LITTLE TOR SUBSTATION

Town of Clarkstown, Rockland County, New York

FINAL ENVIRONMENTAL IMPACT STATEMENT

Volume I

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TABLE OF CONTENTS

Starts on Page

VOLUME I

I. EXECUTIVE SUMMARY……I-1

II. DESCRIPTION OF PROPOSED PROJECT……...……II-1

III. ENVIRONMENTAL CONDITIONS

A. Water Resources

1. Wells and Aquifers…….……III.A-1
2. Stormwater Management…….……III.A-6
3. Spill Containment System…….……..III.A-7

B. Natural Resources…….……III.B-1

C. Facility Materials…….……..III.C-1

D. Air/Fire & Explosion/Emergency Services…….……..III.D-1

E. Aesthetics/Alternatives

1. Aesthetics…….……III.E-1
2. Alternatives……III.E-35

F. Public Health/EMF……III.F-1

G. Community Character/Property Valuation……....III.G-1

H. Tilcon……III.H-1

I. Temporary Substation…….…III.I-1

J. Miscellaneous

1. Historic and Archaelogical Resources……III.J-1
2. Lake Lucille……III.J-3
3. Land Use, Zoning and Public Policy……..III.J-4
4. Noise……... III.J-11
5. Segmentation……III.J-16
6. Socio-economic Impacts……...…III.J-20
7. Utilities……..…III.J-21
8. Other……..…III.J-24

IV. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES……IV-1

V. UNAVOIDABLE ADVERSE IMPACTS……..….V-1

VOLUME II

APPENDIX A- Engineering Drawings

APPENDIX B- Landscape Plan

APPENDIX C-Transformer Fluid Mobility Study

TABLE OF CONTENTS

APPENDIX D- Websites for Manufacturers of Oil Containment Products

APPENDIX E- Material Safety Data Sheets

APPENDIX F- Noise Studies

APPENDIX G- EMF Rapid Report (Electric & Magnetic Fields Associated with the Electric Power)

APPENDIX H- Enertech Report

APPENDIX I- Written Correspondence

VOLUME III

APPENDIX J- Transcripts

- February 27, 2013
- April 3, 2013
- May 2, 2012
- June 6, 2012
- June 13, 2012

APPENDIX K- Stormwater Pollution Prevention Plan (SWPPP)

APPENDIX L- Real Estate Valuation Report

APPENDIX M- Draft Spill Prevention Control and Countermeasure Plan (SPCC)

TABLE OF ATTACHMENTS

Attachment 1- NYSDEC Natural Heritage Program Letter…….III.B-2

Attachment 2- Correspondence with Fire Department……III.D-14

Attachment 3- Index of Comments and Responses…… III.J-28

Attachment 4- Well Decommissioning Records…….III.A-7

TABLE OF FIGURES

Page

Figure 1 Typical Gas Regulator Station....II-5
Figure 2 Secondary Containment Area.... III.A-4
Figure 3 Public/Private Well Map III.A-5
Figure 4 Generalized Groundwater Flow Directions.... III.A-6
Figure 4a- FEMA Flood Map....III.A-8
Figure 5 Containment Area Calculations.... III.A-11
Figure 6 Tertiary Containment Area.... III.A-12
Figure 7 Existing Service Areas II-11
Figure 8 Proposed Service Areas....II-12
Figure 9 Key Map for Visuals III.E-6
Figure 10a Leaf Off View 4 -Existing III.E-7
Figure 10b Leaf Off View 4 -Proposed without Screening III.E-8
Figure 10c Leaf Off View 4 -Proposed with Screening III.E-9
Figure 11a Leaf On View 4 - Existing....III.E-10
Figure 11b Leaf On View 4 - Proposed without Screening....III.E-11
Figure 11c. Leaf On View 4 - Proposed with Screening III.E-12
Figure 12a Leaf Off View 5 - Existing III.E-13
Figure 12b Leaf Off View 5 - Proposed without Screening III.E-14
Figure 12c Leaf Off View 5 - Proposed with Screening III.E-15
Figure 13a Leaf On View 5 - Existing....III.E-16
Figure 13b Leaf On View 5 - Proposed without Screening....III.E-17
Figure 13c Leaf On View 5 - Proposed with Screening III.E-18
Figure 14a Leaf Off View 6 - Existing III.E-19
Figure 14b Leaf Off View 6 - Proposed III.E-20
Figure 15a Leaf On View 6 - Existing....III.E-21
Figure 15b Leaf On View 6 - Proposed....III.E-22
Figure 16a Leaf Off View 7 - Existing III.E-23
Figure 16b Leaf Off View 7 - Proposed without Screening III.E-24
Figure 16c Leaf Off View 7 - Proposed with Screening III.E-25
Figure 17a Leaf On View 7 - Existing....III.E-26
Figure 17b Leaf On View 7 - Proposed....III.E-27
Figure 18a Transition Yard Photo 01....III.E-30
Figure 18b Transition Yard Photo 02 ....III.E-31
Figure 19 Light Distribution Plan....III.E-34
Figure 20 Existing Tilcon Distribution Feed III.H-4
Figure 21 Proposed Tilcon Distribution Feed.... III.H-5
Figure 22 Dimensions from Equipment to Tree Line....III.J-10
Figure 23 Surrounding Water Distribution Map....III.J-23
Figure 24 Vicinity Map with Study Area…….…..III. E-42

INSERT SECTION DIVIDER

I. EXECUTIVE SUMMARY

A. INTRODUCTION

The New York State Environmental Conservation Law provides a State policy to conserve, improve, and protect natural resources and the environment as well as prevent, abate, and control water, land, and air pollution so that the health, safety, and welfare of its citizens are enhanced. To help conform with the Environmental Conservation Law, the New York State Environmental Quality Review Act (SEQRA) was enacted to ensure that all agencies conducted their affairs with an awareness of their stewardship of natural resources and that they have an obligation to protect the environment for the use and enjoyment of future generations. It is SEQRA's intention that the protection and enhancement of the environment, human, and community resources should be given appropriate weight with social and economic considerations in reaching decisions on proposed activities. In New York State, all projects or activities requiring state or local permits are required to have an environmental impact assessment (using the Environmental Assessment Form (EAF)) performed as per the New York State Environmental Quality Review Act (SEQRA), Environmental Conservation Law Article 8, and implementing regulations set forth in 6 New York Code of Rules and Regulations (NYCRR) Part 617. Based on the significance of a project's/activities environmental impacts identified in the EAF, further study of potential impacts may or may not be warranted. If further study of potential impacts is warranted, an Environmental Impact Statement (EIS) is developed for the project/activity.

For the proposed Little Tor Substation, ORU submitted an EAF that identified significant impacts from the project. Based on its review of the EAF the Town of Clarkstown Planning Board required an EIS to be prepared. A Draft Environmental Impact Statement (DEIS) was prepared for the Town of Clarkstown Planning Board, the lead agency for this project, in compliance with the New York State Environmental Quality Review Act (SEQRA) to thoroughly discuss existing conditions, potential impacts, and proposed mitigation for various environmental resources related to how the proposed project will affect the conditions on and in the vicinity of the Site.

The DEIS was reviewed by the Town of Clarkstown Planning Board, deemed complete and circulated for public comment. The Planning Board held a public hearing and solicited comments from interested and involved agencies and the public. All of the comments, both written and verbal, submitted to the Planning Board were recorded and are included in the Final Environmental Impact Statement (FEIS) and Appendices.

The purpose of the FEIS is to respond to all of the comments and issues raised during the public review of the DEIS, which by reference is included and made part of the FEIS. The FEIS is written in a question and answer format based on the comments and questions submitted to the Planning Board. Comments are organized by subject matter and are related to relevant sections of the DEIS.

B. BACKGROUND

The Proposed Project includes the construction of a new electrical substation and the removal and replacement of gas regulators on two parcels (Lot 5 & Lot 6) in northwest Clarkstown, Rockland County, New York. The total area of the two (2) parcels owned by Orange and Rockland Utilities is 10.2-acres. The northern parcel, Lot 5, currently contains a Verizon Building, cellular antenna tower and existing gas regulators. Lot 6 was later purchased by Orange and Rockland Utilities for the purposes of constructing an electrical substation and improving those components located on Lot 5, noted above. Lot 6 was formerly developed with single family cottages with individual septic systems and wells that were determined to be uninhabitable by the Rockland County Department of Health based on the condition of the structures and the septic systems. Additionally the Site contained hazardous substances associated with the debris near the cottages which included paints, stains, lacquer thinners, tar, engine oil, machine oil, floor polish remover, degreasers, Freon, a corrosive (possibly chlorine), herbicides, insecticides, gasoline cans, propane, refined asphalt, petroleum spirits, lead-acid batteries (some cracked), etc. Also, creosote was observed on the soil according to the report prepared by HDR/LMS which is included in Volume II – Appendix H of the DEIS. The existing site residential structures, which have been removed by Orange and Rockland Utilities, contained asbestos which was properly disposed of, in addition to the site remediation of the above mentioned hazardous materials (refer to Volume II – Appendix I of the DEIS for asbestos sampling results). The report included in Appendix I of the DEIS includes verification that all of the asbestos containing materials have been removed. Lot 6 fronts on S. Mountain Road and N. Little Tor Road and Lot 5 has frontage on S. Mountain Road only. Prior to the gas regulating station (installed in 1962) and Verizon building on Lot 5, the Site formerly contained an electrical substation called the Gibbons substation. A switching station existed in 1926 and two (2) transformers were installed between 1952 and 1956. The transformers were removed in 1982 and the switching station was removed in 1983.

The Project calls for the consolidation of Lots 5 and 6, and the removal of the existing gas regulators, on-site driveways, and a 79.5 foot high tower. In addition to the proposed electrical substation and upgraded gas regulators, proposed site improvements include: the erection of two (2) 81-foot high steel poles to replace the existing 79.5 foot high tower, relocation of the existing cellular communications equipment from the existing tower to one of the proposed poles, a 20-foot wide by 430-foot long access drive, stormwater facilities, and landscaping to adequately screen the substation, access driveway and stormwater management facilities from its surroundings. In addition, a security fence and security cameras would be installed around the substation and a gate located at the access driveway entrance to limit access to operators of the facility. Access to the Site will be via a driveway intersecting N. Little Tor Road approximately 290 feet south of S. Mountain Road. This location has been chosen due to the poor sight distance and narrow lane width of S. Mountain Road. The project also requires fill placement within the 100 year flood plain to construct the Proposed Project's access drive. Compensatory storage is provided on another portion of the site to compensate for this loss.

C. SUMMARY DESCRIPTION OF PROPOSED ACTION

Orange & Rockland Utilities, the project sponsor, has applied to the Town of Clarkstown Zoning Board of Appeals and Planning Board for Special Permit for a Public Utility and Site Plan approval, respectively, for the construction of a new electrical substation and the upgrade of the existing gas regulators at its approximate 10.2 acre property (Site) located on the corner of Little Tor Road and South Mountain Road, in Rockland County, New York. The street address is 549-555 N. Little Tor Road and the tax map designations are (S-B-L) 34.5-1-5 and 34.5-1-6.

The Project Site is located within the R-40 (Lot 6) and R-80 (lot 5) Zoning Districts in which public utility substations is a use permitted by Special Permit of the Zoning Board of Appeals. As a result, the site plan is subject to the Town Code performance standards, section 290-13 and special findings, section 290-15. If the property were to be developed with residential homes in accordance with the allowable density permitted within the R-40 zoning district four (4) single-family homes would result.

The substation design includes: the replacement of an existing transmission tower with two (2) steel poles of similar height to supply the new yard; two (2) 50 MVA transformers; one (1) 25 MVA transformer; and a metalclad switchgear. The existing cellular antenna will be relocated from the tower to one of the proposed poles.

The existing gas regulator station will be removed and a new gas regulator station will be located further away from South Mountain Road for better protection from vehicular traffic. The new gas regulator station consists of two (2) parallel regulators, two (2) parallel monitors as well as sound attenuating equipment.

The completed DEIS and the FEIS are written to provide an analysis of the potential environmental impacts of the Proposed Project and respond to comments and questions raised during the public review of the DEIS, as prescribed by SEQRA regulations. The Planning Board of the Town of Clarkstown is acting as the Lead Agency in this matter and the Town Zoning Board of Appeals is an Involved Agency with responsibilities for the review and approval of the Special Permit for the Public Utility.

The applicable actions that have occurred thus far:

Number	Action	Date
1	Notification of Intent to Declare Lead Agency,	August 25, 2008
2	DEIS Submission	February 7, 2012
3	Public Hearing on DEIS	May 2, 2012; June 6, 2012; June 13, 2012; February 27, 2013; April 3, 2013
4	Scoping on Supplemental DEIS	June 5, 2013
5	Referral to Draft FEIS	June 5, 2013

D. SUMMARY OF SIGNIFICANT IMPACTS AND PROPOSED MITIGATION MEASURES

This section briefly summarizes the potential impacts of the Proposed Project and the proposed mitigation measures in each of the areas analyzed for the DEIS. Refer to Chapters III.A through III.P of the DEIS for a complete discussion of each of these potential impacts and mitigation. Also refer to Section III.A through III.U of the FEIS for responses to questions and comments raised during the public review process.

Land Use, Zoning and Public Policy

The Proposed Project, upon approval, will result in the merger of tax lots 5 and 6. The current land use of Lot 6 will then change from a vacant use to a public utility use and Lot 5 will remain as a public utility use. Approximately 68 percent of the 10.2-acre Site, or 6.95 acres, would be retained as undisturbed area. The electrical substation and new gas regulators would result in additional impervious areas and gravel areas of 0.636 acres and 0.911 acres, respectively.

The development would require a special permit approval for a public utility in a residential zone from the Zoning Board of Appeals.

The height of the proposed substation and related components would range from 16 to 26 feet with isolated components of the substation reaching a maximum height of 68 feet (84'-5" with lightning spire). The projected length of the proposed station along N. Little Tor Road (approx. 1,000 ft. of frontage) would be approximately 235 feet and the projected length along S. Mountain Road (approx. 580 ft. of frontage) would be approximately 235 feet.

Because this project will not result in any changes to the current zoning and the proposed use, and is permitted by special permit use in a residential district, no specific mitigation relating to Land use and Zoning is proposed. However, the issuance of a special permit by the Town of Clarkstown requires the applicant to comply with the Town zoning code requirements for the special permit. Among other things, the applicant has provided for adequate screening and landscaping of the site, has provided for adequate fences, security and other safety devices and has provided details as to how it believes it has complied with the provisions of the Town's code regarding performance standards (§290-13) and special findings (§290-15). The issuance of a special permit is subject to compliance with those provisions and approval by the Town's zoning board of appeals.

Aesthestics

The design, location and landscaping of the Proposed Project is intended to minimize its visibility from surrounding areas. Photographs and photo-simulations are provided to illustrate the proposed construction in relationship to its surrounding environment.

Natural Resources

Approximately 3.25 acres of the 10.2 acres site would be disturbed as part of the development. This includes 0.636 acres of impervious surfaces, 0.911 acres of gravel area, and 1.95 acres of lawn and landscaping. The remaining 6.95 acres of the Site would remain undisturbed.

There are a total of 447 trees of at least 8 inch diameter at breast height (DBH) located on the Site of which 106 trees (23.7%) would be removed and 341 would remain (76.3%). A review of existing, available information was completed and responses from jurisdictional agencies were obtained, and specific habitat evaluations were conducted for the subject site. The results of these actions revealed that there are no threatened or endangered plant or animal species identified onsite nor was suitable habitat found, except for Indiana Bat.

The applicant would implement a tree preservation and protection plan, in accordance with the Town's ordinance, during the proposed construction to mitigate any impacts to existing trees which are designated to be preserved. In addition, proposed landscaping as depicted on the revised Landscaping Plan included in Appendix B of the FEIS would further mitigate the loss of trees and would complement the proposed facility upon completion of construction. To mitigate potential impacts to roosting Indiana Bats, a seasonal timing restriction would be put in place limiting tree clearing to the winter months.

Geology, Soils and Topography

The proposed construction would occur on the most level portions of the property. The Site contains minor areas of steep slopes (15% or greater) running north/south along the central corridor of the parcel. Although the access drive from Little Tor Road traverses some steep topography, the driveway's design maintains the appropriate site distances and acceptable grades.

Slopes on the site are comprised of 75.1 percent in the 0-10% category; 12.1 percent in the 10%-15% category, and 12.8 percent in the 15% and greater category. Strict adherence to the proposed erosion and sediment control plan would help mitigate any construction related impacts to these slopes. This Plan includes but is not limited to protective earth moving measures, temporary and permanent cover, and silt fencing. Additionally, the area that maintains slopes greater than 15% has a small contributing drainage area - reducing the erosion potential of the area. The proposed erosion and sedimentation control measures would be implemented prior to the start of construction.

Water Resources

The Site contains 2.134 acres (92,936 square feet) of wetlands. The Proposed Action proposes disturbance to 0.0198 acres (864 square feet) of the wetland area. This level of activity is covered by the existing Nationwide Permit issued by the ACOE and does not require any further action. The Site also contains portions of the Hackensack River (West Branch) along the southern property line as well as a number of unnamed tributaries.

The onsite wetlands are regulated by the Army Corp of Engineers (ACOE) which does not require a buffer. These wetlands are not regulated by the New York State Department of Conservation (NYSDEC) or the Town. The Rockland County Drainage Agency has jurisdiction over the project since portions of the parcel fall within 100 feet of the 100 year flood plain line of a County Stream. Additionally, a Floodplain Development Permit from the Town's Floodplain Administrator is required. Construction of the project as proposed would require limited wetland

and floodplain disturbance. The floodplain disturbance will be compensated by excavating an area of equal volume on the north side of the proposed entry driveway.

The impact on the stormwater runoff that would occur after completion of the proposed project has been analyzed. The stormwater management system for the project as described in the SWPPP included as Appendix K of the FEIS demonstrates that the post-development discharge rate for storm events up to a 100-year event are controlled to less than or equal to pre-development rates. The stormwater management system also includes water quality control and treatment as required by the New York State Department of Environmental Conservation (NYSDEC) and the Rockland County Drainage Agency (RCDA). In order to control stormwater quantity and quality, an onsite stormwater surface sand filter with storage above is proposed at the base (east side) of the electrical substation, as well as a dry swale along the access driveway, and rain gardens at the entrance to the Site.

The stormwater management system also incorporates a multilevel containment system to prevent any uncontrolled discharge of oil from the site. Containment materials consist of a selectively permeable material used in the secondary and tertiary oil containment system. This material allows water to pass under normal condition but solidifies to seal the containment area when it comes in contact with a hydrocarbon.

Utilities

The Site is currently vacant with no sewer or water service and the Proposed Project does not require water or sewer services at the Site; however, the applicant does propose the installation of a hydrant at the northwest corner of North Little Tor Road and South Mountain Road. It should be noted that when the property was occupied by single-family cottages, each was serviced by well and septic. Based on the above, the Proposed Project does not pose any impact on the Town's utility system therefore no mitigation is proposed.

Traffic and Transportation

The Proposed Project has minor temporary impacts on the surrounding transportation system during construction. The amount of traffic generated by the facility after construction has been completed would be approximately four (4) vehicle trips per month. Given the low amount of traffic generated from the completed site, it can be concluded that the current operating levels of the surrounding roadways would not change as a result of the limited increase in traffic resulting from the project.

Air Quality

No long term impacts are projected from the project since there will not be an increase in the traffic volume from the site. Short term impacts associated with construction would be mitigated to the greatest extent practical utilizing best management practices as described in Section III-I, Air Quality of the DEIS. There may also be short-term impacts in the event of a fire or

explosion at the site. It is anticipated that the release of the combustion byproducts from the substances on-site would be of a short duration. It should be noted that the release of all the potential combustion byproducts simultaneously as a result of a fire at the substation is a worst case scenario.

Noise

The noise study (included in Appendix C of the DEIS, Appendix F of the FEIS and the related supplemental reports) evaluated the sound levels at the property lines due to the proposed gas regulators and transformers. The expected sound levels were modeled and compared to the existing background sound levels which were measured during a 24-hour period over several days. This data was compared against the criteria set forth in the Rockland County Sanitary Code, the New York State Department of Environmental Conservation (NYSDEC) guidance policy on noise and Chapter 290-13 *Performance Standards* of the local noise code for the Town of Clarkstown. The resulting estimated noise levels at the property lines were found to be acceptable at all locations around the perimeter of the site, except at the north and west property lines due to the gas regulators. Based on this analysis, Ostergaard Acoustical Associates recommended the installation of sound mitigation in the form of acoustical barriers (3 sided - 8-foot tall metallic walls) to reduce the sound levels from the gas regulator to be within the levels allowed in the Rockland County Sanitary Code, Town of Clarkstown Noise Regulations and the NYSDEC guidance policy. It is anticipated that the metallic acoustical barriers will closely match the appearance of the existing Verizon building on-site.

Historic and Archaeological Resources

A Phase IA Archaeological Survey was conducted on the site and the detailed report was included in Appendix M of the DEIS. This study concludes based on a detailed review of relevant data that the site may contain Historical or Archaeologically significant resources. For that reason a Phase IB study was performed. This study concluded that the project as proposed will not have any significant adverse environmental impacts upon cultural resources.

Community Facilities and Services

Required public and community services are police, fire, and ambulance services. The Proposed Project would have a limited number of visits per month therefore reducing the likelihood of ambulance services. Generally these types of facilities do not require fire protection, however if a fire related emergency were to occur, the Proposed Project is located within 3-4 miles of Police and Fire services and is set back a large distance from surrounding homes. As part of the fire protection measures proposed for this project an additional fire hydrant would be installed at the corner of Little Tor Road and South Mountain Road. The Chief Fire Safety Inspector for the Town of Clarkstown has reviewed the mitigating measures related to fire and found the proposed mitigation acceptable and adequate. In the case of a fire or other emergency that might occur at Little Tor Orange and Rockland Utilities personnel would be dispatched immediately to the site along with the local fire departments. The fire department is trained to establish perimeter positions to ensure the fire is contained. O&R personnel would verify that the substation has been de-energized and the gas regulator isolated.

The necessity for police services is also limited since the site is equipped with security cameras and an eight foot high chain link fence, intended to prevent intruders from entering the substation area and causing vandalism or other damage to the Site. Additional information regarding emergency training and protocols, site security and meetings with the Town Chief Fire Inspector is included in Section III-D of the FEIS.

Socio-Economic Impacts

The DEIS examines the effects of the Proposed Project on the property tax revenues of local jurisdictions and the potential for construction related and permanent employment. This project would result in very limited impact to town services. Town Services would be limited to police and fire protection and there would be no impact on recreational services.

Population gains and public school enrollment were also examined. The Proposed Project would not increase the population; therefore there would be no school-age children and no additional financial burdens on the Clarkstown Central School District. Construction employment is forecasted to be 30 full time positions over the 52 week construction period. It is anticipated that no new full time jobs would be created, however existing jobs will be preserved. The tax revenue generated by the project is estimated to be $269,301.00 annually in overall property tax revenue, including special districts.

The construction employment and property tax revenue demonstrate a positive and beneficial socio-economic impact.

Construction Impacts

The Proposed Project's impacts to the environment during construction are mitigated with measures relating to water quality and quantity, erosion and sediment control, air quality, noise protection, traffic, and protection of existing trees to remain.

Construction trucks travelling to and from the Site will use S. Mountain Road and N. Little Tor Road for local and regional movements. The existing driveway access points on S. Mountain Road to the Site will be closed; therefore construction vehicles will not enter or exit the Site via these locations. There will be minor construction activity at these driveway locations during the demolition and restoration of this area. The number of truck trips is estimated to be 9 per day, based on eight hours of operation per day. The distance of the "truck trips" are expected to be 40 miles (the round-trip distance from the site to the pick-up area or 20 miles to the pick-up site and 20 miles back to the project site). The "truck trips" take into consideration the bulking factors of the loads, which may include timber waste and other non-compacting materials (a compaction factor of 1.2). Large truck deliveries will occur via the N. Little Tor access to the site with all unloading and staging taking place within the site. These trucks will exit the site via N. Little Tor Road once they have been unloaded.

It is not anticipated that any blasting of rock on the Site will occur, however should the need arise; blasting will comply with all Town blasting regulations.

As indicated on the Engineering drawings, all staging and storage of material will occur in the designated areas as indicated on the Engineering drawings. Staging or the storage of material

will not occur along the access road, within the 100-year flood plain or other environmentally sensitive areas.

Magnetic Fields (EMF)

A detailed computer model and magnetic field calculations were used to determine both existing magnetic field levels and anticipated magnetic field levels associated with the substation and existing overhead transmission lines. These levels vary depending on location, but in all cases are well below the standard set by the New York State Public Service Commission (PSC) of 200mG. The FEIS also includes supplemental studies that were prepared at the request of the Lead Agency, that further address the question of Electro-Magnetic Fields. Section III-F of the FEIS provides a summary of the supplemental studies performed.

Based on the information presented in both the DEIS and FEIS, there will be no significant changes in EMFs at the property lines and therefore no significant adverse environmental impacts associated with the magnetic field levels.

Residential Property Value

A detailed regression model was performed utilizing residential home data surrounding the New Hempstead and Congers substations. The results of the model conclude that there is no statistically significant association between the substation and residential property values.

E. SUMMARY OF ALTERNATIVES

The DEIS includes two (2) alternatives to the Proposed Action plus a No-Build alternative (which is required by SEQRA):

- The first alternative examines an alternative use for the property consisting of a single-family subdivision with four (4) lots that complies with the existing R-40 zoning. The impact of the residential alternative differs from the Proposed Action in that the amount of land disturbance and area of impervious surfaces in constructing four (4) homes would be larger. The residential alternative is shown to include other environmental impacts, as well as not meet the goals of the Applicant/Property Owner. This alternative does not further mitigate any significant adverse impacts, since no such unmitigated impacts have been defined for the Proposed Action. Additionally, in the Proposed Action there would be an impact on sewer, gas, and electric utilities.

- The second Alternative examines multiple site locations that might be suitable for development as an electrical substation. The initial assessment included thirteen parcels. Through the first screening process, the thirteen parcels were reduced to five when examined against two key criteria which are access to the existing transmission lines and the local distribution system. The five remaining parcels were evaluated using six criteria. The result of this screening process identified the selected site as the one most suitable for development as an electrical substation.

