

### 3 Environmental Setting

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This section provides a general overview of the environmental setting for the proposed 2021 LRDP. For a typical EIR, the environmental setting is controlled by CEQA Guidelines Section 15125, which states in part:

An EIR must include a description of the physical environmental conditions in the vicinity of the project. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to provide an understanding of the significant effects of the proposed project and its alternatives. The purpose of this requirement is to give the public and decision makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts.

(1) Generally, the lead agency should describe physical environmental conditions as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. Where existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture practically possible of the project's impacts, a lead agency may define existing conditions by referencing historic conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence. In addition, a lead agency may also use baselines consisting of both existing conditions and projected future conditions that are supported by reliable projections based on substantial evidence in the record.

CEQA Guidelines and case law recognize that the date for establishing an environmental baseline cannot be rigid. (See CEQA Guidelines Sections 15146, 15151, and 15204.) Environmental conditions may also change during the period of environmental review, and temporary lulls or spikes in operations that happen to occur during the period of review should not depress or elevate the baseline. Furthermore, environmental conditions may vary from year to year, and in some cases, it is necessary to consider conditions over a range of time periods.

In order to fulfill this requirement, and to inform the reader of the context in which the proposed 2021 LRDP would be carried out, this section generally describes current environmental conditions in and around UCR that are considered representative of the 2018/2019 academic year. UCR began planning for the proposed 2021 LRDP in 2018, with the formal kick-off in 2019. The environmental review process began in 2019 and the campus released the Notice of Preparation (NOP) in July 2020. For many resource areas, the 2018/2019 academic year was the last full year of data that was available while the EIR was being prepared. Furthermore, environmental conditions for 2020 were generally affected by the COVID-19 pandemic, which caused a lull in campus activity. More detailed descriptions of the environmental setting for each environmental issue area can be found throughout Section 4, *Environmental Impact Analysis*.

## 3.1 Regional Setting

The City of Riverside (City) is in Riverside County and is part of a larger geographic area popularly known as Inland Southern California (see Figure 3-1). Inland Southern California includes western Riverside and southwestern San Bernardino counties and portions of the Pomona Valley in easternmost Los Angeles County. The City is bordered by Jurupa Valley and the unincorporated community of Highgrove to the north, Moreno Valley and Box Springs Mountain Reserve to the east, the unincorporated community of Woodcrest to the south, and Norco and the unincorporated community of Home Gardens to the west.

Regional access to the City is provided via I-215/SR 60 freeway, which traverse northwest-southeast through the City, and State Route 91 which traverses northeast-southwest through the City. Local access is provided by various arterial roadways that intersect the City, including Mission Inn Avenue, Magnolia Avenue/Market Street, Central Avenue, and Main Street, among others.

The City experiences a Mediterranean semi-arid climate. Temperatures vary widely, with wintertime lows occasionally dropping below freezing, and highs in summer often exceeding 100 degrees Fahrenheit. Pleasantly warm conditions typify the area in the spring and fall. Although air quality in the area has steadily improved in recent years, the Inland Southern California region remains a nonattainment area for the federal standards for ozone and particulate matter (PM)<sub>2.5</sub> and the State standards for ozone, PM<sub>10</sub>, and PM<sub>2.5</sub>.

## 3.2 Campus Location and Setting

### 3.2.1 UCR Campus

The UCR main campus (campus) is located at 900 University Avenue in the City of Riverside, California. The approximately 1,108-acre campus<sup>1</sup> is in the eastern portion of the City, just west of the Box Springs Mountains. The campus is approximately 3 miles east of downtown Riverside and approximately 2.2 miles northwest of the city of Moreno Valley. The campus is diagonally bisected by the I-215/SR 60 freeway, resulting in two areas referred to as East Campus and West Campus. The two resulting areas of campus are described below. Figure 3-1 shows the campus location in a regional context while Figure 3-2 and Figure 3-3 show the two areas of campus in their geographic context within the City. The campus is generally bounded by Blaine Street to the north, Watkins Drive to the east, Le Conte Drive to the south, and Chicago Avenue to the west.

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<sup>1</sup> The UCR Palm Desert Center, UCR Natural Reserves, all other Regents-owned properties, and all off-campus leased spaces are excluded.

