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DEPARTMENT OF PLANNING
STAFF REPORT

BOARD OF SUPERVISORS PUBLIC HEARING

DATE OF HEARING: September 13, 2010
CMPT 2009-0011, SPEX 2009-0032, & SPMI 2009-0010, Arcola Substation
DECISION DEADLINE: September 27, 2010
PROJECT PLANNER: Sophia Fisher DEPARTMENT DIRECTOR: Julie Pastor
ELECTION DISTRICT: Dulles

EXECUTIVE SUMMARY

Northern Virginia Electric Cooperative of Gainesville, Virginia has submitted applications for a Special Exception, Minor Special Exception, and Commission approval to permit the expansion of an existing utility substation in the TR-3LF (Transitional Residential-3) and TR-3UBF (Transitional Residential-3) zoning districts. This application is subject to the Revised 1993 Zoning Ordinance. The applicant also requests a modification of Section 5-616(D), and the modification of the buffering and screening requirements applicable to the proposed Special Exception use is authorized as part of an approval action of a Special Exception under Section 5-1403(C), pursuant to which the applicant also requests a modification of Section 5-1405(B), both to modify the required Type 4 Buffer Yard located along the entire perimeter of the subject property to modify the required front setbacks and landscaping and increase the minimum height of the required fence, wall, or berm providing a minimum opacity of 95% from six (6) feet to ten (10) feet. The subject property is a 0.54 acre parcel that is located on the east side of Lightridge Farm Road (Route 705), approximately 1.5 miles south of Braddock Road (Route 620), at 26070 Lightridge Farm Road, Aldie, Virginia, in the Dulles Election District. The area is governed by the policies of the Revised General Plan, (Transition Policy Area (Dulles Community)), which designate this area for residential uses.

RECOMMENDATION

Planning Commission:

At the Planning Commission Worksession on July 28, 2010, the Planning Commission voted 8-0-1 (Ronis absent) to approve CMPT 2009-0011 and to forward SPEX 2009-0032 to the Board of Supervisors with a recommendation of approval subject to the Conditions dated July 21 and with the Findings dated July 22, 2010.

The Planning Commission did not act on SPMI 2009-0010 because it is processed directly to the Board of Supervisors without Planning Commission review.

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Staff:

Staff concurs with the Planning Commission's recommendation for the CMPT and SPEX applications, and recommends approval of SPMI 2009-0010 as well. Staff is awaiting final review of the proposed Conditions by the County Attorney's office.

Staff notes that the motion to send these applications to the September 21, 2010 Board of Supervisors Business Meeting is to accommodate the 60-day timeline for the Board to act on the Commission Permit, which expires on September 27, 2010.

SUGGESTED MOTIONS

1. I move that the Board of Supervisors forward CMPT 2009-0011, SPEX 2009-0032, and SPMI 2009-0010, Arcola Substation, to the September 21, 2010 Board of Supervisors Business Meeting for action.

OR

2. I move an alternate motion.

VICINITY MAP



Directions:

From Leesburg, take Route 15 south. Turn left on Braddock Road (State Route 705). At the fork, stay right to stay on State Route 705, which becomes Lightridge Farm Road. Site will be on the left, approximately 2 miles after the fork in the road.

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PROPOSAL: A **Special Exception** and **Commission Permit** to allow a utility substation and expansion pursuant to Section 2-1502 in the TR3LF and TR3UBF Zoning Districts. A **Minor Special Exception** to modify the required Type 4 landscape buffer.

PROPERTY LOCATION: East side of Lightridge Farm Road, Aldie, VA 20105 near the Prince William County, VA boundary.

TAX MAP/PARCEL: Tax Map - 105/////////4/ PIN - 208-27-0686-000
Tax Map - 105/////////4A PIN - 251-47-5326-000

CURRENT ZONING:TR3LF and TR3UBF

SURROUNDING ZONING/LAND USE:

NORTH	TR3LF	Farm/Residential
SOUTH	TR3LF & TR3UBF	VEPCO/Vacant
EAST	TR3LF	Farm/Residential
WEST	TR3UBF	Farm/Vacant

