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CALIFORNIA ENERGY COMMISSION

October 11, 2019

C1-Santa Clara, LLC
c/o Scott Galati
1720 Park Place Drive
Carmichael, CA 95608

Re: Data Requests for the Sequoia Data Center (19-SPPE-03)

Dear Mr. Galati:

Pursuant to Title 20, California Code of Regulations, sections 1941 and 1716, the California Energy Commission (CEC) staff is asking for the information specified in the enclosed Data Requests Set 2 necessary for a complete staff analysis of the Sequoia Data Center project.

Responses to the data requests are due to staff within 30 days. To facilitate an expedited review, staff requests written responses to the enclosed data requests on or before October 23, 2019.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send written notice to me and the Committee within 20 days of receipt of this letter. Such written notification must contain the reasons for not providing the information, the need for additional time, or the grounds for any objections (see Cal. Code Regs., tit. 20, § 1716 (f)).

If you have any questions, please call me at (916) 651-0966, or email me at leonidas.payne@energy.ca.gov.

Leonidas Payne
Project Manager

Enclosure

Biological Resources
Author: Ann Crisp

BACKGROUND

The applicant submitted Data Request Response 64, and supplemental filing Appendix BIO-64, to meet staff's request (Data Request 64) which included Sheet L1.01 of the Tree Removal and Protection Plan. The Tree Removal and Protection Plan indicates in the table at the bottom of Sheet L1.01 that there are four trees on site and two trees on a neighboring property overhanging into property to remain. However, upon review of the submittal by staff only three trees are labeled as an "existing tree to be protected" on Sheet L1.01 of the Tree Removal and Protection Plan. No information is provided on trees #170, #171, and #172 and staff assumes these trees were included on Sheet L1.02, which was not provided in the submittal.

In addition, the table at the bottom of Sheet L1.01 notes there are two trees identified as a "Tree on Neighboring Property Overhanging Into Property" that would remain which would be mapped as an "existing tree to be protected". However, the three trees mapped as an "existing tree to be protected", trees #101, #141,#166, were all identified in the arborist report as being on a neighboring property. Therefore, the number of trees to remain identified as being on a neighboring property does not match between the arborist report and the Tree Removal and Protection Plan.

Additionally, staff must determine if the proposed project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Santa Clara General Plan Policy 5.10.1-P4 provides for the protection of all healthy cedars, redwoods, oaks, olives, bay laurel and pepper trees of any size, and all other trees over 36 inches in circumference. The applicant is proposing removal of two holly oak (*Quercus ilex*) trees, labeled as #108 and #120, and one Brazlian pepper tree (*Schinus terebinthifolius*), labeled as #142 , instead of preserving these three trees as is recommended by the arborist report. It is unclear why these trees are being removed instead of preserved since they are in a location where the applicant proposed to plant trees as part of the landscaping plan. In addition, on page 4.4-8 the applicant states that "two of the trees on site would qualify as street trees, and the applicant would be required to obtain a permit from the City for their removal." However, the applicant did not identify which trees these are.

Staff needs additional information to determine how the applicant is proposing to provide replacement trees for all protected trees, either on or off site and at what ratio (e.g.1:1 or 2:1). There are sheets noted on the Tree Removal and Protection Plan, Sheet Numbers L2.01 and L2.02 that were not included in the submittal and may contain the information that staff requires to complete their analysis.

DATA REQUESTS

93. Please provide additional information on Trees #170, #171 and provide the sheet from the Tree Removal and Protection Plan where these trees are displayed (Sheet Number L1.02).

94. Please clarify if Trees #101, #141, #166 are on a neighboring property or not.

95. Please provide additional information as to how the proposed removal of Quercus #108, Quercus #120, and Schinus #142 does not conflict with General Plan Policy 5.10.1-P4.