Section V of the FEIS also provides additional information concerning alternatives in response to comments and questions raised during the public review of the DEIS.

F. LIST OF PERMITS AND APPROVALS

The proposed facility will require a series of reviews and approvals from local and state agencies. These are summarized in ***Table I-1, Summary of Reviews and Approvals Required***.

Table I-1

Summary of Reviews and Approvals Required

Agency	Approval/Permits Required
New York State Department of Environmental Conservation	Coverage under General Permit for Stormwater Discharges from Construction Activity - GP-0-10-001
Army Corp. of Engineers (ACOE)	Wetland Disturbance
Rockland County Department of Highways	Driveway Curb Cut, Hauling Permit
Rockland County Department of Planning	Planning Review
Town of Clarkstown Zoning Board	Special Permit for Public Utility
Town of Clarkstown Planning Board	Approval of Site Plan
Town of Clarkstown Architecture and Landscape Committee	Town design standards compliance approval
Town of Clarkstown Building Department	Approval of building permits
Rockland County Department of Health	Review of air quality and noise impacts to determine compliance with Rockland County Sanitary Code
Rockland County Drainage Agency	Flood Plain Permit
Town of Clarkstown Floodplain Administrator	Floodplain Development Permit
Clarkstown Department of Environmental Control	Stormwater Pollution Prevention Plan
Public Service Comm.	Approval of Antenna upgrade

G. EIS DISTRIBUTION

As previously noted, the Lead Agency for the Proposed Project is the Planning Board of the Town of Clarkstown. Agencies that have permit-granting authority over the project are described as 'Involved Agencies' under SEQRA. Other related agencies are described as 'Interested Agencies'.

The Involved, Interested Agencies, and other individuals that will receive the DEIS and Final Environmental Impact Statement (FEIS) are listed below:

Lead Agency:

Town of Clarkstown Planning Board
Shirley J. Thormann, Chairperson
10 Maple Avenue, New City NY 10956

Involved Agencies:

Town of Clarkstown Attorney
Amy Wagner Mele
10 Maple Avenue
New City, New York l0956

Town of Clarkstown Zoning Board of Appeals
Gaetano U. Massa, Chairman
10 Maple Avenue
New City, NY 10956

Town of Clarkstown Architectural and Landscape Committee
Edward J. Lettre, Chairperson
10 Maple Avenue
New City, NY 10956
Rockland County Department of Health
Patricia Schnabel Ruppert, DO, FAAFP, Commissioner of Health
Robert L. Yeager Health Center
50 Sanatorium Road, Building D
Pomona, NY 10970

Rockland County Department of Planning
Douglas J. Schuetz, Acting Commissioner
Robert L. Yeager Health Center
50 Sanatorium Road, Building T
Pomona, NY 10970

Rockland County Drainage Agency
Attention: Mr. Shajan S. Thottakara, P.E.
23 New Hempstead Road
New City, NY 10956

New York State Department of Environmental Conservation
Attention: Margaret Duke
625 Broadway
Albany, New York 12233-0001

Rockland County Highway Department
Attention: Sonny Lin
23 New Hempstead Rd
New City, NY 10956

Interested Agencies:

Clarkstown Central School District
62 Old Middletown Road
New City, NY 10956

New City Fire Engine No. 1
15 Maple Avenue
New City, NY 10956

New City Ambulance Corp. and Rescue Squad
200 Congers Road
New City, NY 10956

New York State Office of Parks, Recreation and Historic Preservation
Field Services Bureau
P.O. Box 189
Peebles Island
Waterford, NY 12188-0189

Environmental Notice Bulletin
New York State Department of Environmental Conservation
enb@gw.dec.state.ny.us

Rockland County Office of Fire and Emergency Services
35 Fireman's Memorial Drive
Pomona, NY 10970

INSERT SECTION DIVIDER

II. DESCRIPTION OF PROPOSED PROJECT

DETAILED PROJECT DESCRIPTION

PUBLIC COMMENT 1: The gas regulator is described in O&R's material as a gas substation. *(Mr. Granirer, June 13, 2012, page 19, lines 21-23)*

PUBLIC COMMENT 2: Gas handling equipment. The DEIS now under review mentions that the site is to be used for gas handling and distribution equipment in addition to new equipment for electric distribution. But the information on the gas-handling equipment offers nowhere near the level of detail provided for the electrical equipment. This is no minor inconsistency: the natural gas to be distributed by the new installation is highly flammable, even explosive. (Mr. Granirer, memo dated June 25, 2012)

RESPONSE: *Section I Introduction/Executive summary of the DEIS notes that there is an existing gas regulator to be removed and a new upgraded gas regulator is proposed. The gas regulator is further described in Section II of the DEIS, Description of Proposed Project. A gas regulator reduces the pressure of natural gas from a higher pressure to lower pressure, maintaining that lower pressure within safe limits. Typically lower pressure gas is provided to residential homes.*

Multiple sections of the DEIS reference the existing gas regulator located on this site and the fact that it is being upgraded to meet current design standards. The new regulator station will function in a similar manner to the current regulator station, which has been in service without incident since 1962. The function of the regulator station is to take gas from the gas supply system and introduce it into the gas distribution system for delivery to customers. The new regulator station consists of an inlet pipe with isolation valves, two parallel regulators, two parallel monitors, and an outlet pipe with an isolation valve. The new station will incorporate several enhancements over the existing station. The new station will operate more quietly, due to an inherently quieter design and noise attenuating equipment. The new equipment will incorporate a more modern design that is more reliable and the station monitoring equipment will be upgraded to give the gas control room more timely and precise information regarding the station's operation, as well as provide more precise equipment operation.

The new regulators are also being moved further away from the perimeter property line along South Mountain Road. The existing regulator and related equipment as shown on the engineering drawings included in Appendix A is located approximately 10 feet away from the South Mountain Road property line and the replacement regulator will be located approximately 94 feet away from the same property line. The replacement gas regulator is an above ground installation that includes piping valves and the related equipment. Figure 1 is a picture of a similar installation and is being provided to clearly indicate what the replacement regulator will look like.

PUBLIC COMMENT 3: O&R has maintained electric substations on 3.5 acres of the 10-acre site. The proposed expanded electric substation and a gas line substation will occupy much more of that land. The electric substation will comprise three new transformers, some switching gear and cabinets, and several towers. One tower will be 93.5 feet high; another will be 85.9 feet high. *(Mr. Granirer, memo to neighbors, no date)*

RESPONSE: *The original electrical substation located on this site for decades and the existing gas regulator occupied a majority of lot 5 which is approximately 1.25 acres in size. The overall development of this project will impact approximately 3.5 acres of the total site which is 10.2 acres; however, the substation site itself (fenced in area) will occupy approximately 1 acre. The remaining disturbance will result from the construction of stormwater management system, driveway and removal of existing site features such as the driveways off of South Mountain Road.*

The two steel poles that are proposed to replace the existing 80'-6" tall lattice tower are approximately 81' in height each. The existing tower currently has an antenna that extends to 93'-6" (93.5') above ground level; however, the new steel poles proposed to reduce that antenna height to 85'-11" (85.9') above ground level. The take-off structure proposed inside of the substation is 68 feet high. The center pole also has an 16'-5" tall dynasphere provided for lightning protection that increases the height of this pole to 84'-5".

PROJECT, PURPOSE, NEEDS AND BENEFITS

PUBLIC COMMENT 4: …the applicant's existing DEIS proposes to perpetuate the current antiquated system, it should explore forward-thinking alternatives, as well as ways to reduce current energy usage and growth in Northern New City such as switching to LED streetlights. *(Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 41, lines 19-25)*

RESPONSE: *The design of the proposed facility does take advantage of the newest technology available for this application. However, the substation is necessary to supply the increase in energy consumption of the end users, not the energy provider. In addition, this substation is necessary to reinforce the reliability of the electrical distribution in this area, unrelated to consumption or energy conservation.*

PUBLIC COMMENT 5: Twelve: The DEIS should provide actual usage data for Northern New City and projections for future use. *(Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 42, lines 2-4)*

RESPONSE: *The northern New City area is currently supplied from the New Hempstead, Congers, and West Haverstraw Substations. In addition, a mobile transformer was installed in 2012 which was required as part of the road widening project along New Hempstead Road and the related pole relocation and to support the increased electrical load area. Based on 2013 actual data, the portion of this load to be served from the proposed Little Tor*

Substation is approximately 28.1 MVA. The projected 5 year growth rate for the area is approximately one percent per year.

PUBLIC COMMENT 6: Why can the West Haverstraw substation no longer supply the local demands of New City residents and small businesses, yet is able to supply the massive local demand of a desalination plant? *(Mr. Baum, via email, July 24, 2012)*

RESPONSE: *In 2002, Orange and Rockland Utilities identified the need for the Little Tor Substation using its risk-based design standard methodology for system loading and customer reliability. Load growth in the communities supplied by the West Haverstraw, Congers and New Hempstead Substations, including New City, have outpaced the ability of the current infrastructure to meet those standards. It is the increase in demand in these service areas that has triggered the need for a new substation at Little Tor. As indicated in other sections of the FEIS, the request to serve the proposed United Water desalination plant did not occur until 2008 and 2012, while the need for this substation was identified in 2002.*

Orange and Rockland Utilities is obligated to provide service to all customers within their service area. The estimated demand for the initial installation of the desalination plant is just under 1MVA, an electric load similar to a Wal-Mart Supercenter. A second potential phase planned for 2020 may increase demand to up to twice that amount.

PUBLIC COMMENT 7: What it appears they're not telling the Town is that they want to off-load both Tilcon and northern New City electrical users to make way for the needs of this new desalination plant at the existing West Haverstraw substation facility. *(Mr. Baum, via email, July 24, 2012)*

RESPONSE: *The need, size and location of the electrical substation on this site are not related to the desalination plant proposed by United Water. The need for the Little Tor Substation was identified in 2002, at which time Orange and Rockland was unaware of any plans for a desalination plant. In addition, the capacity of the substation has not changed since it was originally proposed.*

The Little Tor Substation is necessary even if the desalination project is never built. Also, the desalination plant can be supplied by the West Haverstraw Substation even if the Little Tor project is not built. Supplies to the northern New City area from the West Haverstraw Substation are limited by the terrain in between. The load area that will be transferred from West Haverstraw to Little Tor is to the west, in the neighborhood of Routes 45 and 202. (Refer to FEIS Figures 7 and 8, formerly DEIS Figures II-4 and II-5.) The desalination facility requires capacity on a distribution circuit travelling east from the West Haverstraw Substation. These distribution circuits are not interchangeable.

PUBLIC COMMENT 8: Justification of Need: DEIS did not include specific justification as to why the substation is necessary instead had general reference that consumption has

increased. O&R should provide specific information like "Property X with electric consumption amount of Y is added to the system. Therefore the substation is necessary". *(Mr. Adib, via email, June 23, 2012)*

RESPONSE: *There is no specific property or customer that is requiring the construction of the Little Tor Substation. The need for the substation is driven by general load growth and planning criteria that is applied equally to all areas served by Orange & Rockland Utilities. In 2002, a New Hempstead Substation transformer bank and a Congers Substation transformer bank began to fail these criteria due to insufficient backup capability and excessive customer hours out of service for a transformer bank failure. At that time the Little Tor Substation was proposed as a solution to reduce load on adjacent stations (New Hempstead, Congers, & West Haverstraw). The station was originally scheduled to be in service in 2008 but has been delayed. The mobile transformer that was installed at the site in 2012 has provided some relief to the area (single circuit) but is not a permanent solution to meet the long term power requirements for the area.*

PUBLIC COMMENT 9: Information confirming the necessity for the proposed facility, its customer base and areas vulnerable to service interruptions if the substation is not constructed. Data will be consistent with the level of detail supplied to the NY PSC. (*Planning Board Issues for Little Tor FEIS, May 28, 2013)*

RESPONSE: *The New City area is located between the New Hempstead, Congers, and West Haverstraw Substations in Rockland County, New York. These three substations serve a combined total of approximately 37,025 customers. Until recent economy problems, a significant load growth in this area has been realized for several years. The current projected 5 year growth rate for the area is approximately one percent per year.*

The New Hempstead substation has two 35MVA, 138kV to 13.2kV, transformer banks. The 2011 weather-normalized (WN) forecasted loads for both banks is either above or approaching their nameplate rating with loads of 38.7MVA and 33.8MVA. In addition, the existing 35 MVA banks are not equipped with Load Tap Changers (LTC) for voltage control. During the heavy load periods, the voltage at the New Hempstead 13.2kV bus and distribution circuits is below the optimum operating range. Both of the New Hempstead banks have toggled the pass/fail planning criteria margins due to lack of backup for a bank contingency less than four hours. Two of the eight 13.2kV distribution circuits also fail to meet planning criteria with less than 100% backup for an individual circuit contingency and three more New Hempstead circuits will fail within the next two years.

FIGURE 1

Typical Gas Regulator Station
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York

Image Source: LANGAN

LANGAN White Plains New York

The Congers Substation has two 35MVA, 138kV to 13.2kV transformer banks. The 2011 WN forecasted loads for both of these banks are below the nameplate rating with loads of 29.0MVA and 27.3MVA. One out of the eight 13.2kV distribution circuits will fail to meet the planning criteria in 2014 with less than 100% backup for an individual circuit contingency.

The West Haverstraw substation has two 35 MVA, 138kV to 13.2kV transformer banks. The 2011 WN forecasted loads for both of these banks are below the nameplate rating with loads of 33.2MVA and 22.4MVA. Neither bank is equipped with LTC for voltage control.

Currently, a mobile transformer is located at the Little Tor site and is serving approximately 8.4 MVA of load at peak time. Without the mobile transformer in service, both New Hempstead substation banks would fail the planning criteria as well as two New Hempstead circuits and a West Haverstraw circuit. This would negatively impact the electrical reliability for approximately 14,000 customers across areas in New City, New Hempstead, Pomona, Wesley Hills, Ramapo, New Square, and Haverstraw. Construction of the Little Tor Substation will significantly improve the reliability to the area and allow the mobile transformer to be removed from the site.

PUBLIC COMMENT 10: …but it should be part of the DEIS as to where the electricity is really going and what percentage is for who, and clearly, from looking at the percentages in the DEIS, the numbers are incorrect. *(Mr. Baum, May 2, 2012, page 35, lines 4-8)*

RESPONSE: *As specified in the FEIS response section concerning Tilcon, their average load is less than 1MVA. For the remaining load, estimated to be approximately 28.1MVA based on 2013 actual data: 54% will be south of the facility along Little Tor Road, north of New Hempstead Road; 23% will be east along South Mountain Road and 21% will be west along South Mountain Road.*

PUBLIC COMMENT 11: All right. One question I would like to ask, because I had a call come into the office about who and what is being served by this substation that you wish to build, so would you be good enough to explain, and I don't care who does it, who and what will be served by this new substation? *(Chairwoman Thormann, June 6, 2012, page 60, lines 3-10)*

RESPONSE: *The proposed Little Tor Substation will supply the area shaded in red on Figure 8 in the FEIS (Figure II-5 in the DEIS): "Service Areas Including Little Tor Substation". The approximately 3,500 residences and commercial accounts located in this area include houses, condominiums, townhomes, doctor/dentist offices, supermarkets, realtors, legal offices, animal hospitals, restaurants, florists, banks, dry cleaners, state facilities, county facilities, town facilities, hair salons, country clubs, charities, schools, hardware stores, bowling alleys, a quarry and utilities (i.e.: sewer, communications).*

PUBLIC COMMENT 12: If I can, just to go back. The bottom line is, and I would hope that Mr. Coffey's previous statement that you've got 120 MVA capacity in this plant is not what the current demand is because I would certainly think it to be somewhat counterproductive to put in a plant that only meets the current capacity. This plant had better have a twenty-year projected demand capacity to it or we all shouldn't be sitting here. *(Mr. Letson, June 6, 2012, page 89, lines 2-12)*

RESPONSE: *The needs assessment for this substation included a projection of probable growth and includes in its design excess capacity to accommodate both that growth and contingency planning. Orange and Rockland Utilities estimates that the planned facility will meet projected growth for 30 years.*

PUBLIC COMMENT 13: What is the current load? *(Mr. Yacyshyn, June 6, 2012, page 89, lines 21-22)*

RESPONSE: *Currently, the mobile transformer is serving approximately 8.4 MVA of load from a single circuit. When the Little Tor Substation is placed in service the load will increase to approximately 28.1 MVA by transferring load from New Hempstead, Congers, and West Haverstraw.*

PUBLIC COMMENT 14: Do you serve New Square, Mr. Coffey? *(Chairwoman Thormann, June 2, 2012, page 94, lines 12-13)*

RESPONSE: *Orange and Rockland Utilities does serve the Village of New Square, NY. The portion of the Orange and Rockland Utilities transmission line which crosses New Square was converted from an overhead line to an underground line in 2005. The Village of New Square paid 1.5 million dollars of this cost and the customers within New Square are responsible for 1.5 million dollars of capital cost as well as carrying charges through a levelized monthly surcharge for the next forty years for this conversion. The company's tariff under the state PSC requires that the cost of any such future projects will be the responsibility of the ratepayers of the jurisdiction requiring them (i.e.: the Town of Clarkstown).*

PUBLIC COMMENT 15: Currently, the Haverstraw substation provides electricity to Northern New City, yet there is no indication in the DEIS that the New City substation will provide service coverage for backup to Haverstraw. Why not? *(Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 39, lines 7-13)*

RESPONSE: *A circuit from Little Tor will exit the substation and travel west along South Mountain Road to RT 45. At this point it will travel north on RT 45 west along RT 202*

assuming a portion of load currently served by West Haverstraw. This will provide relief and improve contingency backup for the West Haverstraw distribution circuit that currently supplies this area. Due to the terrain and undeveloped land between the Little Tor site and West Haverstraw, this is the only circuit tie between the two substations. The existing and proposed service areas are shown in FEIS Figures 7 and 8, respectively.

PUBLIC COMMENT 16: --what Ms. Lanza had talked about is that 85 percent is for residential purpose and 15 percent is for commercial customers and municipal customers. Now there are two 50 MVA transformers at the location and there is one 20, not 25, I think you may have said 25, the 20, and the 20 according to DEIS is not the primary as was described here tonight, it is the backup. *(Mr. Baum, June 6, 2012, page 84, lines 16-25)*

PUBLIC COMMENT 17: It says in the DEIS that Tilcon is being serviced from the Haverstraw facility. Didn't say anything was being removed there. So, what we got tonight was very different information than the written documentation that you have before you. And if you add up 50, 50 and 20, that's 120. And if one customer is getting 20, it means they already have 20 percent. How can we state in the DEIS that it's only 15 percent for commercial and municipal customers? *(Mr. Baum, June 6, 2012, page 85, lines 2-13)*

RESPONSE: *Once the Little Tor Substation is energized, the Tilcon transformer at the West Haverstraw Substation will be taken out of service and disconnected. It will be retained as a system spare.*

The DEIS states that "The supply area for the Little Tor Substation consists of 85% residential customers and 15% commercial/municipal accounts". The two 50 MVA transformer banks will supply these customers and the Tilcon transformer at 13,200 volts (13.2kV). Tilcon's facility requires 34.5kV necessitating the Tilcon transformer to step up the voltage from 13.2kV to 34.5kV. Tilcon's historical average load has been <u>*less than 1 MVA*</u>*. There are no plans or expectations for that usage to change. While the 25MVA transformer is over capacity for this application, Orange and Rockland is recycling a 13.2kV to 34.5kV transformer retired from another substation rather than purchase a new transformer. Furthermore, the conductor of the existing line will limit Tilcon to their current capacity. There are no additional structures required to make this conversion. The Tilcon load could continue to be supplied from West Haverstraw Substation if the proposed facility were never built. Tilcon represents only a small percentage of the capacity of either the West Haverstraw Substation or the proposed Little Tor Substation.*

PUBLIC COMMENT 18: Therefore, in addition to conducting an investigation of O&R's application (and I believe improper approval) for the temporary substation, I think the Town has an obligation to thoroughly research the connection between the energy usage of the proposed United Water desalination plant and the need for the proposed New City substation. (Mr. Baum, via email, July 24, 2012)

PUBLIC COMMENT 19: Eight: If the United Water project is approved, is it possible that the New City substation then will need to be expanded? Will the Applicant guarantee that this substation will never be expanded beyond the current proposed substation as it already

has done elsewhere? (Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 39, lines 16-23)

PUBLIC COMMENT 20: United Water plans to build a controversial desalinization plant in Haverstraw. The desalination filtration and pumping process will require a massive amount of electricity. Which substation or substations will be providing that power? Will United Water need dedicated transformers or a new substation? And if so, where will those facilities be placed? *(Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 38, lines 19-25; page 39, lines 2-4)*

PUBLIC COMMENT 21: Won't this become more important if the diesel (sic) plant comes online? (Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 39, lines 13-15)

PUBLIC COMMENT 22: The usage data is needed to evaluate the needs of Northern New City and to understand if other factors like the proposed water treatment plant in Haverstraw are the underlying need for the proposed substation. If so, this might raise additional questions about segmentation. (Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 42, lines 22-25; page 43, lines 2-5)

RESPONSE: *The Little Tor Substation was identified in 2002 as a required infrastructure project in northern New City. Orange and Rockland Utilities New Business received an application for a pilot filtration plant from United Water in November, 2008, after the Little Tor project had been submitted to the Town of Clarkstown. The request for service for the full scale plant was not received until 2012. The projects are unrelated.*

The Little Tor Substation is necessary even if the desalination project is never built. Also, the desalination plant can be supplied by the West Haverstraw Substation even if the Little Tor project is not built. Supplies to the northern New City area from the West Haverstraw Substation are limited by the terrain separating them. The load area that will be transferred from West Haverstraw to Little Tor is to the west, in the neighborhood of Routes 45 and 202. (FEIS Figures 7 & 8, DEIS Figures II-4 and II-5.) The desalination facility requires capacity on a distribution circuit travelling east from the West Haverstraw Substation. These distribution circuits are not interchangeable. Orange and Rockland Utilities cannot design and construct capital improvements funded by their customers based on "projects that might be built". The needs assessment for the electrical substation proposed for this site was prepared based on current demands, the current capacity of the existing system and a projection of probable growth which is based on acceptable methods and the historical trends. Orange and Rockland Utilities estimates that the planned facility will meet projected growth for 30 years.

The estimated demand for the initial installation of the United Water intake plant is less than .15MVA and will be supplied by the Stony Point Substation. A second potential phase planned for 2020 will increase demand to approximately .2MVA. The facility will require a conversion from 4.16kV to 13.2kV to be completed at the expense of United Water.

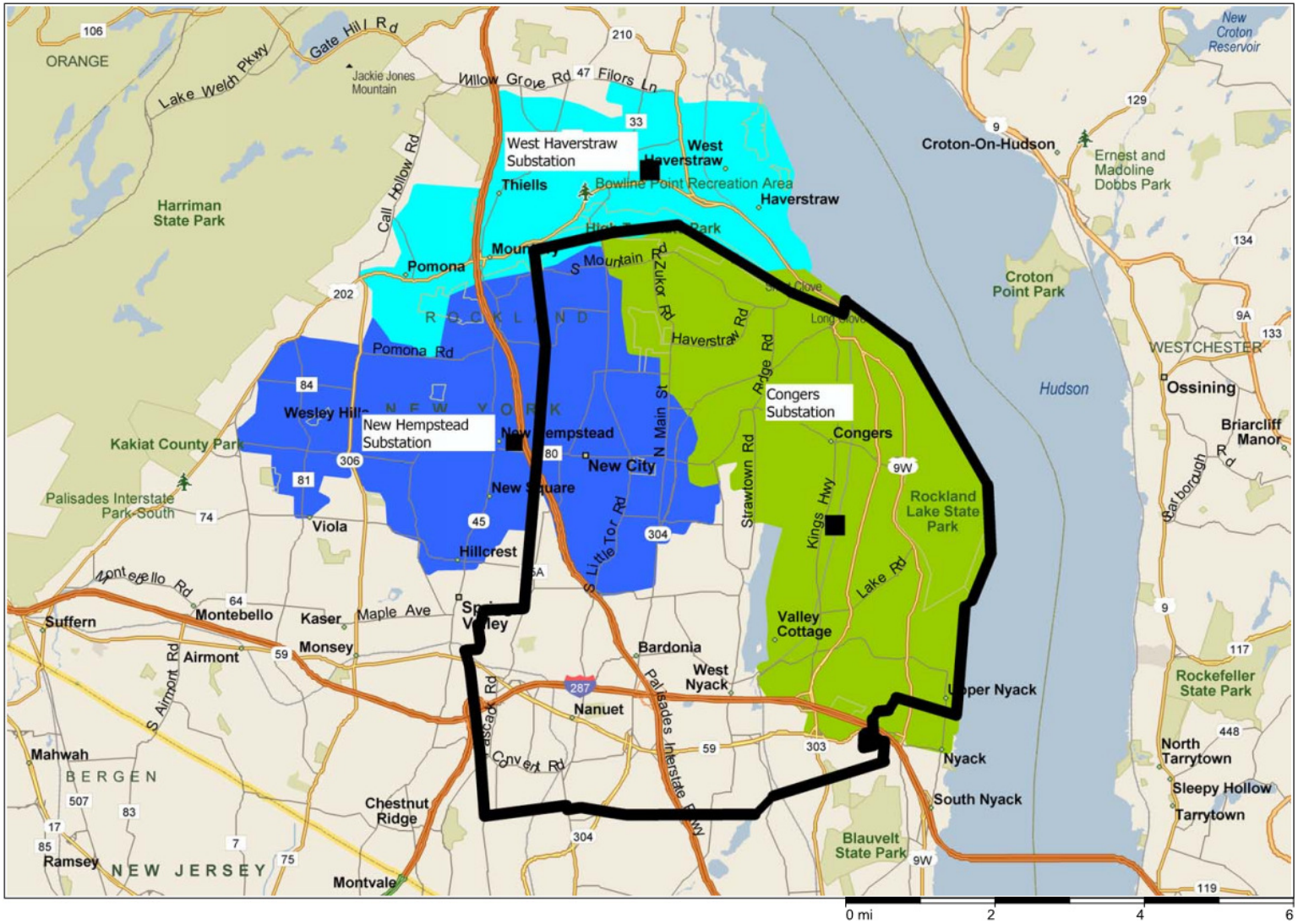
The estimated demand for the initial installation of the desalination plant is just under 1MVA, an electric load similar to a Wal-Mart Supercenter. A second potential phase planned for 2020 may increase demand to up to twice that amount. The desalination plant will be

supplied from the West Haverstraw Substation. The plant will require several minor alterations to their service such as a conductor (wire) upgrade along Carroll Avenue. The alterations will be completed at the expense of United Water.

