



DOCKET ITEM #5

Text Amendment #2015-0001

Electrical Substations and Switching Stations

Issue: Initiation and Consideration of a text amendment to require a special use permit for Electrical Substation and Switching Stations greater than 10,000 square feet in size in the UT/Utilities and Transportation Zone.	Planning Commission Hearing:	March 3, 2015
	City Council Hearing:	March 14, 2015
Staff: Jeff Farner, Deputy Director Alex Dambach, AICP, Division Chief – Land Use Joanna Anderson, Assistant City Attorney		

I. Issue

Electric power substations installed by public utilities, public service corporations, municipal departments, public commissions, or public authorities are required to obtain a special use permit (SUP) in all zoning districts except the UT/Utilities and Transportation Zone. Electrical substations and switching stations (“Substations”) are currently a permitted use in the U/T Utility and Transportation (UT) Zone. The proposed text amendment to the Zoning Ordinance would require substations that occupy a land area of 10,000 square feet or more to obtain a special use permit in the UT zone.

II. Background & Analysis

A substation is an electric utility facility that is typically used to change the voltage in the power grid between high voltage transmission lines and lower voltage local service distribution lines. They could serve other uses like accommodating other voltage changes, switching transmission and distribution circuits, measuring electric power qualities; reducing electrical surges, etc. Typical substations are open-air compounds filled with electrical equipment. For safety, a fence or wall surrounds the equipment. Some smaller substations are built indoors. The general location of a substation depends on transmission requirements and line routing, and the size is typically determined by the forecasted service load in the affected area.

There are currently six utility substations in Alexandria, which consist of the following:

Table 1 – Existing Utility Substations

<u>Address</u>	<u>Sq. Footage</u>	<u>Zoning</u>
1300 N. Royal St	182,787	UT
800 S. Payne St	87,655	UT
521 E. Monroe Av	33,600	CSL
400 S. Union St	8,112	W-1
905 W. Glebe Rd	7,079	UT
1 E. Mason Av	5,806	CL

The smallest is a 7,079 square foot facility at 905-907 W. Glebe Road. The largest is an 182,787 square foot facility at 1300 N. Royal Street adjacent to the dormant Potomac River Generating Station. Three of these are located in UT zones, but the others are located in the W-1, CSL, or CL zones, and were installed with special use permit review. The UT zone was created in 1990 to provide land area for infrastructure-related facilities including Metrorail stations and tracks, freeways and interchanges, and electrical and water utility facilities. In addition to the UT zoned areas shown on the map below, a portion of the CDD zone for Potomac Yard, at the railroad tracks, is also regulated by the standards of the UT zone.

Although this zone serves as a designated area suitable for infrastructure facilities, much of the UT zone areas are close to residential neighborhoods, commercial uses, historic areas, and parks. For this reason, several uses in the UT zone require special use permit approval to assure their suitability with their surroundings. Substations of all types and sizes are currently a permitted use in UT zone. More residential and commercial development has occurred in the past two decades near the UT zone boundaries in areas such as Eisenhower Avenue, Potomac Yard, North Old Town, and the Braddock Metro.

Because of the adjoining uses near the UT zone, including residential and park uses, staff believes it is appropriate to have a special use permit for larger substations because of the potentially greater impacts (noise, lighting, safety etc.) that these facilities may have for the City and surrounding neighborhoods. For these reasons, staff is recommending that substations larger than 10,000 sq.ft. require a special use permit approval. Substation facilities with less than 10,000 sq.ft. would continue to be a permitted use within the UT zone. Larger substations generate excessive noise, excessive lighting, electromagnetic field concerns, and often need carefully designed screening. The special use permit process, would enable review and community comments to ensure that the facilities are properly located and impacts are mitigated given the context of each site.

UT Zone & Substation Locations



The three existing substations in the UT zone are the 7,079 square foot Dominion Power substation at 905-907 Glebe Road, which is relatively small and is in the utility company's maintenance yard; the 182,787 square foot PEPCO substation at 1300 N. Royal Street, which is larger and adjacent to the George Washington Parkway; and the 87,655 square foot Virginia Public Service substation at 800-900 S. Payne Street, which is also larger and adjacent to the Lee Center. The larger two of these substations are adjacent to important recreational or historical areas, making it especially important that they have an appropriate review if they were to be enlarged.

III. Discussion of Proposed Text Changes

The proposed text changes to Section 4-1302 and Section 4-1303 would require that substations obtain special use permit approval in the UT zone if they are installed with more than 10,000 square feet or expanded to a size greater than 10,000 square feet. The area is to be measured by the square footage of the substation and associated elements as enclosed by the outer edges of the fences, walls, or other enclosures of the substation.

Existing large substations would gain non-complying status and would be permitted to continue at their current physical size. Smaller substations are generally not as likely to generate the land use concerns associated with larger facilities, so it is appropriate to permit those smaller facilities in the UT zone, as the zone is designed for utility uses. Smaller facilities are often used for specific applications like serving the electrical needs of Metrorail operations or other electricity-intensive activities. Larger substations, much like other special uses in the UT zone such as utility service yards, railroad repair yards, or outdoor equipment storage yards are all land-intensive uses that have potential impacts such as noise, safety, access, and aesthetic considerations. The SUP review would focus on the reduction of substation impacts through means such as minimizing footprints and height, screening and buffering, and noise controls.

Additionally, Staff recommends amending Section 7-1203 to state that facilities in the UT zone are not regulated by the supplemental zoning regulations of Section 7-1200, in order to differentiate uses in the UT zone from utility uses in other zones.