96. Please provide the Tree ID number for the two trees on site that would qualify as street trees.

97. Please provide Sheet Numbers L2.01 and L2.02 of the Tree Removal and Protection Plan.

Cultural and Tribal Cultural Resources

Author: Gabriel Roark

BACKGROUND

In Data Request 67, staff asked whether the applicant proposes to support foundations for the *data center building* or *backup generators* with piles (CEC 2019, p.17). The applicant responded that, "piles are not anticipated for the SDC [Sequoia Data Center] foundation" (DayZen 2019, p.48). To date, staff and the applicant have used similar terminology to refer to the proposed project, but with different meanings. Staff refers to the entire project as the Sequoia Data Center (SDC), whereas the applicant distinguishes between the Sequoia Backup Generating Facility (SBGF) and the SDC in its application (Circlepoint 2019, p.1-1). The applicant's data response references the SDC but is not explicit whether the response applies to the SDC and SBGF alike.

DATA REQUEST

98. In answering Data Request 67, did the applicant follow staff's use of SDC as referring to both the data center building and SBGF? Has the applicant affirmed that they are not considering piles to support the backup generators?

REFERENCES CITED

CEC 2019—California Energy Commission (TN 229737), Data Requests for the Sequoia Data Center (19-SPPE-03), Sacramento, CA, Submitted to C1-Santa Clara LLC, September 13, 2019.

Circlepoint 2019—Circlepoint (TN 229419), *Application for Small Power Plant Exemption: Sequoia Backup Generating Facility.* Submitted to California Energy Commission, Sacramento. August 9, 2019.

DayZen 2019—DayZen, LLC (TN 229938-1), *Response to CEC Staff Data Request Set 1 (1-92), Sequoia Backup Generating Facility (19-SPPE-03)*, Submitted by C1-Santa Clara, LLC, Submitted to California Energy Commission, Sacramento, October 2019.

Hazards and Hazardous Materials

Author: Brett Fooks

BACKGROUND

The project design calls for a separate diesel fuel tank for each emergency generator. Each diesel engine will be readiness tested on a regular schedule, consuming a portion of its fuel.

DATA REQUEST

99. Please provide the fuel tank replenishment strategy and frequency, and the estimated frequency of fuel trucks needing to visit the facility for refueling.

BACKGROUND

Stored diesel fuel is subject to degradation over time, which can render it unsuitable for use and potentially requiring it to be changed-out for fresh fuel.

DATA REQUEST

100. Please describe what measures are planned to maintain adequate quality of the stored fuel. How often might the stored fuel need to be changed-out for new? If needed, how would this be accomplished? How many fuel truck visits would be required?

Land Use and Planning/Project Description
Author: Jeanine Hinde

BACKGROUND

The SPPE application states that the proposed project site encompasses 15 acres on assessor's parcel number (APN) 230-03-105. In preparing the first set of data requests, staff checked the City of Santa Clara's online zoning map, which seems to indicate that APN 230-03-105 covers 24.27 acres. Based on that assumption, staff prepared data request #74 (Land Use and Planning) asking for information on what the applicant proposes to do with the remaining 9.27 acres that is not part of the 15-acre project site. The applicant responded that the entire 24.27 parcel is under C1 control but has no plans for developing the remaining 9.27 acres at this time (TN #229938-1).

Since receiving the data response, staff re-reviewed the parcel map and now understands that APN 230-03-105 (SDC site) covers 14.959 acres. The adjacent parcel to the south, APN 230-03-106, covers 9.312 acres, for a total of 24.27 acres. The applicant's response to data request #74 implies that C1 owns the separate, adjacent parcel to the south; however, public records show June 28, 2012, as the last transfer date for that property.

DATA REQUEST

101. Please provide information on whether the applicant has an option to purchase or plans to purchase the adjacent parcel south of the SDC site (APN 230-03-106), site address 2500 De La Cruz Boulevard.

