



Electric service in downtown Sacramento

SMUD and the City of Sacramento are committed to helping developers, owners, engineers, contractors and others understand the process, requirements and electrical planning considerations when developing properties within downtown Sacramento. The following information provides a starting point in the project planning. It addresses the placement of electrical distribution equipment, approximate space requirements, and other project-specific considerations.

SMUD electrical distribution equipment including pull boxes, vaults, transformers and switchgear, etc. are typically required to provide electric service to properties being developed. There are differing options for locating these facilities, but they must be within the boundaries of the property. Options are as follows, and costs increase substantially as

you move from one to the next. As an example, vaulted services can cost up to ten times those of an above-ground installation.

1. Above ground located off and adjacent to the alley.
2. Above ground and within an alcove off and adjacent to the alley.
3. Above ground within an alcove off and adjacent to the street.
4. Vaulted within the property footprint.

Your placement decisions will impact space requirements, which vary by type of installation and size of service. The following tables provide a general idea of the space required for different facility placements and sizes of service. Actual space required may be different than those listed. Please contact us as soon as possible to discuss your projects actual needs.

Above ground (pad-mounted) service and space requirements

Service size	Service voltage	21 kV service		
		Estimated space needed for transformer(s) ^{1,2}	Estimated space needed for switch(es) ^{1,2} if required	Total estimated space
400 to 2,000 amps	208	234 ft ²	325 ft ²	559 ft ²
2,001 to 2,500 amps	208	315 ft ²	325 ft ²	640 ft ²
2,501 to 4,000 amps	208	540 ft ²	325 ft ²	865 ft ²
400 to 1,600 amps	480	234 ft ²	325 ft ²	559 ft ²
1,601 to 3,000 amps	480	315 ft ²	325 ft ²	640 ft ²
3,001 to 4,000 amps	480	540 ft ²	325 ft ²	865 ft ²
4,001 to 5,000 amps	480	798 ft ²	546 ft ²	1,344 ft ²

¹ Space must be usable and meet all equipment spacing and working clearance requirements. Please contact SMUD Design & Construction Services for additional details. All values rounded up.

² 24 hour, 7 days a week access required.

NOTE: The listed space requirements represents typical construction and are subject to change. Any special service requirements or other considerations that fall outside of typical construction may need additional space and/or other SMUD equipment requirements.

Alcove (pad-mounted) service and space requirements

Service size	Service voltage	21 kV service					
		Estimated space needed for transformer(s) ^{1,3}		Estimated space needed for switch(es) ^{1,3} if required		Total estimated space	
		Alcove only ²	Total	Alcove only ²	Total	Alcove only	Total
400 to 2,000 amps	208	225 ft ²	285 ft ²	475 ft ²	575 ft ²	700 ft ²	860 ft ²
2,001 to 2,500 amps	208	306 ft ²	374 ft ²	475 ft ²	575 ft ²	781 ft ²	949 ft ²
2,501 to 4,000 amps	208	510 ft ²	646 ft ²	475 ft ²	575 ft ²	985 ft ²	1,221 ft ²
400 to 1,600 amps	480	225 ft ²	285 ft ²	475 ft ²	575 ft ²	700 ft ²	860 ft ²
1,601 to 3,000 amps	480	306 ft ²	374 ft ²	475 ft ²	575 ft ²	781 ft ²	949 ft ²
3,001 to 4,000 amps	480	684 ft ²	836 ft ²	475 ft ²	575 ft ²	1,159 ft ²	1,411 ft ²
4,001 to 5,000 amps	480	756 ft ²	924 ft ²	798 ft ²	966 ft ²	1,554 ft ²	1,890 ft ²

¹ Space must be usable and meet all equipment spacing and working clearance requirements. Please contact SMUD Design & Construction Services for additional details. All values rounded up.

² Listed space represents interior minimum clear dimensions only, actual footprint may be larger. 15' minimum ceiling heights required and space under alcove must be compacted soil.

³ 24 hour, 7 days a week access required.

NOTE: The listed space requirements represents typical construction and are subject to change. Any special service requirements or other considerations that fall outside of typical construction may need additional space and/or other SMUD equipment requirements.

Below grade or in-building vaulted service options and space requirements

Service size	Service voltage	21 kV service ¹			Network service
		Estimated space needed for transformer(s) ^{2,3,4}	Estimated space needed for switch(es) ^{2,3,4} if required	Total estimated space ¹	Total estimated space needed for transformer(s) ^{2,3,4}
400 to 1,200 amps	208	504 ft ²	180 ft ²	684 ft ²	812 ft ²
1,201 to 2,000 amps	208	812 ft ²	180 ft ²	992 ft ²	812 ft ²
2,001 to 4,000 amps	208	1,120 ft ²	180 ft ²	1,300 ft ²	1,120 ft ²
4,001 to 5,000 amps	208	n/a	n/a	n/a	1,428 ft ²
400 to 1,200 amps	480	504 ft ²	180 ft ²	684 ft ²	812 ft ²
1,201 to 2,500 amps	480	504 ft ²	180 ft ²	684 ft ²	1,120 ft ²
2,501 to 3,000 amps	480	504 ft ²	180 ft ²	684 ft ²	1,428 ft ²
3,001 to 4,000 amps	480	812 ft ²	180 ft ²	992 ft ²	1,736 ft ²
4,001 to 5,000 amps	480	812 ft ²	2x 180 ft ²	1,172 ft ²	2,044 ft ²

¹ 21kV requires separate vaults for switches and transformers. If more than one switch is required, each switch requires its own vault.