Figure 3-1 Regional Location

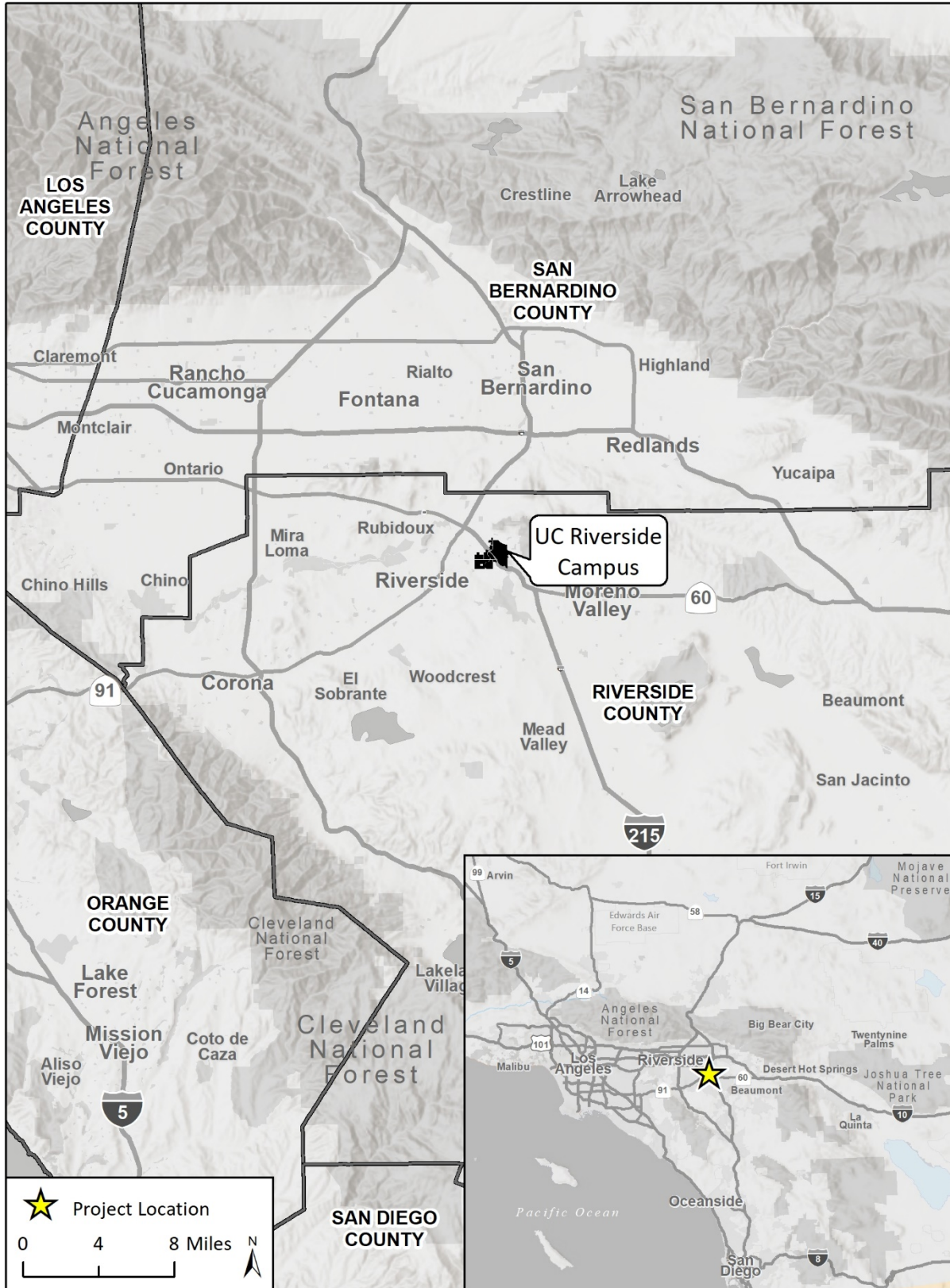
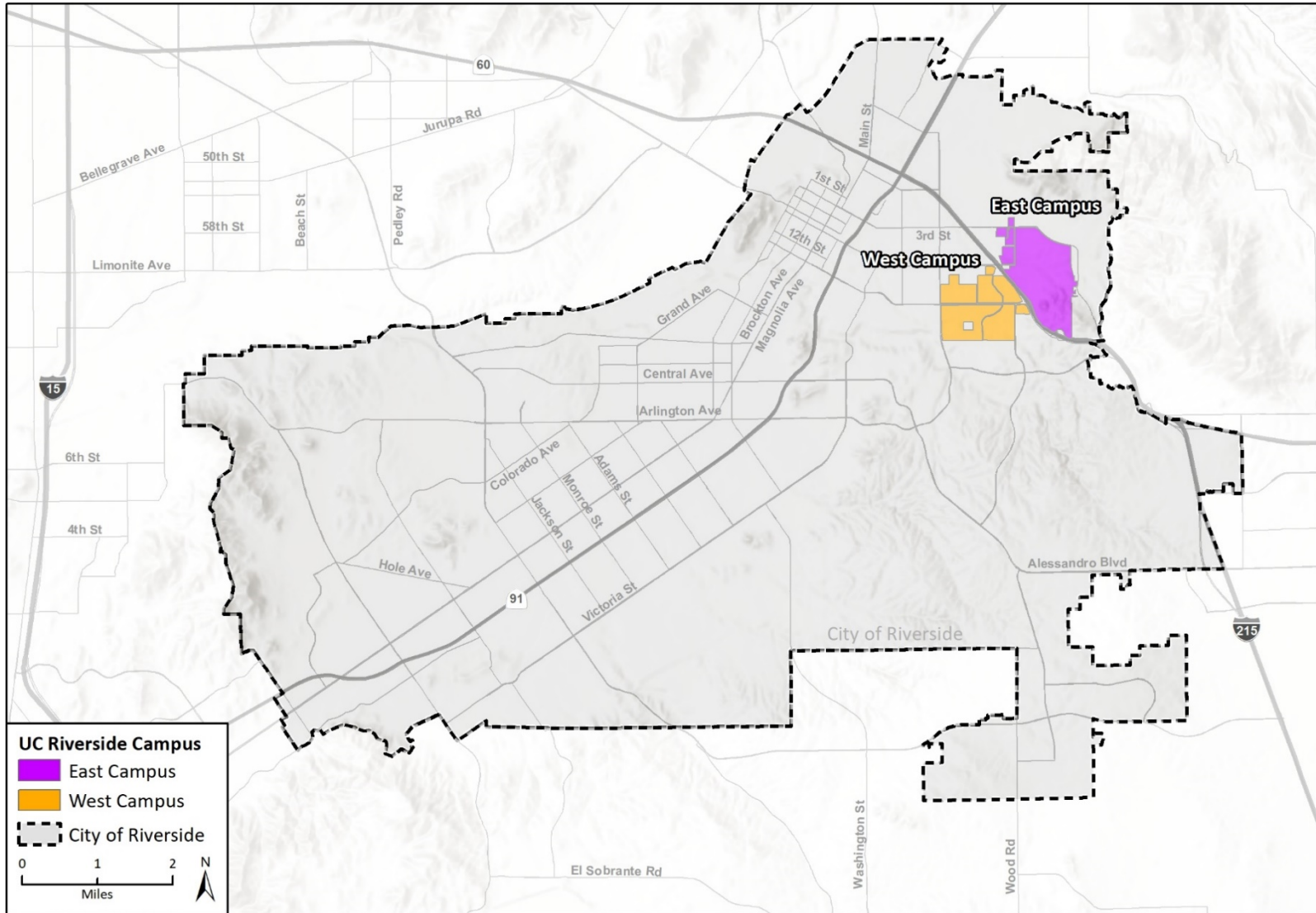