PUBLIC COMMENT 23: I was specifically looking for a section of the foundation of the transformers, which lays out exactly transformers sitting on what, below that is what and then with the section of foundation of transformer. *(Mr. Adib, May 2, 2012, page 57, lines 19-24)*

RESPONSE: *The transformers would be supported on a monolithic reinforced concrete foundation. The secondary containment structure which is described in Section III.F page 77-78 "Oil Containment" of the DEIS (Section III.A.3 of the FEIS) essentially would be a bathtub constructed around the transformer and its foundation. This secondary containment area consists of a reinforced concrete wall constructed around the entire perimeter of the transformer. The containment wall would extend approximately 4.5 feet below grade plus a 16" high curb wall would extend above grade to prevent overland flow. There would be no concrete floor. The bottom of the containment area consists of a selectively permeable liner. The liner, which allows water to pass under normal conditions, solidifies when it comes into contact with the transformer oil; sealing the bottom of the containment pit, completing the bottom of the bathtub. Once the liner solidifies, it remains solidified, and no longer allows even water to pass. At this point the containment pit would require an environmental cleanup and complete replacement of the liner. The containment area created between the transformer foundation and the containment wall would be filled with crushed stone.*

Each transformer would be located at the center of a secondary containment pit that is sized to contain 110% of the oil in a transformer plus the rainfall produced by a 25-year storm event over the containment area. The engineering drawings included in Appendix A and Figures 5 and 6 included in Section III.A of the FEIS provides a typical plan view and cross section of the secondary containment area described above.



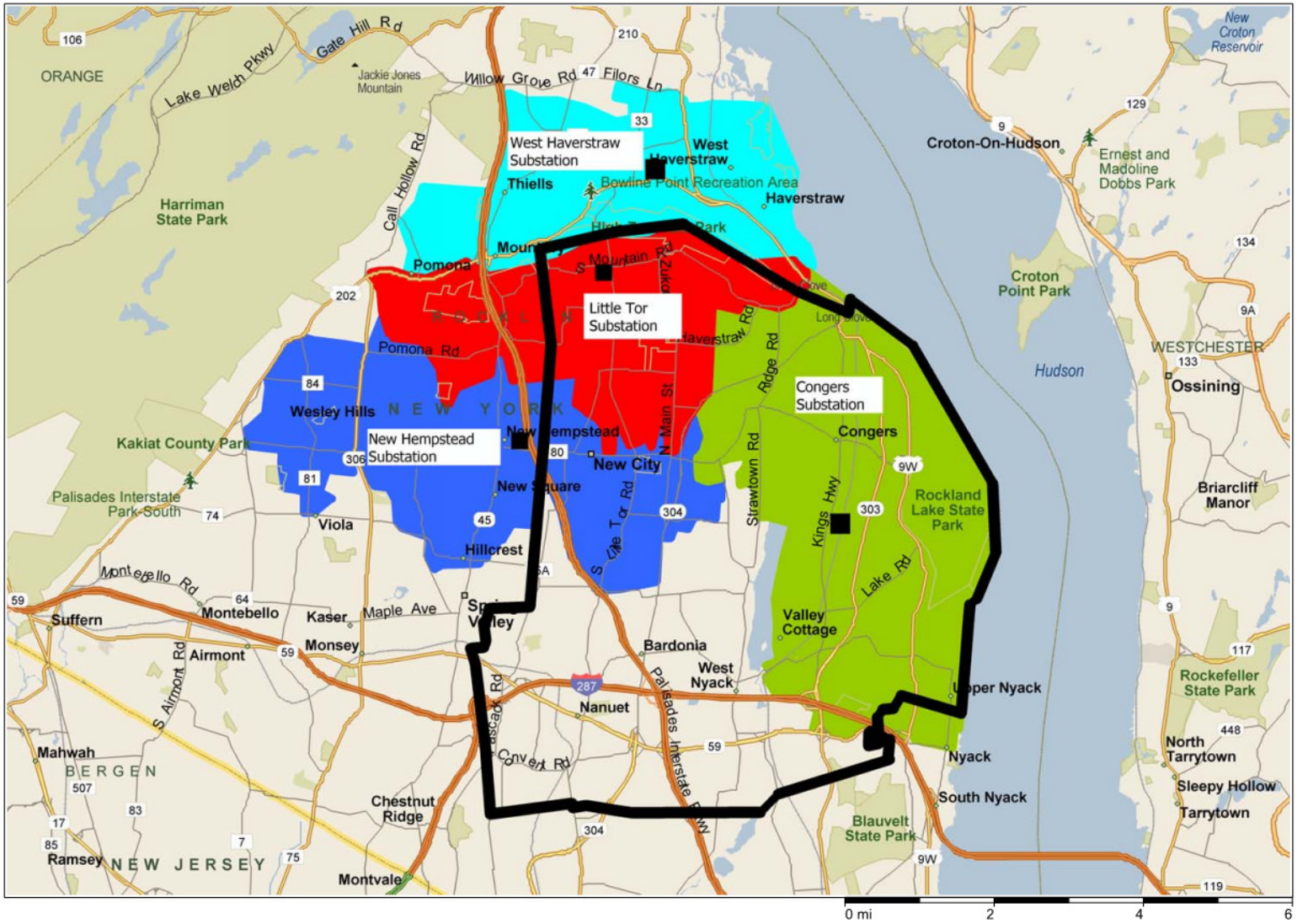
SCALE: NTS

FIGURE 7

Existing Service Areas
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York

Image Source: LANGAN

LANGAN White Plains New York



SCALE: NTS

FIGURE 8

Proposed Service Areas
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York

Image Source: LANGAN

LANGAN White Plains New York

INSERT SECTION DIVIDER

A. WATER RESOURCES

1. WELLS AND AQUIFERS

PUBLIC COMMENT 1: Information regarding the location of private wells within 500 feet of the project site available from the Town of Clarkstown Building Department and the Rockland County Department of Health will be provided. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

PUBLIC COMMENT 2: Information regarding the location of public wells within 500 feet of the project site available from United Water and the Rockland County Department of Health (RCDOH) will be provided. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

RESPONSE: *Figure 3 depicts the location of private wells within 500 feet of the site. As indicated in this figure, there are approximately five (5) private water wells within 500 feet of the site all of which are up-gradient of the site. The closest private well to the site is approximately 150 feet from the property line. All of the existing residential units located along Denver Drive and a majority of the residences located on North Little Tor Road and on South Mountain Road east of Little Tor Road are serviced by public water. The source of the information represented on Figure 3 was taken from information provided by Rockland County and modified based on site specific records which confirm that the onsite wells have been decommissioned.*

Based on information provided by Rockland County Health Department, there are no public wells within 500 feet of the site.

PUBLIC COMMENT 3: Information regarding the aquifers within the project site available from the RCDOH and the USGS report "Water Resources of Rockland County, New York, 2005-07, with Emphasis on the Newark Basin Bedrock Aquifer" will be provided. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

PUBLIC COMMENT 4: Information regarding the subsurface groundwater flow patterns within the project site available from the RCDOH and the USGS report "Water Resources of Rockland County, New York, 2005-07, with Emphasis on the Newark Basin Bedrock Aquifer" will be provided. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

RESPONSE: *Based on the information contained in the USGS report titled "Water resources of Rockland County, New York", the Little Tor site is located within the Newark Basin Bedrock Aquifer (refer to Figure 4). To insure that potential contaminants from this project do not result in any significant adverse environmental impacts, mitigation would be provided as part of the project design. The mitigating measures would include a stormwater management system designed to control and treat stormwater runoff from the developed portions of the site in accordance with State, County and Local regulations. In addition, a multi-tiered containment system would be provided to contain contaminants such as oil from reaching any significant environmental receptors either on or adjacent to the site. Both of these mitigating measures are described in detail in Section G of the DEIS and Section A.2 of the FEIS.*

The groundwater flow data taken from Rockland County Groundwater Study (refer to Figure 4, revised) indicates the groundwater flowing through this site is generally from north to south. This would mean that in the direction of groundwater flow, there are no public or private wells within 500 feet of the site to the south. Therefore there should be no impact on any wells in the vicinity of this site.

In addition, surface water follows the natural topography and generally flows from north to south toward the West Branch of the Hackensack River. Sections III-A2 and III-A3 of the FEIS provides a detailed description of the stormwater management system and oil containment system which has been designed to contain any oil spill onsite and prevent it from reaching groundwater. In addition Section III-A3 and Appendix C provide a detailed assessment of the potential risk of oil flowing offsite, reaching the groundwater and adversely impacting adjacent water courses or water wells. This study concludes that there is more than sufficient time (19.75 days before oil reaches the groundwater and more than 4.16 years before it reaches the West Branch Hackensack River) to capture and clean up an oil spill that is not contained in the oil containment system before it reaches any sensitive receptor.

PUBLIC COMMENT 5: Has O&R presented emergency response plans to Clarkstown as part of its plans to prevent this from ever happening? How will we prevent oil from getting into our drinking water, should there be a fire at any of the proposed substations? *(Mr. Baum, via email, December 13, 2009)*

RESPONSE: *Refer to Section III.A.3 for a detailed description of the multi-tiered containment system proposed as part of the project. Additionally, Figure 2 depicts the secondary containment design. There are three levels of containments and continuous monitoring is provided.*

PUBLIC COMMENT 6: The Rockland County Department of Health should be added to the listing of agencies in Table I-1, as approvals and permits are required for the decommissioning of wells on site. (Rockland County Department of Planning, letter dated May 8, 2012)

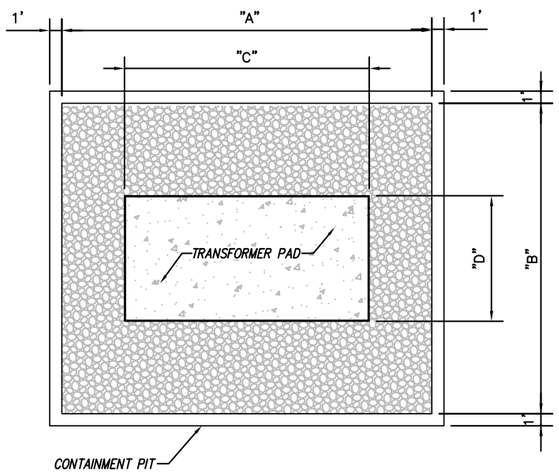
PUBLIC COMMENT 7: Table II-6 must include the Rockland County Department of Health as an agency that must review and approve the project, as permits must be obtained for the decommissioning of the onsite wells. (Rockland County Department of Planning, letter dated May 8, 2012)

PUBLIC COMMENT 8: It is not clear if the existing wells on site have been decommissioned or are to be decommissioned. The Existing Conditions and Demolition Plan indicate that they are existing wells to be decommissioned, while the (DEIS) text page III. F-67 indicates that Barmore Pump and Electric Co. was retained to obtain a permit from the Rockland County Department of Health to decommission the wells on the property and (DEIS) Figure III. F-1 indicate that they are "existing decommissioned wells." This must be clarified. If the wells are to be decommissioned, then the applicant must contact the

Rockland County Department of Health, as indicated in item #3 below. (Rockland County Department of Planning, letter dated May 8, 2012)

PUBLIC COMMENT 9: The Rockland County Department of Health must be contacted regarding the decommissioning of all existing wells on site. A formal notation on the approved plans must specify that the wells will be decommissioned in compliance with Article II of the Rockland County Sanitary Code. Furthermore, this work must be done in accordance with the terms of a well decommissioning permit that must be obtained from the Rockland County Department of Health. (Rockland County Department of Planning, letter dated May 8, 2012)

RESPONSE: The Rockland County Health Department issued Permit WDC 07-01 on January 17, 2007 to Barmore Pump & Electric Co. Inc. (RCDOH Reg # RWC-0006, NYSDEC Reg # 10517) for the decommissioning of the five (5) onsite wells. The well decommissioning was inspected by the Rockland County Department of Health on February 22, 2007 and "no problems observed" was noted on the Inspection Form. Barmore submitted a letter containing the details of the wells and their decommissioning to the Rockland County Department of Health on March 21, 2007. The permit, Inspection Form and letter are included as Attachment 4.

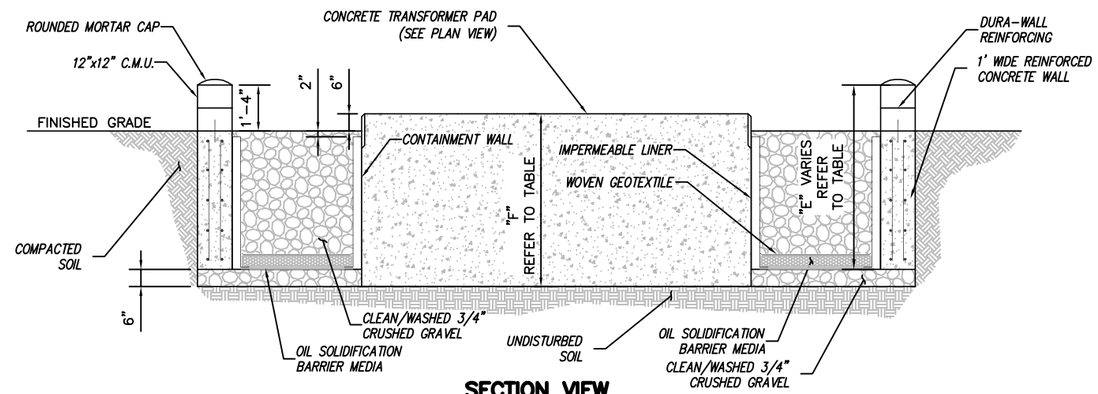


PLAN VIEW

TRANSFOMER DIMENSIONS AND VOLUMES

		TRANSFORMERS	
		1 & 2	3
DIMENSIONS	A	26.75'	23.50'
	B	21.42'	22.75'
	C	17.00'	13.00'
	D	8.00'	6.00'
	E	5.58'	5.33'
	F	5.25'	5.00'
VOLUMES (GAL.)	110% Oil Containment	8,422	4,851
	Rain Water 25–Year Storm (6.4" Rainfall)	2,285	2,133
	Volume Required	10,707	6,984
	Volume Provided	10,758	10,501

NOTES:
1. STONE FILLED SECTION OF CONTAINED AREA CONSIDERED TO HAD 40% OF VOLUME VOID SPACE



SECTION VIEW

SECONDARY CONTAINMENT AREA – CONTAINMENT PIT AND TRANSFORMER PAD DETAIL

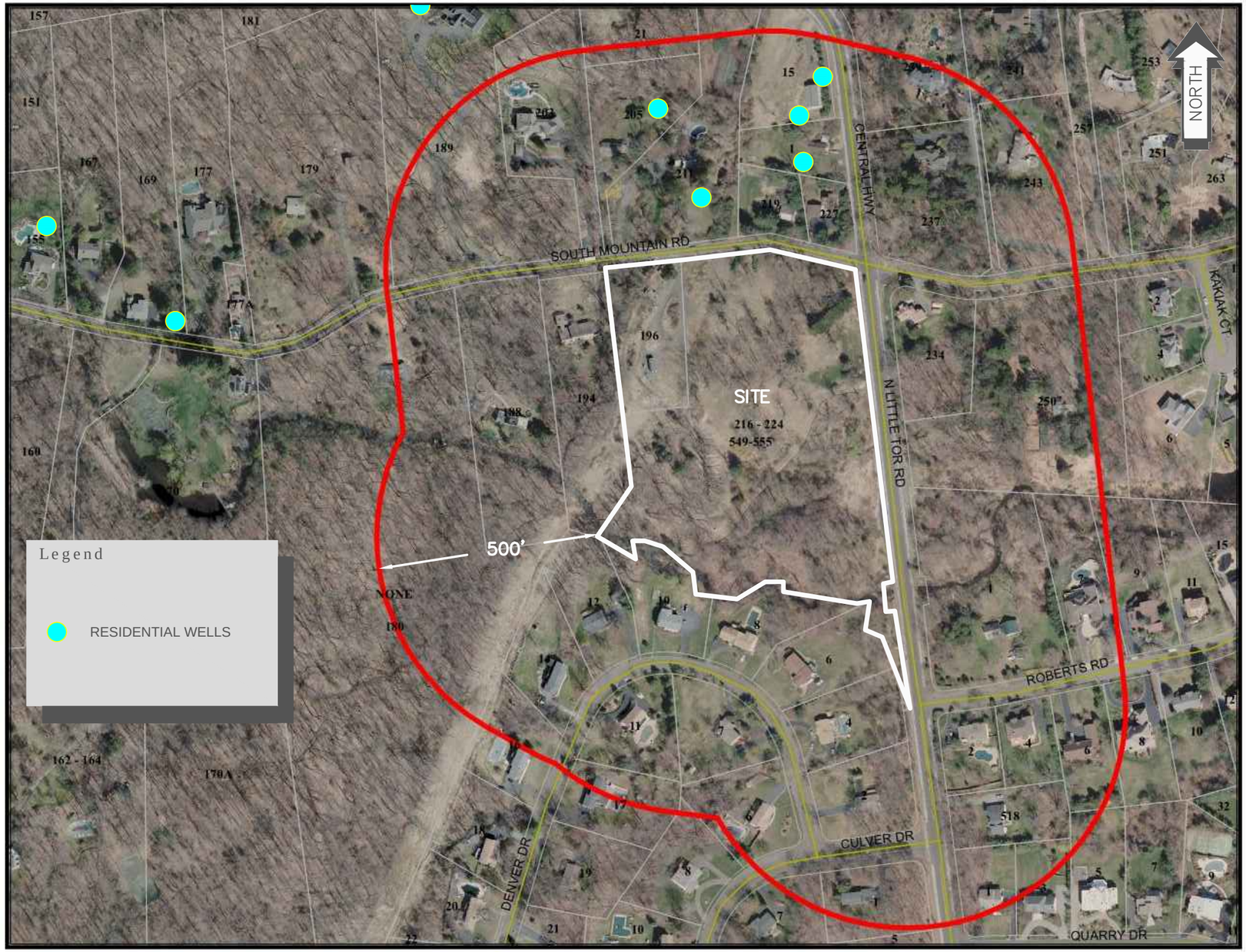
NTS

SCALE: NTS

FIGURE 2

Secondary Containment Area
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

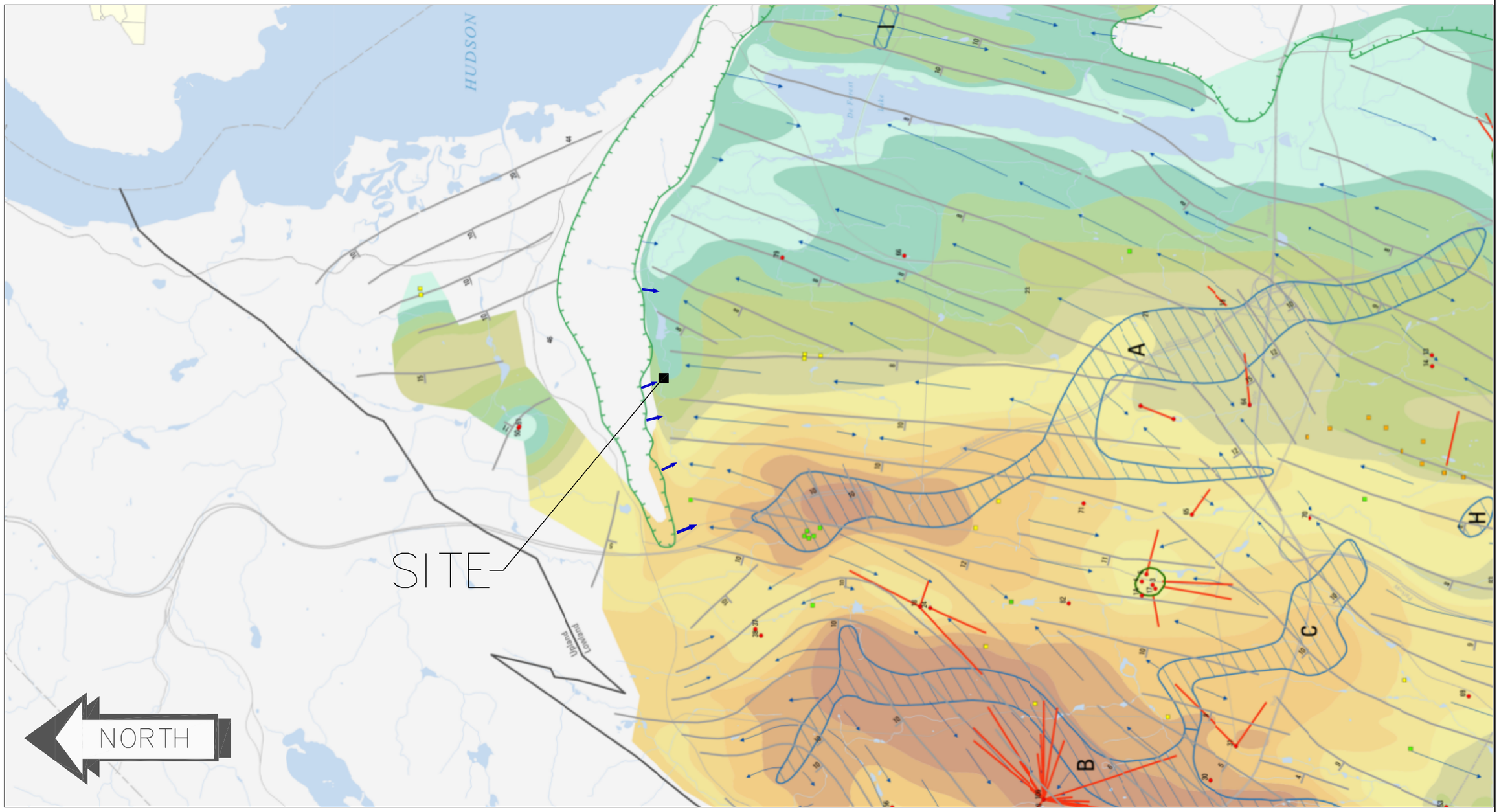
Image Source: LANGAN



NOTE: Information taken from data provided by Rockland County Heatlh Department

FIGURE 3
Public/Private Well Map
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN



LEGEND
→ FLOW ARROWS ADDED FOR CLARIFICATION PURPOSES

Image Source: LANGAN

FIGURE 4
Generalized Groundwater Flow Directions
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York

LANGAN White Plains New York

WDC-0701

ROCKLAND COUNTY DEPARTMENT OF HEALTH

INSPECTION FORM

Case #: _____ Facility #: _____ Date: 2/22/07

Name: New City Address: Corner of Little Tor Rd + S. Mountain Rd

City: _____ State: NY Zip: _____

Arrival: 9:30 Departure: 9:55 Inspector #: _____

Owner: _____ Address: _____

City: _____ State: NY Zip: _____ Phone: ( ) -

c/o: _____ Phone: ( ) -

11. Comm. System
12. Non-Comm. System
13. Bottled & Bulk Wat
14. Ice
21. X-Ray Facilities
22. Other Rad. Prog.
23. Env. Rad. Prog.
31. State Local Inst.
32. High Risk Food
33. Med. Risk Food
34. Low Risk Food
35. Children's Camps
36. Hotels and Motels
37. Campsites
38. Swimming Pools
39. Bathing Beaches
40. Mobile Home Park
41. Migrant Labor Camp
42. Indiv. Sewage
43. Indiv. Water
44. Realty Subdiv.
45. Residen. Housing
46. Nuisances
47. Rodent Control
48. Lead Poisoning
50. Day Care Centers
51. Mass Gatherings
52. Temp. Food Service
53. Vending Machines
54. Chemical Emerg.
61. Haz. Waste Disp.
62. Indoor Air
63. Occupat./Health
64. Env. Health Asses.
65. Rabies Invest.
66. DEC Programs
67. Smoking Restrict.
68. Noise
69. Other

Decommission work started in the first well. Three feet of casing was cut. reached bed rock. A ditch had been excavated to contain water. grouting procedure started. No problem observed.

PERSON IN CHARGE:
INSPECTOR: Ebi Elachi

ORIGIN [4]
1. Initial Insp.
2. Routine Insp.
3. Service Req.
4. Complaint
5. Re-inspection
6. Miscellaneous
7. Injury/Illness

RESULTS [3]
1. Not at Home
2. No Cause
3. Violation
4. No Change
5. Vio-Remove

TOWNS [H]
1. Clarkstown
2. Haverstraw
3. Orangetown
4. Ramapo
5. Stony Point
6. Other (X)

TRAINING
1. Training Giver
2. Training Recv

SAMPLING
1. Bacterial
2. Chemical
3. Chlorine Res.
4. Food

CASE CLOSED
Yes No

TYPE: [ ]

NEXT INSPECTION: _____

inspform

ROCKLAND COUNTY DEPARTMENT OF HEALTH
PERMIT TO DECOMMISSION A WELL

Phone: (845) 364-2608 FAX: (845) 364-2025

RCDOH Permit #	Actual Decommissioning Date	Actual Decommissioning Time	RCDOH Notification Confirmation #
WDC 07-01			

Location of Well

Section/Block/Lot	Street Address	Village	Town
34.05-1-6	Southwest corner intersection of Little Tor Rd & S. Mountain Rd	New City	Clarkstown

Subdivision: _____ Lot Number: _____

Decommissioning Contractor

Business Name: Barmore Pump & Electric Co. Inc. Telephone Number: (845)268-2751

RCDOH Registration #	Expiration Date	NYSDEC Registration #	Expiration Date
RWC-0006	8/3/2007	10517	3/31/07

Property Owner

Name: Orange & Rockland Utilites
Mailing Address: 390 W. Route 59, Spring Valley
Telephone Number: _____
Authorized Representative / Title if Corporate Owner: William Helmer, Agent
FAX Number: _____

Conditions of Permit

General Conditions (apply to all parties named on the application)

- Permit is automatically rendered null and void if the application is not true and accurate.
- All work shall be conducted in compliance with applicable federal, state and local laws, rules and regulations, including Article II, Section 2.8.4 of Rockland County Sanitary Code.
- There shall be no deviation from the plans submitted on and with the application without prior approval by the Commissioner (or his/her designee).