² Space must be usable and meet all equipment spacing and working clearance requirements. Please contact SMUD Design & Construction Services for additional details. All values rounded up.

³ Listed space represents interior minimum clear dimensions only, actual footprint may be larger. 15' minimum ceiling heights required.

⁴ 24 hour, 7 days a week access required.

NOTE: The listed space requirements represents typical construction and are subject to change. Any special service requirements or other considerations that fall outside of typical construction may need additional space and/or other SMUD equipment requirements.

In addition to the above considerations, developing properties in downtown Sacramento may also present unique challenges if any of the following scenarios apply.

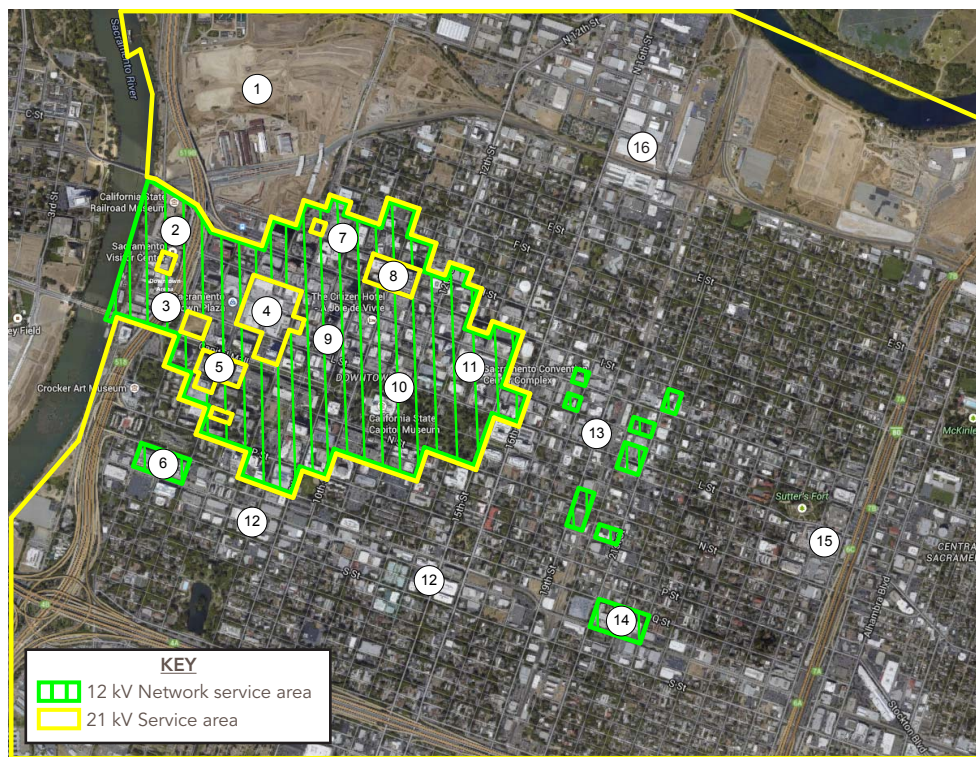
- Properties being developed are located within the highlighted 12 kV Network Service Area (see map on back page).
- You are constructing a new building or addition with no minimal setbacks from the property line.
- You are subdividing land to create parcels without public street frontage or deviating from minimal parcel size standards.
- You have a remodel which includes a change of use updating or intensifying the electric service needs for an existing property.

Electric service in downtown Sacramento

Downtown service overview exhibit

Island & notable landmarks

1. Railyard's Development
2. Orleans Hotel
3. Towers on Capitol Mall site
4. ESC Arena, 700 K Street and Bank of the West
5. Wells Fargo, US Bank and Board of Equalization
6. CalPERS Q Street
7. Mercy Housing
8. City Hall and Cal EPA
9. K Street Mall
10. State Capitol
11. Convention Center
12. R Street Corridor
13. Various small office buildings and strip malls
14. Sacramento Bee
15. Sutter General Hospital
16. Blue Diamond



Note: **Approximate** service boundaries shown. For illustrative and conceptual purposes only.

21 kV circuits exist in areas currently designated 12 kV network. Consequently, this DOES NOT necessarily represent future serving capability because many locations within the 12 kV network bounded service area are within reasonable distances to 21 kV facilities.

Each project is different and can present challenges depending on equipment placement, size, location, timing and unique challenges. But help is available to ease the process. Contact SMUD or the City at the locations and numbers listed before filing the development applications, and help will be provided at no cost. SMUD and City representatives are ready to meet with you to review requirements and help you navigate the approval process to ensure the success of your project.

SMUD

smud.org/construction

Design & Construction Services:

916-732-5700

City of Sacramento

Planning/Entitlement Phase:

planning@cityofsacramento.org

Building Permit Phase:

EZPermit@cityofsacramento.org

City Operator: 311 (if calling within city limits)
or 916-264-5011
