with the architecture and infrastructure. The OVMC site is unique because of its size and integration with the surrounding Angeles National Forest. Open space provides a habitat for vegetation and wildlife, reduced heat island effect, and increased stormwater infiltration. Given the location oand the already existing connection to open space, it will be important for the master plan to celebrate and protect the natural characteristics of the site.

Water

Hospitals are among the top-10 water consumers in their water utility service areas. Therefore, reduction in water use can significantly affect the regional water supply, especially in water-scarce areas such as Southern California. OVMC leadership has expressed that water efficiency is a priority for the campus and that the master plan should account for water use and reduction. Additionally, water treatment and a resilience to municipal water disruption, either because of drought or catastrophe (fire, earthquake) would be a benefit to the hospital. The guidelines will focus on indoor plumbing fixture selection, optimizing cooling tower cycles, efficient water use for cooling equipment, metering, drought tolerant landscaping, and graywater reuse.

Energy

Healthcare facilities have the second-highest average energy usage intensities (EUI) of any building type due to their 24/7 operations and the high energy use associated with medical equipment, lighting, and ventilation. Energy efficiency demands of the state and local codes will continue to evolve. OVMC leadership agrees that the master planning effort should include EUI analysis of each building and that the solar potential of the site should be estimated in order to inform the design of the campus. The size and topography of the site offers a huge opportunity for solar generated renewable energy.

Occupant Wellness

Healthcare’s fundamental mission is to protect and enhance individual and community health. By acknowledging the intrinsic relationship between the built environment and human health, we are able to create high performing healing environments. OVMC has expressed an interest in a healthy materials program for all new buildings on campus and the master plan focuses on how building design and operations can foster health and healing for both patients and staff.

SUSTAINABILITY FRAMEWORK

Green Building rating systems and frameworks offer a clear process by which sustainability goals can be implemented and measured. In addition to the California Green Building Code (CalGreen), several green building frameworks are available that provide a comprehensive set of guidelines for developing high-performing, sustainable healthcare facilities. Frameworks are tools that help the hospital take systematic action toward its goals and generate measurable results upon which stakeholders at many levels of the organization can maintain focus.

There are several rating systems that can guide the sustainability process on many different levels including planning, building, and operations. Leadership in Energy and Environmental Design (LEED) is the most widely recognized rating system, a green building certification program developed by the U.S. Green Building Council that offers third party validation of a project's green features.

The Planning Level

Healthcare campuses offer unique opportunities for expanding sustainable development at the campus or neighborhood scale. Several approaches and frameworks that address principles of smart growth, urbanism, and green building that may be appropriate for this project are:

LEED for Neighborhood Development (ND) places emphasis on site selection, design, and construction elements that bring buildings and infrastructure together into a neighborhood and relates the neighborhood to its landscape as well as its local and regional context. OVMC is not eligible to earn this certification but the LEED ND rating system offers a comprehensive set of considerations applicable to the long term success and sustainability of the OVMC campus. For the purpose of this Master Plan, the rating system has been referenced as a source for additional guidance on the implementation of specific design strategies including:

- Smart Location and Linkages
- Neighborhood Pattern & Design
- Green Infrastructure and Buildings

LEED Application Guide for Multiple Buildings and On-Campus Building Projects allows credits to be earned through a Master Site Review. All campus credit information is documented within a Master Site and projects on the campus that submit for LEED certification can utilize the credits pre-approved in the master site review.

The Building Level

In the United States, buildings consume more than 30% of the total energy and 60% of the electricity used. Healthcare facilities represent an energy, water, and personnel intensive building type and rank as the third most energy intensive building type and among the top 10 water consumers. Green building can substantially reduce the negative environmental impacts through high-performance. Rating systems designed to address the performance of buildings include:

LEED for New Construction (NC) is the primary framework developed by the USGBC and focuses on the design and construction of buildings. LEED NC addresses design and construction activities for both new buildings and major renovations of existing buildings and focuses on 5 main categories: Site, Water, Energy, Materials, and Indoor Environmental Quality.

LEED for Healthcare adapts the LEED NC rating system to meet the specific issues and needs of inpatient, outpatient, long-term care facilities and focuses primarily on design and construction.

The Green Guide for Healthcare (GGHC) is a best practices guide for healthy and sustainable building design, construction, and operations for the healthcare industry. The GGHC borrows the credit structure of LEED but is self-certifying.

The WELL Building Standard® is the first green building framework to focus on improving human wellness within the built environment. The WELL Building Standard® prescribes a series of technology enhancements and performance-based measures that are systemized across seven categories relevant to occupant health in the built environment – Air, Water, Nourishment, Light, Fitness, Comfort, and Mind.

The Operations Level

A sustainable building maximizes operational efficiency while minimizing environmental impacts. It is important to have sustainability guidelines for building operations to ensure that the building performs as originally intended throughout its life.

LEED for Existing Buildings is designed to certify the sustainability of ongoing operations of existing buildings. Specifically, the rating system addresses exterior building site maintenance programs, water and energy use, environmentally preferred products and practices for cleaning and alterations, sustainable purchasing, policies, waste stream management, and ongoing indoor environmental quality.

