I. INTRODUCTION & BACKGROUND

Resource Management and Planning is requesting site endorsement for a new Central Plant Expansion (Chiller Plant Addition) (CPA) adjacent to the existing Central Utilities Plant (CUP), York Hall and Galbraith Hall in the south west corner of UC San Diego's campus along Scholars Drive South and Herbert York Lane (Figures 1 & 2). With continued campus development, cooling loads are expected to reach maximum capacity within the next 2 to 3 years. The plant expansion project is needed to support the existing CUP with the loads generated from projects such as, Franklin Antonio Hall (Winter 2021), the Design and Innovation Building (Spring 2021), Pepper Canyon West Housing (Fall 2022), Triton Pavilion (Spring 2023), Future College (Fall 2023), and other future loads.

The existing CUP has a maximum chiller capacity of 24,280 tons. This capacity includes the added capacity of the chiller replacement project that is currently in construction and expected to be complete by August 2019. Based on utility analyses of anticipated campus growth under the 2018 Long Range Development Plan (LRDP), it has been determined that the existing CUP will not have enough chiller capacity to serve the existing and future buildings. To achieve necessary capacity, the existing chilled water system must be expanded because there isn't room to replace the older chillers with new, larger capacity chillers within the existing space.

II. PROJECT DESCRIPTION

The CPA, proposed to be located west of the existing CUP on the west side of Hebert York Lane, would include a 20,000 square foot facility that will provide capacity for five 3,000 ton chillers, associated condenser pumps, electrical distribution equipment and accessories. The project would also include approximately 32,000 square feet of exterior space to accommodate up to five cooling towers and one thermal energy storage (TES) tank, access and maintenance vehicle parking.

The CPA will be phased in over time as chiller capacity increases on campus. It is anticipated that the CPA project will initially install two 3,000 ton chillers, associated condenser pumps, two cooling towers and provide provision for future projects. The project's 6,000 ton cooling capacity would support near-term projects while providing spare capacity for future projects.

The CPA project would also include: off-site utility work to provide chiller and high temp water piping to Future College (south of Revelle College), connecting chilled water piping to the existing chilled water loop, and connecting the control to

the existing CUP for monitoring. Medium voltage electrical and other utilities would also be connected to the new CPA. Construction staging will occur on the project site, which may include part of the parking lot in the CUP.

III. SITE EVALUATION

Three alternatives were considered: 1) Replace and upsize the existing CUP, 2) select an alternate location for a satellite chiller plant or 3) select locations for multiple smaller portable chiller units. Due to the limited space in the existing CUP, the existing chillers could only be replaced in kind. There is not enough room to install chillers with increased capacity because those units are larger and do not fit within the existing footprint.

Based on studies of utility access Capital Program Management Engineering Staff identified and analyzed three possible campus locations (Figure 3): Site 1: Scholars Drive South, Site 2: Warren College, and Site 3: Adjacent to the existing CUP.

Site 1, Scholars Drive South, would locate chillers and cooling towers adjacent to the Revelle Switch Station within the Open Space Preserve (Urban Forest), requiring extensive tree removals and excessive construction costs associated with grading, drainage and retaining walls.

Site 2, Warren College, would locate chillers and cooling towers in the Open Space Preserve (Ecological Reserve) north of the Geisel Library. This location would require an amendment to the LRDP as it is an incompatible land use and would also require a coastal development permit from the California Coastal Commission that would be unlikely given the sensitivity of the adjacent biological resources. In addition, a satellite chiller plant in this location would require constructing a new monitoring facility and hiring staff to operate the facility. This location was studied as it could easily be connected to the existing chilled water infrastructure.

As a result of extensive Open Space Preserve impacts (including tree removals), LRDP amendments, coastal/environmental permitting, and excessive construction and staffing costs, Site 1 and 2 were rejected.

Site 3 is adjacent to the existing CUP, taking advantage of existing staffing resources, with good access for construction and utility connections. In addition, Site 3 is located within the "General Services" land use designated in the 2018 LRDP (Figure 4). For these reasons, Site 3 is the most viable location for the proposed CPA.