Decommissioning Contractor

- Minimum two (2) business days notice required prior to decommissioning well. Call (845) 364-2608; give date and time of decommissioning ; record the notification confirmation number provided by RCDOH personnel on the space provided on this permit. No subsequent deviation in date and time allowed without prior notification.
- Submit a signed RCDOH Decommissioning Report, completed in its entirety, to RCDOH within 60 days of decommissioning the well.

Other Conditions: _____

Issuance Date	Expiration Date	Signature of Permit Issuing Official
1/17/2007	7/17/2007	

TRANSMISSION VERIFICATION REPORT

TIME : 01/17/2007 10:31
NAME : ENVHEALTH
FAX : 8453642025
TEL : 8453642025
SER.# : BROG5J303683

DATE,TIME	01/17 10:30
FAX NO./NAME	92685096
DURATION	00:00:39
PAGE(S)	02
RESULT	OK
MODE	STANDARD ECM

FAX TRANSMITTAL SHEET

County of Rockland
ROCKLAND COUNTY DEPARTMENT OF HEALTH
Robert L. Yeager Health Center
Sanatorium Road - Building D
Pomona, New York 10970

Date: 1/17/07

TO: Barnone

ORGANIZATION:

FAX #: # of Pages to follow: 1

RESPONSE REQUIRED: ☐ **YES** ☐ **NO**

FROM: Ebi Elaahi

DIVISION:

TELEPHONE #: **Direct Line – (845) 364 -**

DOCUMENT DESCRIPTION: Permit to decommission well in New City

ROCKLAND COUNTY DEPARTMENT OF HEALTH
APPLICATION FOR PERMIT TO DECOMMISSION A WELL
Phone: (845) 364-2608 Fax: (845) 364-2025

Date: Jan. 8 '07 RCDOH Application #: WDC-07-01

Site Information

Orange + rockland utilities — Facility / Site / Subdivision Name — 34.05-1-6 Section / Block / Lot

South West Corner at The Intersection of Little Tor Rd and South Mountain Road — Street Address — New City — Village — Clarkstown — Town

Any open NYSDEC spills on site? ✓ No Yes Spill Number(s): ____

Is site under NYSDEC management? ✓ No Yes Name of Program / Site Identification #: ____

Is site under USEPA management? ✓ No Yes Name of Program / Site Identification #: ____

To be completed by Well Contractor

Barnore Pump & Electric Co — Business Name — 709 Route 9W, Valley Cottage — Mailing Address — (845) 268-2751 Telephone Number — (845) 268-5096 FAX Number

006 — RCDOH Well Contractor Registration # — 03/07 Expiration Date — 10517 NYSDEC Registration # — 03/07 Expiration Date

I do hereby certify that to the best of my knowledge and belief, the information being submitted on and with this application is complete, accurate and true. I understand that completion of this application does not constitute an approved permit to construct a well. I also certify that no well construction activities will be initiated prior to receipt of the approved permit and that all work will be conducted in compliance with the terms specified on said permit or as contained in Article II of the Rockland County Sanitary Code.

William A. Dauksza, CPI — Authorized Representative (Print Name / Title) — WAD/CPI — Signature — 1/8/07 Date

To be completed by Property Owner Private Ownership Business or Corporate Ownership

Orange + Rockland Utilities — Owner Name(s) — 390 West Rte 59 - Spring Valley — Mailing Address — (___) ____ Telephone Number — (___) ____ FAX Number

Information about Well to be Decommissioned

Type of Well: Water Well

Total Depth of Well (ft) ____ Total length of Casing (ft) ____ Type of Casing ____ Diameter of Casing (in) 6"

Is Casing Grouted? ✓ No Yes Type of Grout: ____ Condition of Grout: ____

Depth to Bedrock (ft, if well extends into bedrock) ____ Bedrock Type ____

Overburden Material: ____

Screened Interval (ft below grade, if applicable): ____ Screen Slot/Perforation Size: ____ Filter Pack: ____

Potential Contaminants of Concern

Is there currently, or will there be a water supply well serving this facility / property ? No Yes

# of People Served: 0 # of Buildings Connected: ____ Public water available? No Yes Name of Supply: ____

Is there currently a connection to a public water supply? (No) Yes Public Water Account Number: ____

This property is served by: Public Sewers Septic System Proposed Date of Decommissioning: ____

I do hereby certify that to the best of my knowledge and belief, the information being submitted on and with this application is complete, accurate and true. I understand that completion of this application does not constitute an approved permit to construct a well. I also certify that no well construction activities will be initiated prior to receipt of the approved permit and that all work will be conducted in compliance with the terms specified on said permit or as contained in Article II of the Rockland County Sanitary Code. I further certify that the well will be sited and installed, and the water produced therefrom tested and used in compliance with all applicable laws, rules and regulations.

William Helmer, Agent — Authorized Representative if Corporate Owner (Print Name / Title) — WILLIAM HELMER, AGENT — Signature (Owner(s) or Authorized Representative) — 1/8/07 Date

December 26, 2006

Dan M. Miller, PHD
Bureau Head, Water Supply
Environmental Health, RC Department of Health
50 Sanitorium Road
Pomona, New York 10970

Re: Well Abandonment Procedure, So.West side of South Mountain Road, and North LittleTor Road, New City, NY
Property Owner; Orange & Rockland Utilities

Dear Dan,

Barmore Pump & Electric Co.,Inc. will locate each of the five wells and label. Remove pump or pipe as it applies. We will video each well, measure length of casing, depth of well and water level. Excavate at each well, cut casing down 5 ft. below grade, also prepare retention pit for each at this time, for discharge water to be disposed of on site. As per conversation with you, there will be no water test.

Insert tremie pipe to well bottom, and pump EZ seal (which contains approximately 25 gallons of water, to one Fifty pound bag of EZ seal) from well bottom, until a consistant flow of grout, appears at top of casing. Let settle for at least 24 hours, NO more than 72 hours, to top off as needed and pour slab.

If you have any questions, please feel free to contact me at our office. We await your go ahead.

Sincerely,

William A. Dauksza, CPI
RWC-006

[redacted]

Jan. 04 2007 03:28PM

YOUR LOGO : BARMORE PUMP & ELECTRIC CO. INC
YOUR FAX NO. : 8452685096

NO.	OTHER FACSIMILE	START TIME	USAGE TIME	MODE	PAGES	RESULT
01	<FAX # NOT AVAIL.>	Jan. 02 11:32AM	00'37	RCV	01	OK
02	845 429 7128	Jan. 02 11:33AM	00'42	RCV	01	OK
03	<FAX # NOT AVAIL.>	Jan. 02 01:24PM	01'08	RCV	01	OK
04	Via Fax	Jan. 02 02:46PM	00'36	RCV	01	OK
05	358-6612	Jan. 03 05:03AM	01'00	RCV	01	OK
06	<FAX # NOT AVAIL.>	Jan. 03 11:08AM	00'46	RCV	00	OTHER FAX NOT RESPONDING
07	<FAX # NOT AVAIL.>	Jan. 03 11:13AM	00'46	RCV	00	OTHER FAX NOT RESPONDING
08	<FAX # NOT AVAIL.>	Jan. 03 11:20AM	00'35	RCV	01	OK
09	Fax	Jan. 03 11:31AM	00'40	RCV	01	OK
10	Via Fax	Jan. 03 11:35AM	00'34	RCV	01	OK
11	<FAX # NOT AVAIL.>	Jan. 03 11:43AM	00'46	RCV	01	OK
12	<FAX # NOT AVAIL.>	Jan. 03 11:51AM	00'37	RCV	01	OK
13	US Vend	Jan. 03 01:32PM	00'36	RCV	01	OK
14	<FAX # NOT AVAIL.>	Jan. 03 06:54PM	00'46	RCV	00	OTHER FAX NOT RESPONDING
15	Natl Training Center	Jan. 03 09:24PM	00'34	RCV	01	OK
16	358-6612	Jan. 04 05:51AM	01'13	RCV	01	OK
17	973 584 4392	Jan. 04 10:47AM	03'49	RCV	08	OK
18	13364342823	Jan. 04 11:07AM	00'39	SND	01	OK
19	FAX	Jan. 04 11:21AM	00'33	RCV	01	OK
20	<FAX # NOT AVAIL.>	Jan. 04 11:25AM	00'37	RCV	01	OK
21	18669088472	Jan. 04 11:59AM	00'13	SND	00	PRESSED THE STOP KEY
22	18669088472	Jan. 04 12:00PM	01'32	SND	04	OK
23	866 908 8472	Jan. 04 12:33PM	01'05	RCV	01	OK
24	Business Loans	Jan. 04 12:58PM	00'28	RCV	01	OK
25	4297128	Jan. 04 01:00PM	01'47	SND	03	OK
26	thebluebook.com	Jan. 04 01:07PM	00'32	RCV	01	OK
27	Zero G Fitness	Jan. 04 02:20PM	01'13	RCV	02	OK
28	6347002	Jan. 04 03:18PM	00'13	SND	00	PRESSED THE STOP KEY
29	6347002	Jan. 04 03:19PM	00'49	SND	01	OK
30	3643634	Jan. 04 03:26PM	00'50	SND	02	OK

FOR FAX ADVANTAGE ASSISTANCE, PLEASE CALL 1-800-HELP-FAX (435-7329).

BARMORE PUMP & ELECTRIC CO., INC.
COMPLETE WELL & PUMP INSTALLATIONS

709 ROUTE 9 WEST
VALLEY COTTAGE, NEW YORK 10989
OFFICE (845) 268-2751
FAX (845) 268-5096

January 8, 2007

Ebbie Elaahi
Rockland County Department of Health
Well Drilling Program
50 Sanatorium Road - Building D
Pomona, New York 10970

Re: Application to decommission Wells at No.Little Tor Road & So. Mountain Rd., New City; Section / Block / Lot 34.05-1-36

Dear Ebbie,

We do not know the depth of the well or the casing depth on any of these five wells of this property. We will give to the RC Dept of Health, information on each well as we determine it, including video taping of inside casing, at the time of decommissioning.

Sincerely,

William D. Dauksza

William D. Dauksza
RCHD Well Contractor Reg# RWC-006
NYS DEC# NYRD 10517

WDD/rr

BARMORE PUMP AND ELECTRIC COMPANY
709 ROUTE 9W
VALLEY COTTAGE, NY 10989
845-268-2751 / 845-268-3313
FAX # 845-268-5096

DATE: March 22 '07

TO: Ebbie Elaahi

COMPANY: RCDH

FROM: Bill Dawkszo

FAX #: 364-3634

SUBJECT: Decomission Report WDC-07-1

NUMBER OF PAGES INCLUDING THIS ONE: 3

PLEASE CONTACT US IF YOU HAVE ANY DIFFICULTY RECEIVING THIS FAX,

for: Orange & Rockland site,
No. Little Nor Rd., & So. Mt Rd.
Newburgh

Permit # WDC 07-1

BARMORE PUMP & ELECTRIC CO., INC.
COMPLETE WELL & PUMP INSTALLATIONS

709 ROUTE 9 WEST
VALLEY COTTAGE, NEW YORK 10989
OFFICE (914) 268-2751
FAX (914) 268-5096

March 21, 2007

Rockland County Department of Health
Dr. R. Yeager Health Center
Building D, Sanatorium Road
Pomona, New York 10970
Attn: Ebbie Elaahi

Re: Orange & Rockland Site, No. Little Tor Rd., & So. Mountain Rd., New City, NY
Decommissioning of Five Wells at this Location. Permit# WDC 07-1

Dear Ebbie,

Well # 1 W
Well depth: 123 ft. Static Water level: 8 ft. 6" Well Casing: 19 ft.
Pull submersible pump and pipe. Video hole to bottom. No other materials present. Insert tremie pipe to bottom well, mix 24 Gallons water to one (1) 50# bag of EZ seal. Pump eight (8) bags down hole to fill. No settling took place. Cut casing down 6 ft. below grade. Cap with concrete.

Well # 2 W
Well depth: 136 ft. Static Water level: 11 ft. 6" Well Casing: 17 ft.
Remove jet pump and pipe from well. Video hole to bottom. No other materials were present. Mix 24 Gallons water to one (1) 50# bag of EZ Seal. Cut casing down approximately 3.5 ft., to a granite like rock. Insert tremie pipe to bottom and pump nine (9) bags of EZ seal to fill. No settling took place. Cap with concrete.

Well # 3 W
Well depth: 114 ft. Static Water level: 13 ft. 6" Well Casing: 12 ft.
Remove submersible pump & pipe. Video hole to bottom. No other materials were present. Mix 24 Gallons water to one (1) 50# bag of EZ Seal. Cut 6" casing down to about 3.5 ft. to a granite like rock. Insert tremie pipe to bottom and pump seven (7) bags of EZ seal to fill. No settling took place. Cap with concrete.

Well # 4 W
Well depth: 100 ft. Static Water level: 23 ft. 6" Well Casing: 25 ft.

BARMORE PUMP & ELECTRIC CO., INC.
COMPLETE WELL & PUMP INSTALLATIONS

709 ROUTE 9 WEST
VALLEY COTTAGE, NEW YORK 10989
OFFICE (914) 268-2751
FAX (914) 268-5096

Pull submersible pump and pipe. Video hole to bottom. No other materials present. Insert tremie pipe to bottom well, mix 24 Gallons water to one (1) 50# bag of EZ seal. Pump seven (7) bags down hole to fill. No settling took place. Cut casing down to approximately 3.5 ft. to a Red Rock Slab. Cap with concrete.

Well # 5 W
Well depth: 96 ft. Static Water level: 1 – 2 ft. 6" Well Casing: 18 ft.
Well was buried 3 ft. below grade. Static was about 1 – 2 ft. below top of casing.
Pull submersible pump and pipe. Video hole to bottom. No other materials present.
Insert tremie pipe to bottom well, mix 24 Gallons water to one (1) 50# bag of EZ Seal. Pump seven (7) bags down hole to fill. Cut casing down to 6 ft. below grade.
Grout was solid. Good set up. No water flowing through. Cap with concrete.

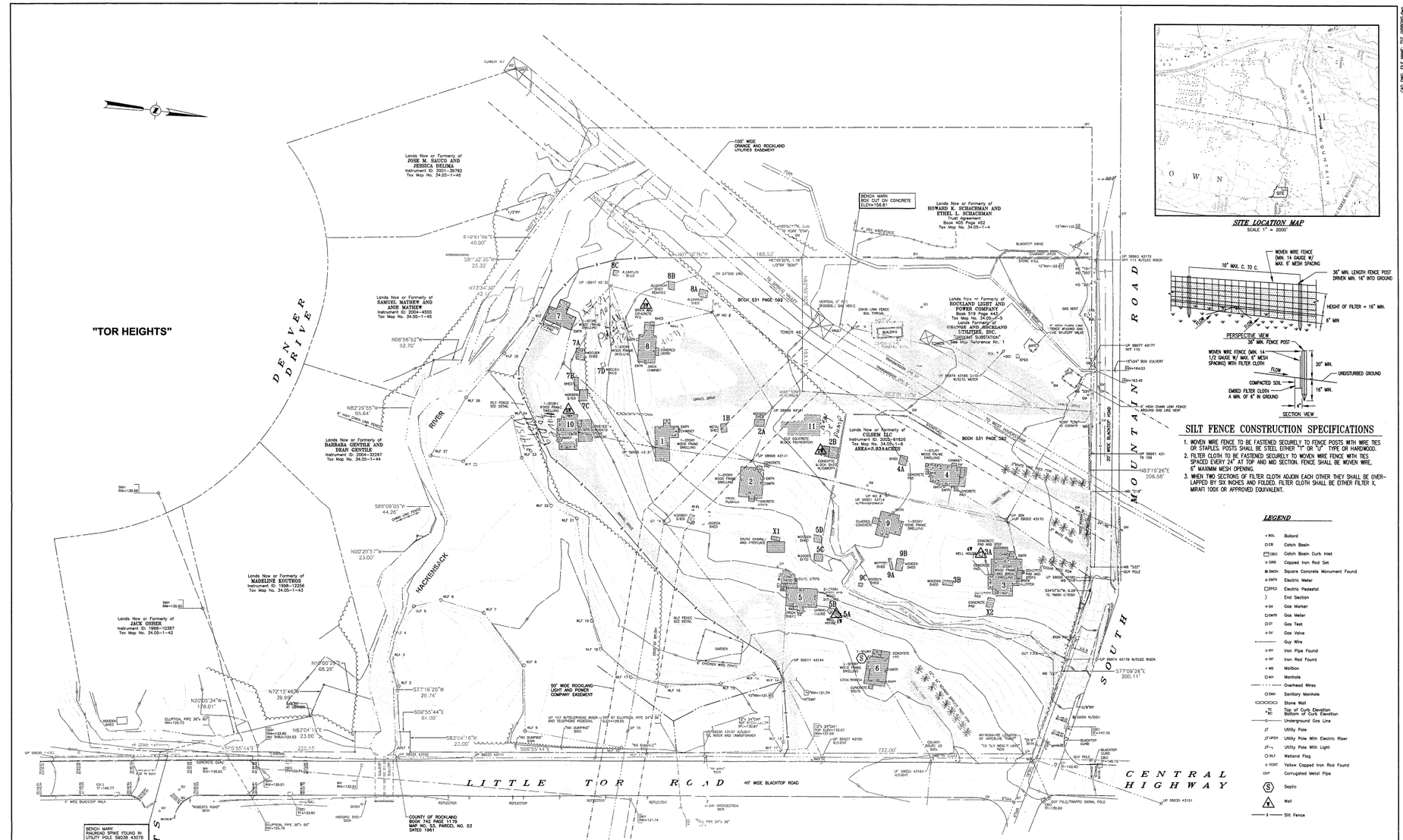
Yours truly,

William A. Dauksza, CPI
RCHD Well Contractor Reg# RWC-006
NYS DEC# NYRD 10517
Certified Pump Installer; National Ground Water Assoc. Member# 199874

WAD/rr

NO XREFS

PROJECT NUMBER: 04.9854



SITE LOCATION MAP

SCALE 1" = 3000'

SILT FENCE CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X OR APPROVED EQUIVALENT.

LEGEND

- BOL Bollard
- CB Catch Basin
- CBCI Catch Basin Curb Inlet
- CIRS Capped Iron Rod Set
- SMCN Square Concrete Monument Found
- ELMTR Electric Meter
- ELPED Electric Pedestal
- End Section
- GV Gas Marker
- GMTR Gas Meter
- GT Gas Test
- GV Gas Valve
- Guy Wire
- IPF Iron Pipe Found
- IRF Iron Rod Found
- MB Mailbox
- MH Manhole
- Overhead Wires
- SMH Sanitary Manhole
- Stone Wall
- TC Top of Curb Elevation
- BC Bottom of Curb Elevation
- Underground Gas Line
- Utility Pole
- UPER Utility Pole With Electric Riser
- Utility Pole With Light
- WLF Wetland Flag
- YCRF Yellow Capped Iron Rod Found
- CMP Corrugated Metal Pipe
- S Septic
- A Well
- SF Silt Fence

MAP NOTES

1. Boundary and topographic information shown hereon was compiled from an actual field survey conducted during the month of February 2005.
2. North orientation and bearings are based on the New York State Plane Coordinate System, East Zone, NAD 1983 as established by GPS observations performed on the site in the month of January 2005. The distances shown are horizontal ground distances. Grid lengths may be obtained by a multiplication of 0.99991831 (Combined factor). The average convergence angle from Grid to True North is 0°19'29.60".
3. Vertical Datum shown hereon is NAVD 88 as established by GPS observations performed on the site in the month of January 2005.
4. This survey was prepared without the benefit of an up to date abstract of title or title report and is therefore subject to any easements, covenants, restrictions or any statement of fact that such documents may disclose.
5. Underground facilities, structures, and utilities have been plotted from data obtained from previous maps and record drawings. Surface features such as catch basin rims, manhole covers, water valves, gas valves, etc. are the result of field survey unless noted otherwise. There may be other underground utilities, the existences of which are not known to the undersigned. Size and location of all underground utilities and structures must be verified by the appropriate authorities. The Underground Facilities Protective Organization must be notified prior to conducting test borings, excavation and construction.

MAP REFERENCES

1. "Boundary and Topographic Survey, Gibbons Substation, Prepared for Orange and Rockland Utilities, Inc." prepared by C.T. Male Associates, P.C. dated January 17, 2005. Dwg. No. 05-149.
2. "Rockland Light and Power Company–Nyack NY, Gibbons Sub–Sta Lot, Additional Land Acquired From Bernard Gibbons Town of Clarkstown, NY, Deed 727 Nov. 3, 1950 Recorded 1319 P444" dated December 18, 1951, Map No. 727.
3. "Rockland Light and Power Company–Nyack NY, Gibbons Substation, Location Plan of Gibbons Substation B 16" prepared by J. Kelly, dated June 6, 1952, drawing no. N-3-4044-5.
4. "Boundary Survey, Area: 8.921 Acres, Tax Lot: 34.05-1-6, Lawrence Kigler" prepared by Atzl, Scotese & Zigler, P.C., Surveyors–Planners dated May 3, 2002.
5. "Gilsem Property, Water Main Extension Area: 8.921 Acres, Tax Lot: 34.05-1-6" prepared by Atzl, Scotese & Zigler, P.C., Surveyors–Planners dated February 7, 2005.
6. "Subdivision Plat For Heights, Town of Clarkstown, Rockland County, New York" prepared by Henry Horowitz, P.E., dated November 6, 1970.
7. "South Mountain Road, Romapo & Clarkstown" surveyed by H. Brown & C.F. Doherty, drawing no. M232 & M233.

REV	REVISION	DRW	DES	CHKD	DATE

ORANGE AND ROCKLAND UTILITIES, INC.
PEARL RIVER NEW YORK

BOUNDARY AND TOPOGRAPHIC SURVEY

LANDS NOW OR FORMERLY OF GILSEM LLC
PREPARED FOR
ORANGE AND ROCKLAND UTILITIES, INC.
TOWN OF CLARKSTOWN
ROCKLAND COUNTY, NEW YORK

ENGINEERING REVIEW		
DEPT.	SIGNATURE	DATE
CIVIL	M Hernandez	12/14/06
METERING		
RELAY		
R.O.W.		
R.E.		

APPROVAL: DATE 12/14/06

- ☐ INFORMATION
- ☐ COMMENTS
- ☒ BID
- ☐ CONSTRUCTION

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

© 2006 C.T. MALE ASSOCIATES P.C.

APPROVED:
DRAFTED: GLB
CHECKED:
PROJ. NO: 04.9854
DATE: MAR. 20, 2006

DRAWN	DES	CHK	SCALE	REF NO.	REFERENCE MAPS	SECT	SHEET	REV
GLB		12/14/06	1" = 40'		N F 3708		1 OF 1	0

C.T. MALE ASSOCIATES, P.C.
50 CENTURY HILL DRIVE, P.O. BOX 727, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299
ARCHITECTURE & BUILDING SYSTEMS ENGINEERING * CIVIL ENGINEERING
ENVIRONMENTAL SERVICES * SURVEY & LAND INFORMATION SERVICES

601-715

DWG. NO: 06-283

CAD DWG. FILE NAME: TOR_GIBBONS.dwg

2. STORMWATER MANAGEMENT

PUBLIC COMMENT 1: Threat to the West Branch Stream:

The substation would be partly sited on the riparian strip alongside the West Branch stream, a sub-tributary of the Hackensack River, just upstream of Lake Lucille.

The equipment to be located on the site includes a bank of distribution transformers. Typically, these transformers are oil-filled. The oil provides electrical insulation and it serves as a coolant. *(Mr. Granirer, memo dated December 2, 2008)*

RESPONSE: *Comment noted, however the substation would not be located in the riparian strip of the West Branch stream. In addition, the proposed substation would be located outside the flood plain and floodway associated with this branch and is also located outside the wetland and wetland buffer, with the exception of a small portion of the access driveway.*

Section III.A.3 of the FEIS includes a detailed explanation of the mitigation measures proposed to ensure that a potential discharge of oil from a transformer would be controlled so as to not adversely impact the referenced stream.

PUBLIC COMMENT 2: The plan shows several different elevations between 134 and 140 for the 100-year flood limit. I am using EL 140 for purposes of this review. *(Mr. Longhitano, memo dated July 23, 2012)*

RESPONSE: *The 100-year flood elevation as defined on the Federal Emergency Management Agency (FEMA) flood insurance rate maps (FIRM) ranges from elevation 140 to elevation 132 as indicated on the FIRM included in the Appendices of the DEIS. The updated 100-year floodplain elevation indicated on the March 3, 2014 FIRM (refer to Figure 4A of the FEIS), and represented on the revised Engineering Drawings varies from elevation 140 along the westerly portion of the site to elevation 132 near the access drive along Little Tor Road.*

PUBLIC COMMENT 3: The only access to the site is from Little Tor Road, south of South Mountain Road. South of South Mountain Road, all of Little Tor Road and about the first 180 feet of the site access road are within the 100-year flood line (EL 140). In case of a major fire during flooding, the fire Department vehicles may not have access to the substation. Is there any way that an access road can be brought in via South Mountain Road where the site terrain is all above the 100-year flood elevation. *(Mr. Longhitano, memo dated July 23, 2012)*

RESPONSE: *The original location proposed for the primary access into the site was located further north on Little Tor road closer to South Mountain Road. This location was generally outside of the 100-year floodplain. However, based on concerns from the Rockland County Highway Department relative to the proximity of the proposed driveway to the intersection of Little Tor Road and South Mountain Road, the driveway was shifted south. At this location only a small portion of the primary access drive is located in the floodplain. However, the elevation of the driveway is*

above the updated (2014) 100- year flood elevation to ensure the driveway to the substation is accessible even in a 100-year storm event. The revised plans show a portion of the driveway profile in the area of the floodplain and the relationship of the floodplain to the finished grade of the driveway. The lowest elevation of the driveway is approximately El- 134 which is 2 feet above the updated 100-year flood elevation of 132 in the area of the proposed driveway.

To provide a driveway location acceptable to the Rockland County Highway Department and raise the driveway to be above the 100-year flood elevation it is necessary to fill a small portion of the 100-year flood plain. The revised plan includes approximately 78 cubic yards of fill in the flood plain affecting approximately 227 square feet of floodplain. The revised plan also includes compensation for this impact to the floodplain in the amount of 234 cubic feet.