Figure 3-2 Local Setting

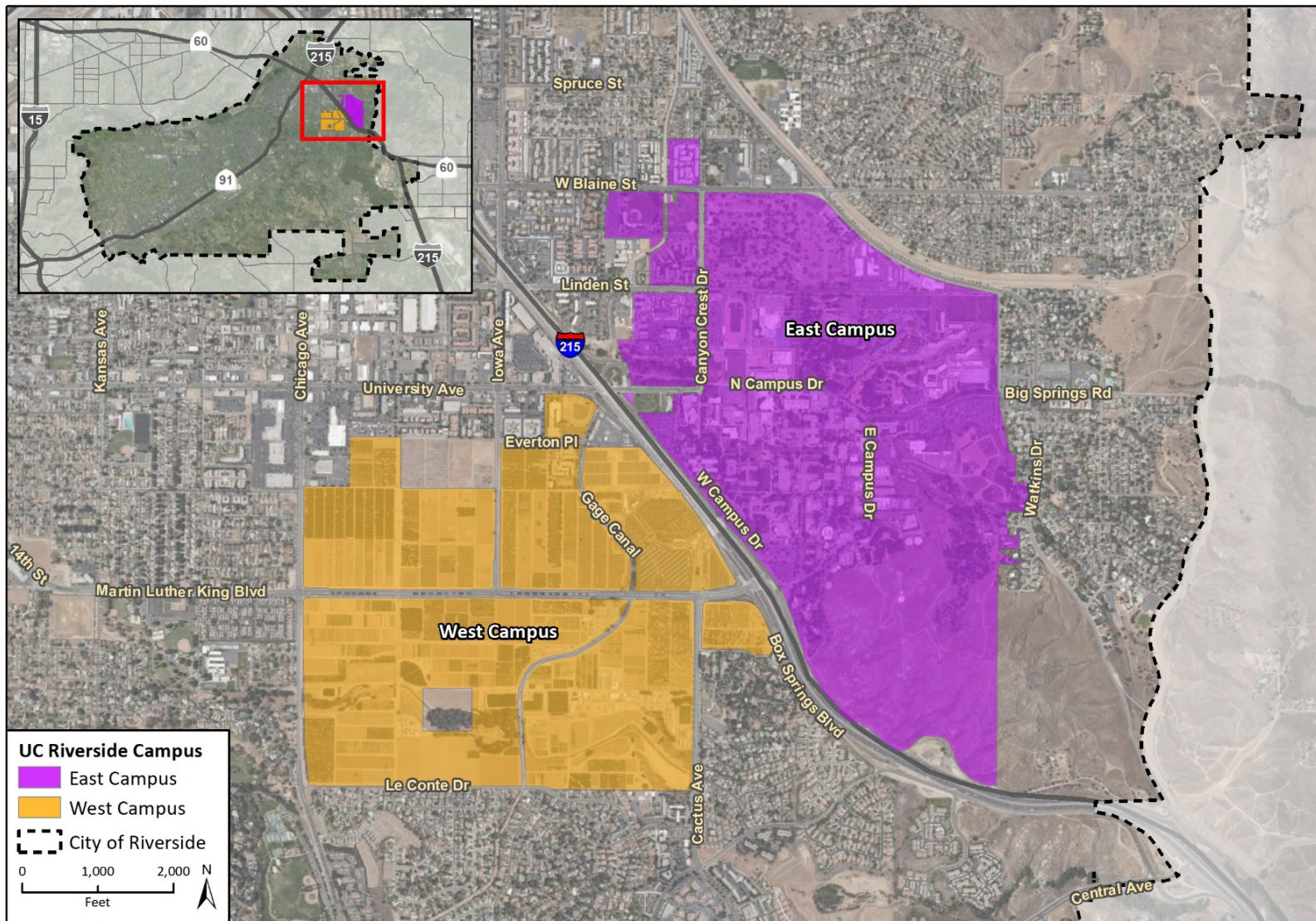


Data provided by UC Riverside and County of Riverside, 2020.

Fig 2 Local Setting-VTA-AF501



Figure 3-3 Aerial Map



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Data provided by UC Riverside and County of Riverside, 2020.

Fig 3 Aerial Map

## **East Campus**

East Campus comprises approximately 604 acres and contains most of the University's built space. Nearly all the academic, research, and support facilities are in the Academic Center, circumscribed by Campus Drive, including many original campus buildings. The northern half of East Campus is devoted to student housing and recreation. The UCR Bell Tower marks the heart of the campus, at the center of the Carillon Mall. The UCR Botanic Gardens is in the southeastern area of East Campus. The terrain steepens to the south and east of East Campus, surrounding the UCR Botanic Gardens; these areas are largely unbuilt.