The Healthier Hospitals Initiative (HHI) is a collaborative effort among healthcare organizations to address health and environmental impacts of the healthcare industry. The HHI challenge consists of “self-reported” data that is collected and tracked towards achieving certain goals. The primary focus of the HHI is on operations.

THE LEED SCORECARD

New buildings and major renovations are mandated by the County of Los Angeles to be certified under the USGBC's LEED Rating System with a minimum certification of LEED Silver. In addition to meeting all prerequisites, a minimum of 60 points are required for projects seeking LEED Silver.

The LEED rating system will continue to evolve in an effort to push green building to the highest standard possible. Future projects built on the OVMC campus will be certified under the LEED version that is current at that time. As this report begins to frame sustainability goals for the campus, it is important to note that these goals will also evolve over time.

COMMUNITY

Resilient communities are characterized by their ability to come together and overcome adversity when faced with catastrophe. A strong sense of community is signified by individuals who share pride and care toward a common identity. The Olive View Master Plan offers many opportunities to provide leadership and implement strategies which contribute to the resiliency and identity of the adjacent Sylmar homes and businesses. These strategies share a common concept of enhancing connectivity, through increasing opportunities for interactions between neighbors, encouraging commerce between local businesses, sharing or optimizing resources to improve the local environment. The following strategies will provide many important benefits to residents, employees, and visitors to Sylmar and the OVMC.

Location and Linkage - Commercial Space

Developing basic commercial services within walking distance (1/4 mile) helps to limit suburban sprawl and reduce traffic congestion caused by single occupant vehicle trips while improving air quality, reducing air pollution, and greenhouse gas emissions. Shaded pedestrian corridors and interesting places to walk (like shops and parks) can improve workers' health and productivity through exercise instead of driving.

Currently there are few basic services within a walkable ¼ mile radius serving the OVMC campus and the surrounding residential neighborhood. The development of mixed-use buildings that locate small business services close-to or on campus will provide walkable access to shops and basic services promoting greater human interaction and physical activity.

Location and Linkage - Local Food Production

Community-based food production provides environmental and economic benefits along with improved nutrition through better access to fresh produce.

Recommendations

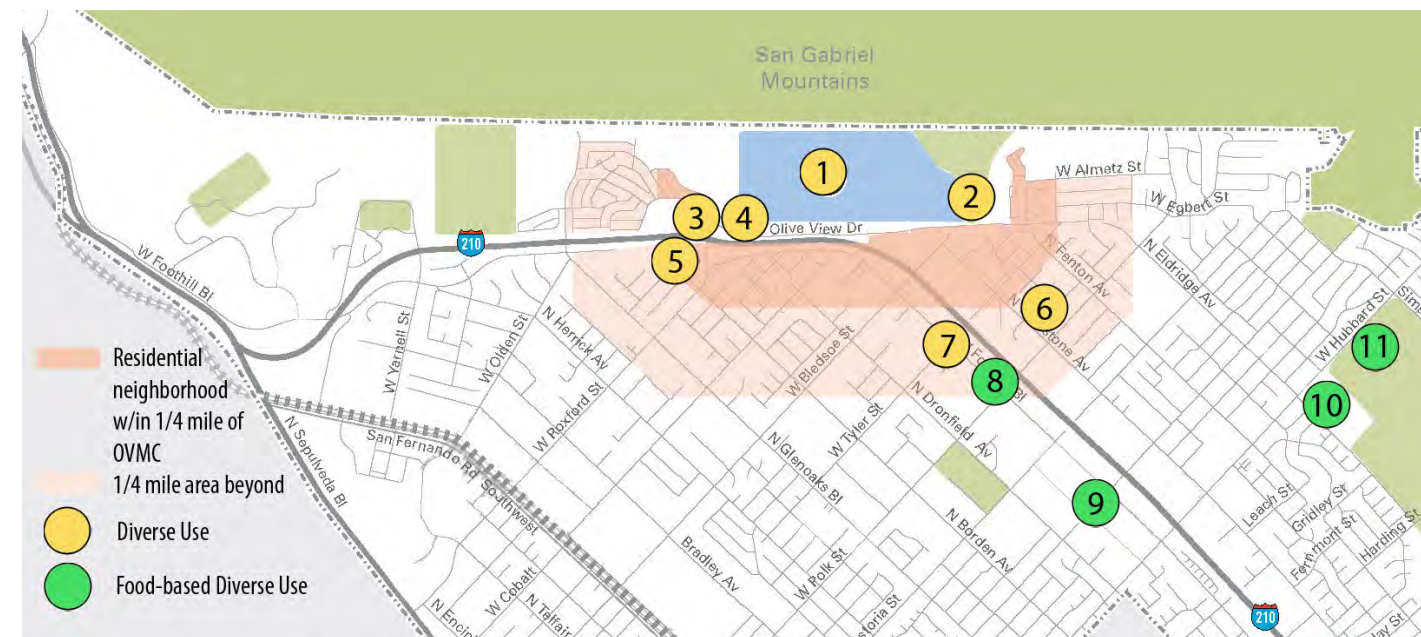
- Dedicate permanent and viable growing space or related facilities within the project and provide fencing, watering systems, garden bed enhancements, secure storage space for tools, and pedestrian access for these spaces.
- Host a farmers market that will operate at least once weekly for at least five months annually.
- Include a produce market in the community/ retail space program.