SCALE: NTS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0092G

FIRM

FLOOD INSURANCE RATE MAP

for ROCKLAND COUNTY, NEW YORK
(ALL JURISDICTIONS)

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER
CLARKSTOWN, TOWN OF	360679
HAVERSTRAW, TOWN OF	360681
RAMAPO, TOWN OF	365340

PANEL 92 OF 207
MAP SUFFIX: G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
36087C0092G

EFFECTIVE DATE
MARCH 3, 2014

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

FIGURE 4a

FLOOD INSURANCE RATE MAP
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

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3. SPILL CONTAINMENT SYSTEM

PUBLIC COMMENT 1: The information about the secondary transformer oil containment system will be expanded to include the product data for the Albarrie Sorb-web plus Secondary Oil Containment System, the volume contained in the secondary system and a list of sites where the product is used. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

PUBLIC COMMENT 2: The stormwater drainage system description will be expanded to include a description of the systems interaction with the secondary and tertiary oil containment systems and the potential impact of a storm event on the systems. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

PUBLIC COMMENT 3: So if there is any kind of contamination to the water in this area, it will have broad implications. *(Mr. Dillon, June 13, 2012, page 67, lines 5-8)*

PUBLIC COMMENT 4: When the water used to fight those fires goes into the water table, what chemicals from firefighting and the utilities themselves will be released into the watershed for the Hackensack river? *(Ms. King, via email, June 23, 2012)*

PUBLIC COMMENT 5: Power surges, such as those caused by lightning or by switching in the grid, can burst the transformers and cause the oil to spill. Even if such events are rare, just one such spill can severely harm the watercourse and the plants, fish and animals that live in it. No provision has been made for containing such a spill. Any such provision must take into account the possibility that the spill may occur during a downpour, when leaking oil may be flushed into the stream. *(Mr. Granirer, memo dated December 2, 2008)*

PUBLIC COMMENT 6: If one so much - - we've had somebody who did research. As I said, I would have preferred they spoke first because he knows more about this stuff. If so much as one drop of oil of any kind, and I'm not talking about the oil necessarily that's stored in the transformers, but if one drop of any kind of oil, lubricant oil, baby oil, motor oil is spilled, then the stuff that keeps the oil from coagulating or the oil coagulated and from not going into the stream stops working. The Environmental Statement doesn't mention that, it just says that the oil will coagulate, there'll be gravel, it will never leave, and it will never go into the stream. And I find it curious that we're expected to be so convinced that nobody, even somebody who isn't supposed to be on the property like a kid, isn't going to drop one drop of oil and have it float down and silt up, ruin my lake again. An I know that the Town of Clarkstown doesn't want to hear Lake Lucille residents coming back yet again to say you destroyed Lake Lucille. I'm also sure that since the lake is the opening to the Hackensack River that the Town is very concerned about the water that floats down into the Hackensack River. There are reservoirs. It's an important part of the water course. That's my major thing. I may come back. Thank you. *(Ms. Thal, May 2, 2012, page 15 lines 12-25; page 16 lines 2-22)*

PUBLIC COMMENT 7: Totally. I would like to see reports do that, in fact - - preferably not developed by the industry that makes these things. *(Ms. Thal, May 2, 2012, page 17, lines 10-13) Author's note – This refers to the Geocomposite material.*

PUBLIC COMMENT 8: With respect to water quality, we are recommending a more in depth study into protection of local water sources both Lake Lucille and the Hackensack

River from contamination from oil and other contaminants including contamination from geo-composite material *(Mr. Geneslaw, June 6, 2012, page 17, lines 5-12)*

PUBLIC COMMENT 9: What is the amount of oil in the current station and what is the actual capacity for containing that oil through all three stages of protection that you're talking about? *(Mr. Trevor, June 6, 2012, page 49, lines 13-17)*

PUBLIC COMMENT 10: The other question is, there was word about absorption. Geo-composite is not an absorptive complex or matrix. And again, I have this question, how come geo-composite, the name was not mentioned in the DEIS? Geo-composite is a material which would solidify in contact with oil, petroleum specifically, so it doesn't have any absorptive capacity. So please clarify that so we will know that none of it would absorb oil, but keep it, it will basically act like a barrier. *(Mr. Adib, June 6, 2012, page 117, lines 2-14)*

PUBLIC COMMENT 11: I reviewed whatever which was proposed as containment. It's my professional opinion, if you want to accept it, this is not containment. This would basically allow oil to mix with water in a way I would say is more dangerous because it would keep it in contact with oil. Whatever leaks from all of those transformers in all of the water streams around site, there's no doubt in my mind that every droplet of leak would eventually end up in ground water or in water streams, whatever which is produced or somehow proposed as a containment does not contain any oil. *(Mr. Adib, June 13, 2012, page 98, lines 22-25; page 99, lines 2-12)*

PUBLIC COMMENT 12: …but my concern is when you have a substation that has oil and all kinds of substances that might be coming out of there, how is that going to be protected from the storm, the residue or whatever you want to call it, water pouring through? *(Ms. Stava, May 2, 2012, page 53, lines 12-18)*

PUBLIC COMMENT 13: In the event of such a scenario, what will happen to the water and dangerous material run-off that could easily pollute the West Branch stream, Lake Lucille and Lake DeForest reservoir? *(Ms. Koch, via email, June 22, 2012)*

PUBLIC COMMENT 14: I am concerned about of the potential for fire disaster followed by water runoff going down the mountain, into the West Branch stream, Lake Lucille and further down into the Lake DeForest reservoir. *(Ms. Landman, via email, June 23, 2012)*

RESPONSE: *Section III.G of the DEIS provided a description of the measures proposed to prevent to the greatest extent practical, the wetlands, adjacent water courses and ground water from being adversely impacted by pollutants. These measures include containment of oil from the transformers should there be a leak and the control and treatment of stormwater runoff from impervious areas.*

There are generally two potential sources of contamination from this station that could adversely impact the wetlands, adjacent water courses and ground water. These include stormwater runoff from the developed impervious areas and the discharge of oil from the transformers due to a spill or fire. The runoff from all developed areas would be directed to a stormwater management system where it is treated, before discharging. The water quality treatment system proposed for this project treats the runoff from all impervious areas and is designed in accordance with the applicable NYSDEC stormwater requirements for

construction activities that disturb more than one (1) acre of land, the Town of Clarkstown stormwater regulations and the requirements of the Rockland County Drainage Agency.

Should there be a discharge of oil from one (1) or more of the transformers on this site, there would be three levels of containment to insure oil does not adversely impact the wetlands, adjacent water courses and ground water. The first level of mitigation is the exterior transformer walls which are connected to a sensor. These sensors are monitored continuously. If there is a failure of the transformers, oil will be contained within the exterior walls of the transformer. If a failure occurs, the low level senor is triggered; Orange and Rockland Utilities personnel are notified immediately and respond to the site.

The second level of mitigation is an oil containment basin. Each transformer would be situated in its own containment basin which is designed to hold 110% of the transformer's oil volume plus the runoff volume produced by the 25-year storm event. If the transformer walls rupture, the oil would discharge into this containment basin. A containment basin is essentially a "bathtub". It would consist of a concrete wall surrounding each transformer and a specially designed selectively permeable liner lining the floor of the containment basin bottom (refer to Figure 2 for a typical section and layout). The basin is filled with ¾" to 1" stone from the bottom of the basin up to the substation grade. The concrete wall is a below grade, 8-inch thick reinforced concrete wall. The concrete wall is further extended 16 inches above grade with the addition of two courses of concrete block. The selectively permeable liner lining the bottom of the basin is permeable in its natural state; allowing water, from rain or snow melt, to drain from the basin. The selectively permeable liner contains polymers which react with the transformer oil (or any hydrocarbon) and solidifies. When this layer solidifies, it becomes impermeable thus sealing the bottom of the containment basin and completing the "bathtub". If the transformer ruptures, the oil would discharge into this containment area which would capture the oil and allow for it to be collected and properly disposed. The selectively permeable liner used in this application is comprised of a polyvinyl membrane. The selectively permeable portions of the liner are constructed from non-woven geo-textile material filled with a blend of USDA food-grade polymers that chemically react with hydrocarbons and solidify. Typically these materials are proprietary and vary slightly from manufacturer to manufacturer. Although a specific manufacturer has not been selected, the type of material to be used in this application would meet description outlined in the FEIS.

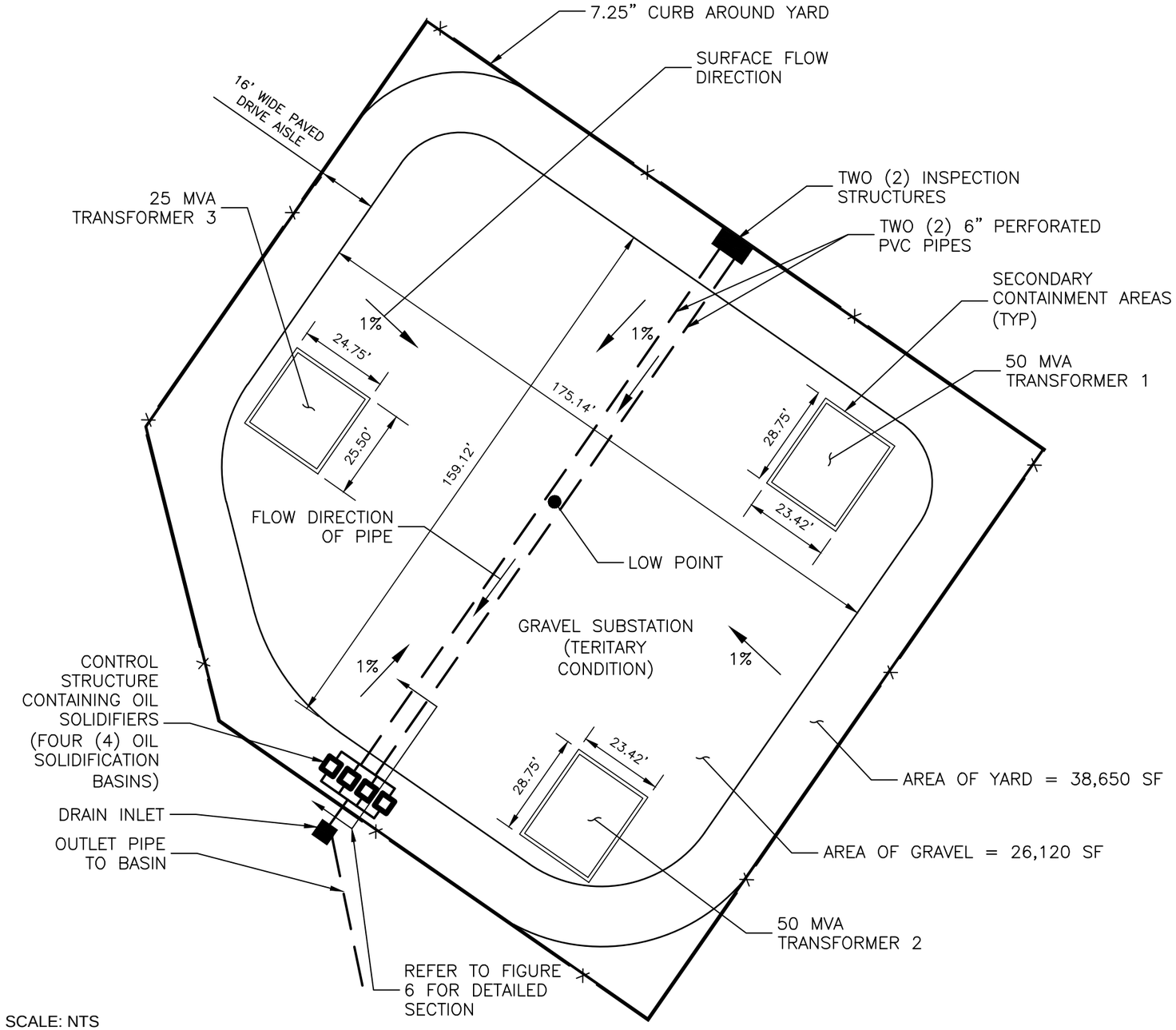
Secondary containment systems employing polymer agents have been used by Orange & Rockland Utilities at Corporate Drive (2011), Dean (2010), Hartley Road (2014), New Hempstead (2013), Stony Point (2003), and at the Middletown Tap (2001). There have been nine small transformer fluid spills associated with these properties ranging from one ounce to two gallons. In every case, the spills were contained to the substation site and resolved through the removal of impacted material (stone, item 4, etc.) for proper disposal.

To further protect against the release of transformer oil from the substation, a third level of mitigation is proposed. Should a more significant event occur, such as a storm event in excess of a 25-year storm accompanied by a complete failure of all three transformers, a tertiary containment area is provided. The entire substation yard is designed to capture and hold the equivalent of 110% of the oil from all the transformers at this station, the equivalent of a 100 year storm event (9" of rainfall based on the most current NERCC rainfall data)

and an additional 21,136gallons of capacity. This additional capacity equates to the fire department applying 250 gpm for 84.5 minutes. Refer to Figure 5 for the supporting calculations. The tertiary containment area involves the construction of a 7.25" concrete curb around the entire substation yard and a gravel storage component. Refer to Figure 6 for a detailed section through the tertiary containment area. The substation yard including the paved drive aisle, gravel surface and subgrade surface (compacted Item 4) are graded to drain toward an underdrain that is located in the middle of the yard and is directly connected to the containment structures. The containment structures are filled with an oil solidifier as indicated in Figure 6. When oil comes into contact with this material (oil solidifier) it forms a bond with the oil and turns into a rubber-like solid preventing the oil from passing. The gravel yard section is comprised of 12" of gravel over 8" of subgrade (Item 4). The Item 4 subgrade will be compacted and graded to prevent, to the greatest extent practical, stormwater runoff from infiltrating through it. Should stormwater runoff containing oil bypass or infiltrate through the gravel and the compacted subgrade, there is adequate time to initiate a cleanup effort (see explanation below) before runoff containing oil can infiltrate through the natural soils and reach a sensitive receptor.

To further understand the potential risk associated with the uncontrolled discharge of oil from a transformer and the potential of the discharged oil having a significant adverse impact to the "waters in the area", an analysis of the potential movement of oil through the site soils was performed. This study, included in Appendix C, indicates that it would take approximately 19.75 days for oil to travel through the soils and reach the ground water which is approximately 13' below grade and it would take an additional 4.16 years for that oil to travel to the West Branch of the Hackensack River. Given these time frames and the fact that Orange and Rockland Utilities would know immediately that a transformer had failed and oil had leaked out, there is ample time to implement a site clean-up program.

To insure that all of requirements and procedures are followed, a Spill Prevention, Control and Countermeasure Plan (SPCC) will be prepared. A draft of the SPCC is provided in Appendix M. The SPCC describes the containment measures provided on the site, how they operate and how a spill on this site will be contained. The plan also describes how a spill should be remediated and how the containment systems should be restored after the material is cleaned up. An SPCC will be developed for this project and will be in place prior to the substation being energized.



VOLUME REQUIRED:

AREA OF SUBSTATION: 38,650 SF
100 YEAR STORM EVENT: 9 IN.
VOLUME REQ'D.= 38,650 SF x 9 IN x 7.48 GAL. = 216,827 GAL.

VOLUME PROVIDED:

A) VOLUME OF YARD CONTAINED BY CURB
AREA OF TRANSFORMERS: 1,977 SF
AREA OF YARD: 38,650 SF – 1,977 SF = 36,673 SF
HEIGHT OF CURB: 7.25 IN.
VOLUME OF YARD CONTAINED BY CURB = 36,673 SF x 7.25 IN x 7.48 GAL = 165,731 GAL

B) VOLUME OF GRAVEL IN YARD
AREA OF TRANSFORMERS: 1,977 SF
AREA OF GRAVEL: 26,120 SF – 1977 SF = 24,143 SF
DEPTH OF GRAVEL SECTION: 12 IN.
VOID RATIO OF GRAVEL: 40%
VOLUME OF GRAVEL IN YARD = 24,440 SF x 12 IN. x 40% VOIDS x 7.48 GAL = 72,236 GAL

TOTAL VOLUME PROVIDED = A + B = 237,967 GAL
TOTAL VOLUME REQUIRED = 216,827 GAL
EXCESS VOLUME = PROVIDED – REQUIRED = 21,140 GAL

FLOW FROM 2.5" FIRE HOSE = 250 GPM
EQUIVALENT FLOW = 21,140 GAL / 250 GPM = 84.6 MINUTES

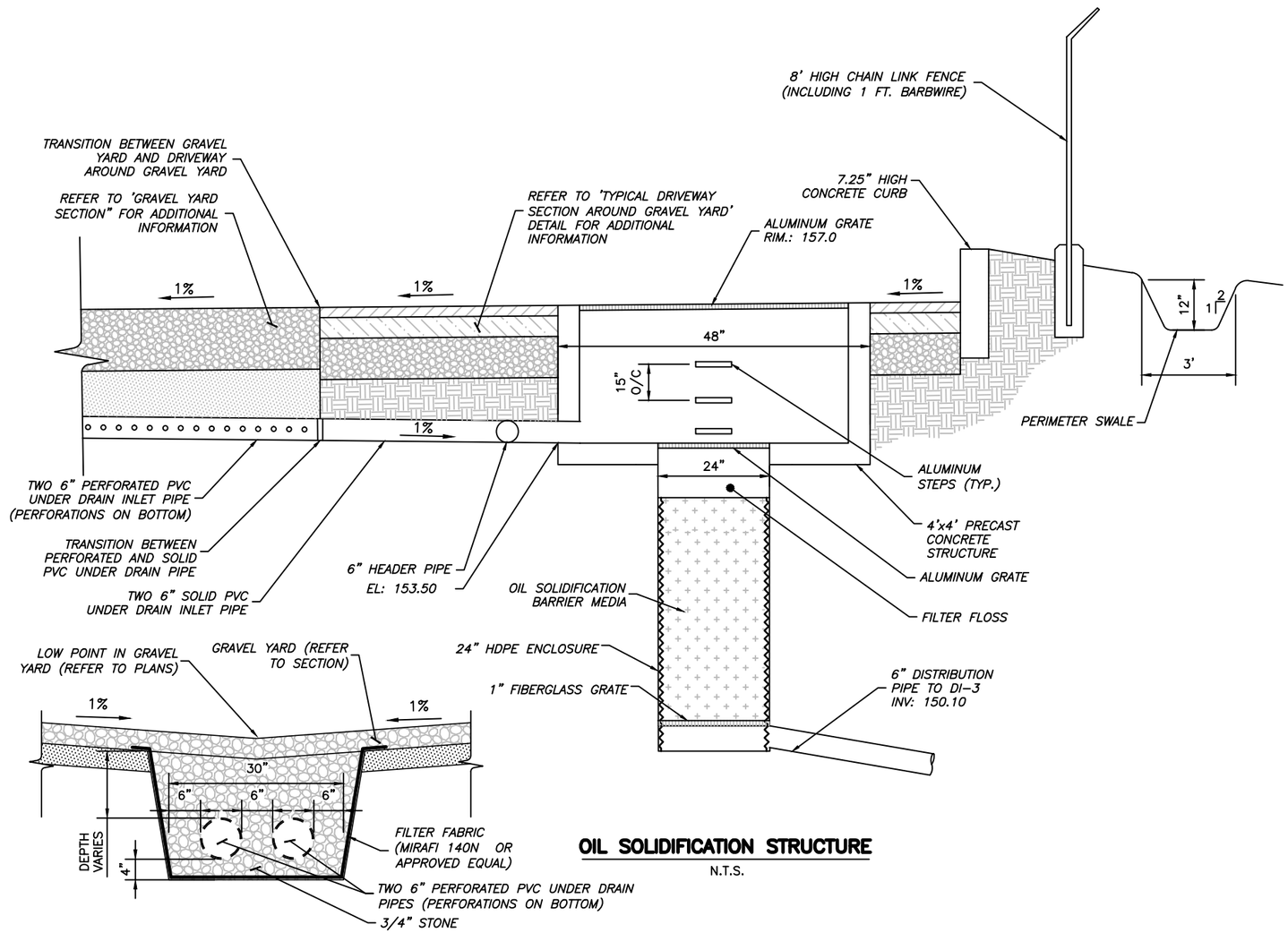
FIGURE 5

Containment Area Calculations
Little Tor Substation
Orange and Rockland Utilities, Inc.

Town of Clarkstown, Rockland County, New York

LANGAN White Plains New York

Image Source: LANGAN



TERTIARY CONTAINMENT AREA

SCALE: NTS

FIGURE 6

Tertiary Containment Area
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

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PUBLIC COMMENT 15: Thank you for considering my comment during the O & R Scoping session. Here is a summary explanation of the comment. Hydrocarbons including mineral oil, that is proposed as cooling liquid of the O&R transformers, are generally considered insoluble in water since they do not readily mix and dissolve in water. Therefore, to separate them from oil, a simple oil/water separation is often considered an acceptable method for isolation and removal of the oil from water streams. However, despite general immiscibility with water, small quantities of oils are actually dissolved in water. It is this dissolved phase organics that is often subject of regulations by EPA or NYSDEC in fresh waters since it cannot be easily separated and removed, and can travel long distances with water stream. Additionally, hydrocarbons upon release in the environment (i.e. soil), enter a cycle of transformations the result of which is that they eventually dissolve in water and leach into the aquifers (groundwater reservoirs). (*Mr. Adib, via email, March 3, 2012)*

PUBLIC COMMENT 16: Release of Contaminants: According to USEPA and NYSDEC, Water Quality in Clarkstown is considered worse than national average due to more than national average contaminated sites within Clarkstown that release dissolved phase contaminants to groundwater or surface waters. Given the positive exposure of the facility to precipitation, DEIS does not include protective measures against transport of dissolved contaminants from the site to surface waters and groundwater. It discusses several physical barriers, none capable of withholding dissolved pollutants. *(Mr. Adib, via email, June 23, 2012)*

PUBLIC COMMENT 17: Number two, everything what was discussed tonight was about separation of oil from water based on the geo-composite. As we know, when we mix oil and water, some phase of oil would enter water and will not be removed by physical separation. We would need a biochemical separation which would be far beyond just removing the oil or keeping the oil. In addition to that was discussed that if there would be a major storm, we would have overflow of oil which is on top of water into the river, so that has to be addressed. *(Mr. Adib, June 6, 2012, page 116, lines 2-15)*

PUBLIC COMMENT 18: I reviewed the document, I didn't see anything about dissolved phase organics transporting into well water. I can understand that oil water separator might receive or might remove some of the oil which is dissolved, un-dissolved filtration, but the dissolved components which would vibrate the well water people who drink from those wells is not dissolved. Thank you. *(Mr. Adib, February 27, 2013, page 15, lines 24-25; page 16, lines 2-9)*

RESPONSE: *Based on the best available data and a review of the Material Safety Data Sheet (MSDS) (refer to FEIS- Appendix E) for the oil used in the transformers (Cross Trans 206), the volume of dissolved oil in water is so minimal it is not measurable. The current literature on this type of oil indicates this material is insoluble. However, should an oil leak occur there are three levels of containment provided, that to the greatest extent practical, will contain an inadvertently spilled oil from discharging off the site. The three levels of containment are described in Response 1 of this section and the stormwater management system is designed to provide water quality treatment of stormwater runoff in accordance with New York State and Federal regulations.*

PUBLIC COMMENT 19: The proposed project has the potential to significantly harm that watershed and one of the streams that flows through it. The harm would be done by the structures proposed for the site, by the lighting proposed for their nighttime security and by some of the equipment to be installed on it. *(Mr. Granirer, memo dated December 2, 2008)*

RESPONSE: *The normal operation of the proposed substation can be generally described as a passive use. All of the primary equipment is self-contained and there are very few moving parts. Only when there is a malfunction in the equipment or some form of natural disaster would the substation present any form of significant adverse potential environmental impact. As part of the proposed development plan, mitigation measures are proposed to ensure that, even when these types of events occur to the greatest extent practical the potential for significant adverse environmental impacts have been mitigated. For example:*

- *The stormwater management system for this project has been designed to control and treat stormwater runoff from all impervious areas in accordance with the 2008 NYSDEC guidelines, the requirements of the Town of Clarkstown and the Rockland County Drainage Authority (RCDA). The stormwater system has been designed to include both water quality treatment and stormwater flood control.*
- *Multiple levels of oil containment have been included in the design to mitigate the risk of a discharge of oil from the transformers. Refer to the first response in this section for a detailed explanation of these containment measures.*
- *Figure 19, Light Distribution Plan, shows that the light level in the vicinity of the on-site stream will be less than 0.1 footcandles. Therefore there will be no impact on the stream from the proposed lighting. Additionally, the proposed lighting is only for emergency use. Under normal operation, the substation would not be illuminated. The only time the area lights would be activated is when Orange and Rockland personnel need to work on the substation during night hours and this only occurs when there is an operational problem at the substation. Refer to Section III.E.1 of the FEIS for additional information about the operation of the lights at the substation.*

PUBLIC COMMENT 20: On that information that I talked to Vincent, the fire inspector, and he told me he had no idea that up to seventeen thousand gallons of cooling oil were going to be at this location. *(Mr. Terribile, June 13, 2012, page 56, lines 16-21)*

PUBLIC COMMENT 21: Also, I wanted to know how much oil will be in each transformer. *(Mr. Adib, May 2, 2012, page 57, lines 6-7)*

PUBLIC COMMENT 22: Oil Storage: DEIS did not include the amount of oil handled/kept at the site. It is crucial that the public knows this amount. *(Mr. Adib, June 23, 2012)*

RESPONSE: *The total volume of oil contained in the three transformers is 19,726 gallons, each of the 50MVA transformers contains 7,656 gallons of oil and the 25 MVA transformer contains 4,410 gallons.*

PUBLIC COMMENT 23: Also want to point out that with the first fire that was at the substation in Yonkers, the fluids that were used by the fire department ran off into the storm drains in the area, and then two weeks later it showed up in the Bronx River. I think one of the concerns of area residents is will it wind up in our drinking water. And in the Bronx, two weeks later, they discovered that the oil from the original spill had showed up two miles away. We're talking about just a few yards away from Hackensack River. So I think that again, it needs to be better dealt with than in the DEIS. *(Mr. Baum, May 2, 2012, page 33, lines 7-21)*

PUBLIC COMMENT 24: But we do have a concern about Lake Lucille and the Hackensack River. You were fined because of Bronx River, for the oil going into the Bronx River. We have a similar concern here. So if you could share what your preventative measures are or what Con Ed has decided those preventive measures are, I think it would allay some fears. *(Ms. O'Connor, June 6, 2012, page 47, lines 19-25; page 48, lines 2-4)*

RESPONSE: *The design of this electrical substation includes multiple levels of redundant practices to protect to the greatest extent practical, the adjacent wetlands and watercourse from being adversely impacted. In the case of an oil spill, the initial protective measure is the exterior transformer walls which are connected to a sensor. These sensors are monitored continuously. If there is a failure of the transformers, oil will be contained within the exterior walls of the transformer. If a low oil level alarm is triggered, Orange and Rockland Utilities personnel are notified immediately and respond to the site. The second level of protection is a concrete containment area built around each transformer. These containment areas around each of the transformers have concrete walls, a selectively permeable liner lining the bottom and are backfilled with stone. They can hold 110% of the oil in the transformer and the equivalent of a 25-year rainfall. The third level of containment is a concrete curb around the entire substation yard. This third level of protection includes the entire substation yard back filled with stone and a 7.25" raised curb. This containment area can hold 110% of all the oil from the three transformers, the equivalent of a 100-year storm event and the equivalent of applying 250 gpm for 84.5 minutes fighting a fire.*

The impact to the Bronx River was as a result of a transformer failure at Dunwoodie and a subsequent malfunction of a mechanical Pollution Prevention System (PPS). The PPS included a pipe connection from the Dunwoodie facility to the City of Yonkers municipal drainage system which discharged directly to the Bronx River.

