

## INTRODUCTION & BACKGROUND

Resource Management and Planning (RMP) is requesting site endorsement for chilled water cooling infrastructure to be located west of Voigt Drive in the North Campus Neighborhood and adjacent to the San Diego Super Computer Center (SDSC) (Figure 1).

With its robust information technology infrastructure, the SDSC requires a significant amount of energy, specifically chilled water from the Central Utility Plant, to operate. Facilities Management conducted a study that determined a dedicated cooling tower at SDSC to handle process cooling loads would result in significant energy savings of up to \$250,000 per year. The site also considers area for a second tower should the SDSC expand to full capacity.

## PROGRAM & PROJECT DESCRIPTION

The project would include one cooling tower unit with a screen enclosure and associated utility work. The equipment would rest on a concrete pad of approximately 1,200 square feet with a screen enclosure that would align with the approximately 35-foot setback of Hopkins Parking Structure from Hopkins Drive.

The cooling tower would function as a water-side economizer that would offer an alternative to the chilled water loop that is currently utilized to cool the computer rooms within the building. When the outside air wet-bulb temperatures fall to 60 degrees or below, the air handling system can leverage evaporative cooling through the cooling tower and reduce the demand on the chilled water system.

While only one cooling tower would be required at this time, the project site could potentially expand to the west to include another tower at a later date.

## PROJECT SITE

As the cooling tower would solely serve the SDSC, close proximity to the building is required. The site surrounding the SDSC is highly constrained with Hopkins Parking Structure to the south, Social Sciences Building to the west, RIMAC to the north, and Hopkins Drive to the east. Several site options were initially studied including south of SDSC West, north of SDSC east, north of SDSC West, and the roof of SDSC West. Due to the constructability, construction and operating noise, and expense associated with these sites, a southern site nearest the Hopkins Parking Structure was studied in further detail. While more visible from Hopkins Drive, this site was furthest from occupied buildings, resulting in the least noise impacts while remaining close to existing utility connections.

The proposed site is approximately 3,200 square feet on the north side of the Hopkins Parking Structure. It is currently occupied by a 400 square foot concrete pad that holds a temporary battery storage container. This unit is scheduled to be decommissioned and removed in advance of this project. On the west and east sides of the concrete pad are relatively flat areas of wood mulch. East of the concrete pad are two large Torrey Pines, one of which may be removed due to this project. The concrete pad would grow to the east and south to hold the new equipment.

## PLANNING PARAMETERS

### Relationship to 2018 Long Range Development Plan (LRDP)

The project site is within an "academic" predominant land use. Ancillary uses, like utilities such as this project, are supported in the academic land use areas.

### **Relationship to 1989 UCSD Master Plan Study (MPS)**

The project site is located along Hopkins Drive, which is part of the Campus Loop Road. The project will not substantially detract from the elements that help define the Campus Loop Road, such as the rustic planting and defined setbacks.

### **Relationship to the 1994 North Campus Neighborhood Planning Study (NCNPS)**

The campus has largely met the buildout studied in the NCNPS, but can also reinforce several site planning criteria. As the site is below the ridge line, the project does not conflict with the height conditions.

### **Building Form & Massing**

The cooling tower and screen enclosure would be approximately 25-feet in height, and approximately half the height of Hopkins Parking Structure from grade. The screen enclosure would be painted and characterized to reduce apparent mass and blend with the Hopkins Parking Structure. A 10-foot setback from the Hopkins Parking Structure would be maintained for fire safety.

### **Utility & Infrastructure**

The utility connections for this site may include recycled water, electrical, and telecom that can be extended from connections on the site. Some adjustment to the utility access may be necessary.

### **Environmental Considerations**

The proposed project would be subject to the California Environmental Quality Act (CEQA). It is anticipated that a categorical exemption would be submitted for the proposed project as it constitutes an addition to an existing facility. Additional