BACKGROUND

On February 19, 2019, C1 published a press release (attached) announcing its plan to develop the "CyrusOne Santa Clara Data Center campus" on two adjacent land parcels that will be capable of "delivering over 100 MWs of capacity." Shortly before the press release, C1 purchased the adjacent 8.35-acre parcel north of the SDC property at 2750 De La Cruz Boulevard (APN 230-03-099). The total area for the two properties is 23.3 acres.

On February 22, 2019, the online publication, *Data Center Frontier*, posted an article (attached) describing the C1 plan to deploy 144 MWs of new data center capacity on two adjoining parcels totaling 23 acres. The article describes how the adjacent 8-acre parcel will house a 48-MW data center, resulting in the "largest contiguous data center campus in Santa Clara...."

DATA REQUESTS

102. Staff requires additional information from C1 on its overall plan for the data center campus to determine how these projects may interrelate and the extent to which additional information is needed for the cumulative impacts analysis. Staff requests additional information on C1's plans for the data center campus as follows:

    a. Please provide information on the anticipated schedule for developing the 48-MW data center, including the schedule for filing a planning application with the City of Santa Clara. Please provide details of this project's scope and functions, if available.

    b. Please describe all common elements and facilities for the 144-MW data center campus.

    c. Please describe whether the electrical distribution facilities for the data center campus would need to be expanded beyond what is currently proposed and, if so, please describe how the facilities would be expanded.

Transportation

Author: Andrea Koch

BACKGROUND

The applicant's response to Data Request 89 states that the applicant was planning to file a formal application with the City of Santa Clara in September 2019, and that the City's response to that application was expected to provide an analysis of the project's conformance with the Comprehensive Land Use Plan (CLUP).

The project is located within the Turning Safety Zone and Inner Safety Zone of the San Jose International Airport, as designated by the CLUP for the airport. According to Policy S-4 of the CLUP, above-ground fuel storage and hazardous materials facilities are not permitted in these zones. The project has above-ground diesel storage tanks (total capacity 367,200 gallons).

DATA REQUESTS

103. Please provide a copy of the application materials submitted to the City of Santa Clara.

104. Please provide the approximate timing of the City of Santa Clara's review of the application.

105. Please provide a copy of the City of Santa Clara's analysis of the application materials, when available

CyrusOne Continues Expansion into Silicon Valley for Large Hyperscale Customers with Land Purchase

February 19, 2019

Fastest-Growing Major Data Center Provider Closes 8 Acre Land Deal for Creation of Second Santa Clara Facility Creating the Largest Mission-Critical Concentration in Silicon Valley Delivering Over 100MW of Capacity

SANTA CLARA, Calif.--(BUSINESS WIRE)--Feb. 19, 2019-- CyrusOne (NASDAQ: CONE), a premier global data center REIT, today announced the purchase of 8 acres of land in Santa Clara. Upon completion, the new facility will be the second for CyrusOne in Santa Clara and will be adjacent to the company's existing land parcel that is currently under construction. Combined, the CyrusOne Santa Clara Data Center campus will be the largest mission-critical concentration in Silicon Valley delivering over 100MW of capacity. The unique campus will be able to generate up to 27MWs of energy by use of the onsite generation, giving customers even more aggressive power pricing over any competitor in the market.

"Today marks an exciting new chapter for CyrusOne as we set the course for our second data center in the heart of Silicon Valley. With innovative power cogeneration, our new data center will provide low energy costs for our hyperscale customers. Part of our mission at CyrusOne is to help the world's leading technology companies power this new exciting digital era we all live in. Continuing our expansion in Silicon Valley will help our customers turn their visions into reality," said Kevin Timmons, chief technology officer, CyrusOne. "In technology, speed is a differentiator, and our track record demonstrates that we build data centers faster than anyone in the world."

CyrusOne operates more than 45 data center facilities across the United States, Europe, Asia and LATAM to provide customers with the flexibility and scale to match their specific IT growth needs. CyrusOne facilities are engineered to include the power-density infrastructure required to deliver high availability, including an architecture with the highest available power redundancy.