Neighborhood Design - Compact Development

Compact development characterized by buildings clustered near one another, typically two stories or more in height preserves natural landscape, reduces the development footprint of the project and makes more efficient use of infrastructure such as water and gas pipelines. Currently, the buildings on the OVMC are spread out in a way that discourages walkability and requires upgrades or extensions to below-ground utility services. The Master Plan maintains a density of .247 which is measured in Floor-to-Area Ratio (FAR). FAR is calculated by dividing the building area by the site area. Rural agricultural zones are characterized by a FAR of >0.09. Village or campus zones have a FAR of 0.1 – 0.49. General urban zones have a FAR of 0.5 – 1.49.

Mark	Diverse Use Type	Diverse Use Name
1	Hospital	OVMC
2	Park	Wilson Canyon Park
3	Gas Station	AMPM
4	Auto Repair	Jiffy Lube
5	Hotel	Travelodge
6	Church	Sylmar Christian Fellowship
7	Pre School	Foothill Learning Center
8	Convenience Store	7-Eleven
9	Grocery Store	Vons
10	Farmers Market	Mission College
11	Community Garden	El Cariso Park

6.36 Existing Diverse Uses



6.37 Existing Diverse Uses Vicinity Map

Case Study: Kaiser Permanente Farmers Market

Kaiser Santa Clara opened its 52-acre Hospital and Medical Office campus in 2007. Kaiser's pro-active health-care philosophy includes a Farmers' Market and healthy eating alternatives in the Cafeteria.



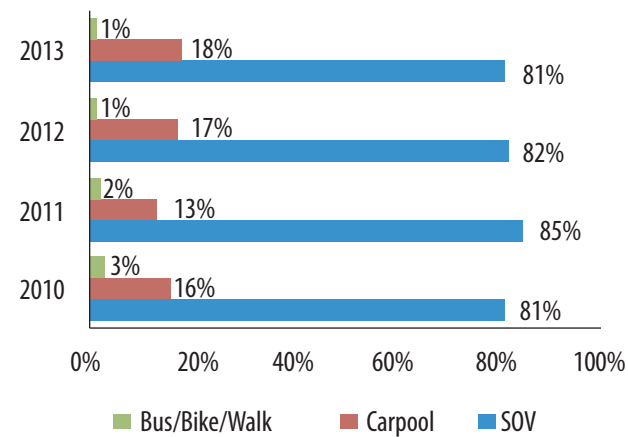
6.38 Case Study - Kaiser Permanente Santa Clara

TRANSPORTATION

While OVMC does not yet have a formal Transportation Demand Management (TDM) program, the campus is required to meet SCAQMD Rule 2202 which requires the campus to meet emission reduction targets by implementing a trip reduction program.

Increase Average Transportation Ridership (AVR)

Currently, only 1% of OVMC employees use public transportation or bike/ walk to work with 18% of employees commuting by carpool. This leaves about 81% of employees commuting to work via Single Occupant Vehicles (SOV). As part of a comprehensive master plan, OVMC will want to encourage an increase in alternate means of commuting other than by SOV.



6.39 OVMC Employee Commuter Data by Year

Transit Service

The Los Angeles Metro is the chief transit service provider to OVMC via bus. Two Metro bus transit lines pass within a 1/4-mile walking distance of the OVMC campus with bus stops located on Olive View Drive, Reagan Road, and Kennedy Road.

- 90 - This is a downtown route that serves Downtown LA, Chinatown, Lakeview Terrace, and Sylmar.
- 224 - This is a San Fernando Valley route that serves Sylmar, San Fernando, North Hollywood, and Studio City.

Total daily transit trips currently serving the project are:

- Weekdays: 70
- Weekends (avg.): 37

The county is encouraged to work with the Los Angeles METRO to inventory existing and new metro stops within the project boundary that will be warranted within two years of master plan completion. Bus stops should be located so that all new building entrances are within a 1/4 -mile walking distance. The project is encouraged to meet increasing transportation demands associated with growth by increasing the weekday and weekend trips for transit lines serving the campus. Recommended minimum daily transit trips are:

- Weekdays: 76
- Weekends (avg.): 50

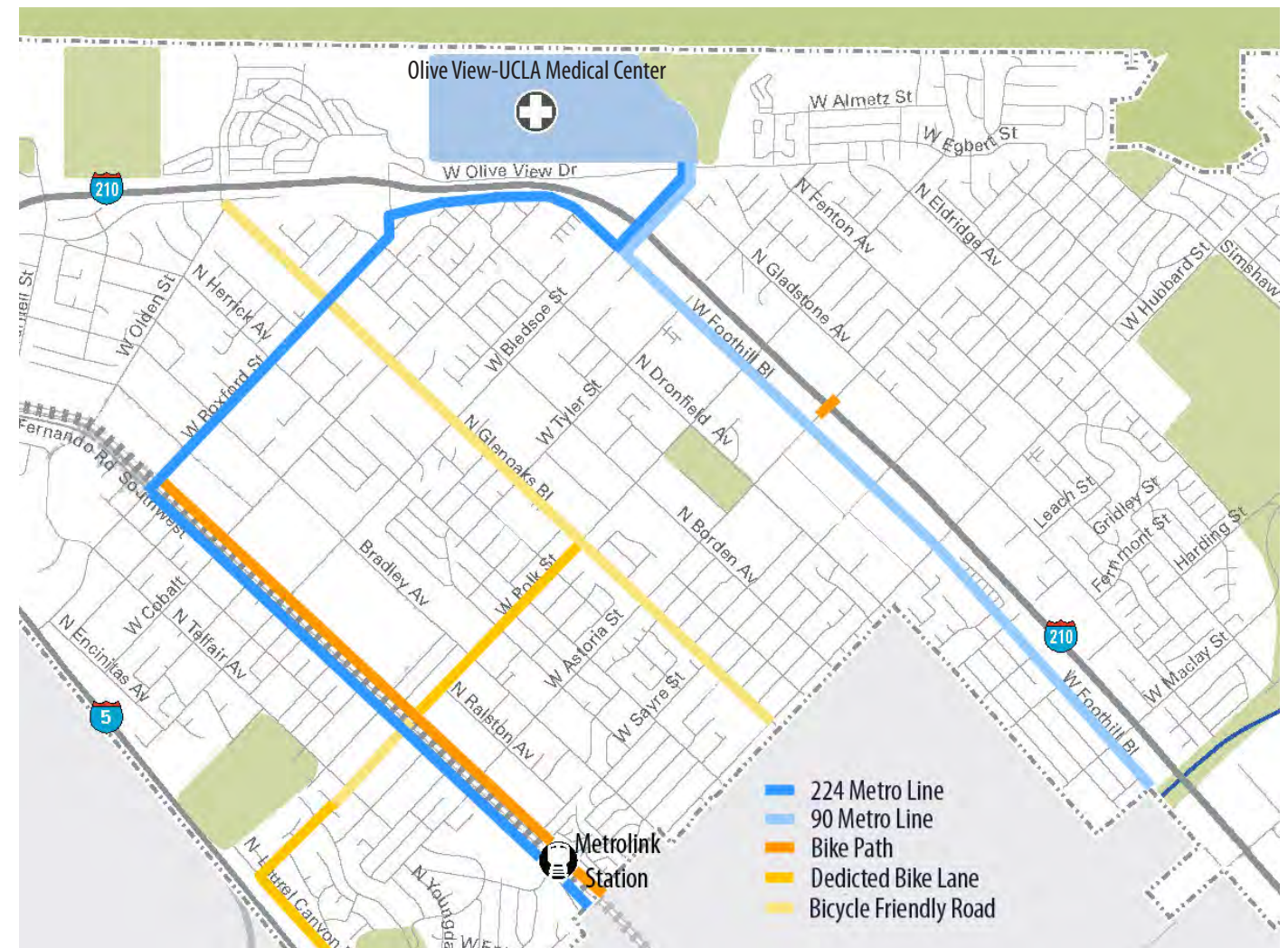
Bicycle Amenities

Currently, OVMC is approximately 1 mile from the nearest bicycle network which begins at the intersection of Polk St. and Glenoaks Blvd. Dedicated bike lanes exist on Polk St. and San Fernando Rd. which offer a bike friendly route to the Metrolink station located approximately 3 miles from OVMC. In order to connect the campus with the Sylmar/ San Fernando Metrolink station, it is recommended to extend the existing bicycle network directly to the campus. There are two possible scenarios for achieving this:

- Bledsoe St. - Integrate dedicated bicycle lanes or designate as a bicycle friendly street from Glenoaks Blvd. to OVMC.
- Tyler St. - Designate as a bicycle friendly street from Glenoaks Blvd. to Gladstone. Continue designation onto Bledsoe St. via Gladstone Ave to OVMC.

Existing Transit and Bicycle Network

OVMC is currently providing 24 bicycle racks located at the Main and ER entrances. In order to encourage biking to work by employees, OVMC should provide dedicated secure bicycle parking for 5% of its FTE. Secure parking includes bike cages, bike lockers, or indoor secure parking. In addition to parking, provide maintenance stations for filling up tires and making minor repairs.



6.40 Transit Map of Sylmar

OPEN SPACE

The master plan should provide a variety of open spaces to meet a variety of hospital and community needs from pocket parks, to gardens, to more civic spaces. At a minimum it should dedicate 30% of the total site to open space with 25% of that space vegetated.