ELECTION DISTRICT: Dulles

II. SUMMARY OF DISCUSSION

Topic/Issue Area	Issues Examined and Status
Community Planning	<ul style="list-style-type: none"> • Provide a buffer yard along the front of the existing substation. Status: Resolved—the applicant has agreed to close the entrance fronting Lightridge Farm Road and has agreed to plant a buffer of Hollywood Junipers along the frontage. • Lighting should be downward directed and shielded. Status: Resolved—the facility will not be lit continuously, but any lighting will be downward directed and fully shielded.
Zoning	<ul style="list-style-type: none"> • Revise the plat according to referral comments. Status: Resolved—the plat has been revised accordingly. • Clarify the buffer yard modification request for the side and rear buffers, and either request to modify the required buffer between the two parcels or complete a boundary line adjustment prior to site plan approval. Status: Resolved—the applicant clarified the buffer yard modification request, and has agreed to a condition requiring that the boundary line adjustment be completed prior to site plan approval.
Environmental	<ul style="list-style-type: none"> • Clarify the method of stormwater management to be used on the site, and the potential for hazardous material spills. Status: Resolved—the applicant will provide a berm to block any potential hazardous materials, and will use a combination of filtertraps and an underground stormwater detention facility to treat runoff from the site.
Transportation	<ul style="list-style-type: none"> • No issues—estimated traffic impact of one trip per month for scheduled maintenance.
Fire and Rescue	<ul style="list-style-type: none"> • Provide information about emergency response procedures. Status: Resolved—information provided as requested.

III. PLANNING COMMISSION REVIEW AND RECOMMENDATION

The Planning Commission held a Public Hearing on these applications on June 23, 2010. No members of the public spoke at the hearing. The Commission deferred action to July 28, 2010 in order to allow the Board of Supervisors to review the application within the 60 day timeline that accompanies a Commission Permit. There were no issues raised by members of the Commission during the brief discussion that accompanied this application. At the Planning Commission Worksession on July 28, 2010, the Commission voted 8-0-1 (Ronis absent) to approve CMPT 2009-0011 and to forward SPEX 2009-0032 to the Board of Supervisors with a recommendation of approval. The Board must take action on the CMPT by September 27, 2010.

IV. FINDINGS

1. The general location, character, and extent of the proposed utility substation expansion are in substantial accord with the Comprehensive Plan.

2. The existing utility substation and the proposed expansion are both compatible with the surrounding area and are supported by the land use and energy policies of the Revised General Plan.

3. The existing use and its proposed expansion generate minimal transportation impacts.
4. The proposed use, as conditioned, complies with the applicable requirements of the Revised 1993 Zoning Ordinance.

V. CONDITIONS OF APPROVAL (September 1, 2010)

SPEX 2009-0032

1. Substantial Conformance. The proposed Special Exception Use, electrical substation, shall be developed in substantial conformance with the Special Exception Plat ("Arcola Substation SPEX 2009-0032 & CMPT 2009-0011"), prepared by Dewberry & Davis LLC, dated November 20, 2009, as revised through August 23, 2010, (the "Plat"), and the Revised 1993 Loudoun County Zoning Ordinance. Approval of this application for Tax Map Number 105/////////4A (PIN# 251-47-5326) and an approximately 3.34 acre portion of the adjacent Tax Map Number 105/////////4/ (PIN# 208-27-0686) (the "Property") shall not relieve the Applicant or the owners of the Property from the obligation to comply with and conform to any other Zoning Ordinance, Codified Ordinance, or applicable regulatory requirement.
2. Lighting. Lighting on the Property shall be designed and constructed to minimize light trespass and to limit the view of lighting from off-site, specifically that exterior light fixtures shall be "full cut-off outdoor lighting fixtures" as defined by the Illuminating Engineering Society of North America (IESNA). Light will be directed inward and downward toward the interior of the Property, away from the public streets and adjacent properties.
3. Boundary Line Adjustment. The boundary line adjustment for the existing .54 acre substation parcel (PIN# 251-47-5326) and an approximately 3.34 acre portion of the adjacent (PIN# 208-27-0686) shall be completed prior to site plan approval.