The pollution prevention system, referred to in this FEIS as the containment system, is designed as a non-mechanical passive system. It does not rely on any mechanical operations such as automatic valves or manual operations that activate when oil is detected. This passive system eliminates the potential for mechanical or operator error. The containment materials proposed for both the secondary and tertiary containment areas at the Little Tor Substation are simply activated by a chemical reaction when it comes into contact with oil. This chemical reaction solidifies the containment material and creates a physical barrier preventing any material, including water and oil, from passing through.

PUBLIC COMMENT 25: So the question, basically, the essence of my question is, if you had a major storm event, not necessarily like Irene, but we do get events where you have many inches of water, an inch of water an hour over a period of time, if at the same time you

had a failure of the transformers, what capacity would there be to contain both the oil and the water from this rain event? Because you could have quite a few inches of rain before you managed to alleviate the problem. *(Mr. Trevor, June 6, 2012, page 52, lines 4-16)*

PUBLIC COMMENT 26: Please. And because you said it suggested that the perimeter containment would be protection from a major storm event. In other words, would that include flood? *(Mr. Trevor, June 6, 2012, page 50, lines 19-23)*

RESPONSE: *The tertiary containment area has the capacity to hold 110% of the oil from all three transformers, the equivalent of a 100-year storm event (9" of rainfall) and an additional 21,136 gallons which equates to a fire hose distributing 250 gpm of water for 84.5 minutes. The total volume of storage provided in the tertiary containment area is 237,963 gallons. 100% of the volume of oil contained in all three transformers is approximately 9% of the volume provided in the tertiary containment system. In addition, the substation is located outside of the 100-year floodplain as defined by FEMA (based on 2014 FIRM). The 100-year floodplain, as shown in Figure 4a and on the Engineering Drawings varies from elevation 140 along the westerly portion of the site to elevation 132 near the access drive along Little Tor Road. The substation grade is approximately 17 feet above the 100-year flood elevation of 140.*

PUBLIC COMMENT 27: What's the absorbent capacity of that material as far as either gallons per square yard of material or -- *(Mr. Letson, June 6, 2012, page 54, lines 20-23)*

RESPONSE: *The key component to this containment material is not its absorbent capacity, but the chemical reaction that occurs when it comes into contact with oil or other hydrocarbons. This chemical reaction causes the containment material to solidify, effectively blocking oil from escaping the containment area. The flow rate through the material is only important when determining the thickness of the material. The surface area and thickness of the material is designed to insure stormwater filtrates through the material at an acceptable rate. Both the secondary and tertiary containment materials have been sized to effectively pass the 25-year and 100-year storm respectively, without creating a significant ponding area. In the case of the tertiary containment area, the surface area and depth of the containment material is size to pass the 100-year storm, without water ponding in the substation yard. The secondary containment material is designed to control the 25-year storm event without overtopping the containment wall.*

The materials typically used in these applications are not intended to absorb the entire oil volume or other contaminant, but to solidify immediately upon contact with oil or other hydrocarbons and "contain" the oil, not absorb it. These materials do not have a specific absorption capacity, although small amounts of oil do adhere to the containment materials. Larger amounts of oils that come into contact with the oil solidifiers produce a chemical reaction that creates a physical barrier preventing any additional oil from passing.

PUBLIC COMMENT 28: My question is, this was ten gallons and it took up a space that was huge. If we're even talking about a thousand gallons going into the drinking water, it's very scary for anybody to live there and know that this is overhead of you. And at any moment we have storm drains that can't even hold three inches of rain right now and you're telling us that it's going to hold. We've lived there, we see what's happening in those woods, and it's quite dangerous right there right now. And for anybody to tell me that seventeen thousand gallons is an environmentally safe situation, I find that hard to believe. *(Mr. Terribile, June 6, 2012, page 70, lines 18-25; page 71, lines 2-9)*

RESPONSE: *There are multiple levels of containment that are designed to mitigate to the greatest extent practical the potential adverse impacts of oil leaching into the groundwater or other environmentally sensitive areas in and around the site. These measures are described in detail in Response 1 of this Section. In addition to providing multiple levels of containment, a study has been performed (refer to Appendix C) that concludes that any oil spill that occurs within the substation yard would take 4.16 years to travel through the existing soil matrix and reach the West Branch. In this time frame, Orange and Rockland Utilities would have sufficient time to remediate an oil spill before it reaches any of the adjacent environmentally sensitive areas in accordance with the site specific SPCC plan.*

PUBLIC COMMENT 29: You spoke earlier about the geo-material and the membrane. I'd like to know how many installations you have that already use that technique, how long they've been in operation and what the results have been with them. *(Mr. Rosen, June 6, 2012, page 76, line 25; page 77, lines 2-6)*

RESPONSE: *The use of oil solidifier material to control oil spills from electrical transformers has been in use in the utility industry for decades and has proven to be an effective containment system. Secondary containment systems employing polymer agents have been used by Orange & Rockland Utilities at Corporate Drive (2011), Dean (2010), Hartley Road (2014), New Hempstead (2013), Stony Point (2003), and at the Middletown Tap (2001). There have been nine small transformer fluid spills associated with these properties ranging from one ounce to two gallons. In every case, the spills were contained to the substation site and resolved through the removal of impacted material (stone, item 4, etc.) for proper disposal.*

PUBLIC COMMENT 30: I guess what I'm really asking here is whether we have a well-founded basis for the plan that they're suggesting would contain everything. If we're going to be the guinea pigs, I don't really want to hear that. If you can demonstrate that there's evidence that this entire system, because you talked about the tertiary aspects of it, where you've got layer on layer on layer, and that's fine, unless you haven't already employed layer on layer on layer, so I'd like the Board to please consider that and look for experience in that regard. *(Mr. Rosen, June 6, 2012, page 78, lines 6-19)*

RESPONSE: *The concrete walls with open bottoms have been successfully used as a single form of containment in the utility industry. The design of the secondary containment area for this site further enhances this single level protection by adding the selectively permeable liner on the bottom of the pit. A tertiary containment system is not a typical design. It has been added to this project to further increase the level of protection. The tertiary system consists of an old design concept which uses the entire site for containment by creating a curb and a single pipe outlet control.*

PUBLIC COMMENT 31: The problem with the Dunwoody was from the amount of water that was used by the firefighters. In the DEIS it says that it will take care of the fire simply by letting it burn out. But if the conditions are such, high winds, very dry conditions, they will use massive amounts of water. So the question I had, and I think that perhaps Mr. Geneslaw had tried to touch on it but it wasn't answered by the Applicant, is what happens if the fire department has to use water to put this fire out, can't let it burn out on its own? If there's perhaps water, you know, that's not getting out there for whatever reason, what's going to happen? *(Mr. Baum, June 6, 2012, page 80, lines 3-18)*

RESPONSE: *The New City Fire Department has been trained to handle fires at electrical substations and they have been trained that the protocol is containment of the fire to the substation. To aid the fire department in safely handling a fire at this site, the project includes the installation of a fire hydrant in close proximity to the site. In addition, a clear zone void of significant plant material has been provided. These measures and others including access and circulation around the substation have been reviewed by the Chief Fire Inspector and found to be adequate. If the fire department, for whatever reason, were to apply water to a fire at this substation, the tertiary containment area can hold 110% of the entire volume of oil contained in all three (3) transformers, the equivalent of a 100-year storm event (9" of rainfall) and an additional 21,136 gallons which equates to a-2.5" fire hoses applying 250 gpm for 84.5 minutes.*

PUBLIC COMMENT 32: Your concerns with as far as the oil in the transformers and the PCBs, that question was asked by another woman. Do they contain PCBs? *(Mr. Kiegler, June 13, 2012, page 97, lines 13-16)*

PUBLIC COMMENT 33: And the other question is, has a design been -- a containment system been designed for the base of this unit? I mean, all these people have concerns about water getting contaminated and this and that, but it's my concern too. My question is, is there a containment system built around it and does it contain any PCBs? *(Mr. Kiegler, June 13, 2012, page 97, lines 17-25)*

PUBLIC COMMENT 34: And I also -- so it concerns me very much. What the content, I hear people talking about the oil, and this is not Wesson oil, this is electrolytic fluid. That all precautions aside, I've already experienced the worst case scenario from contamination from electrolytic oil. And so I guess I would like to know what's in this oil. Is there still PCBs? *(Ms. Hudson, June 13, 2012, page 91, lines 5-14)*

RESPONSE: *None of the materials that would be used on this project would contain PCBs. The characteristics of the oil used in the transformers are described in the MSDS included in the Appendices and there is a multi-tiered containment system proposed as part of this project. Refer to responses of this section for detailed information.*

PUBLIC COMMENT 35: It may not have been clear from what Terry Thal said, but as I understand it, the material that the we were given that there's supposed to be a substance underneath the gravel on top of which the transformers will be placed that will take oil leaks and turn the oil into jelly, and I think the problem with that is that the substance is good for one shot only. If any oil gets in there, the stuff stops dealing with more oil, and then what happens to the oil that leaks? *(Mr. Granirer, May 2, 2012, page 43, lines 5-16)*

RESPONSE: *Both the secondary and tertiary containment systems are designed to contain oil. Once the selectively permeable material comes in contact with oil, it solidifies. The advantage of this type of containment system is that it contains both small minor leaks and a major oil spill. In the case of minor leaks, oil will come into contact with the containment material and solidify, however, only a small area solidifies, not the entire system. The remaining material continues to function as intended, allowing water to pass through. In the case of a major spill, the entire layer of selectively permeable material comes into contact with the oil and solidifies and traps the oil in the containment area. At this point, Orange and Rockland would have responded and would be implementing an environmental remediation of the contained oil. As part of this remediation, the selectively permeable material would be replaced.*

PUBLIC COMMENT 36: However, transformers frequently develop chronic leaks that may exist for prolonged periods of time. In order to maximize the effectiveness of this material, it has to be prevented. *(Mr. Adib, May 2, 2012, page 61, lines 7-11)*

PUBLIC COMMENT 37: Now, are they – every chronic impact, let's say every two, three months that there might be leaks, are they going to dig up everything and remove it and put it back again? I don't believe so. And the question becomes who is monitoring this? *(Mr. Adib, May 2, 2012, page 61, lines 14-20)*

RESPONSE: *One of the specific reasons why the Little Tor Substation containment system was selected is because it can contain small chronic leaks over a long period of time and still allow the containment areas to drain. Small leaks only impact a small area of containment material that comes in contact with the oil, allowing the other areas to continue functioning. Over a prolonged period of time it might be necessary to replace the containment material in the secondary containment area; however, this is a confined area that can be excavated, the containment material replaced and the containment area backfilled with gravel restoring it to its original condition. This work is carried out by an environmental remediation*

contractor and contaminated materials are disposed of in accordance with local, state and federal regulations.

If the containment material in either the secondary or tertiary containment systems does come into contact with enough oil to solidify a large area, the containment area will not drain properly and this will be observed during routine inspections. At that time the containment area would have to be excavated, the containment material replaced and the area backfilled with gravel to its original condition.

PUBLIC COMMENT 38: Remote diagnostics is a term that is, you know, is very vague. You could have somebody in India looking over a substation and all of a sudden you have a power outage or something like that, and a lot of times, I know, with remote diagnostics you have to reboot the server and stuff like that which takes a lot of time. So, what they could actually be doing is having somebody it India doing remote diagnostics. That was my first question. *(Mr. Terribile, June 6, 2012, page 63, lines 23-25; page 64, lines 3-10)*

RESPONSE: *For security purposes, the location of Orange and Rockland Utilities control centers, where the substations are monitored, are not released. However, the control centers are local and manned by Orange and Rockland Utilities.*

PUBLIC COMMENT 39: And how does the remote diagnostics work? *(Mr. Terribile, June 6, 2012, page 64, lines 14-15)*

RESPONSE: *The electrical substation and gas regulators are monitored remotely on a continuous basis. These facilities are monitored for a large variety of reasons. The important aspects of this monitoring is that in real time, if a significant fluctuation in the normal operating parameter of the facilities occur, the control center will know immediately and will be able to dispatch Orange and Rockland Utilities personnel immediately.*

PUBLIC COMMENT 40: But is this something that if it goes out it has to be reprogrammed or something like that from the substation? *(Mr. Terribile, June 6, 2012, page 65, lines 3-6)*

RESPONSE*: This monitoring of the functions at the substation is not the same as performing remote diagnostics. The important aspect of the continuous monitoring is that if there is a change in the normal operating conditions at the facility, the control center can respond in real time. There are other more routine operations that can be controlled from the monitoring station and as with any electronic equipment; reset if the system may be required from time to time for a variety of reasons.*

In addition to the remote monitoring, the design includes closed-circuit cameras. They relay a video feed back to the control center. The video feedback also gives the control center a visual confirmation if an emergency condition occurs.

PUBLIC COMMENT 41: Geocomposite Material: DEIS did not reveal the type and specification of the geocomposite material. *(Mr. Adib, June 23, 2012)*

RESPONSE: *There would be two (2) types of containment systems being used on this project. The system to be used in the secondary containment area is a combination of a polyvinyl blanket and a non-woven geotextile material filled with a blend of USDA food-grade polymers that encapsulate hydrocarbons. There are a variety of manufacturers that produce this type of oil solidifier material specifically for this application, one of which is C.I Agent Solutions. The system to be used in the tertiary containment area applies the same type of technology, but is a different application of this technology. There are a variety of manufacturers that produce this type of containment material specifically for this application, one of which is Solidification Products International, Inc. (SPI). A more detailed description of both of these types of systems is provided in the response to Comment 1.*

PUBLIC COMMENT 42: Construction Details: DEIS did not provide a plan with sections showing the foundation structure of the transformers, the protective layers, etc. instead several electrical drawings were provided that could not be used for understanding the project specifics. *(Mr. Adib, via email, June 23, 2012)*

RESPONSE: *Details and sections have been added to the engineering drawings to provide additional information about the secondary and tertiary containment systems. These systems are also described in more detail throughout this section of the FEIS and depicted on Figures 2, 5, and 6.*

PUBLIC COMMENT 43: Recently, we built a 48' x 24' structure on our South Mountain property. The County required that we construct a dry well or like feature to collect rainwater from our new roof because it displaced the absorbing flora. Can anyone imagine all of High Tor without any water-absorbing vegetation? Please require effective and proper drain sewers along South Mountain Road. If we were required to deal with containing rainwater on our property for such a small structure at great cost to us, shouldn't Orange and Rockland be required to as well, while planning for an easily conceivable catastrophic fire. This will help direct this mess to a proper safer location. Currently, we have none. *(Mrs. Smith, memo dated June 21, 2012)*

RESPONSE: *The project as proposed and described in Section III.G of the DEIS includes a complete stormwater management system that captures stormwater runoff from the developed portion of the site including all impervious areas and directs it to a stormwater control system that has been designed to meet local, county and state requirements. The stormwater management system includes pipes, catch basins and swales that collect and direct stormwater runoff to a surface sand filter. The sand filter includes a filtering media designed to remove the pollutants contained in stormwater runoff. This is a water quality treatment practice approved by the NYSDEC, which removes pollutants contained in*

stormwater runoff and prevents them from discharging into the adjacent water courses and wetlands.

PUBLIC COMMENT 44: The question that was raised by the public was how the material would be dealt with once it reacted to oil in an "event." Would it be all dug up and replaced? *(Mr. Simoes, via email, June 6, 2012)*

RESPONSE: *In the event of an oil spill, where the secondary containment area fills with oil and has solidified the containment material, an environmental contractor approved by Orange and Rockland Utilities would be called to remediate the condition. The contractor would perform the following remediation:*

- *The containment pit could be drained of all liquids which would be pumped into a holding tank and ultimately disposed of at an approved disposal site.*
- *The gravel in the containment pit would be excavated all contaminated material disposed of in accordance with a Federal, State and Local regulations.*
- *The oil solidifying material would be removed and disposed of in accordance with a Federal, State and Local regulations.*
- *The secondary containment area would then be reconstructed, as originally designed with the exception of replacing the concrete walls unless they had been damaged and could not functioning as originally intended.*

PUBLIC COMMENT 45: The use of an oil water separator is not proposed for this project. The transformer oil is addressed by the secondary and tertiary containment proposed which are the Albarrie Sorb-Web Plus Secondary Oil Containment System and the Albarrie Sorb-Web Plus Oil Blocker, respectively. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

RESPONSE: *Comment noted. Typically, oil–water separators are not designed for high volume, high flow situations. The containment system designed for this site includes multiple levels of protection. Refer to the response to Comment 1 of this section for a detailed explanation of the containment systems.*

PUBLIC COMMENT 46: There will be no PCBs or asbestos on site. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

RESPONSE: *This statement is correct. There will be no PCB's or asbestos proposed on this site. The productions of PCB's have been banned by the United States Congress in 1979 (refer to USEPA Website for additional information on PCB ban).*

INSERT SECTION DIVIDER

B. NATURAL RESOURCES

PUBLIC COMMENT 1: The proposed site was screened for wildlife and two letters were obtained from the NYSDEC Natural Heritage Program as detailed in Section III.C of the DEIS, "Natural Resources" and the Appendices. In reference to the threatened and endangered species issue raised in the recent letter from the NYSDEC, ORU will submit an updated request to the NYSDEC Natural Heritage Program and address any additional species identified. (Planning Board Issues for Little Tor FEIS, May 28, 2013)

RESPONSE: *The referenced response from NYSDEC was a response to the discussion about a Supplemental Environmental Impact Statement. A request was made by the applicant to the NYSDEC Natural Heritage Program for an updated report. The updated report dated June 25, 2014 states "We have no records of rare or state-listed animals or plants, or significant natural communities, at your site or in its immediate vicinity" (Attachment 1). Refer to Section III.C of the DEIS for a detailed description of the natural resources on this site.*

PUBLIC COMMENT 2: Sensitive environmental areas that are present on the project site will be identified. (Planning Board Issues for Little Tor FEIS, May 28, 2013)

RESPONSE: *All environmentally sensitive areas including wetlands, wetland buffers, flood plains, flood ways, steep slopes, rock outcroppings and geologically sensitive areas are shown on the Existing Conditions Plan included in Appendix A.*

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov

Joe Martens
Commissioner

June 25, 2014

Brian Bury
Orange & Rockland Utilities
390 West Route 59
Spring Valley, NY 10977

Re: Little Tor Substation, located at the intersection of Little Tor Road and South Mountain Road
Town/City Clarkstown. County: Rockland.

Dear Brian Bury :

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

We have no records of rare or state-listed animals or plants, or significant natural communities, at your site or in its immediate vicinity.

The absence of data does not necessarily mean that rare or state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other resources may be required to fully assess impacts on biological resources.

This response applies only to known occurrences of rare or state-listed animals and plants, significant natural communities and other significant habitats maintained in the Natural Heritage Data bases. Your project may require additional review or permits; for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Sincerely,

Andrea Chaloux

Andrea Chaloux
Environmental Review Specialist
New York Natural Heritage Program

INSERT SECTION DIVIDER

C. FACILITY MATERIALS

PUBLIC COMMENT 1: Dissolved phase of organics will not be an issue since the solubility of the transformer oil in water is considered negligible. Facility information will be provided and referenced to the MSDS sheets to be provided in the response concerning Facility Materials. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

RESPONSE: *As indicated in Appendix C, Transformer Fluid Mobility Study, the oil used in the transformers is not soluble. In addition, the MSDS for this material (CrossTrans 206), included in Appendix E, lists the solubility in water as insoluble.*

PUBLIC COMMENT 2: There are typically a number of toxins at substation facilities, including PCBs. I had specifically asked that the DEIS include a full list of all potential toxins, which could be emitted during normal and/or emergency conditions that could end up in the water and/or in the air. The DEIS should provide a material data sheet for each substance contained onsite that is potentially toxic in any form from any source (liquids, plastics, foams/rubber/insulators, oil containment substances, plated/coated metals, etc.). *(Mr. Baum, via email, June 8, 2012)*

PUBLIC COMMENT 3: The FEIS will contain the following: MSDS sheets and a discussion of the uses of each material identified above. The following substances have been identified for discussion:

1. transformer oil
2. sulfur hexafluoride gas (SF6)
3. nitrogen
4. battery acid
5. natural gas
6. containment materials

(Planning Board Issues for Little Tor FEIS, May 28, 2013)

RESPONSE: *This electrical substation does not contain PCBs or asbestos. During the normal operation, the substation does not produce emissions. The following is a list of other significant substances that will be present at the project site and Appendix E includes Material Safety Data Sheets (MSDS) for these materials. The following is a description of each substance:*

- *Transformer Oil (Cross Trans 206) is used in the electrical transformers for electric insulation and cooling. Per the MSDS toxicological information based on animal toxicity data the oil is practically non-toxic via oral or dermal exposure; the median lethal dose (LD50) for inhalation was not determined; there is no appreciable effect on skin or eyes and sensitization data was not available. No*

data is available on the adverse effects of this material on the environment. A film or sheen will cause discoloration of the water surface or adjoining shoreline.

- *Sulfur Hexafluoride Gas (SF6) is used in the electrical components such as the circuit breakers to provide electric insulation. The MSDS for sulfur hexafluoride lists chronic effects on humans as may cause damage to the upper respiratory tract. No information on aquatic ecotoxicity, environmental fate or toxicity to the environment was listed but the MSDS does state that no known significant effects or critical hazards in regards to environmental hazards.*
- *Nitrogen is used in the transformers in the substation. It is a gas used to fill the void space inside of the transformer that is not occupied by the transformer oil. The void space is left to allow the oil to expand and contract during temperature changes. The toxicological information section of the nitrogen MSDS lists nitrogen is a simple asphyxiant and that no adverse ecological effects are expected. Additionally, nitrogen does not contain any Class I or Class II ozone-depleting chemicals.*
- *Battery Acid is contained in the batteries in the switchgear which are used to provide the substation controls with a back-up power supply. The batteries contain sulfuric acid and lead compounds. The MSDS states that sulfuric acid is harmful by all routes of entry causing severe irritation, burns, etc. Hazardous exposure to lead compounds can only occur when the product is heated, oxidized or otherwise processed or damaged to create dust, vapor or fume. Exposure to lead compounds through inhalation or eye contact can cause irritation. Exposure through ingestion may cause abdominal pain, nausea, vomiting, etc which may lead to systemic toxicity and must be treated by a physician. Specific environmental toxicity information is not listed in the MSDS however it does state not to allow the discharge of unneutralized acid to sewers.*
- *Natural Gas is a commodity that Orange & Rockland Utilities supplies to customers. Natural gas is currently present on the site in the underground gas pipes and the gas regulator station. In addition to the substation, the project includes a new gas regulator station on the project site. The toxicological effects of natural gas, as listed in the MSDS, are: suffocation (asphyxiant) hazard if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels; and exposure to rapidly expanding gas or vaporizing liquid may cause frostbite. This material is not expected to be harmful to aquatic organisms nor to bioaccumulate. Additionally, the hydrocarbons are expected to be inherently biodegradable.*
- *Containment Materials consist of a selectively permeable material used in the secondary and tertiary oil containment system. This material allows water to pass under normal condition but solidifies to seal the containment area when it comes in contact with a hydrocarbon. The system to be used in the secondary containment area is a combination of a polyvinyl blanket and a non-woven geotextile material filled with a blend of USDA food-grade polymers that encapsulate hydrocarbons. There are a variety of manufacturers that produce this type of oil solidifier material specifically for this application, one of which is C.I.*

Agent Solutions. The system to be used in the tertiary containment area applies the same type of technology, but is a different application. There are a variety of manufacturers that produce this type of containment material specifically for this application, one of which is Solidification Products International, Inc. (SPI). This product is not a health hazard as defined by OSHA.