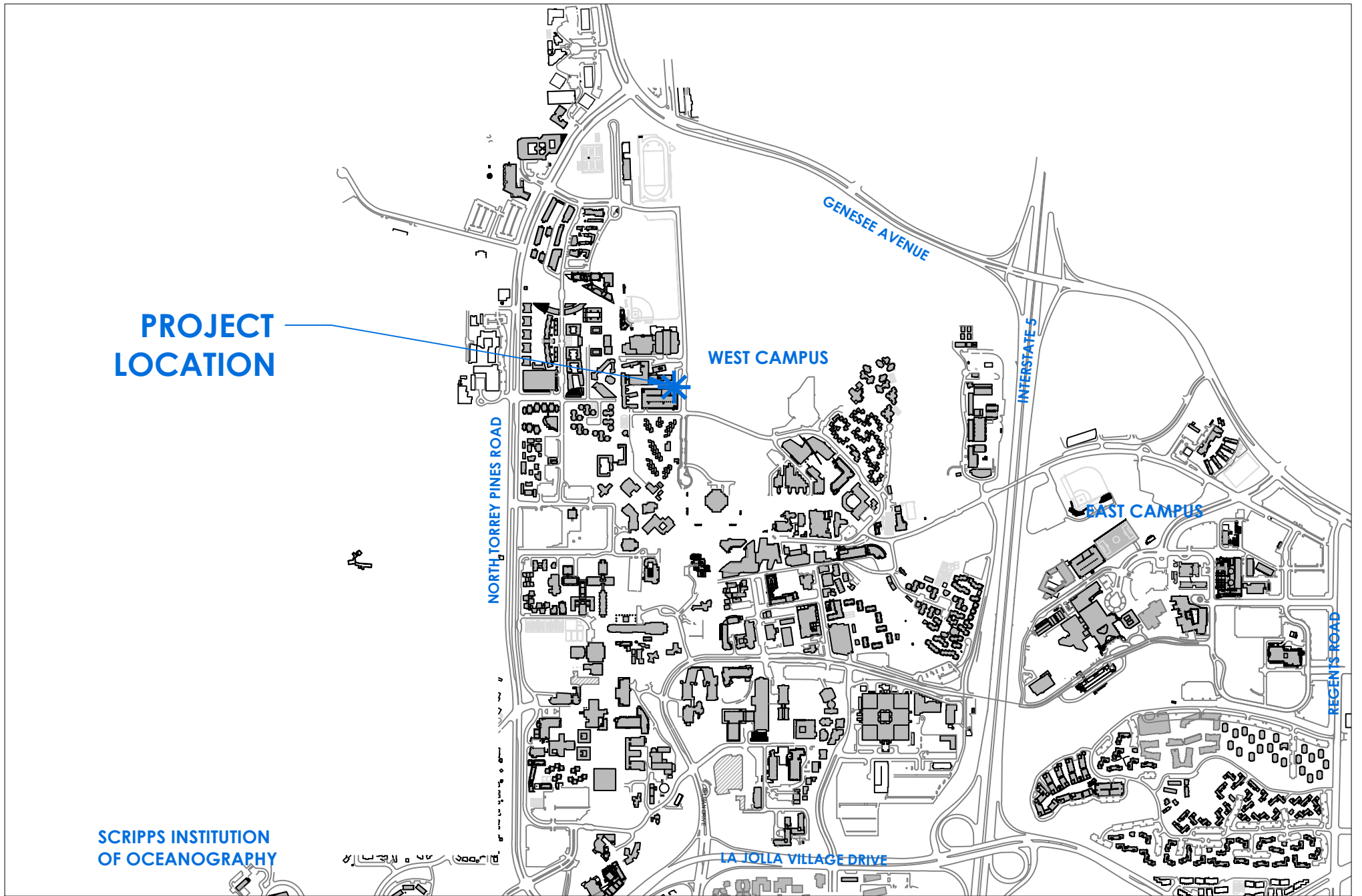
environmental considerations would include less-than-significant impacts to aesthetics/visual resources, biological resources, air quality, noise, water quality, and hydrology that would be addressed with special conditions provided with the project's Environmental Impact Classification form. The project lies within the Coastal Zone, but would not require a coastal development permit as it results in a net increase of only approximately 800 square feet of impervious surface and would not increase the height of the existing structure.

### **Sustainability**

Localizing the heat exchange near the high-load SDSC will reduce the overall load on the campus chilled water system resulting in significant energy and monetary savings over time. As UC San Diego grows, this energy savings can be diverted to new future demands on the system. The project could also consider using recycled water.

### **RECOMMENDATION & PROCESS**

The site evaluation will be presented for information and potential endorsement at the May 17<sup>th</sup>, 2018 meeting. The project will return to C/CPC at Concept for Comment to the Design Review Board.