Constraints and considerations for Site 3 include: proximity to the Open Space Preserve (Historic Grove), construction impacts,

massing and scale, aesthetics, noise impacts and demolishing the existing Revelle Provost Building.

A portion of the Open Space Preserve (Historic Grove) is located within the proposed Site 3 boundary. Expansions of facilities within the 'Historic Grove' are subject to guidelines which require that when minor adjustments are made in the Historic Grove to accommodate campus improvements, no net loss of Open Space Preserve land should occur.

Trees removed from the Historic Grove are required to be replaced at a ratio of 2:1 (e.g. two new trees for every one tree removed) with appropriate irrigation improvements. The exact number of displaced, replacement and new trees will be based on concept design and will be reviewed by Campus Planning staff.

The second consideration for the proposed location is the potential for adverse noise impacts to the surrounding buildings. The 2018 LRDP environmental impact report (EIR) states Stationary Noise Sources, such as utility plants, are considered significant noise impacts if the noise level exceeds 65 dBA CNEL (Community Noise Equivalent Level) at the exterior of housing, temporary lodging, inpatient medical care facilities, classrooms, child development centers, libraries and related learning spaces. The exact noise level impacts of the CPA to the surrounding buildings (Galbraith and York Hall) will be further studied based on the concept design to identify appropriate noise mitigation features and will be reviewed by Campus Planning staff.

The third consideration for the proposed location is the existing Revelle Provost Building. Because of the square footage required for the CPA, the project will require demolition of the existing Revelle Provost Building. The Revelle Provost office is planned to relocate to Galbraith Hall as its permanent location. Academic Affairs is currently identifying space for the relocation.

III. PLANNING PARAMETERS

The project is consistent with campus land use plans and the principles contained in the campus' overarching planning and design documents. The proposed site location has been designated "General Services" land use in the 2018 LRDP (Figure 4). Through the development of the 2018 LRDP it was anticipated that the CUP would require future expansion to the west and the land use plan was reviewed by C/CPC at the time the LRDP was being updated. In addition the project location is consistent with the South Gateway Neighborhood Planning Study that was completed in November 2018 (endorsed by C/CPC in September 2018). The Study states "It is envisioned

that regardless of the final programmed size of the chiller plant it will be necessary to mask it from the sculpture lawn with landscape screening or other means, to lessen its impact visually and acoustically whilst maintaining the natural ambiance and serenity of the lawn."

The approximately 300,260 square foot project area includes the CPA (chillers, cooling towers, TES), access and parking, areas for construction access and staging, grading and drainage, setbacks, and utility connections.

The project site currently consists of the existing CUP, Revelle Provost Building (4,500 gross square feet), an access road, a 2-spot parking lot, vegetation and potentially, based on preliminary CPA layout concepts, up to 13,000 square feet of the Historic Grove. The actual project site would be further studied during the design phase by the executive engineers with an emphasis on reducing site impacts to the extent feasible.

The project would not reconstruct the existing 2-spot parking lot and no additional public parking would be provided.

Resource Management and Planning acknowledges the unique character of this site and seeks to enhance the Historic Grove aesthetic. To this end, if required, the 2:1 Tree Replacement and No Net Loss square footage will be attained within the project site.

V. RECOMMENDATION

The Committee is asked to review and endorse the site for the proposed CPA project. The project would adhere to both the Open Space Preserve "No Net Loss" and 2:1 tree replacement policies, as required and/or necessary. The site evaluation for the Central Plant Expansion was presented for information at the April 18, 2019 meeting and for site endorsement at the June 20th meeting. In addition, this project will return to the Committee for concept design review at a future date.