## **West Campus**

West Campus comprises approximately 504 acres and is largely used as agricultural research fields and teaching and managed by the Agricultural Operations unit of the College of Natural and Agricultural Sciences. Several University facilities are also on West Campus: Parking Lot 30, University Extension, and International Village—a housing complex intended for visiting international students. The University Substation, jointly owned by the City and UCR, is at the northern edge of Parking Lot 30. A California Department of Transportation (Caltrans) service yard is situated on an approximately 4.4-acre triangular parcel directly west of the I-215/SR 60 freeway, at the eastern terminus of Everton Place. The Gage Canal irrigation facility traverses the area north to south, with portions running underground.

### **3.2.2 Surrounding Land Uses**

Land uses surrounding the campus are primarily residential, with some commercial uses along the arterial streets. Residential uses, commercial uses, and the I-215/SR 60 freeway are located north of the campus. Residential uses, open space, and the I-215/SR 60 freeway are located south of the campus. Residential uses and open space, including the Box Springs Mountain Reserve, are located east of the campus. Residential uses and commercial uses are located west of the campus. The California Air Resources Board (CARB) Southern California headquarters facility (scheduled for completion in 2021) is located on former University land adjacent to West Campus, between Chicago Avenue, Iowa Avenue, University Avenue, and Martin Luther King Boulevard.

## **3.3 Existing Campus Conditions**

### **3.3.1 UCR Development and Growth**

The original UCR campus was officially dedicated in 1954, having developed from the UC Citrus Experiment Station established in 1907. In 1959, The Regents voted to make UCR a general campus (UCR 2021a). Today, UCR consists of three colleges and four professional schools: Marlan and Rosemary Bourns College of Engineering; College of Humanities, Arts, and Social Sciences; College of Natural and Agricultural Sciences; Graduate School of Education; School of Business; School of Medicine; and School of Public Policy. In 2018/2019, the campus served approximately 24,000 students (Fall quarter headcount) and approximately 4,700 faculty and staff (UCR 2021b).

The Regents established the UC Citrus Experiment Station on 23 acres of land on the eastern slope of Mt. Rubidoux. The citrus research station formally opened its doors in 1917. After its transformation into an official UC campus in 1954, the construction of the campus' early main buildings began with the Library (Rivera Library), Webber Hall, Physical Sciences Building (Geology

Building), Physical Education Building (Athletics and Dance Building), and the Social Sciences-Humanities Building (Watkins Hall). In 1961, the Citrus Experiment Station became the Citrus Research Center and Agricultural Experiment Station. The UCR Botanic Gardens was officially designated in 1963 with 37 acres, which expanded to 40 acres in 1980 (UCR 2021c).

After the designation of UCR as a “general campus” and the adoption of the 1964 LRDP, there was rapid and broad development in Fine Arts, Humanities, Sciences, and Social Sciences programs, at both the graduate and undergraduate levels, to meet the needs of a 10,000-student campus (UCR 2005). After a period of stagnation in the 1970s, enrollment began growing dramatically in the 1980s and, between Fall 1983 and 1989, almost doubled from 4,655 to 8,220 (UCR 2005).

In the 1990s, The Regents targeted UCR for an annual growth rate of 6.3 percent, the fastest in the UC system. To accommodate the growing numbers of students, UCR experienced a campus-wide building boom, including adding more than one million square feet (sf) of office, research, and teaching facilities. The 1990 LRDP proposed approximately 10,134,000 gross square feet (gsf) of building space on campus to support a total student enrollment of 18,050 students by academic year 2005/2006 (UCR 2005).

By 2000, enrollment had reached 12,703, had increased by another 3,200 students within 2 years, and was anticipated to reach almost 20,000 by 2010 (UCR 2010). The original 2005 LRDP anticipated a total of approximately 14.9 million gsf of building space to support the needs of approximately 25,000 students by 2015. The 2005 LRDP outlined a planning approach with the goal of creating a vibrant on-campus presence for student life, providing strong connections and ease of access on campus and with the surrounding community, and promoting environmental stewardship and protection of natural resources. The 2005 LRDP guided infill development in the East Campus academic core and expanded the West Campus academic zone immediately adjacent to the I-215/SR 60 freeway. It also directed development to expand and co-locate student housing and recreational and athletic facilities and fields, relocate parking from central campus locations to the periphery of the academic core and replace surface parking with structures, and maintain the teaching and research fields on West Campus south of Martin Luther King Boulevard.

The 2005 LRDP Amendment 2 allowed for the location of the School of Medicine along with other land use map changes and increased the maximum building space that could be built on campus from 11.8 million gsf to 14.9 million gsf to accommodate the increased square footage requirements for the School of Medicine. The 2005 LRDP Amendment 2 did not change the projected enrollment level of 25,000 students but projected that the enrollment level would be attained in academic year 2020/2021, 5 years later than projected in the 2005 LRDP (UCR 2011).

The number of students applying to UCR generally increased between 2010 and 2019. Freshman applications increased by approximately 87 percent (from 26,480 students to 49,516 students) and transfer student applications increased by approximately 97 percent (from 6,372 students to 12,543 students) (UC 2020). As of the 2018/2019 academic year, enrollment had reached approximately 24,000 students (Fall quarter headcount). In addition, as of the 2018/2019 academic year, the UCR campus had approximately 4.8 million assignable square feet (asf)<sup>2</sup> (approximately 7.2 million gsf)<sup>3</sup> of academic buildings and support facilities. Refer to Table 2-3 in Section 2, *Project Description* for detailed information.