Restoration of Habitat

Restoration of the land offers opportunities to enhance the natural state of the site and promote the survival of native animals and insect life while strengthening the campus' sense of place. Native plants require less maintenance and have a better long term survival rate which will be economically beneficial to the hospital. This strategy also creates an opportunity to provide an educational experience for staff, patients, and visitors with self-guided nature walks or tours that highlight the restored areas. The Master Plan should seek to restore as area equal to or greater than 10% of the development footprint using only native plants.

Pedestrian Oriented Hardscape

Pedestrian oriented hardscapes facilitate social networking, civic engagement, physical activity/ rehabilitation, and time spent outdoors. Although it is important to provide sidewalks at all streets, it is also important to provide walking paths and gathering spaces that are separate from the path of vehicular traffic. The Master Plan should consider creating a diverse network of hardscapes that enhance the pedestrian experience.

Access to Recreational Facilities

There are opportunities within a healthcare campus to provide outdoor recreational facilities that will promote physical activity and provide a connection with the surrounding community. Outdoor recreation facilities should be at least 1 acre in size and could consist of outdoor gyms, basketball courts, playgrounds, etc.

HEAT ISLAND REDUCTION

Dark non-reflective surfaces used for parking, roads, walkways, and other hardscapes absorb the sun's warmth and radiate heat, creating heat islands.

Dark non-reflective surfaces like asphalt used for parking, roads, walkways, and other hardscapes absorb the sun's warmth and radiate heat at night, creating heat islands which are zones of warmth that are of higher average temperature than surrounding areas. Heat island effect results in the increased need for cooling in buildings which can drive up costs from increased energy use. Reducing the heat island effect is a passive strategy for reducing ambient air temperatures which helps to reduce cooling costs, conserve water used for cooling and improve comfort with less energy.

Tree-lined and Shaded Streets

Tree-lined streets help to reduce heat island effect by increasing evapotranspiration but they also improve air quality, encourage walking, and discourage excessive motoring speeds. The Master Plan should include trees on both sides for at least 60% of streets intervals averaging no more than 40 feet or provide shade (trees or structures) for a minimum of 40% of the length of sidewalks on all streets.

Parking

Currently, the site is scattered with large asphalt surface parking lots which of all hardscapes contributes the most to urban heat island effect. In order to combat heat island and free up more open space, the Master Plan should strive to locate at least 75% of parking spaces under cover. For surface parking lots, consideration should be given to pervious pavers in parking stalls and light colored concrete elsewhere or providing canopy cover to surface parking areas which may also provide infrastructure for mounting photo-voltaics for renewable on-site energy production.

Case Study: Fitness Zone at Pan Pacific Park, Los Angeles



6.41 Case Study – Pan Pacific Park

Pan Pacific Park's Fitness Zone is one of 29 in Los Angeles County. Fitness Zones are easy-to-use outdoor gyms that bring a new set of healthy activities to the park experience.

INDOOR WATER USE

New construction and major renovations should demonstrate a reduction in indoor water usage by a minimum of 35% from a baseline.

Plumbing Fixtures

All newly installed toilets, urinals, private lavatory faucets, and showerheads that are eligible should be EPA WaterSense labeled.

Recommended flush and flow rates are:

Water Closet	1.28 gpf
Urinal	0.35 gpm or waterless
Public lav faucet	0.5 gpm
Kitchen faucet	1.5 gpm
Showerhead	1.75 gpm
Prerinse Spray Valves	1.3 gpm

OVMC should consider low-flow and/or dual flush water closets for all buildings, ultra low-flow urinals for acute care and waterless urinals for MOB's. Lavatory faucets should be sensor type with automatic on/off capabilities and consideration should be given to solar or turbine powered options. It is also recommended to limit the number of unisex single occupancy toilet rooms as these are typically fitted with water closets only which drives up the water usage for men who would typically use urinals.

Medical Equipment Cooling

Select equipment that can be air cooled if possible. Any medical equipment that rejects heat and is required to be cooled by water should be on a closed-loop system in lieu of a once-through with the exception of emergency back-up.

Cooling Towers

The Co-gen Plant current system operates at full capacity at all times which requires a tremendous amount of water for cooling that equipment] Replacement of the co-gen facility would result in a tremendous amount of water savings for OVMC, however, because that system is not individually metered, the actual amount of water use for that system is not quantified. Cooling towers may also be cooled using recycled greywater which would reduce demand on municipal supplies while reducing operating costs.

Water Metering

Currently there are only a few water meters on campus but it is vital to be able to track water consumption and identify opportunities for additional savings. In addition to whole building water metering (for each individual building), it is recommended that the following subsystems be considered for metering as applicable:

- Irrigation
- Indoor plumbing fixtures and fittings
- Domestic hot water
- Boilers
- Process water
- Reclaimed water

OUTDOOR WATER USE

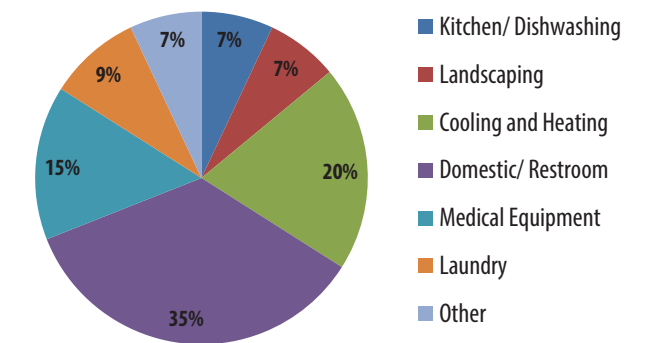
With an average rainfall of 13.75-inches per year, the OVMC site currently relies on potable water to meet its landscaping demands. Moving forward, the campus as a whole should demonstrate a reduction in outdoor water usage by 50% from a baseline and engage in strategies that eliminate the use of potable water for landscaping.