Figure 1

UC SAN DIEGO CAMPUS - PROPOSED PROJECT SITE LOCATION

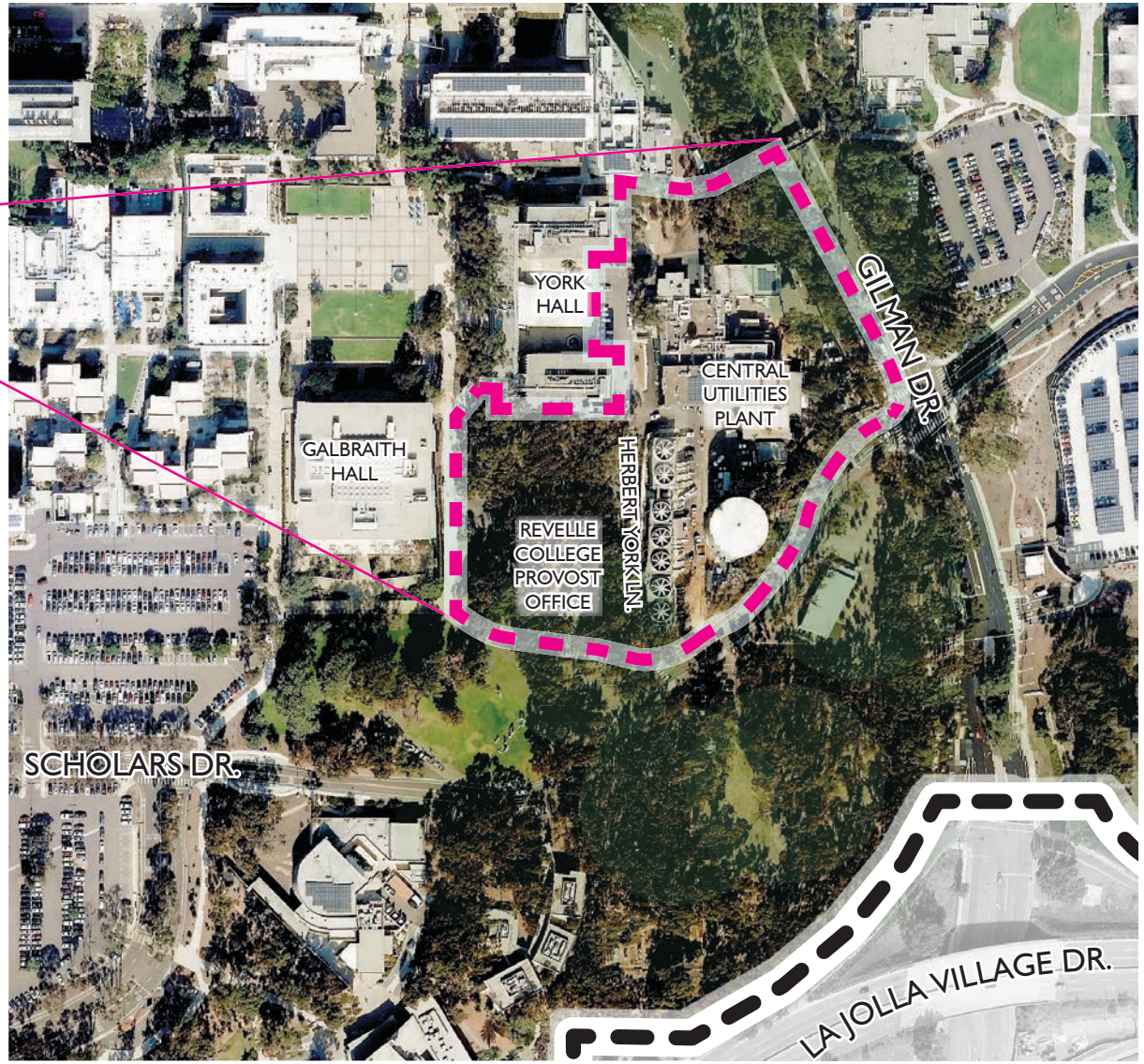
MAP NTS

Chiller Plant Expansion (Chiller Addition)
Site Evaluation
Created 04/11/2019

UC San Diego
CAMPUS PLANNING

KEY MAP

MAP NTS



LEGEND

PROPOSED PROJECT SITE