SPMI 2009-0010

1. Landscape Buffer. Landscaping shall be installed in substantial conformance with the landscaping shown on Sheets 1 and 4 of the Special Exception Plat ("Arcola Substation SPEX 2009-0032 & CMPT 2009-0011"), prepared by Dewberry & Davis LLC, dated November 20, 2009, as revised through August 23, 2010, (the "Plat"), and the Revised 1993 Loudoun County Zoning Ordinance. Approval of this application for Tax Map Number 105/////////4A (PIN# 251-47-5326) and an approximately 3.34 acre portion of the adjacent Tax Map Number 105/////////4/ (PIN# 208-27-0686) (the "Property") shall not relieve the Applicant or the owners of the Property from the obligation to comply with and conform to any other Zoning Ordinance, Codified Ordinance, or applicable regulatory requirement. All landscaping shall be maintained in good health, and dead or diseased materials shall be replaced.

2. Future Road Alignment. In the event that the future Northstar Boulevard is constructed according to the Countywide Transportation Plan, which would result in the road shifting away from the site, the applicant shall install a full Type 4 landscape buffer along the road frontage as required by the Ordinance. Should any easements be required in order to provide the buffer, the applicant shall acquire said easements.

V. PROJECT REVIEW

A. Context

The applicant, Northern Virginia Electrical Cooperative (NOVEC), is requesting a Special Exception (SPEX) to expand an existing utility substation. A Commission Permit (CMPT) is also required for the proposed use on the subject site. The subject site is located east of Lightridge Farm Road, two miles south of Braddock Road and one-half mile north of the Prince William County boundary in Aldie. The 3.88 acre subject site is occupied by an existing electrical substation (90' x 261') which abuts Lightridge Farm Road and features a variety of ground-mounted equipment and overhead wiring. The area of the proposed expansion is currently a flat, grassy field. Towards the eastern end of the property, there is an area of steep slopes, which will not be affected by the expansion.

The existing electrical substation compound has been in place for several decades and is surrounded by a chain link fence with no landscape buffering or screening present. The proposed substation expansion will include the enlargement of the existing compound towards the east to incorporate additional ground-mounted equipment. The expanded compound will be surrounded by a chain link fence with a landscape buffer around the perimeter of the property. An existing utility substation and high-voltage overhead transmission corridor owned and operated by the Virginia Electric and Power Company (VEPCO) abuts the southeastern boundary of the subject site and is connected to the existing NOVEC substation by wiring.

The subject site is zoned Transition Residential-3 (TR3LF and TR3UBF) and is governed under the provisions of the Revised 1993 Zoning Ordinance. A Special Exception is required for the proposed "utility substation" within the zoning district. A Commission Permit is also required when a public utility or public service facility is constructed. A Commission Permit is used to determine if the general location, character, and extent of a proposal is in substantial accord with the Comprehensive Plan. An approved Commission Permit was never issued for the existing substation; therefore a Commission Permit is required for the existing and proposed "utility substation" on the subject site.

The site is located in the Lower Foley and Upper Foley sub-areas of the Transition Policy Area and is governed under the policies of the Revised General Plan (the Plan). The County's vision for the Transition Policy Area is for land uses that provide a visual and spatial transition between the suburban development to the east and the rural development to the west.

The land use policies in Chapter 8 for the Transition Policy Area and the energy policies in Chapter 2 of the Revised General Plan were used to evaluate the application.

B. Summary of Outstanding Issues

- The Conditions of Approval are currently under review; an update will be provided at the Public Hearing.

C. Overall Analysis

COMPREHENSIVE PLAN

Land Use

The Transition Policy Area of the Revised General Plan (Plan) is envisioned to be a distinct planning area that will provide a transition in land development intensity between suburban development in the east and rural development in the west. The subject site is located in Lower Folley and Upper Folley sub-areas of the Transition Policy Area, which the Plan envisions to develop at a density of 1 dwelling per 3 acres with a minimum of 50 percent of the site maintained as open space. The Plan does not specifically identify “utility substation” as a non-residential use within the Transition Policy Area; however, Plan policies generally support the timely delivery of electrical service to households and to businesses as development occurs. The proposed expansion of the existing substation on the subject site can be buffered to be compatible with the surrounding land uses which include the existing NOVEC utility substation that is subject to this application and the existing VEPCO utility substation (28.53 acres) and high-voltage overhead transmission corridor to the south and southeast. However, this is an industrial use, which is not envisioned for the Transition Policy Area. The surrounding uses to the north and east are agricultural, with the closest residence approximately 600 feet to the north. To the west is an existing forest bisected by the high-voltage power distribution lines. This application will allow the existing NOVEC utility substation to expand to the east. Plan policies support the grouping of electrical facilities to the extent permitted by the law to minimize adverse impacts on the surrounding area, such as multiple substations in different locations. The location of the proposed utility substation expansion in proximity to other electrical facilities is supported by the Plan.