Landscaping

The master plan should identify plant types and coverages that balance water use efficiency with the area's intended function. Preference should be given to native and drought-tolerant plants that require little to no irrigation. Turf grass should only be used for play fields or specific activities that require turf. Additionally, irrigation should be drip type and should include rain sensors for optimal performance.

Water Reuse

Graywater systems involve on-site capture, treatment and reuse of water that would otherwise be discarded offsite for treatment. On-site water recycling systems are a highly effective way to replace potable municipal water for landscaping, cooling tower makeup, and toilet flushing where appropriate (non-OSHDP) with recycled water that is less energy-intensive and burdensome to municipal systems to use. Common graywater systems include filtration, ultra-violet light, and chlorine treatment. Membrane Bioreactors and Constructed Wetlands are used to treat black water which can offer additional supply of recycled water while reducing reliance on municipal conveyance and treatment systems that are aging or vulnerable to service disruption after an earthquake.



6.42 End Uses of Water in Hospitals



6.43 Case Study - Providence St. Peter Hospital

Case Study: Providence St. Peter Hospital

St. Peter Hospital in Providence WA has reduced their water usage by 50% while the campus has actually grown by 21% by implementing aggressive water saving measures .

ENERGY

Healthcare facilities have the second-highest average Energy Usage Intensities (EUI) of any building type due to their 24/7 operations and the high energy use associated with medical equipment, lighting, and ventilation.

This presents a major opportunity for Olive View to improve air quality, reduce green house gas emissions and save money on operations. Healthcare facilities, however, face barriers to improving energy performance. Energy codes are not applicable at hospitals and complicated procurement procedures for public agencies can obscure the motivational relationship between energy use (hospital facilities) and energy cost (county procurement). When those who use energy do not pay for energy, they may be less critically aware of the need for improvement or incentivized to make changes.

In the context of the Olive View Medical Campus Master Plan, performing long term energy analysis to forecast what energy use will look like for the medical campus at key intervals of the planning timeline provides critical insights to the ultimate goal of energy reduction. Energy use from today to 2020, 2030, 2050 and beyond have been forecasted using EUI targets for various medical building types. EUI targets are informed by professional estimates of the impact of California Title-24 and Calgreen future code trends, ongoing technology and design advancements in green building and energy efficiency. It is expected that increasing emphasis by California State agencies on high performance buildings, climate change impacts, and stricter energy standards will continue to drive down energy use in buildings. The OVMC should follow these trends and even use development opportunities to show leadership in energy conservation and renewable energy production to meet future needs in a sustainable manner.

The two categories of master plan phasing options (Renovation & Replacement) were analyzed for total impact and any comparative differences. Overall, the analysis shows that achieving aggressive energy savings to meet the 2030 Challenge targets is possible, but achieving carbon neutrality will be difficult without additional renewable energy installation beyond what is possible on building rooftops. In comparing the two schemes, the Replacement Scheme has significant advantages in seeking aggressive energy efficiency and greenhouse gas reductions. Full replacement provides greater opportunity to pursue energy efficiency and the cumulative impact translates to twice the impact in reductions by 2050 and an average campus energy intensity of less than half of the Renovation scheme (See Annual Energy Use and CO2 Impact Table).

The energy and greenhouse gas savings represented in the Replacement scheme are even greater when considered over the total years between now and 2050. Even though both schemes have very similar energy efficiency targets, the timing of the hospital replacement paired with a replacement being inherently more efficient than a renovation, the Replacement Scheme results in 35% fewer CO2 emissions by 2050, representing savings of approximately 4 million Btu and 500,000 metric tons of CO2 emissions (See Cumulative Energy and CO2 Impact Table).

The resulting campus in 2050 will be very different in many ways under the different schemes. (See Overall Campus Energy Efficiency by 2050 Table).