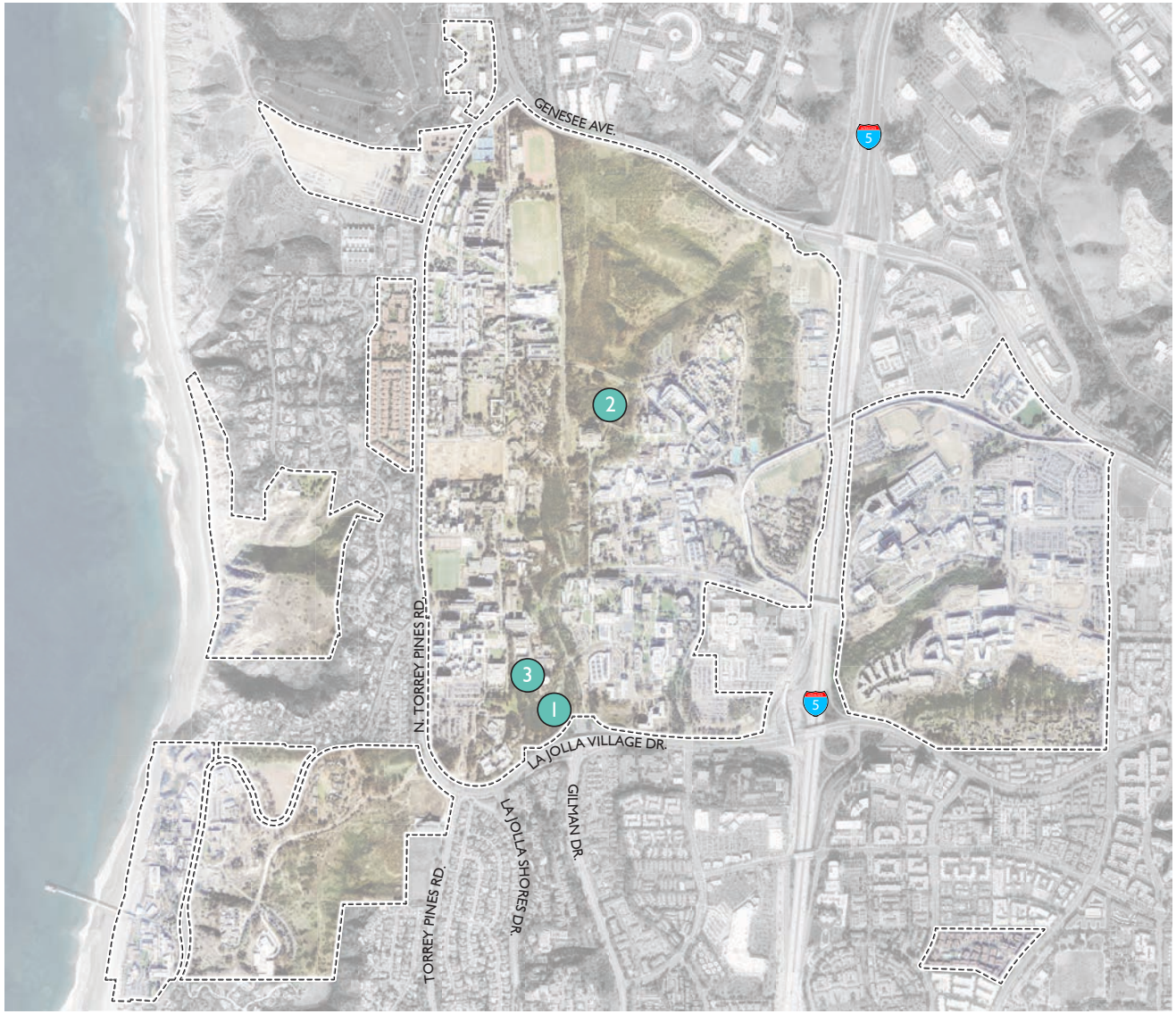
UC SAN DIEGO CAMPUS BOUNDARY

PROPOSED PROJECT SITE

MAP NTS

Chiller Plant Expansion (Chiller Addition)
Site Evaluation
Created 04/11/2019

UC San Diego
CAMPUS PLANNING

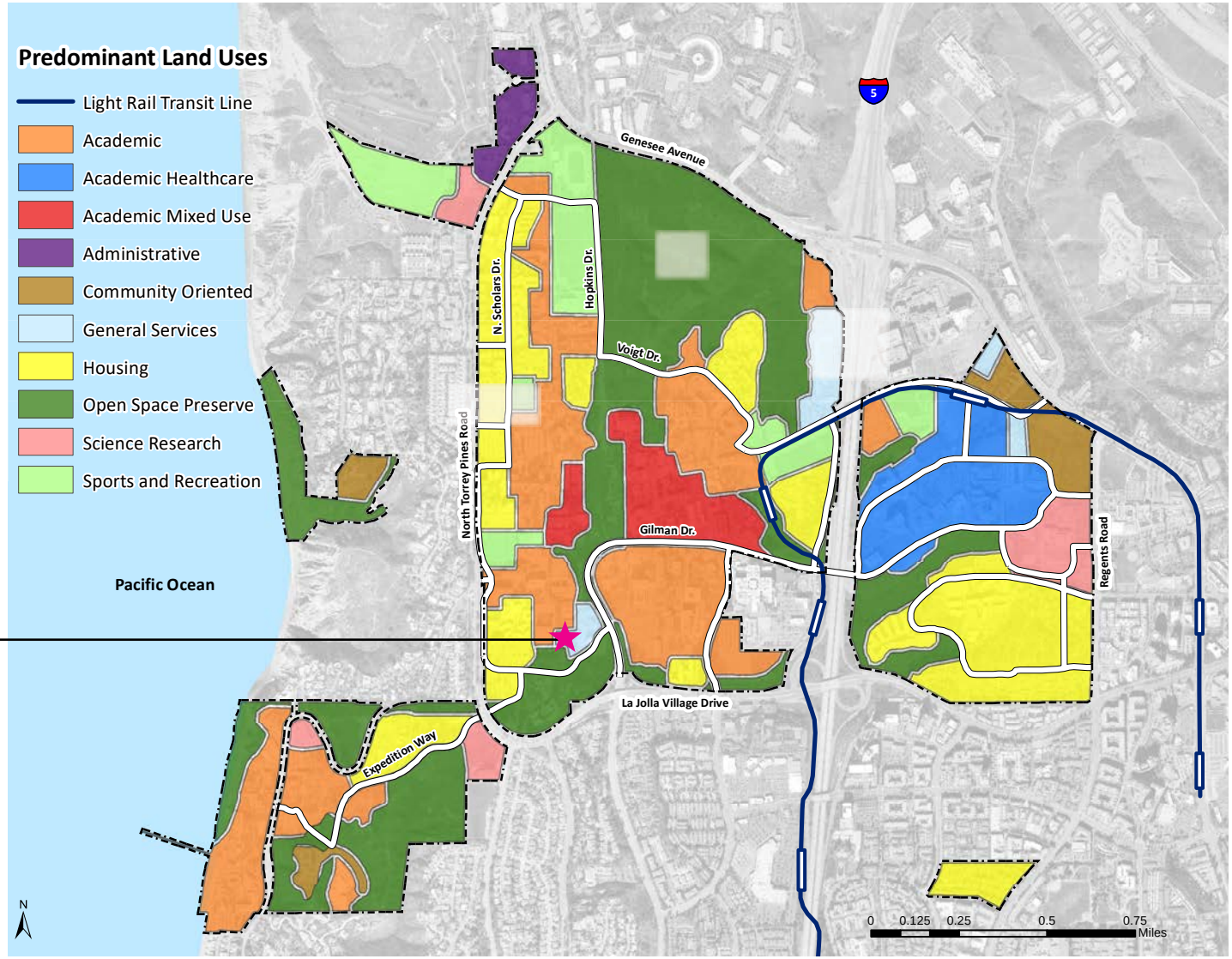


UC SAN DIEGO CAMPUS - ALTERNATIVE SITE LOCATIONS

MAP NTS

Chiller Plant Expansion (Chiller Addition)
Site Evaluation
Created 04/11/2019

UC San Diego
CAMPUS PLANNING



UC SAN DIEGO CAMPUS - LAND USE MAP

MAP NTS

Chiller Plant Expansion (Chiller Addition)
Site Evaluation
Created 04/11/2019

UC San Diego
CAMPUS PLANNING