For more information about CyrusOne, call +1-855-908-3662 or visit www.cyrusone.com. Connect with us on LinkedIn, Twitter, and Facebook.

About CyrusOne

CyrusOne (NASDAQ: CONE) is a high-growth real estate investment trust (REIT) specializing in highly reliable enterprise-class, carrier-neutral data center properties. The Company provides mission-critical data center facilities that protect and ensure the continued operation of IT infrastructure for approximately 1,000 customers, including more than 205 Fortune 1000 companies.

With a track record of meeting and surpassing the aggressive speed-to-market demands of hyperscale cloud providers, as well as the expanding IT infrastructure requirements of the enterprise, CyrusOne provides the flexibility, reliability, security, and connectivity that foster business growth. CyrusOne offers a tailored, customer service-focused platform and is committed to full transparency in communication, management, and service delivery throughout its more than 45 data centers worldwide. Additional information about CyrusOne can be found at www.CyrusOne.com.

View source version on businesswire.com: https://www.businesswire.com/news/home/20190219005613/en/

Source: CyrusOne

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From Data Center Frontier

CyrusOne Preps 144-Megawatt Santa Clara Campus With On-Site Power

BY **RICH MILLER** - FEBRUARY 22, 2019 3 COMMENTS

An illustration of an aerial view of the planned CyrusOne data center in Santa Clara. (Image: CyrusOne)

After a lengthy search, CyrusOne has secured land for a new data center campus in Santa Clara, the leading data center hub in Silicon Valley.

Over the past six months, the company has acquired two adjoining parcels with an on-site cogeneration facility, creating a 23-acre property where CyrusOne plans to deploy 144 megawatts of new data center capacity.

"We will have the largest data center campus in Santa Clara," said CyrusOne CEO Gary Wojtaszek on Thursday's earnings call. "We spent a number of years trying to find properties, and we were fortunate now in the last couple of months to assemble two properties that are adjacent to one another."

The new project will bring more data center inventory and competition toSilicon Valley, which is one of the largest and most important data center markets in the U.S., but also one of the most difficult places to build new data centers. The entry of CyrusOne is the latest in a flurry of data center construction projects in Santa Clara, which promise to bring a steady flow of new server space online in 2019 and 2020.

CyrusOne will knock down several buildings from the previous owner, a recycled paper mill that closed in late 2017. But it's keeping the cogeneration plant, which will provide up to 27 megawatts of on-site power generation.

"With innovative power cogeneration, our new data center will provide low energy costs for our hyperscale customers," said Kevin Timmons, Chief Technology Officer at CyrusOne, who said the on-site electricity could be meaningfully cheaper than market rates from local utility Silicon Valley Power.

Site Selection Challenges

Santa Clara has long been the Data Center Capital of Silicon Valley due to competitive power pricing from the municipal utility, Silicon Valley Power. It's the favored spot to deploy new hardware and services from the Valley's marquee technology companies, as well as a legion of fast-moving startups. That's why there's 35 data centers are located in an 18-square mile municipality.

The region is facing a shortage of finished data center space due to a dwindling supply of development sites in key data center corridors. This was a challenge for CyrusOne, which announced its intent to enter the Santa Clara market back in 2016. But finding a site was not easy.

"Santa Clara is a market where we have spent a number of years trying to find properties to develop," said Wojtaszek. "You've got to know what you're doing. It's a really expensive market to get into, so you're back-solving for yields (return on investment) because the price that you're paying for those properties are multiples of what you can get elsewhere around the country."

Despite those challenges, rewards await those who can execute. "The supply constraints are why you see so many companies getting phenomenal yields on the investments that they made in that market," said Wojtaszek.