INSERT SECTION DIVIDER

D. AIR / FIRE & EXPLOSION / EMERGENCY SERVICES

PUBLIC COMMENT 1: Using readily available data, prevailing wind patterns will be provided. (Planning Board Issues for Little Tor FEIS, May 28, 2013)

PUBLIC COMMENT 2: All access for fire apparatus is to the north and northeast of the transformers. Prevailing winds from the southwest will generally have you taking a downwind position to fight a very smoky oil fire. You need to be able to attack a fire from the south and west sides of the transformers. High tension lines to the immediate west must also be considered. (Mr. Longhitano, memo dated July 23, 2012)

RESPONSE: *Based on the best available data, including prevailing wind data taken from the National Oceanic and Atmospheric Administration (NOAA) database, the prevailing wind is generally from the west in New York State. A southwest component becomes evident in winds during the warmer months while a northwest component is characteristic of the colder half of the year. To the west of the proposed substation there is a 100' cleared utility easement (Right of Way) that does not have any significant woody vegetation and provides easy access for firefighting equipment to set up a line of defense along the west side of the substation. In addition, the driveway to the north of the substation and the access drive to the east side of the substation are designed to accommodate emergency vehicles.*

PUBLIC COMMENT 3: This article speaks to the fire releasing PCBs — a known carcinogen into the AIR, that even three days after the fire, were still at unacceptable levels. *(Ms. Walker, June 8, 2012)*

PUBLIC COMMENT 4: As a home owner, I need to know what effect the release of massive amounts of PCBs would do to my home, my child, and to my real estate value. *(Ms. Walker, June 8, 2012)*

RESPONSE: *None of the components of this project contain PCB. There are no PCBs proposed on this site.*

PUBLIC COMMENT 5: The second rule is that trees and flora burn white. This is clean smoke. Structures burn black. They are full of chemicals and these chemicals are toxic when inhaled. They are harmful to us. We all learned about this the hard way in the World Trade Center attacks. In Colorado, this is how we learned if our friends and neighbor's homes and businesses were burning, or just their back forty. A substation burning has got to be beyond toxic. Who will contain this smoke? Will there be pollution fines? When the winds are right, New Jersey oil refineries and factories are fined every time their fumes pollute Staten Island's air. Please don't let this happen here. Require far greater substantial fire-safety regulations. *(Mrs. Smith, memo dated June 21, 2012)*

PUBLIC COMMENT 6: Just for the benefit of the public, the New City fire company is the fire company that would service the area if there were an incident? *(Chairwoman Thormann, June 6, 2012, page 39, lines 22-25; page 40, line 2)*

PUBLIC COMMENT 7: To investigate and employ fire stopping technologies and to employ the latest fire explosion extinguishing and technologies. *(Mr. Geneslaw, June 6, 2012, page 38, lines 21-24)*

PUBLIC COMMENT 8: In terms of the fire department putting the fire out, they said they could handle the fire at the station. *(Mr. Gianondo, June 6, 2012, page 118, lines 11-13)*

PUBLIC COMMENT 9: …in this area where you have steep slopes and you have a lot of unburned fuel for generations, that it could be catastrophic and ordinary firefighting mechanisms may not be adequate. *(Mr. Dillon, June 13, 2012, page 69, lines 6-10)*

PUBLIC COMMENT 10: Fires: The substation contains 3 hazardous elements namely gas, electric and oil. Within the life span of the substation, at least one fire is likely to occur. DEIS does not discuss the protective measures against spread of fire in a densely wooded area instead it relies on local fire control facilities. *(Mr. Adib, via email, June 23, 2012)*

PUBLIC COMMENT 11: We know defensive fire-lines are only lines dug in the sand, so to speak. One gust of wind on dry clay can blow sparks well beyond the line to start up a new and destructive race against the elements or it can spread under parched grass by its root system. Defensive lines can move by the hour depending on fuel, wind and how much retardant is applied. Water is a retardant, as are foam, slurry and similar substances. We need to plan for an unbelievable amount of water. We need many more hydrants on the uphill side of the mountain. Please don't be naïve and think there will never be a drought. *(Mrs. Smith, memo dated June 21, 2012)*

PUBLIC COMMENT 12: What is your plan for what will happen if a fire starts at that site and spreads? Can New City's volunteer firefighters be expected to risk > their lives for Orange & Rockland or whatever gas company will own the gas line in the future? Will Clarkstown reimburse families for the damage to their homes and property caused by explosion and forest fires? *(Ms. King, via email, June 23, 2012)*

PUBLIC COMMENT 13: If a fire like the one in Nyack occurs at the proposed substation site spreads, what plan is there in place to deal with such an event? (Ms. Koch, via email, June 22, 2012)

PUBLIC COMMENT 14: I am especially concerned about three potential dangers related to the proposed electrical substation: 1) Fire, 2) Run-off of dangerous material into the West Branch, and 3) Electro Magnetic Forces. (Ms. Newman, via email, June 22, 2012)

PUBLIC COMMENT 15: As I've previously stated, the lack of comprehensive and cumulative risk assessments in the DEIS, together with the lack of emergency planning, is very surprising, especially given the unique risks associated with the proposed site (residential neighborhood, heavily wooded, steep slopes nearby, drinking water source onsite, gas substation onsite, etc.). *(Mr. Baum via email, June 21, 2012)*

PUBLIC COMMENT 16: Do we wish to rely on luck and 'wishful thinking,' as evidenced by the failure of the Applicant to adequately address health and safety issues in their DEIS? (Mr. Baum, via email, June 22, 2012)

PUBLIC COMMENT 17: As indicated on Sheet 2, I see no source of water for firefighting on the plans. No public hydrants or water mains are shown on the plans. Hydrants at the four corners of the asphalt loop around the transformers, each fitted with a turret monitor with

adjustable nozzle would allow the application of master stream flows with minimal exposure to manpower and apparatus. However, assuming four 500 GPM nozzles operating, the water supply requirement would be at least 2000 GPM at sufficient pressure to maintain 100 PSI at the nozzles. Is there a street main that can supply 2000 GPM? If so, you would want two 5" fire department connections that would allow two engines to boost the pressure into the loop that feeds the hydrants_ You would want those FDCs to be located where they will be a safe distance from the transformers and preferably not downwind of them_ Of course it would be advantageous to have a high-volume public hydrant from which pumpers can draw suction located at the head of the access driveway, and a private hydrant about halfway up the driveway. In addition, at least one public hydrant should be available where it will not be affected by the 100-year flood. *(Mr. Longhitano, memo dated July 23, 2012)*

RESPONSE: *In the case of a fire or other emergency at Little Tor, Orange and Rockland Utilities personnel would be dispatched immediately to the site along with the local fire departments. The fire department is trained to establish perimeter positions to ensure the fire is contained. O&R personnel would verify that the substation has been de-energized and the gas regulator isolated.*

Section III.L.2 of the DEIS indicates that this site is located in the section of Clarkstown serviced by the New City Fire District. The specific fire prevention and control measures proposed for this project have been reviewed by the Town of Clarkstown Chief Fire Safety Inspector who has determined these measures are acceptable and adequate (Attachment 2). The specific fire control measures proposed for this site include:

- *Installation of a fire hydrant within 450 feet of the substation at the corner of South Mountain Road and North Little Tor Road.*
- *Routine training of the local fire department to prepare them to control a fire at an O&R facility should one occur. Orange and Rockland Utilities trains the fire company that their role is to prevent a fire from spreading beyond the limits of the facility, not to extinguish a fire within the facility unless and until directed by O&R personnel. A draft of the most recent revision of the training presentation, developed in conjunction with the Director of the Rockland County Office of Fire & Emergency Services at the Fire Training Center, can be found in Attachment 2a.*
- *Within the fenced portions of the substation and gas regulator, the surface material is gravel. Should any equipment catch fire, the gravel helps prevent the fire from spreading. The distance from the transformers to the fence line is approximately 25 feet.*
- *Outside the fenced portion of the site, the project design allows for a defensible space - an area typically 30' wide or more between an improved property and a potential wildland fire where combustible materials and vegetation have been removed or modified to reduce the potential for fire on the improved property spreading to wildland fuels. A defensible space also provides a safe working area for firefighters. The closest wooded area is approximately 50 feet from any piece of major equipment within the substation. Access is provided for firefighting vehicles on the west, north and east sides of the substation. Space is provided for visual assessment and foot traffic around the entire perimeter of the substation.*

Section III.G of the DEIS and Section III.A of the FEIS describe the measures proposed to ensure that, to the greatest extent practical, oil and other contaminants would not adversely impact the adjacent natural resources. Section III.O of the DEIS and Section III.F of the FEIS provide a detailed explanation of the Electro Magnetic Field issue.

Appendix E includes MSDS for the materials of concern used in the construction of an electrical substation. They are discussed in Section III.C-Facility Materials. Other materials such as concrete, steel and metal are conventional construction materials used in general construction.

As listed in Section III.C- Facility Materials the significant substances that will be present at the project site are: transformer oil, sulfur hexafluoride gas (SF6), nitrogen, battery acid, natural gas and containment materials. MSDS sheets for these materials are provided in Appendix E. In the event of a fire at the substation the following materials may be released into the atmosphere: sulfur oxides (from the combustion of SF6 and battery acid), halogenated compounds (from the combustion of SF6), carbon monoxide (from the combustion of transformer oil), carbon dioxide (from the combustion of natural gas and transformer oil), nitrogen oxides (from the combustion of natural gas), methane (from the combustion of natural gas), sulfur dioxide (from the combustion of natural gas), and mercury compounds (from the combustion of natural gas). It is anticipated that the release of these combustion byproducts would be of a short duration. It should be noted that the release of all the above potential combustion byproducts simultaneously as a result of a fire at the substation is a worst case scenario.

Both the DEIS and the FEIS provide comprehensive and detailed explanations of the potential environmental impacts that might occur as a result of the proposed project. These documents also provide a detailed description of the measures proposed to mitigate impacts to the greatest extent practical.

PUBLIC COMMENT 18: I didn't see anything in this DEIS that referred to an automated fire suppression system which would react to a fire before the fire department could react. *(Mr. Dillon, June 13, 2012, page 68, lines 3-7)*

PUBLIC COMMENT 19: Information about building enclosures and automated fire suppression systems at substations and whether they are practical at this site. *(Planning Board Issues for Little Tor FEIS, May 28, 2013).*

PUBLIC COMMENT 20: How many transformers and phase angle regulators are going on this site? How many gallons of oil does each unit hold? Are there any blast walls between units to limit an incident to a single unit and to protect the Verizon building from concussion and shrapnel? Is the gravel area provided with a trapped drainage system to drain off the spilled oil to a sump? Are the transformers protected by deluge water spray systems? (Mr. Longhitano, memo dated July 23, 2012)

RESPONSE: *The proposed substation would include three (3) transformers, but no phase angle regulators. The two (2) 50 MVA transformers each contain 7,656 gallons of oil. The*

one (1) 25 MVA transformer contains 4,440 gallons of oil. Refer to Section III.A.3 for a detailed explanation of the tertiary containment system.

The substation does not include firewalls or extinguishing systems around each transformer. Per IEEE standard 979, "IEEE Guide for Substation Fire Protection", firewalls are not required when the design and size of the containment facilities are adequate or the transfomers are separated by at least 30'. The transformer containment facilities are more than adequate and the distance between the secondary containment of the transformers is in excess of 90'. The Verizon building is over 85' from the nearest transformer secondary containment which is greater than the 50' required to avoid transformer fire protection systems.

Orange and Rockland Utilities is primarily an overhead outdoor transmission and distribution system and does not have any electrical substations located in fully enclosed structures. This is due to the availability of adequate land throughout their franchise area for outdoor, air cooled facilities normal to suburban and rural areas. The rate structures established by the New York Public Service Commission are based on an overhead system.

In the case of the Little Tor substation, the use of an automatic exterior fire suppression system is not necessary because conventional firefighting measures are possible and a continuous water source will be established with the installation of a fire hydrant. These measures have been reviewed by the Chief Fire Safety Inspector for the Town of Clarkstown and found to be adequate and appropriate.

PUBLIC COMMENT 21: Information about the existing emergency services in the Town of Clarkstown is in the DEIS in the section on Community Facilities and Services. The applicant has met with members of the New City Fire Company and will respond to any requests for additional information they may submit. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

RESPONSE: *The applicant has provided the New City Fire Department with a copy of the design documents. The New City Board of Fire Commissioners has indicated that they do not require any additional information or clarification from Orange and Rockland at this time. (Attachment 2). The fire prevention measures proposed as part of this project have been reviewed by the Chief Fire Inspector and found to be adequate and acceptable.*

PUBLIC COMMENT 22: The access road from Little Tor Road is only 18 feet wide. If you set up an aerial apparatus to apply overhead master streams, no vehicles will be able to pass that ladder. If you bring in an engine first laying 5" hose up the access driveway that charged hose line will restrict access to any other vehicles. You really need a wider access road (27' — 30'). *(Mr. Longhitano, memo dated July 23, 2012)*

PUBLIC COMMENT 23: The asphalt access road that surrounds the transformers and switchgear is only 16 feet wide. You need wider access than that (27' — 30'). *(Mr. Longhitano, memo dated July 23, 2012)*

PUBLIC COMMENT 24: The access driveway rises 13 feet (137 to 148) over a distance of 100 feet as apparatus approaches the northeast corner of the transformer pad. This is probably as close as you would want to set up an aerial master stream device. Can the ladder equipment that you have be stabilized on a 10% — 12% grade? (Mr. Longhitano, memo dated July 23, 2012)

RESPONSE: *As indicated on the engineering drawings, the maximum slope of the access drive would be 10% and the width 20' which meets the requirement of the NYS Building Code and NFPA 13 for acceptable access for fire and emergency services equipment.*

The 16' wide paved circulation drive within the substation fence is designed to accommodate equipment required to operate and maintain the substation, not for emergency fire vehicles. The remaining portions of the substation yard are gravel designed to support H-20 loading and can support the maintenance equipment that Orange and Rockland Utilities uses.

The protocol for fighting a fire at this site requires emergency response equipment to control the spread of a fire from outside the fenced in yard. Access drives outside the substation fence provide access for firefighting equipment. The width and configuration of all access drives have been adjusted to reflect comments from the Town's Chief Fire Safety Inspector and the applicable code requirements.

PUBLIC COMMENT 25: The O&R DEIS does not at all address the potential risks associated with the co-location of the substation and gas regulator facilities. Do these two facilities together pose an increased risk to the safety of residents in Clarkstown that either would if located separately? *(Mr. Baum, via email, May 25, 2012)*

PUBLIC COMMENT 26: With the dangers demonstrated by these videos, the links to recent substation "events," and the attached articles, I have a particular concern about the proposed location, which will also be the site of a gas line regulator. Take a look at what happened some years ago in Edison, NJ *(Mr. Baum via email, May 25, 2012*)

PUBLIC COMMENT 27: What I didn't mention last time, although I did raise it in my e-mail and I want to raise for the benefit of the public, is since there is a potential for an explosion and fire at this facility, the fact that there will also be a gas substation, I wanted to find out, and I think it should be part of the DEIS, it should be part of the final record, the confluence of both a gas substation -- *(Mr. Baum, June 6, 2012, page 82, lines 12-21)*

PUBLIC COMMENT 28: Okay. So we have at that location a gas substation as well as a proposed electrical substation. What I want to question is whether there is some additional risk by putting those two facilities at relatively close proximity from a firefighting and safety stand- point. I mentioned the Fukushima Daiichi plant, problems with the nuclear plant in Japan. It was a worst case scenario that they had not planned for -- *(Mr. Baum, June 6, 2012, page 83, lines 4-14)*

PUBLIC COMMENT 29: The question needs to be answered by the DEIS about the cumulative risks of co-locating a gas regulator or gas substation at the same site, which could make the proposed project even more dangerous for the public's health and safety than each facility would do independently of the other. *(Mr. Baum, via email, June 14, 2012)*

PUBLIC COMMENT 30: The DEIS or its supplement should, at least, offer information on the dangers of the gas-handling operation and, particularly, on the possible interaction of the gas-handling operation and the electrical operation. Misadventure with natural gas entails possible danger to the electrical equipment and vice-versa. *(Mr. Granirer, memo dated June 25, 2012)*

RESPONSE: *Historically, electric and gas equipment have coexisted on this site for decades without incident, including the time when an electric substation existed in relative proximity to the gas regulator. Both the electric substation and the gas regulator will be continuously monitored for proper operation and both can be safely isolated from their energy sources if necessary. This is a significant improvement compared to the previous conditions on this site. During the incident in Edison, NJ, there was no way of remotely isolating the gas flow from feeding the fire. With the upgrade to the equipment being proposed, the gas flow to the equipment at South Mountain Road can be remotely isolated.*

Shared facilities exist throughout the Orange and Rockland Utilities service area and historically have not resulted in any unusual emergency events as a result of this coexistence. Other shared facilities include:

- *Bowline Point, West Haverstraw, NY*
- *Hillburn, NY*
- *Monroe, NY*
- *Shoemaker, Middletown, NY*
- *Stony Point, NY*
- *Tallman, Airmont, NY*
- *West Haverstraw, Haverstraw, NY*
- *Lovett, Tomkins Cove, NY*

The Chief Fire Safety Inspector for the Town of Clarkstown reviewed the revised fire protection measures proposed for this facility and indicated they are acceptable and adequate. The addition of a fire hydrant in proximity to the site provides an adequate course of water to the fire department to ensure any fire does not spread beyond the fenced in portion of the facility. The fire department is aware of the fact that this facility has both electrical and gas equipment like many other facilities in the Orange and Rockland Utilities system.

PUBLIC COMMENT 31: Information on the lightning protection included in the substation design and in the existing transmission lines. *(Mr. Granirer, memo dated June 25, 2012)*

RESPONSE: *A Dynasphere Air Terminal is included in the project design for lightning protection. The Dynasphere would extend approximately 83.5 feet above the station and is designed to attract and dissipate a lightning strike. Dynasphere Air Terminal is an integrated direct strike protection system that provides protection against the effects of direct lightning strikes. The Dynasphere is shown on the Engineers drawings included in Appendix A.*

PUBLIC COMMENT 32: How could Orange & Rockland ensure that employee or contractor errors like those that happened with a massive gas explosion earlier this year in Haverstraw won't happen at this facility? *(Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 43, lines 6-11)*

PUBLIC COMMENT 33: -- one massive deadly explosion in San Bruno, CA, in 2010, and one more recently on an O&R gas line in nearby West Haverstraw, which fortunately was not deadly because the homeowners weren't home at the time. *(Mr. Baum, via email, June 14, 2012)*

RESPONSE: *Orange and Rockland Utilities invests a significant amount of effort training their employees, local emergency services and their contractors to ensure to the greatest extent practical that human error is not the cause of an emergency event. Employees receive regular technical training and safety training. In addition, Orange and Rockland Utilities hires contractors that have been evaluated, have demonstrated they are properly qualified and where necessary are certified . While infrastructure located in the public right of way is exposed to any contractor, as in the case of West Haverstraw, no contractor would be allowed to excavate or dig on the Little Tor site without the supervision of O&R Construction Management personnel.*

Maintaining equipment and utilizing technology also play a key role in preventing emergency events. The San Bruno, CA event referenced in this question was further complicated because the gas supply could not be isolated. Much of the gas regulator equipment that has existed on this site since 1962 would be removed and replaced with newer equipment that can be remotely monitored and controlled. The same type of monitoring and control would be provided for the substation.

PUBLIC COMMENT 34: The situation that happened down in Dunwoody resulted in a seven hundred thousand dollar fine against Con Ed and we learned that you had agreed to make changes to prevent future malfunctions and consented to a comprehensive review and audit of similar facilities in the Hudson Valley. Now, you had something happen again on April the 28th. Can I ask you what your comprehensive review was, what you did to change how you function, and what was different with Dunwoody than what we're having here? Are those substations not monitored twenty-four hours a day when they're such a high voltage substation? *(Ms. O'Connor, June, 6, 2012, page 46, lines 5-21)*

PUBLIC COMMENT 35: Information on how the ORU system differs from the ConEdison system, limiting the potential for fire and explosion at Little Tor compared to ConEdison events. *(Mr. Baum, via email, May 25, 2012)*

PUBLIC COMMENT 36: I also referred to several other explosions and fires experienced by Con Edison, Inc., including a massive explosion and fire in November 2009 at the Dunwoodie Substation in Yonkers, which was followed by an oil spill in the Bronx River two miles away as a result of this fire. *(Mr. Baum, via email, May 25, 2012)*

RESPONSE: *The containment system for the Little Tor site is completely different than the system at the Dunwoodie facility. The discharge of oil from the catastrophic failure of a*

transformer at Dunwoodie was caused by a mechanical failure of the oil containment system on that site. The containment system proposed for the Little Tor substation, described in Section III-A, is a passive system that does not require any mechanical or manual operations to function. In its dormant condition normal stormwater runoff passes through. In its active state the containment material solidifies when in contact with oil, contains any spilled oil to a confined area and prevents the oil from reaching any sensitive receptors. In addition, the containment system for the Little Tor Substation has multiple levels of protection. The redundancy and overall capacity provided in the containment system for Little Tor is significantly greater than that provided at the Dunwoodie substation. These improvements to the containment systems are a result of lessons learned and changes in the environmental regulations governing these facilities.

*O&R's electric system operates at much lower voltages than the Con Edison electric system, resulting in less force behind abnormal events. The transformer involved in the Dunwoodie incident is a 345kilovolt (kV) to 138kV unit; the transformers at Little Tor will be 138kV to 13.2kV and 13.2kV to 34.5kV units.***PUBLIC COMMENT 37:** Who would pay for such a fire here? Who will take responsibility for it? Orange and Rockland? Can they be sued if there is ever such a fire? Can the county sue them to recoup expenses? Can the state sue them to recoup expenses? Can the federal government sue them if their substation started such a hypothetical catastrophic fire? We would think Orange and Rockland would be making no end of effort to do everything possible to prevent this from becoming an issue at any cost. *(Mrs. Smith, memo dated June 21, 2012)*

RESPONSE: *Orange and Rockland Utilities employs regular maintenance and testing of all its facilities in accordance with manufacturers' recommendations and industry standards. This site would be monitored 24 hours a day from a centrally located control center. In the event of a fire, the New City Fire Department would respond. Orange and Rockland Utilities meets periodically with all of the fire departments within its service territory and provides training and guidelines for handling fires at these types of facilities.*

There is no prohibition against a lawsuit being filed against any party determined to be responsible for damages. Any party incurring damages as a result of another party's negligence is entitled to resort to the courts of the State of New York to request that such damages be determined.

PUBLIC COMMENT 38: Descriptions of the 24 hour/7 day a week monitoring systems on site. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

PUBLIC COMMENT 39: Descriptions of the applicant's response protocol to an event, the cleanup process, and the time frame for cleanup. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

RESPONSE: *The proposed electrical substation is remotely monitored 24 hours a day, 7 days a week, 365 days a year. There is a central control center manned by Orange and Rockland Utilities personnel who monitor and control the major elements of the electrical substations and gas facilities in the Orange and Rockland Utilities system. The proposed substation would be equipped with various alarm systems which detect problems at the substation (ie: low oil pressure levels in the transformers). In addition, the closed circuit*

cameras are monitored continuously. If a signal is received at the control center, crews would be dispatched to the substation. The response time is typically less than one (1) hour. Orange and Rockland Utilities has a response protocol for any abnormal condition at every substation. The specific protocol is dictated by the type of situation. In the case of a failure in a transformer that results in a discharge of oil, Orange and Rockland Utilities would dispatch their own personnel along with contractors who are on call 24/7. These contractors are equipped and qualified to control and clean up a spill should one occur. Once on site the protocol would be as follows:

- *Notification - Orange and Rockland Utilities Environmental Health and Safety personnel would make all required notifications, such as those to the NYS DEC.*
- *Containment - the contractor is required to contain any spill using accepted means and methods.*
- *Removal - once the spill is confined, the contractor is required to remove all contaminated material, including clothing, cleanup materials and any affected dirt or stone, and dispose of it offsite at a previously approved disposal site.*
- *Restoration - once the contaminated material is removed and Orange and Rockland's Environmental Services staff or the on-call spill responder verifies the site is clean, the site is restored to its original condition. In the case of a transformer containment area, this would include replacing the containment material, if affected, and the stone backfill.*
- *Time Frame - cleanup will commence immediately following the identification of the release of material. Orange and Rockland Utilities and the contractors would work continuously until restoration is complete. The length of time necessary will depend on the extent of the spill.*

From: Kenneth Flynn [mailto:KFlynn@newcityfire.org]
Sent: Thursday, June 28, 2012 3:27 PM
To: Lanza, Joanne
Subject: Re: O&R Little Tor Substation <External Sender>

Hi Joanne,
I have spoken with some of the members of the Board, and the general consensus is to let the approval process follow it's normal course through the building department and fire inspectors office. Therefore, they are not asking for any clarifications from O&R at this time.
Thank you for the offer.
Kenny

Sent from my iPhone

On Jun 21, 2012, at 11:14 AM, "Lanza, Joanne" <lanzaj@oru.com> wrote:
Kenny,
I would be happy to attend the meeting on 7/12 to answer any questions you and the Board may have.

Regards,
Joanne

From: Kenneth Flynn [mailto:KFlynn@newcityfire.org]
Sent: Thursday, June 14, 2012 9:55 AM
To: Lanza, Joanne
Subject: Re: O&R Little Tor Substation <External Sender>

Good morning Joanne,

Thanks for the info, I've passed it along to the Board of Fire Commissioners.

As I said in our phone conversation, their next meeting, due to the 4th of July holiday week, will be held on Thursday, July 12.

I was at the meeting last night and left at the break.
Interesting spectacle.

Kenny

Sent from my iPhone

On Jun 12, 2012, at 5:29 PM, "Lanza, Joanne" <lanzaj@oru.com> wrote:
http://www.town.clarkstown.ny.us/html/planning_board_view.asp?id=10
Kenny,
I apologize for the delay – I was stuck in a training class today.
Here is the page address to the Draft Environmental Impact Statement, its appendices and the associated drawings. I can provide you with full size prints of the drawings if you wish. Let me know if you have any questions.
Regards,
Joanne H Lanza
Sr Electrical Engineer
Transmission & Substation Engineering
Orange & Rockland Utilities, Inc
390 West Route 59
Spring Valley, NY 10977
Desk: 845-577-3727
Cell: 917-709-1843

SCALE: NTS

Image Source: LANGAN

Attachment 2 (Page 1 of 2)
Correspondence at Fire Department
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

From: Mike Finan [mailto:mfinan@langan.com]
Sent: Thursday, October 31, 2013 11:10 AM
To: v.narciso@clarkstown.org
Cc: Lanza, Joanne
Subject: Little Tor Substation Fire Meeting <External Sender>

Mr. Narciso:

It was a pleasure meeting you and we thank you for your time. This shall serve to confirm our discussions and the requests you made at our meeting dated October 17, 2013.

1. The installation of a new fire hydrant at the intersection of N. Little Tor and South Mountain Road will be sufficient for your department;
2. The entrance driveway shall be 20 feet wide;
3. The access driveway to the storm water pond shall be a minimum of fifteen (15) feet wide and left as item 4. The purpose of widening the access driveway is to allow the department to gain access to the tree areas in the event of a brush fire;
4. The separation of the tree canopy, as indicated on the attached map, is sufficient and does not appear to be a fire concern;
5. There is sufficient turn around area at the end of the driveway for a fire apparatus.
6. ORU has provided training for fire departments and will continue to provide such training, upon request;
7. There is no access to the internal yard of the electrical substation. This was acceptable since the department's protocol is to allow the substation to burn and not apply water until power at the station has been turned off.