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<sup>2</sup> Asf refers to the sum of all areas on all floors of a building assigned to or available for assignment to an occupant or specific use (e.g., classrooms, labs, offices, study facilities) used to accomplish the institution’s mission.

<sup>3</sup> Gsf refers to the sum of all areas on all floors of a building included in the outside faces of its exterior walls, including all vertical penetration areas, for circulation and shaft areas that connect one floor to another.

### 3.3.2 On-Campus Housing

In 2018, UCR housed approximately 27 percent of its enrolled students in University-managed or controlled housing. UCR has several campus-affiliated student residence options, including 6,511 on-campus student beds.

In East Campus, undergraduate student residence halls include Aberdeen-Inverness Residence Hall, Lothian Residence Hall, Pentland Hills Residence Hall, and Dundee Residence Hall (construction completed in 2020). On-campus apartments include Bannockburn Village, Falkirk, Glen Mor, The Plaza, and Stonehaven, which are intended to house continuing, transfer, and graduate students. Most East Campus housing is in the northern and eastern areas surrounding the Academic Center. Oban Family Housing is available on campus for students with children. The International Village in West Campus is a housing complex intended for international students but also allows for continuing, transfer, and graduate students an opportunity to reside on campus. Student housing options are further described in Section 4.12, *Population and Housing*.

### 3.3.3 Recreation, Entertainment, and Student Life Facilities

The 155,000-sf UCR Student Recreation Center (SRC), which opened in 1994 and was expanded in 2014, is the central hub for recreational, intramural, and club sports on campus. The complex is divided into SRC North and SRC South, both located south of West Linden Street, east of the UCR Track Facility, and northeast of the Amy S. Harrison Field and UCR Soccer Field. The SRC Tennis Courts are adjacent to SRC South. The SRC is home to an extensive intramural program for students, and the facility includes a large swimming pool and spa, tennis courts, an indoor running track, a gym with multiple courts, classroom kitchen, outdoor gear rental shop, cardio and weight space, and an indoor climbing wall (Fenex 2021). SRC also has full locker rooms and three multipurpose rooms. SRC access is included in UCR students' tuition. UCR faculty and staff may purchase quarterly memberships or day passes for admission.

The UCR Baseball Complex (Riverside Sports Complex) is in the northwest corner of East Campus just south of Blaine Street and east of Rustin Avenue. UCR's cross-country course is the Agricultural Operations (Ag Ops) Cross-Country Course in West Campus, located south of Martin Luther King Boulevard and west of Canyon Crest Drive. UCR has a National Collegiate Athletic Association (NCAA) Division I program and includes intramural sports and club sports.

The Highland Union Building (HUB) is a three-story, 142,000-sf multidisciplinary complex located in the middle of East Campus, east of Parking Lot 1 and southeast of Parking Lot 19. The HUB offers space for dining options, student organization and program space, student lounges, and conference rooms.

The 492-seat University Theatre is a proscenium theater with continental seating, a full-orchestra pit/elevator, and full-fly system (UCR 2021d).

The Barn, a 101-year-old building that began as a horse stable, is an entertainment and dining venue located in the west side of East Campus. The Barn underwent a two-year renovation and expansion, reopening in 2020. It serves as a gateway and link between East Campus and West Campus and integrates indoor and outdoor spaces to support dining and entertainment programs. The 16,425-sf facility includes the Barn building with increased seating capacity, along with a new outdoor patio for diners and a significant new live entertainment venue. It also includes a reconstructed Barn Theater, a faculty and staff dining building, and restroom building (UCR 2019a).



The 2,000-sf Alumni & Visitors Center, located west of Canyon Crest Drive in East Campus, is a premier meeting space that serves the university and local community (UCR 2021e).

### 3.3.4 UCR Botanic Gardens

The UCR Botanic Gardens is an approximately 40-acre “living plant museum” in the southeastern area of East Campus in the foothills of the Box Springs Mountains. It serves as a regional resource for enjoyment, relaxation, and education. Its mission is to “serve as UCR's focal point for campus and community engagement in the science of nature, gardens, and conservation.” UCR Botanic Gardens became official in 1963, although the idea for a botanic garden at UCR originated in 1954 with botanist Dr. Victor Goodman. The UCR Botanic Gardens contain more than 3,500 plant species and thousands of specimens from around the world, with a focus on plants from Mediterranean climate (dry summer) and arid lands similar to California and the desert southwestern United States. About one-third of the UCR Botanic Gardens area remains unplanted and consists of native plant communities including coastal sage scrub and annual grassland. The UCR Botanic Gardens contain geographical collections and themed and horticultural collections include the Butterfly Collection, Herb Garden, Iris Garden, Lilac Lane, Rose Gardens, and Subtropical Fruit Orchard. Other features include Alder Canyon, 4 miles of trails, and a turtle pond.

The UCR Botanic Gardens houses several buildings on the site, including a Gatehouse with two small restrooms and a meeting room near the entrance. The UCR Botanic Gardens is open to the public, hosts events throughout the year, and receives over 75,000 annual visitors (UCR 2020).

### 3.3.5 Campus Access, Circulation, and Parking

#### **Campus Access and Internal Circulation**

Local and regional commuters approach the campus from north and south via three interchanges along the I-215/SR 60 freeway, with major east-west arterials that also connect the campus to Downtown Riverside and regional transit options. The campus road network integrates well with the City's street network.