	Annual Energy Use (million Btu)	Annual CO ₂ Emissions (metric tons)	% Reduction (Relative to Today)
Today	377,446	48,146	0%
2050 – Renovation	245,935	31,371	35%
2050 – Replacement	122,144	15,580	68%

6.44 Annual Energy Use and CO2 Impact

	Total Energy Use (million Btu)	Total CO ₂ Emissions (metric tons)	% Reduction (Relative to Renovation)
2050 – Renovation	11,102,021	1,416,151	0%
2050 – Replacement	7,254,706	925,395	35%

6.45 Cumulative Energy and CO2 Impact (Today through 2050)

Campus Average Building Efficiency (EUI)	Energy Use Index (kBtu/squarefoot-year)	% Reduction (Relative to Today)
Today	445	0%
2050 – Renovation	111	75%
2050 – Replacement	45	90%

6.46 Overall Campus Energy Efficiency by 2050

ENERGY

OVMC Long Term Energy Analysis

There are great resources for benchmarking and forecasting energy use by building type available including the EPA Energy Star Portfolio Manager Energy Use Intensity by Property Type reports. This report is based on DOE Commercial Building Energy Consumption Survey (CBECS) which is a national survey of existing facilities that is completed, analyzed, and published in extensive detail. The Energy Information Administration (EIA) which maintains this data also released a report in 2007 focused on large hospitals. The analysis completed to-date should be considered an interim step on the process—additional refinement based on further discussion, selection of renovation or new construction for the main hospital, and further analysis will ultimately inform the final results.

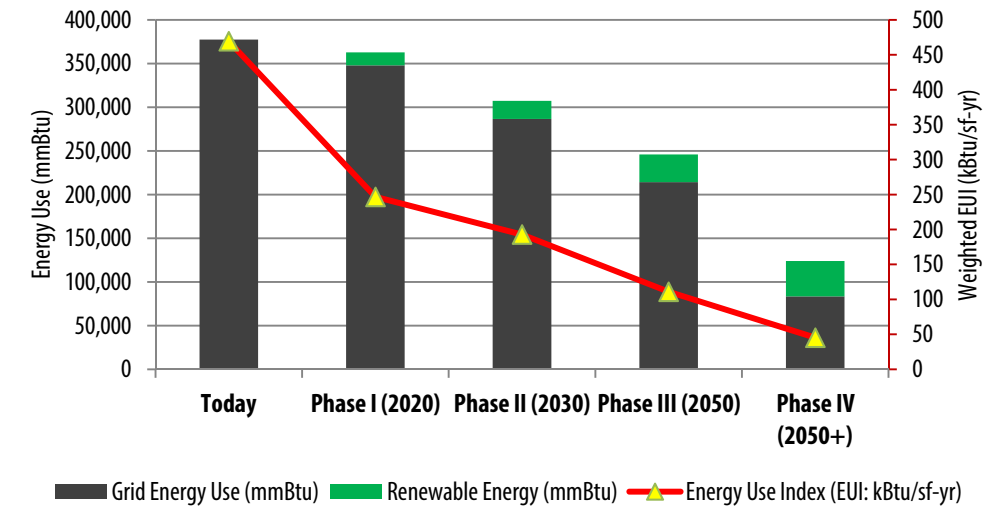
The resulting energy use intensity (EUI, kBtu/sf-year) targets we developed are shown in the table below. This is the input data for the Replacement Scheme. The major difference in the Renovation Scheme is that the hospital could not achieve as great or as fast energy efficiency improvements as are possible in earlier and full replacement.

Building Type	CBECS	Today	Phase I 2020	Phase II 2030	Phase III 2050	Phase IV 2050+
Hospital	196.9	651	600	150	150	150
Ambulatory Care	63	50	40	35	30	30
Medical Office Building	44.4	40	35	30	30	30
Long Term Care	125.7	80	60	50	45	45
Administrative Office	44.4	40	35	30	20	20
Outpatient	63	55	50	45	40	40
Public Assembly, Social	45.3	40	35	30	25	25
Fire Department	82	50	45	40	35	35
Fitness	39	35	30	25	20	15
Retail	47.1	45	40	35	30	30
Storage	28.5	25	20	15	15	15
Parking	15	13	12	11	10	10

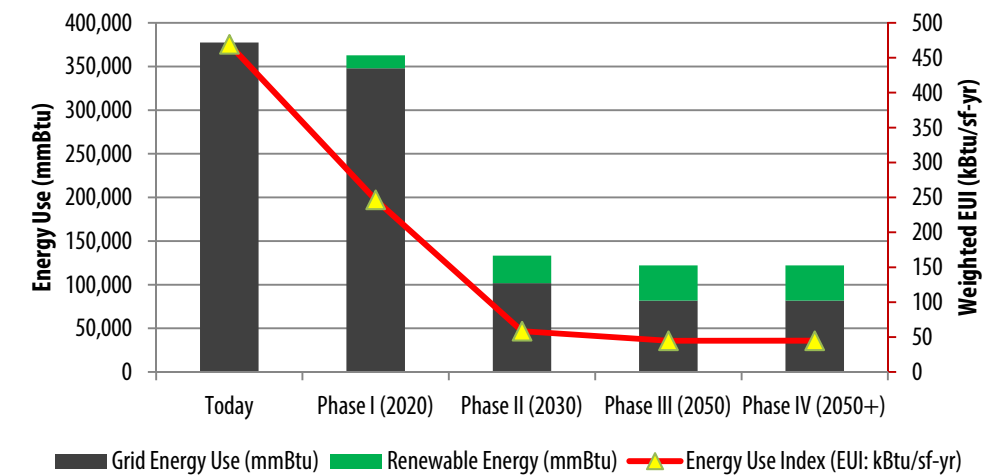
6.47 EUI Targets by Building Type and Phase