The proposed utility substation is compatible with the existing electrical uses to the south, and will be screened to the north and east by the new landscape buffer and fencing. The expanded facility will provide needed infrastructure for the delivery of electrical services to households and businesses in the area. Staff finds the proposed expansion of the utility substation on the subject site is supported by the land use and energy policies of the Revised General Plan.

Screening and Buffering

The Revised General Plan calls for non-residential uses to be compatible with desired development patterns and the rural landscape within the Transition Policy Area. The proposed expansion of the existing NOVEC substation on the subject site will not significantly alter the visual impact or existing industrial character of the subject site which is adjoined by

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two existing utility substations and high-voltage overhead transmission corridors. The applicant has proposed a 25-foot wide vegetated Side and Rear Buffer Yards (Type 4) to the east, west, and south to screen the compound. The Ordinance requires the following in a Type 4 buffer per 100 linear feet (Side/Rear buffers are to be a minimum of 25 feet and a maximum of 30 feet wide)

- 2 canopy trees
- 5 understory trees
- 10 shrubs
- 8 evergreen trees
- A 6 foot high fence, wall, or berm providing a minimum opacity of 95%

The applicant has requested a modification to the required buffer on these three sides to replace the required canopy trees with evergreen trees, and to provide a 10' instead of 6' fence. Using evergreens and increasing the height of the proposed fence will provide additional screening and buffering for the facility.

The applicant also requests to eliminate the front yard buffer entirely (SPMI 2009-0010), due to the fact that the existing facility is directly adjacent to the right-of-way and there is no width from the existing road to install the required buffer. The criteria for approving a Minor Special Exception include whether an innovative design is being offered, and whether the proposed modification exceeds the public purpose. In response to staff's concern that the proposed elimination of all the front buffer yard plantings does not meet the public purpose, the applicant modified the application to provide a row of Hollywood Junipers along the frontage, and has eliminated the entrance to the facility from Lightridge Farm Road and instead will be providing a second entrance to the rear of the property. The revised site access allows for the necessary internal circulation, and allows for a solid row of trees to be planted across the site's frontage. The applicant has also agreed to provide the full Type 4 buffer in the event that Lightridge Farm Road is realigned to become Northstar Boulevard as noted in the Countywide Transportation Plan. The future alignment of Northstar Boulevard pulls the road far enough away from the existing facility (at least 50 feet) to allow for the full buffer to be installed.

The County Urban Forester has determined that the Hollywood Juniper is an acceptable tree for the location, and the combination of the 10-foot tall opaque fence (replacing the required 6 foot fence or berm) and the row of evergreens adequately screens the existing substation use. This issue is resolved.



View northeast of existing NOVEC utility substation from Lightridge Farm Road.

Lighting

The Revised General Plan promotes lighting standards that will “reduce light pollution such as glare, energy waste, light trespass, and the deterioration of the natural nighttime environment”. According to the applicant’s response, the compound will have manually operated lighting mounted in the equipment that will be turned on only when there is personnel onsite at night to perform maintenance work or during an emergency (Note 24 on the plat).

Commission Permit

In accordance with the Revised 1993 Zoning Ordinance, a Commission Permit is required when a public utility or public service facility is constructed to determine if the general location, character, and extent of the proposed use is in substantial accord with the Comprehensive Plan. The area surrounding the proposed utility substation expansion already contains two existing utility substations and high-voltage overhead transmission corridor owned and operated by NOVEC and VEPCO. The proposed expansion of the existing substation will not significantly alter the character of the existing site, which is industrial in character and will provide additional infrastructure necessary to serve the existing and future electrical needs for the area.

Staff finds that the general location and extent of the proposed utility substation expansion are in substantial accord with the Comprehensive Plan. Staff recommends that either the existing facility be moved back from the road in order to accommodate the required front yard buffer landscaping, or an innovative screening solution be found and implemented. The

applicant responded by agreeing to close the existing entrance on Lightridge Farm Road; to install a row of Hollywood Junipers along the fence fronting Lightridge Farm Road; and to provide the full buffer yard in the event that Northstar Boulevard is constructed to the west of the existing road alignment.