West Campus is mainly accessed by University Avenue and Martin Luther King Boulevard from the east and west, Chicago Avenue and Iowa Avenue from the north, and Chicago Avenue from the south. Access to Parking Lot 30 is provided from Canyon Crest Drive. Everton Place provides access to the International Village and the Solar Farm.

East Campus is mainly accessed from the west by University Avenue, West Linden Street, and Blaine Street. Access from the north is mainly provided by Canyon Crest Drive. Rustin Avenue and Canyon Crest Drive provides access to the UCR Baseball Complex (Riverside Sports Complex), Watkins Drive and Blaine Street provides access to the Early Childhood Services (Child Development Center) and the Corporation Yard on the northeastern side of campus. Big Springs Road provides eastern access to East Campus by the Glen Mor student residence complex.

Internal campus streets primarily include the campus loop (West Campus Drive, North Campus Drive, South Campus Drive, and East Campus Drive), Citrus Drive, Eucalyptus Drive, Aberdeen Drive, West Linden Street, Big Springs Road, and Botanic Gardens Road.

#### **Campus Gateways**

The University Avenue interchange to the I-215/SR 60 freeway provides the most prominent and direct entry point to East Campus. University Avenue is the principal connector between downtown

Riverside and the Academic Center, which lies at its eastern terminus. Blaine Street also provides the campus community access to the I-215/SR 60 freeway on- and off-ramps.

The Martin Luther King Boulevard intersection and Canyon Crest Drive connects East and West Campus with the I-215/SR 60 freeway. Canyon Crest Drive north of University Avenue serves as a secondary gateway to campus. UCR-owned and privately-owned apartment complexes are scattered along the western and northern edges of East Campus. There are Riverside Transit Agency (RTA) bus stops immediately north of the Alumni & Visitors Center. Therefore, there is heavy vehicle, pedestrian, and bicycle traffic on Canyon Crest Drive, particularly between Blaine Street and University Avenue. Additionally, the Big Springs Road and Watkins Drive intersection affords an entrance to East Campus.

## **Parking**

The existing campus parking supply serves students, staff, and faculty who commute to and from the campus. East Campus has been planned as a walkable university for students, staff, and faculty to and from the parking areas and campus facilities. Pedestrian paths are webbed throughout campus. There are bicycle lanes on campus streets and surrounding city streets; bike racks and additional infrastructure are provided for students to secure personal methods of transportation. Main academic and administrative functions are in the center of campus, while vehicular circulation, parking lots, and parking structures are located around the periphery.

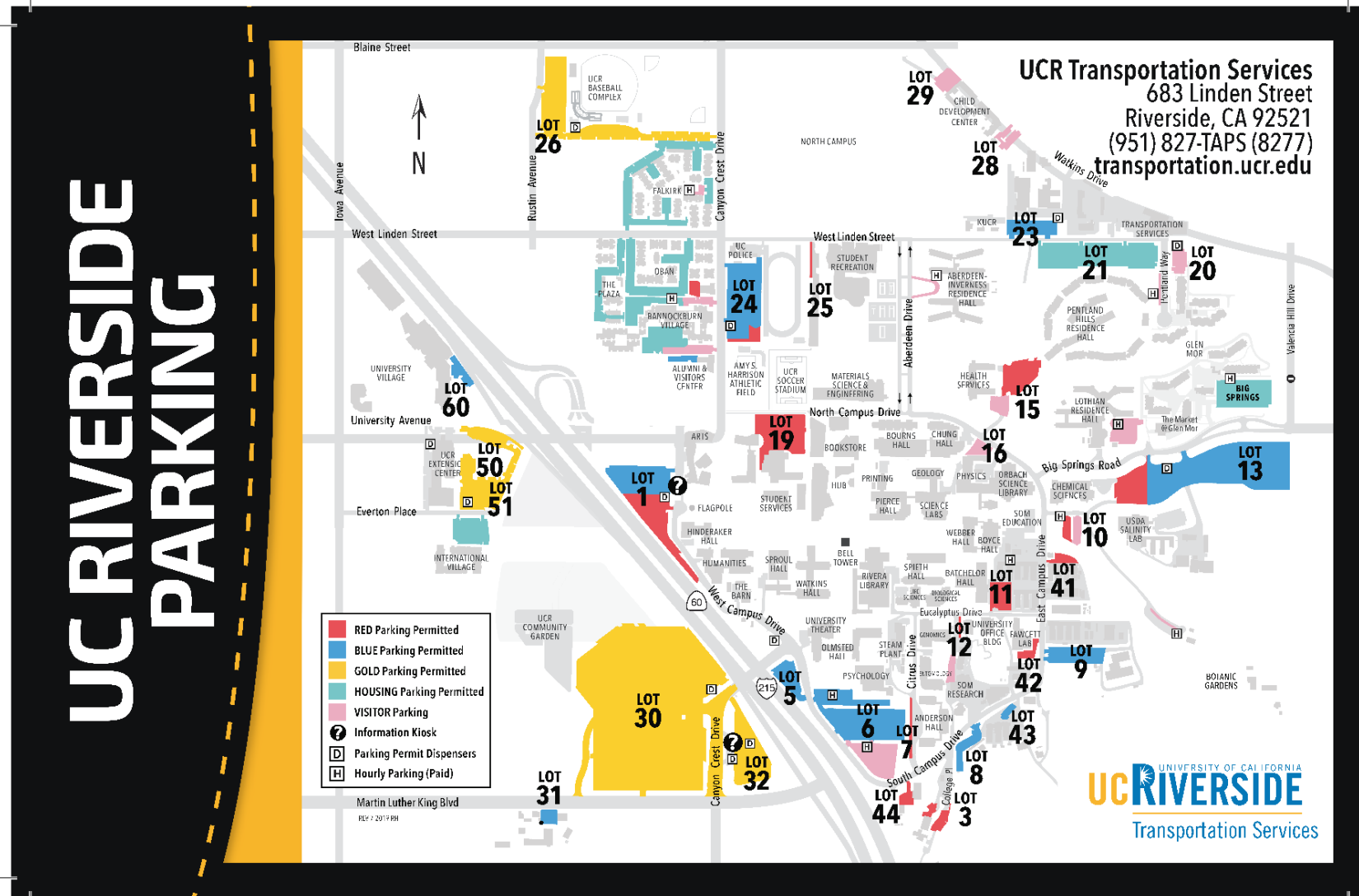
As of Fall 2018, UCR had approximately 9,600 parking spaces serving its faculty, staff, graduate students, undergraduate commuter students, on-campus residents, as well as for service and delivery vehicles and campus visitors. Most of the campus parking facilities are in surface parking lots equating to approximately 85 acres. UCR actively manages parking demand through a tiered parking permit system in which users purchase permits to access various parking facilities based on their affiliation with the campus. As a result, the increase in the number of parking spaces on campus has been minimal, even as UCR has seen growth in faculty, staff, and students.