Renewable Energy

Included in the analysis is the expectation that renewable energy, in the form of solar photovoltaic panels, will be included in the long term plans for the construction of new facilities. This analysis assumes that 25% - 60% of the total rooftop of each building is available for solar energy installation. For larger, more complex, taller buildings, a lower portion of the roof will be available given competing demands for mechanical systems. For simpler, small, and shorter buildings, a much higher portion of the rooftop should be available for solar installation. To achieve even greater renewable energy production—and in order to achieve net zero energy—installation on areas not covered by buildings should also be considered, however this was not included in our analysis. The two adjacent figures show energy reductions over time as the campus master plan is implemented along with aggressive energy efficiency. Gray and green bars represent grid and renewable energy use, and the yellow dots represent overall campus energy intensity (EUI).



6.48 Renovation Scheme - Energy Use Intensity



6.49 Replacement Scheme - Energy Use Intensity

WELLNESS

Just as the Hippocratic Oath promises to “first, do no harm,” health care systems have a responsibility to eliminate practices that harm people and the environment. OVMC has the opportunity to take this promise one step further by creating an environment that optimizes wellness using an integrative and holistic approach.

Air

Clean air is a critical component of our health. We often do not have control of the air that we breathe which is especially true of patients in healthcare facilities who are confined in a building. Genuine sustainability must take an integrated approach to healthy indoor air quality.

Safer Chemicals

Harmful chemicals used in some healthcare products are linked to a range of impacts including cancer, birth defects, asthma and other health problems. To create a healthier environment, OVMC should consider implementing the following strategies:

- Green Cleaning – purchase 90% Green Seal or EcoLogo certified cleaning products in these four categories: carpet, window, all purpose, and bathroom.
- DEHP/PVC Reduction – Eliminate DEHP/ PVC from at least one of the following product lines: breast pumps, enteral nutrition products, parenteral infusion devices, general urological, exam gloves, umbilical vessel catheters, vascular catheters.
- Healthy Interiors – ensure that 25% of the annual volume of furniture and medical furnishings eliminate the use of halogenated flame retardants, formaldehyde, perfluorinated compounds and PVC.
- Comply with the Living Building Challenge materials red lists for all major interior finishes and furnishings.

Natural Ventilation

In addition to reducing energy consumption, research shows that natural ventilation can improve patient outcomes by providing control over thermal comfort and ventilation. Where possible, operable windows should be included in designs of patient rooms, offices and any other appropriate occupied spaces.

Water

Many Americans have less than ideal water quality. Increasingly, water is contaminated with unsafe levels of pharmaceuticals, chlorine, fluoride and other chemicals. Healthcare facilities should strive to deliver the healthiest and cleanest possible water for consumption.

Impurity Reduction

Reducing impurities in drinking water results in healthier and better tasting water. For kitchen faucets and drinking fountains, filter water should meet the following:

- Aluminum less than 200 ug/L
- Arsenic less than 2 ug/L
- Chloride less than 250 mg/L
- Lead less than 2 ug/L
- Manganese less than 5 ug/L
- Sodium less than 270 mg/L
- Chlorine less than 0.5 mg/L
- Fluorine less than 1mg/L

Nature

Research shows that the physical and visual connections to the natural environment (access to outdoor space, views of nature, natural daylighting) provide social, psychological, and physical benefits. These connections also assist in patient recovery and healing, reduce stress, and improve the overall healthcare environment.

Daylight and Views

Design of new buildings should consider daylighting in the following areas:

Inpatient Units: A minimum of 90% of inpatient staff, patient, and public areas should be within 20 feet of the perimeter with perimeter areas having windows that provide at least an 11-degree angle of unobstructed view in the vertical and horizontal direction.

Places of Respite

Program of new buildings should include patient, visitor, and staff accessible indoor and outdoor places of respite with 90% of these spaces having direct views of nature. Indoor Places of respite may include:

- Family consultation or gathering spaces
- Lounges without negative distractions such as TV's
- Café
- Grieving room
- Meditation spaces or chapels
- Resource areas and libraries
- Designated staff break areas with positive sensory distractions
- Spa or exercise spaces for staff and/or visitors

Nourishment

Many Americans have a high-calorie diet that consists of unhealthy fats and sugars that gradually weaken immune function, leads to excessive weight gain, and causes long-term health problems. As part of a mission of healing, OVMC should consider implementing the following strategies:

- Balanced Menu – decrease amount of meat purchased by 20% within three years.
- Healthy Beverages – Increase the percentage of healthy beverages by 20% of total beverage purchases annually (include promotion of tap water over bottled water)
- Local Sustainable Food – Increase the percentage of local and/or sustainable food purchases by 20%.



6.50 Future Hospital Dusk View



6.51 New Ambulatory Care Center and Drop-off Dusk View