New Inventory is Coming

That's why a number of new developments are under way in Santa Clara and its neighborhood. Here's a look at the inventory in the pipeline:

- Vantage Data Centers is building a new campus on Mathew Street in Santa Clara, where plans to create 69 megawatts of new data center capacity. The first phase of 21 megawatts is schedule to be delivered in the third quarter of 2019.
- CoreSite is developing its SV8 property, which will offer 175,000 square feet of data center space and 18 megawatts of power capacity. The 58,000-square foot first phase is expected to come online in the third quarter of 2019.
- Digital Realty has announced plans for a new campus on Lafayette Street that will add 48 megawatts of power across 403,000 square feet of data center space. The company has not yet set a timetable for delivery of the first phase.
- RagingWire Data Centers has just announced its entry into Silicon Valley with a 16-megawatt, 160,000 square foot building on a 3-acre site in Santa Clara, which will open for business in mid-2020.
- EdgeCore has acquired 12 acres in Santa Clara and plans a campus that can support four data centers and up to 80 megawatts of capacity. The 36-megawatt first phase is scheduled for delivery in 2020.
- STACK Infrastructure says its San Jose data center campus (previously operated by Fortune Data Centers and Infomart) is likely to be expanded, as it has a building available for retrofit and a parking lot that could be converted to data center use.

Wojtaszek said CyrusOne has begun work on its site, which will have a view of Mineta Airport in nearby San Jose. Given the lack of vacant development sites in Santa Clara, data center operators must buy properties with existing structures, raze the buildings, and redevelop the property for data center use.

"We're starting to demolish the buildings and scrape all of the land," said Wojtaszek. "We look to have capacity online in 2020."

Building Vertically to Boost Capacity

As with other new projects in Santa Clara, CyrusOne will be building two four-story data centers to get the most capacity possible out of its existing real estate. The company expects to deploy 96 megawatts of capacity on its first 15-acre property, which it acquired in August for $53.1 million. The adjacent 8-acre parcel will house a 48-megawatt data center.

That yields a total of 144 megawatts, which would be the largest contiguous data center campus in Santa Clara, matching the combined 144-megawatt projected capacity of Vantage's two campuses, which are about 2 miles apart.

Digital Realty has deployed 105 megawatts of power across 990,000 square feet of space in multiple properties across Santa Clara, and with its planned 48-megawatt expansion could push its total power deployment to 153 megawatts.

CoreSite (615,000 square feet) and Equinix (540,000 square feet) also have substantial data center footprints in Silicon Valley, but don't publicly disclose details on their total power deployed across the market.

An illustration of the exterior of the planned CyrusOne Santa Clara data center. (Image: CyrusOne)

Timmons calls the Santa Clara development "an exciting new chapter for CyrusOne."

"Part of our mission at CyrusOne is to help the world's leading technology companies power this new exciting digital era we all live in," said Timmons. "Continuing our expansion in Silicon Valley will help our customers turn their visions into reality."

Making On-Site Power Work

A unique element of the CyrusOne project is its on-site power generation. The prior business at the site operated a cogeneration plant that uses natural gas to generate electricity. The plant features a GE LM2500 gas turbine, along with a heat recovery steam generator. This combination will allow CyrusOne to generate up to 27 megawatts of power for its data center customers, while using the steam heat from the turbine in absorption chillers to produce cold water for the data center's cooling system.

This combination of gas turbines and absorption chillers was pioneered in 2009 at an IBM data center at Syracuse University, which served as a testbed for new approaches to sustainable operations. Reusing waste heat from data center operations has been a trend in Europe, where district heating systems can use the low-grade heat produced by servers. Facebook's Denmark data center plans to use this heat recycling. Such systems are rare in the U.S., but turbines generate much higher temperatures, allowing the heat to be reused in industrial systems.

"It's not common because it's not cost effective to add it," said Timmons. "But when it comes with the property, it's a different story. Another hidden beauty of this site is that there was already a dedicated substation. I love what we're going to be able to do competitively."

About Rich Miller

I write about the places where the Internet lives, telling the story of data centers and the people who build them. I founded Data Center Knowledge, the data center industry's leading news site. Now I'm exploring the future of cloud computing at Data Center Frontier.