There are 41 parking lots on campus and additional parking for student housing in East Campus in the Big Springs parking structure and Falkirk, Oban, and Bannockburn Village apartments, and in West Campus at the International Village Apartments. Most parking lots are in East Campus, although there are six parking lots in the northeastern portion of West Campus. The largest parking areas are Parking Lot 30 in West Campus accessed from Martin Luther King Boulevard, Parking Lot 13 in East Campus accessed from Big Springs Road. Parking Structure 1 will be completed in the eastern half of Parking Lot 13 in Summer 2021 and provide approximately 800 net new parking spaces (UCR 2019b). Figure 3-4 shows the locations of existing campus parking lots.

## **Transit Access**

UCR can be accessed by several alternative methods of transportation. The UCR campus is served by bus and rail from the neighboring counties of San Bernardino, Los Angeles, and Orange. UCR has partnered with RTA to subsidize free bus use for faculty, staff, and students through the UPASS program. RTA routes that serve the UCR campus include Routes 1, 10, 14, 16, 51, 52, 204, 208, and Gold Line. Major stops near East Campus are on University Avenue, Canyon Crest Drive, West Campus Drive, and Blaine Street. West Campus facilities are served by stops in Parking Lot 30, along University Avenue, and by stops on Iowa Avenue north of University Avenue that are in walking distance to the UCR Extension Center and International Village. In addition, UCR Police

Figure 3-4 Existing Campus Parking



Department offers a point-to-point shuttle service that takes students from North Campus at Chung Hall to their off-campus homes (UCR 2021g)<sup>4</sup>.

Metrolink, Southern California's regional passenger rail system, provides a discount for students and an incentive program for faculty and staff who use Metrolink for their daily commute. Metrolink serves the campus with two local stations in downtown Riverside and at the Hunter Park station, approximately 2.8 miles west and 1.8 miles north of campus, respectively. RTA provides bus service from the Hunter Park station (Route 52) and the Downtown Riverside station (Route 1) to UCR. Transit ridership has increased five-fold since the UPASS program began in 2007, from 100,000 rides in the first year to approximately 600,000 rides between Fall 2018 to Fall 2019.

### **Transportation Demand Management**

UCR's Transportation Demand Management programs include multi-pronged efforts such as marketing, incentives, expanded vanpool offerings, on- and near-campus housing amenities, parking pricing, and more. UCR encourages students to use designated bike paths to commute to and travel on campus. Registered bicyclists or walkers are eligible to receive a complimentary bicycle parking allotment and are eligible to utilize the day-use locker and shower facilities at the SRC without charge (UCR 2021h). UCR has also encouraged ride-sharing services, and the average vehicle ridership has increased from approximately 1.36 to 1.57 occupants per vehicle over the last 15 years.

## **3.3.6 Campus Utilities and Service Systems**

### **Water and Wastewater**

The campus has a combined fire and domestic water system. Riverside Public Utilities (RPU) provides potable water to the campus. Potable water is used both in buildings and for landscape irrigation. At the time of preparation of this LRDP, there was nominal reclaimed water use for landscape irrigation. Campus agricultural fields are irrigated with water from the Gage Canal.

UCR has a private on-campus water system that conveys water supply throughout the campus as needed. All potable water, fire water, and irrigation water supplies are distributed through the campus-wide system. UCR's water supplies (domestic, irrigation, and fire water) are conveyed to the UCR water system via a 15-inch concrete pipe connecting to a five-million gallon City reservoir, which is buried just south of University Avenue and east of the I-215/SR 60 freeway. A pumping station for the reservoir is located east of the intersection of University Avenue and Canyon Crest Drive. UCR has two domestic water storage tanks, with respective capacities of 1,000,000 gallons and 50,000 gallons each. See Section 4.17, *Utilities and Service Systems*, for more detailed information.