ZONING

The Properties are zoned Transitional Residential-3 (Upper Broad Run Upper Foley and Lower Foley) (TR-3UBF and TR-3LF), governed under the Revised 1993 Loudoun County Zoning Ordinance ("Ordinance"). The Properties are within the major and minor Floodplain Overlay District, and contain moderate and very steep slopes; however, no steep slopes or floodplain are within the area of the special exception. A utility substation, distribution, is a special exception in the zoning district and is subject to the additional regulations found in Sections 5-616 and 5-621 of the Ordinance. The applicant also seeks to modify Section 5-616(D) and 5-621(B) to alter the required planting and fence height required with a Type 4 buffer yard, which was discussed in the previous section.

During the review of the application, staff identified several plat corrections. The applicant has revised the plat according to staff comments. One of the more significant comments had to do with showing the parcel line and providing the required buffer between the two parcels. The applicant responded that they plan to perform a boundary line adjustment in order to combine the smaller parcel with the existing substation with a 3.34 acre portion of the adjoining parcel in order to allow room for the facility to expand as planned. Staff has recommended that the boundary line adjustment be completed prior to site plan approval, and written a condition to that effect. The applicant has agreed to the condition; this issue is resolved.

TRANSPORTATION

The existing substation use currently generates approximately one trip per month for maintenance purposes. The expansion of the facility is not anticipated to increase the number of trips generated by the use; therefore, there are minimal transportation impacts associated with this application.

According to the Revised Countywide Transportation Plan (2010 CTP), future Northstar Boulevard (relocated 659) is planned to follow the same alignment as the existing Lightridge Farm Road. Future Northstar Boulevard is planned to be a two-lane rural road within a 70-foot right-of-way. Future Northstar Boulevard would connect to the planned Route 234 Bypass in Prince William County. At such time as the ultimate condition of future Northstar Boulevard is completed, the road would carry significantly more traffic than it does today, and at a far higher speed. The future alignment of Northstar Boulevard shifts the road more than 50 feet to the west, away from the existing facility. This issue is resolved.

ENVIRONMENTAL

With the first submission, the applicant proposed an underground stormwater management facility. Subsequent revisions to the plat continue to show the underground stormwater management facility, plus an oil containment berm in the event of any spills onsite. Plat note 21 states that the stormwater will flow through a series of filterra inlets prior to its arrival in the underground stormwater management facility.

D. ZONING ORDINANCE CRITERIA FOR APPROVAL

Section 6-1310 of the Revised 1993 Zoning Ordinance states "In considering a Special Exception application, the following factors shall be given reasonable consideration. The applicant shall address all the following in its statement of justification or Special Exception plat unless not applicable, in addition to any other standards imposed by this Ordinance":

Standard *Whether the proposed Special Exception is consistent with the Comprehensive Plan.*

Analysis The Revised General Plan calls for residential growth in the Dulles South Area. The proposed substation expansion will help to ensure that there is adequate capacity in the power grid to provide for the planned growth. In addition, this application proposes to expand an existing facility, which is in line with the Plan policies that encourage collocation of public facilities when possible. The proposal to increase the height of the fence and to provide evergreen trees in place of canopy trees on three sides of the facility would provide screening on those three sides; due to space constraints, the applicant is providing a row of Hollywood Junipers along the front of the property in addition to the 10' fence. In order to comply with Plan policies that call for adequate buffering and screening, the applicant has agreed to provide a row of Hollywood Junipers and to plant the full Type 4 buffer when Lightridge Farm Road is reconstructed to become Northstar Boulevard.

Standard *Whether the proposed Special Exception will adequately provide for safety from fire hazards and have effective measures of fire control.*

Analysis The facility will be equipped with fire suppression technology. In the event of a fire, NOVEC will coordinate the response with Loudoun County Fire/Rescue to ensure that the proper procedures are followed.

Standard *Whether the level and impact of any noise emanating from the site, including that generated by the proposed use, negatively impacts the uses in the immediate area.*

Analysis Neither the existing substation nor the proposed expansion will generate significant noise.