**PROJECT  
LOCATION**

**WEST CAMPUS**

**EAST CAMPUS**

**SCRIPPS INSTITUTION  
OF OCEANOGRAPHY**

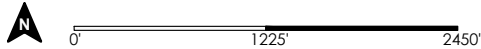
**LA JOLLA VILLAGE DRIVE**

**GENESEE AVENUE**

**INTERSTATE 5**

**REGENTS ROAD**

**NORTH TORREY PINES ROAD**



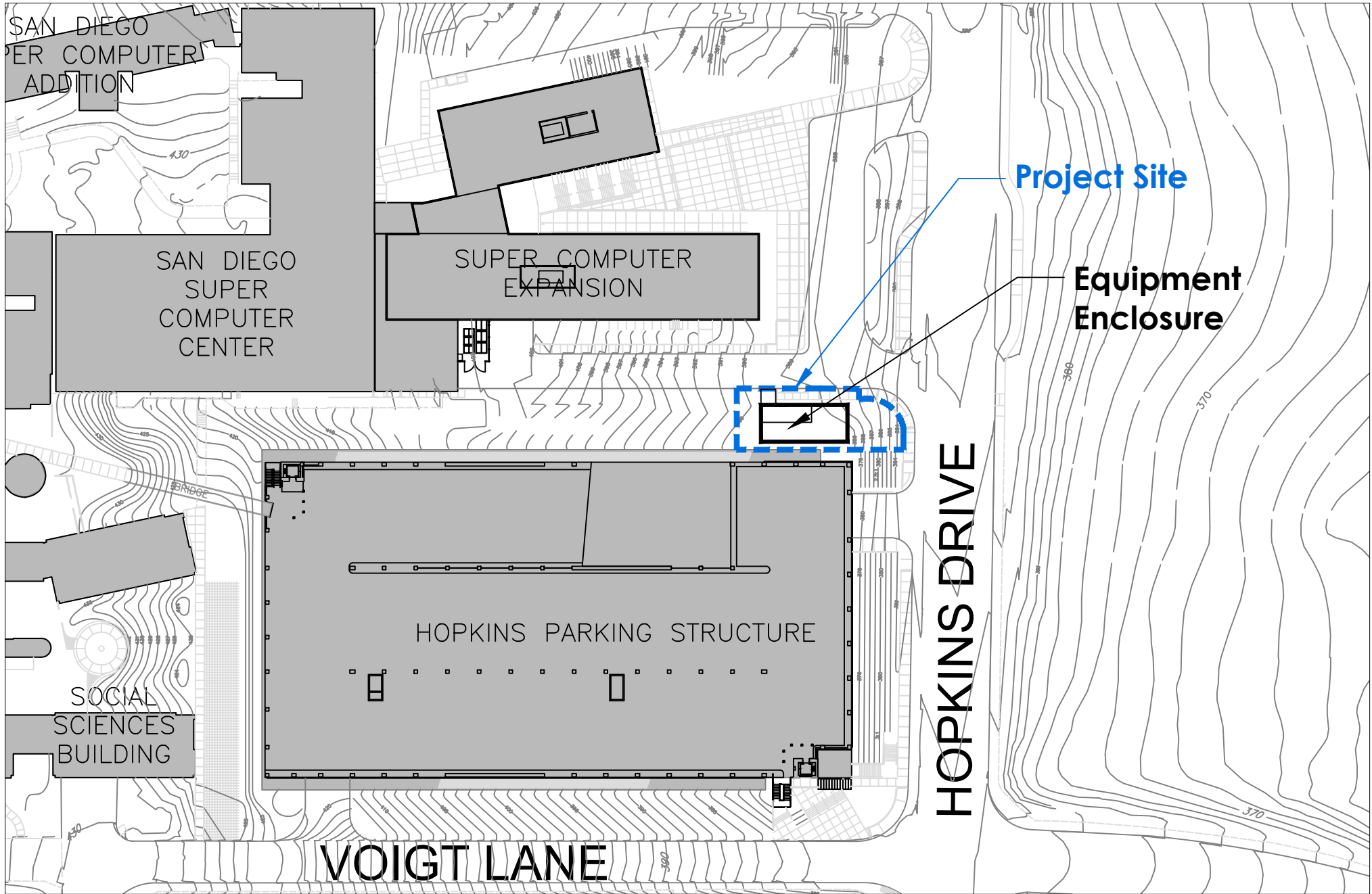
# San Diego Supercomputer Center Energy Infrastructure

Figure 1 - Project Location

5/09/2018

**UC San Diego**

**CAMPUS PLANNING**



**San Diego Supercomputer Center Energy Infrastructure**

Figure 2 - Project Site

5/10/2018