RPU's Sewage Systems Services Program and Treatment Services unit collects, treats, and disposes of all wastewater generated by the UCR campus. The sanitary sewer system at UCR has been in use since 1954 and comprises over 80,000 linear feet of collection pipe ranging from 4 to 15 inches in diameter. Original pipe has been replaced as upgrades or repairs have been required or new facilities have been constructed. The piping consists of a combination of vitrified clay, cast iron, polyvinyl chloride, asbestos, and cement. The campus sanitary sewer is served by three major arteries: a 15-inch main located in North Campus Drive, an 8-inch main located in Canyon Crest

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<sup>4</sup> Service has been temporarily suspended due to COVID-19.



Drive serving the North District, and an 8-inch main branching from the 15-inch main and serving the Academic Center (UCR 2019c).

Although North Campus Drive is part of the campus, the underlying 15-inch sewer is owned by the City of Riverside. The 15-inch line serves as an interceptor for the whole campus and receives sewage effluent from the residential neighborhood upstream of the campus. The 8-inch main along Canyon Crest Drive is also owned by the City. The remaining pipes serving the campus are owned and maintained by the University. There are nine grease interceptors and one clarifier located on East Campus (UCR 2019c). There is an existing 8-inch sanitary sewer line located in Iowa Avenue near the intersection of Everton Place that serves West Campus. This line flows into the 8-inch trunk sewer located in Iowa Avenue (CARB 2020).

The East Campus is bounded on the north and east by residential neighborhoods, separated by Blaine Street and Valencia Hill Drive/Watkins Drive, respectively. The majority of stormwater runoff coming from the east is collected as surface runoff near Valencia Hill Drive and Big Springs Road by an inlet structure and is discharged to the Gage Detention Basin north of University Avenue at Canyon Crest Drive through aboveground swales, a 72-inch pipe, and, finally, a 7-foot box culvert.

The existing storm drain network serving the campus is comprised of UCR, City of Riverside, and County of Riverside drainage facilities. The campus generally drains via surface (channels, detention basins) and underground storm drain conveyances that ultimately discharge to open channel arroyos and large diameter backbone county drainage infrastructure (UCR 2016).

The municipal storm drain system ultimately discharges to the Santa Ana River. UCR is located within the Riverside County Flood Control and Water Conservation District Master Drainage Plan areas for the Box Springs and University areas. West Campus drains into the Box Springs Storm Drain system, with an east-west storm drain line along Martin Luther King Boulevard and a north-south storm drain line in the center of the western portion of West Campus. East Campus drains into the University Wash-Spruce Street Storm Drain line along Spruce Street and Watkins Drive. University area storm drain lines are proposed east of East Campus at Blaine Street from West Campus View Drive to Mount Vernon Park, west of East Campus from Rustin Avenue to the I-215/SR 60 freeway, and the University Wash Channel west of the I-215/SR 60 freeway (RCFCWCD 2020).

## **Solid Waste**

UCR's landfill-bound waste is picked up and hauled by UCR trucks to the CR&R facility in Perris, California. There, recycle materials are sorted out of the landfill waste stream and the remainder is used for waste to energy. UCR's recycle materials are hauled to the UCR transfer station, just north of Parking Lot 30. Compost, food waste, and the commingled recycle streams are picked up from the UCR transfer station by the current contracted vendor and then recycled or composted. Green waste is currently being blended into the soil at Ag Ops.

## **Energy**

UCR purchases electricity for campus operations from RPU and through a power purchase agreement for on-site generation from the campus' solar infrastructure which, on average, produces approximately 11.6 megawatt-hours (MWh) of electricity. The purchased electricity is used to provide power for space cooling, heating and ventilation, lighting, research activities, office equipment, refrigeration, and more, by means of an extensive distribution network. The campus is mostly served by a 12.47 kilovolt (kV) network, following the conversion of many sections of a legacy 4.16 kV network to 12.47 kV.

Eight chillers provide 12,250 tons of chilled water capacity and utilize an innovative system of three thermal energy storage (TES) tanks that hold seven million gallons of chilled water. The TES tanks allow the University to implement demand management strategies to purchase electricity during off-peak hours which may have otherwise gone to waste and to produce and store chilled water for use during daytime on-peak hours (UCR 2016).

There is an existing University substation just north of Parking Lot 30 on West Campus. RPU is currently adding 4 miles of double-circuited 69 kV transmission lines to the existing electrical network and reconfiguring connections between various substations. One transmission line segment will traverse south along Chicago Avenue to about 0.25-mile south of Martin Luther King Boulevard, then east through West Campus. A second segment approximately 600 feet north of where the first line ended was constructed; this intercepts the north-south line on UCR's property and head east across Canyon Crest Drive to the I-215/SR 60 freeway.

The campus supply of natural gas is derived from Southern California Gas (SCG) which currently delivers natural gas to campus through high pressure distribution lines. UCR privately distributes medium pressure gas throughout East and West Campus. Distribution lines exist under Iowa Avenue and Martin Luther King Boulevard and under a portion of West Campus. East Campus is served by a distribution line under Blaine Street (SCG 2016). Purchased natural gas is combusted in four steam boilers at the Central Plant to generate steam for distribution. The Central Plant can produce up to 150,000 pounds of steam per hour, which is distributed to many of the Academic Center buildings, primarily for heating. Some natural gas is also used in the residential dining hall kitchens, on-campus restaurant kitchens, and science research and teaching laboratories. No new building or major renovation that is approved shall use on-site fossil fuel combustion (e.g., natural gas) for space and water heating (except those projects connected to an existing campus central thermal infrastructure) Projects unable to meet this requirement shall document the rationale for this decision as described in Section V.A.4 of the UC Policy on Sustainable Practices (UCOP 2020).

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