Standard *Whether the glare or light that may be generated by the proposed use negatively impacts uses in the immediate area.*

Analysis The site will only be lighted if there are maintenance personnel present during the night. All site lighting will be downward directed, fully cut off and shielded. There are no residences or businesses in close proximity to the site that would be impacted by the site.

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Standard *Whether the proposed use is compatible with other existing or proposed uses in the neighborhood, and adjacent parcels.*

Analysis The application proposes to expand an existing electrical substation, and is adjacent to another electrical substation facility. The site is surrounded by agricultural fields on the north and east sides, and there will be a landscape buffer installed along those boundaries. There will also be a modified buffer along the site's frontage on Lightridge Farm Road.

Standard *Whether sufficient existing or proposed landscaping, screening and buffering on the site and in the neighborhood to adequately screen surrounding uses.*

Analysis The existing substation does not have any buffering adjacent to the agricultural use. With this application, a new landscape buffer will be installed on three sides that will provide screening year round, since part of the landscape buffer modification request is to replace the required canopy trees with evergreens. The applicant has also requested to modify the required plantings in the front yard buffer along Lightridge Farm Road.

Standard *Whether the proposed special exception will result in the preservation of any topographic or physical, natural, scenic, archeological or historic feature of significant importance.*

Analysis There are no known features of significant importance on the site.

Standard *Whether the proposed special exception will damage existing animal habitat, vegetation, water quality (including groundwater) or air quality.*

Analysis The applicant will construct a stormwater management facility in order to deal with any potential runoff from the site. The site is relatively flat and has no significant vegetation or animal habitat.

Standard *Whether the proposed Special Exception at the specified location will contribute to or promote the welfare or convenience of the public.*

Analysis The proposed expansion will contribute to and promote the welfare of the public by providing additional electric distribution capacity in the area.

Standard *Whether the traffic expected to be generated by the proposed use will be adequately and safely served by roads, pedestrian connections and other transportation services.*

Analysis The existing use currently generates one trip per month for maintenance purposes. This is not a manned facility, and the expansion of the substation use will not generate any additional trips. The existing road network has the existing capacity to handle the trips generated by use and the proposed expansion of that use.

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- Standard *Whether, in the case of existing structures proposed to be converted to uses requiring a special exception, the structures meet the code requirements of Loudoun County.*
- Analysis All structures on the site will be built to meet the applicable codes.
- Standard *Whether the proposed Special Exception will be served adequately by essential public facilities and services.*
- Analysis The facility does not require water or sewer service.
- Standard *The effect of the proposed special exception on groundwater supply.*
- Analysis Neither the existing use nor the proposed expansion is anticipated to have a negative impact on the groundwater supply.
- Standard *Whether the proposed use will affect the structural capacity of the soils.*
- Analysis The existing electrical substation use has been in operation since the 1960's without having any known impact on the structural capacity of the soils. It is not anticipated that expanding the facility will affect the structural capacity of the soils.
- Standard *Whether the proposed use will negatively impact orderly and safe road development and transportation.*
- Analysis The traffic impacts of the existing use and its proposed expansion are minimal, therefore no impacts are anticipated to area roads.
- Standard *Whether the proposed Special Exception use will provide desirable employment and enlarge the tax base by encouraging economic development activities consistent with the Comprehensive Plan.*
- Analysis The expansion will assist in providing desirable employment and enlarging the tax base by providing additional electric distribution capacity for economic development activities consistent with the Comprehensive Plan. The existing substation is not adequate to serve the anticipated needs of the area.
- Standard *Whether the proposed special exception considers the needs of agriculture, industry and businesses in future growth.*
- Analysis The additional electric distribution capacity that would be provided considers the needs of agriculture, industry and businesses in future growth by anticipating the increase in power before the need arises.
- Standard *Whether adequate on and off-site infrastructure is available.*

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Analysis The proposed expansion will not require any additional on or off-site infrastructure.

Standard *Any anticipated odors which may be generated by the uses on site, and which may negatively impact adjacent uses.*

Analysis The electrical substation use does not produce any odors.

Standard *Whether the proposed Special Exception uses sufficient measures to mitigate the impact of construction traffic on existing neighborhoods and school areas.*

Analysis The construction of the substation expansion will not impact existing neighborhoods or school areas because the existing substation is located in a rural area away from such areas.

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