IV. Recommendation

Staff recommends that this text amendment be approved in order to ensure that larger substations get appropriate special use permit review when they are added or enlarged at the UT zone. The special use permit process will enable potential effects such as noise, safety, access and other associated impacts elements as part of the special use permit process. The process will also be an opportunity to ensure compatibility with the adjoining uses.

Staff: Alex Dambach, AICP, Division Chief – Land Use

Attachments: 1. Proposed Zoning Text Changes

Attachment #1

PROPOSED ZONING TEXT CHANGES

Sec. 4-1300 - UT/Utilities and transportation.

4-1301 - Purpose.

The UT zone is established to provide land areas in the city for utility and transportation uses.

4-1302 - Permitted uses.

The following uses are permitted in the UT zone:

- (A) Electrical substation and/or switching stations that covers a land area of 10,000 square feet or less including all land enclosed by fence, wall, or other structure;
- (B) Railroad, bus and rail transit passenger stations;
- (C) Railroad switching yard;
- (D) Railroad tracks;
- (E) Telephone company dial center;
- (F) Utilities, as permitted by section 7-1200
- (G) Utility company office;
- (H) Washington Metropolitan Area Transportation Authority stations and associated facilities and operations;
- (I) Water pumping station, tower and reservoir;
- (J) Accessary uses, as permitted by section 7-100

4-1303 - Special uses.

The following uses may be allowed in the UT zone pursuant to a special use permit:

- (A) Bus shelter on private property;
- (B) Electrical power generating plant;
- (B-1) Electrical substation and/or switching station that covers a land area of 10,000 square feet or more including all land enclosed by fence, wall, or other structure;
- (C) Helistop;
- (D) Public utility service yard;
- (E) Railroad, bus and rail transit maintenance, repair and operating facilities;

- (F) Railroad car assembly operations;
- (G) Railroad engine service operations;
- (H) Railroad repair yards;
- (I) Utility and transportation equipment and outdoor storage yards.

4-1304 - Prohibited uses.

Any use which is not a permitted, special or accessory use pursuant to this [section 4-1300](#) is prohibited.

4-1305 - Area and bulk regulations.

- (A) *Yards.* For nonresidential uses, there are no yard or open space requirements except as may be applicable pursuant to the supplemental yard or setback regulations of [section 7-1000](#) and the zone transition requirements of [section 7-900](#)
- (B) *Floor area ratio.* The maximum permitted floor area ratio is .25, except that the floor area ratio may be increased to an amount not to exceed .5 with a special use permit.
- (C) *Height.* The maximum permitted height of a building is 35 feet, except that the height may be increased to an amount not to exceed 50 feet with a special use permit.

4-1306 - Use limitations.

- (A) No use shall be conducted in any manner which would render it noxious or offensive by reason of dust, refuse matter, odor, smoke, gas, fumes, noise, vibration or glare.
- (B) All uses and operations shall take place within a completely enclosed structure or an area enclosed on all sides with screening or buffering adequate and reasonable to protect adjacent nearby uses, as determined by the director.

4-1307 – Noncomplying Use.

Notwithstanding the language of section 12-301 regarding the definition of noncomplying uses, Electrical substation and switching stations that cover a land area of 10,000 square feet or more including all land enclosed by fence, wall, or other structure that legally existed immediately before (effective date of this ordinance) shall be deemed a noncomplying use and allowed to continue subject to the rules for noncomplying uses in section 12-302 of this ordinance.

Sec. 7-1200 - Utilities.

7-1201 - Permitted utilities.

The following utilities are permitted in any zone in the city: the erection, construction, alteration or maintenance by public utilities, public service corporations, municipal departments, public commissions or public authorities of underground gas, steam, water or sewage supply, collection or disposal systems and underground or overhead electric, communication, telephone or cable transmission or distribution systems, including poles, wires, lines, mains, drains, sewers, pipes, conduits, cables, fire alarm boxes, traffic signals, hydrants, freestanding pad mounted transformers and electric switches, and other similar equipment and accessories in connection therewith reasonably necessary for the furnishing of adequate services by such utilities, corporations, departments, commissions or authorities, or for the public health, safety or general welfare; provided, that such freestanding pad mounted transformers and electric switches have been approved after public hearing by site plan, special use permit or certificate of appropriateness or as part of the city's capital improvement program, or have been approved either by both the director of transportation and environmental services and the director of planning and zoning, in accordance with guidelines established by the directors and approved by city council, after affording informal notice and opportunity to comment to affected parties or by city council, after public hearing, on an appeal from disapproval by one or both directors.

7-1202 - Special use utilities.

The following utility uses are permitted by public utilities, public service corporations, municipal departments, public commissions or public authorities only with a special use permit:

- (A) Tanks, towers, standpipes or other facilities for storing water, sewage or other liquids or gases, electric power substations, telephone exchange buildings and structures, and pumping stations;
- (B) Overhead transmission, distribution or communication wires, lines, cables or facilities for the transmission of telecommunication suspended, mounted or carried by poles, towers or other structures which:
 - (1) Exceed 65 feet in height;
 - (2) Have one or more arms, cross arms or similar apparatus which would extend out more than six feet from the side thereof;
 - (3) Have a diameter in excess of three feet if it is a pole-like structure; or
 - (4) Exceed four square feet in area at any cross section, or have a side exceeding two feet in width if it is a tower or other type structure.

7-1203 - Uses not considered utilities.

The following are not included in the above-named lists of uses: buildings, offices, motor vehicles, bus or car barns, garages, shops, railroad yards or siding, freight terminals, warehouses, service or storage yards or facilities, any use listed in the UT/Utility and Transportation zone, or any use separately listed in a zone.