Please feel free to correct any item that I may have misrepresented or misinterpreted.

Michael Finan, PE LEED AP
Senior Project Manager
Toll Free: 800.952.6426
Direct: 212.479.5502
Mobile: 914.523.4496

EXTERNAL SENDER. Do not click on links if sender is unknown and never provide user ID or password.

SCALE: NTS

Attachment 2 (Page 2 of 2)
Correspondence at Fire Department
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York

Image Source: LANGAN

LANGAN White Plains New York

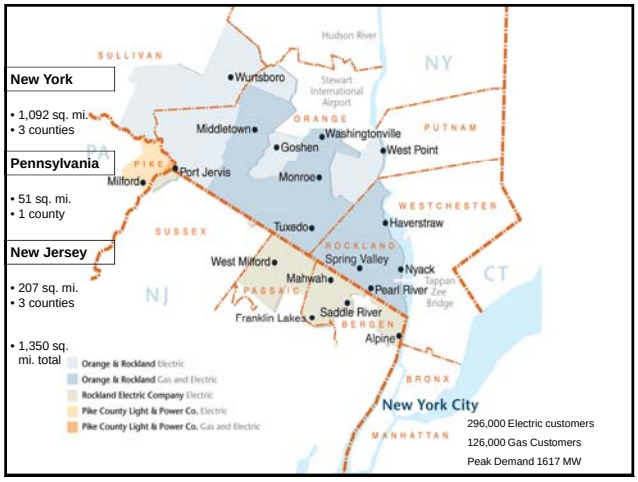
Orange & Rockland Utilities
Firefighter Safety Training Program

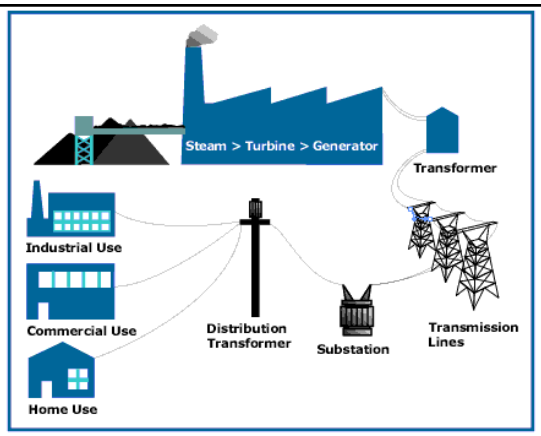
1

Introduction

- Background
- Safety
- Types of hazards

Orange & Rockland 2





Orange & Rockland 4

O&R Electric T&D System

Distribution

- 2 operating divisions
- 1,022 miles of overhead mainline
- Total distribution
  - *5,038 miles overhead*
  - *831 miles URD*
- 221 circuits
- Operating Voltages
  - *2,400 & 4,800 delta*
  - *4,160/13,200/34,500 wye*
  - *Primarily 15 kV class overhead radial distribution*

Transmission

- 587 miles
- 80 Substations
- Operating voltages
  - *34.5 kV (sub-transmission)*
  - *69 kV*
  - *115 kV*
  - *138 kV*
  - *345 kV*

O&R Control Room

Operation

- Emergencies response
- Scheduling & dispatch
- **Safety clearance on distribution system**
- Field communications
- Off hours call outs

- Operating authority for all distribution equipment
- Monitor system status
- Coordination of information flow between necessary personnel

Electricity Background

Why Be Concerned?

- Can't see, feel, smell or hear it
- Don't have to make contact with a wire to be injured or killed by it
- The amount of current necessary to kill you can be less that what is required to light a 100 watt bulb

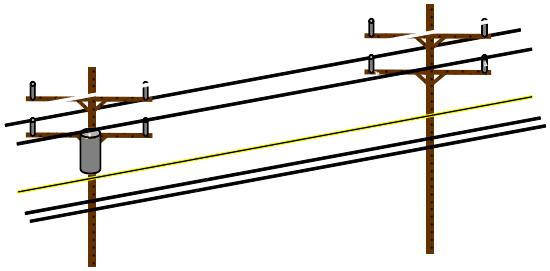
Affect of Electrical Current on the Human Body

1 milliamp –	Just a faint tingle.
5 milliamps –	Slight shock felt. Disturbing, but not painful.
6-25 milliamps (women) –	Painful shock. Muscular control is lost.
9-30 milliamps (men) –	It may not be possible to "let go."
50-150 milliamps –	Extremely painful shock, respiratory arrest (breathing stops), severe muscle contractions. Death is possible.
1,000-4,300 milliamps – (1 – 4.3 amps)	Ventricular fibrillation occurs. Muscles contract; nerve damage occurs. Death is likely.
10,000 milliamps (10 amps) –	Cardiac arrest and severe burns occur. Death is probable.
15,000 milliamps (15 amps) –	Lowest over current at which a typical fuse or circuit breaker opens a circuit!

Affect of Electrical Current on the Human Body (cont)

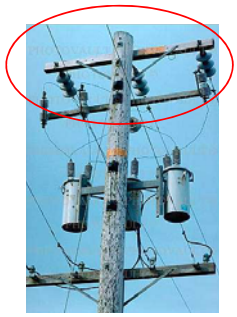
- Effects are for voltages less than about 600 volts. Higher voltages also cause sever burns.
- Differences in muscle and fat content affect the severity of shock.
- Other Factors
  - Resistance hinders current
    - Dry skin - 100,000 ohms
    - Wet skin – 1000 ohms
  - Current path through the body
  - Duration of the current passing through the body

Distribution System
Typical Pole Construction



Primary Conductors

- Located at the highest level of the pole
- Carry the greatest amount of power
- Voltage can vary from 2400 to 34,500 volts



Secondary Conductors

- Located below transformers, at the second-highest level of the pole.
- Carry voltages of 120/240, 120/208 or 277/480.
- May be coated for protection from the elements. This coating DOES NOT provide insulation from live current

Electrical Hazards

Distribution System

Cable TV / Telephone Lines

- located at the lowest level of the pole
- carry lower voltages than primaries & secondaries
- should be coated for protection from the elements. This coating DOES NOT guarantee insulation from live current.
- should always be considered dangerous due to back-feeding or cross-conduction.

Electrical Hazards

Types of Emergencies

Downed Wires

Pole / Transformer Fires

Vehicle / Pole Accidents

Wires on Vehicle

Vehicles Contacting Wires

Structure Fires

Manhole/Vault Fires

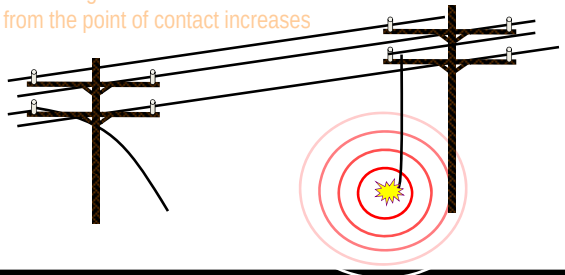
Substations

CAUTION CAUTION CAUTION CAUTION

Electrical Hazards

Step Potential

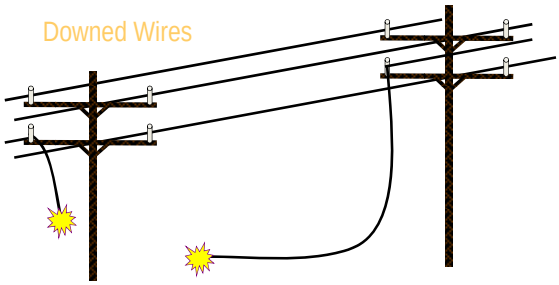
The voltage decreases as the distance from the point of contact increases



Electrical Hazards

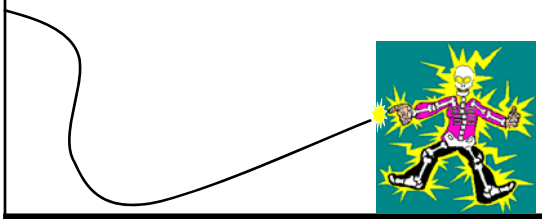
Types of Emergencies

Downed Wires



Types of Emergencies

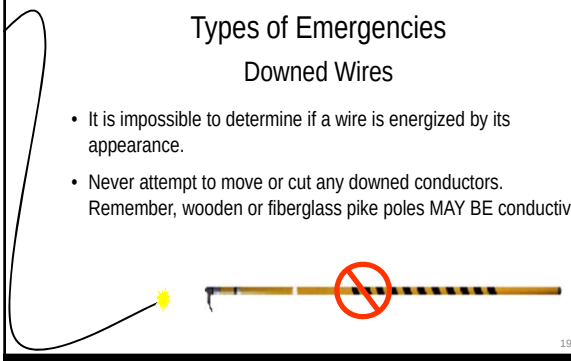
Downed Wires



Types of Emergencies

Downed Wires

- It is impossible to determine if a wire is energized by its appearance.
- Never attempt to move or cut any downed conductors. Remember, wooden or fiberglass pike poles MAY BE conductive



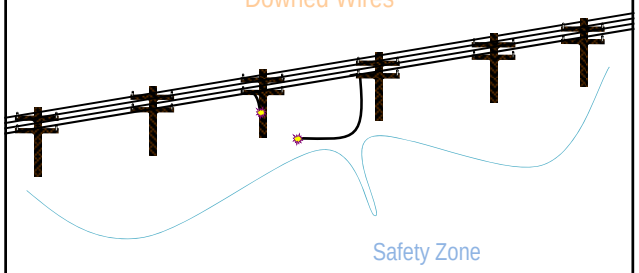
Types of Emergencies

Downed Wires

- Upon arrival
  - Establish a safety zone and secure the area.
- If possible, the safety zone should extend a minimum of two full span lengths of wire in each direction beyond the downed wire.
  - poles may break and fall due to stress
  - wires can slip through insulators and sag to the ground
  - wire may be contacting metal fences, guard rails, buildings, etc.

Types of Emergencies

Downed Wires



Types of Emergencies

Downed Wires

- Any high-voltage wire, when disturbed, can get out of control.
- FF boots do not guaranty insulation from energized wires.
- NO HIGH VOLTAGE wire is insulated. The coating sometimes seen is to provide protection from

Types of Emergencies

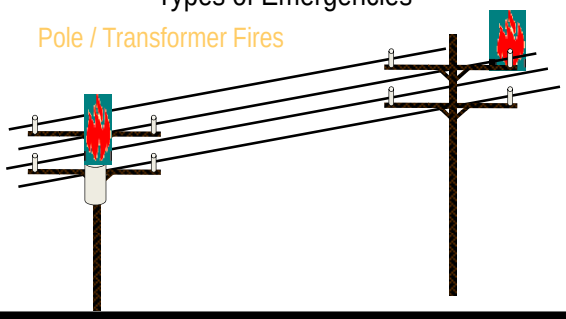
Downed Wires

- Bodies in contact with live wires may be energized. DO NOT TOUCH the individual until the wire is tested dead and cleared form the body.
- Wires should not be assumed dead until they are tested dead or certain assurance from O&R personnel is

Electrical Hazards

Types of Emergencies

Pole / Transformer Fires



Types of Emergencies

Pole / Transformer Fires

- If a downed wire is involved in the fire, use a fog pattern to keep the fire in check and protect the surrounding area.
- If the fire is at the top of the pole, or is on pole-mounted equipment, and it appears that the fire will not endanger life or property, let it burn. Remember, once electrical equipment is involved in fire, it is not salvageable.

Types of Emergencies

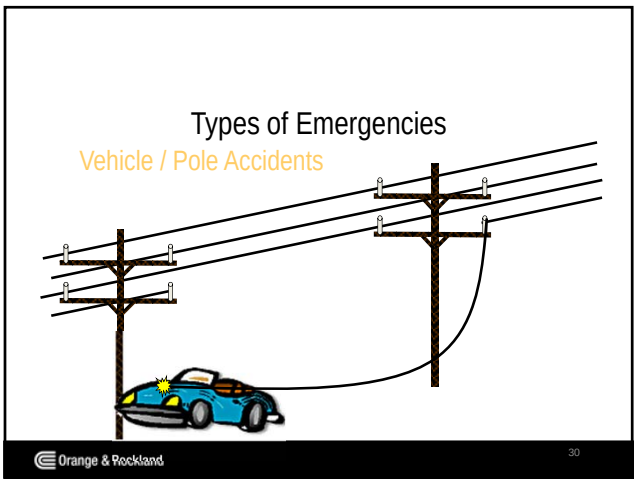
Pole / Transformer Fires

- In the rare case where the fire must be attacked and/or the equipment has not been de-energized, exercise extreme caution.
- Most pole fires are caused by:
  - Lightning
  - insulator breakdown (broken or contaminated by salt spray or air pollution)
  - equipment failure

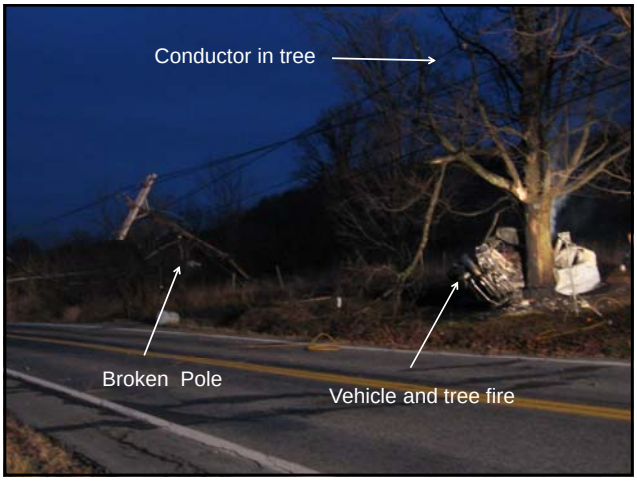
Types of Emergencies

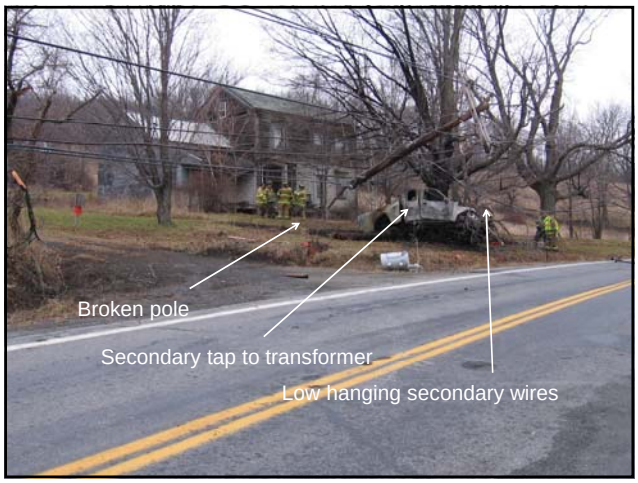
Pole / Transformer Fires

- As most pole-mounted equipment contains oil, the extinguishing agents of choice are dry chemical and water fog.
- If the equipment is still energized, little can be done to extinguish the fire, as the oil will continue to re-ignite.
- When in doubt, secure the area, establish a safety zone and allow O&R to arrive and determine the safe and proper course of action.


Types of Emergencies
Vehicle / Pole Accidents
Orange & Rockland
30

CATV
Pole
Guy Wire


Conductor in tree
Broken Pole
Vehicle and tree fire



Types of Emergencies

Vehicle / Pole Accidents

- All potential hazards should be thoroughly evaluated.
- Approach cautiously - Establish a safety zone.
- If a fire is present, use a fog pattern rather than straight stream.
- Remember: the vehicle *and anything attached to it* may be energized.
- Approach the vehicle to no closer than 10 feet.

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Types of Emergencies

Vehicle / Pole Accidents

- Occupants have one overriding thought . . . . To get out of the vehicle.
- Gain their confidence and order them to remain in the vehicle.
- In dire emergencies and under ideal conditions, the driver can try to move the vehicle from underneath the wires.
- However, the wire may weld itself to the vehicle – preventing

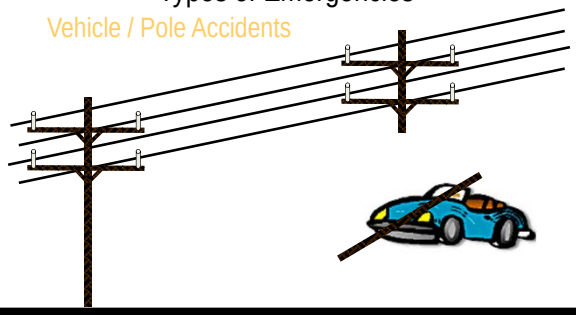
Types of Emergencies

Vehicle / Pole Accidents

- If it is absolutely necessary to have the occupants exit the vehicle, they should be given explicit instructions and told not to come in contact with the vehicle and the ground at the same time.
- Once on the ground, small shuffling steps should be taken to move away from the involved vehicle (remember - step potential

Types of Emergencies

Vehicle / Pole Accidents



Types of Emergencies

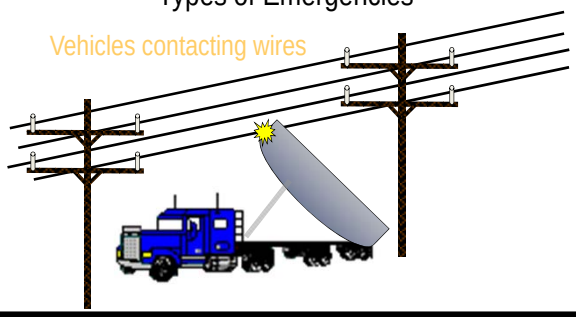
Vehicle / Pole Accidents

- In some cases, poles struck by a vehicle will sever, leaving the top portion suspended in air by the wires.
- In these cases, if energized wires are not contacting the vehicle, the occupants should be evacuated and a secure zone established.
- The supported section may fail, causing energized wires to fall to the ground.

Electrical Hazards

Types of Emergencies

Vehicles contacting wires



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Types of Emergencies

Vehicles contacting wires

- Procedures for vehicles in contact with energized wires are the same as those for vehicle / pole accidents.
- The “step potential” affects the area around the involved vehicle, as well.
- Unless threatened by fire or some other danger, occupants should remain on the vehicle until the wires can be de-energized.

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Types of Emergencies

Vehicles contacting wires

- The entire vehicle may be energized, causing tires and fluids to burn, lug nuts to weld & other components to fail, especially pressurized cylinders (bumpers / hatch lifts).
- Fires should be extinguished with a fog pattern – NOT a straight stream.

Electrical Hazards

Structure Fires

Electrical Hazards

Structure Fires

It is usually best to leave the power on to structures as long as you safely can

When safe firefighting tactics require the power to be shut off, the following actions are appropriate:

- de-energize the fire-affected area by removing fuses or opening circuit breakers.
- open the main disconnects to de-energize the entire bldg.
- if the bldg. is damaged to the extent that service is no longer req'd or puts personnel in jeopardy, the service to the bldg. should be disconnected by O&R

Structure Fires

Meters

O&R says . . .

Never pull an electric meter to de-energize a bldg.

Structure Fires

Meters

Reasons for NOT removing meters

1) Pulling the meter may not de-energize the electric service to the bldg.
   - Services over 200 amps are metered by current transformers. Pulling the meter will not shut off the electric supply.
   - Some meter bases are equipped with automatic bypasses. When the meter is removed, the bypasses close and the bldg. remains energized.
   - People have developed many unique methods to bypass the meter.

Structure Fires

Meters

Reasons for NOT removing meters

2) If there is a presence of explosive gases in the bldg., the service wire piping can act like a chimney. A small amount of gas may be present in the meter socket and pipe. When the meter is removed, a small arc will occur and the gas may explode.
3) If the meter is exposed to the heat of the fire, it can build up internal stresses and explode on contact.
4) After a meter is removed, the energized contacts in the meter socket are left exposed, posing a shock hazard to anyone near the meter base.

Electrical Hazards

Manhole Fires

Electrical Hazards

- Notify O&R immediately upon receipt of the alarm.
- Secure the area. Establish a safety zone.
- If the cover is in place, do not attempt to remove it without first consulting with O&R personnel.
  - If flammable gases are present, removing the cover may provide sufficient air to cause an explosion.
  - If a transformer has failed and the oil is above it's ignition temperature, removing the cover may cause a back draft.

Electrical Hazards

- A spark resulting from removing the cover may cause an explosion of gases in the manhole.
- If there are gases present in the ductwork running from manhole-to-manhole, subsequent explosions could occur down the line.
- Explosions have been known to propel a manhole cover (which weigh approx. 270 lbs.) a significant distance.

Electrical Hazards

- If the manhole cover is already off, do not enter the manhole or take any further action until the situation has been evaluated by O&R and BC GAS personnel.
- Manholes must always be treated as highly hazardous confined spaces.
- Except for rescue, FD personnel should never enter a manhole.

Electrical Hazards – Manhole Fires

REMEMBER

Unless there is human life at stake,

there is no great urgency to extinguish a fire or enter the manhole or vault!!!

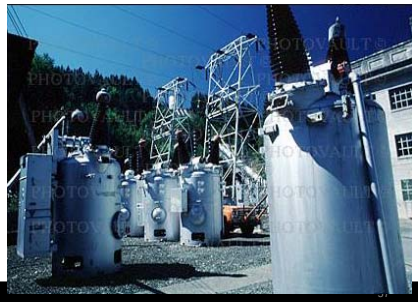
Maximum damage to the equipment has already taken place.

Types of Emergencies - Substation

- Some equipment, such as circuit switches and breakers, have porcelain housings that are pressurized with SF-6 gas. If they are involved in fire and sprayed with water, the sudden temperature change may cause a violent failure.
- Never operate electric utility high-voltage switches that are within a substation property, mounted on poles, or located within manholes or vaults. Many of these are not designed to drop electric load.

Types of Emergencies

Substations



Types of Emergencies

Substations

Hazards

- High voltage (overhead & underground)
  - Open high-voltage work
  - Oil-filled switch gear, transformers, etc.
- Toxic smoke & gases due to burning oil & insulating materials
  - Intense heat of a fire can collapse steel framework
  - Explosion from oil-filled equipment
  - Exploding glass & porcelain

Types of Emergencies

Substations

Types of Emergencies

Substations

- FD personnel should not enter substations, either private or O&R, unless accompanied by O&R.
- Any electrical apparatus, transformer or switch that has been on fire cannot be salvaged.
- Efforts should be directed at protecting surrounding property and awaiting arrival of O&R.

Summary

Treat all wires as dangerous and energized at high voltage until tested and proven otherwise.

Exercise extreme caution when approaching the scene, especially at night.

Establish a safety zone and prevent all unauthorized persons from approaching the scene.

Secure the scene until relieved by O&R.

Never tamper with energized wires or equipment.

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61

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Building for a Brighter Future.

INSERT SECTION DIVIDER

1. AESTHETICS

PUBLIC COMMENT 1: The first thing I noticed in reviewing the DEIS is that the photo simulations were inconsistent with the Landscape Plan that was presented. In other words, the photo stimulations are unrealistic and not showing what the Landscape Plans shows. The photo simulations do not represent the Landscape Plans and the actual impacts that will be seen from South Mountain Road and also from Little Tor Road. (Mr. Baum, May 2, 2012, page 22, lines13-23)

PUBLIC COMMENT 2: The second thing that's noticeable here with the little bit of right-of-way that is visible, they have tall growing trees that are quite some age directly under the transmission lines. Their Landscaping Plans do not show those trees at all. So there's a major inconsistency between the reality, and I believe the Landscaping Plan is the reality and the photo simulation - - you have the same kind of problem with the photo simulation for Little Tor Road. (Mr. Baum, May 2, 2012, page 23, lines 24-25; page 24, lines 2-11)

PUBLIC COMMENT 3: Continuing, Mr. Geneslaw advised when the plan is revised depicting the relocated driveway, suggested the applicant provide new photos showing the level of visibility from Little Tor Road. (PB Meeting December 3, 2008, FKA 25B1, Page 3)

PUBLIC COMMENT 4: The top of the substation is about eighty-one feet high, I believe, and you can see that the trees from Little Tor Road are pretty much covering the entire facility. So this represents probably between twenty and maybe as much as forty years' worth of growth of the Norway spruces that are put in front of the substation. So what people will see with these seven – and the ten- or twelve-foot trees that are going to be planted is not what's being represented in these photo simulations. (Mr. Baum, May 2, 2012, page 24, lines 11-23)

PUBLIC COMMENT 5: And, again, I think the South Mountain Road perspective, particularly because it's a town-designated historic road, it's really important to have that correct and that the perspective should be taken from the actual viewpoint. It would be as though you wanted to buy a house and the real estate agent showed you the house next door instead of the house they wanted to sell you. So that's a problem. (Mr. Baum, May 2, 2013, page 25, lines 9-19)

PUBLIC COMMENT 6: We felt that this might be an intrusion on that view shed. They brought in some very detailed maps and we went out and actually walked the site to see where the facility would actually be built, and it looked like it would not be visible from South Mountain Road at all which relieved our one major fear. *(Mr. Knight, June 13, 2012, page 101, lines 2-10)*

PUBLIC COMMENT 7: Visibility of the substation on a historic road. We displayed O&R's photo-simulations showing trees that purportedly would hide some of the substation equipment. We noted that those trees would have to be 50 years old to be as high and dense as shown in O&R's renderings. O&R also showed trees under the power line. Under

interstate regulations, O&R would be required to cut these down! We demanded to see what the plant would look like from the road in five years, not 50, with a legal Landscaping Plan. *(Ms. Thal, via email, May 20, 2012)*

PUBLIC COMMENT 8: To paint in a mature forest where seven-foot trees are being planted, there's no way to give anyone an idea of what the station will look like. To show trees in the right-of-way of the conductors' overhead wires, where PSC requires that those trees not be there, is faking and I wish we could see a reliable visual impact study instead of the one we have. *(Mr. Granirer, May 2, 2012, page 42, lines 19-25; page 43, lines 2-4)*

PUBLIC COMMENT 9: Renderings of the site are included in Section III.B of the DEIS, Visual Resources and Community Character. Additional information will be provided at the request of the Planning Board. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

PUBLIC COMMENT 10: Additional discussion of the site restoration plans. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

PUBLIC COMMENT 11: So I think that the applicant needs to go back with their photo simulations and do photo simulations that represent reality of when the substation is first created, built, five years, and ten years out. I don't think that in something that's twenty or forty years, most people are going to be all that much worried, twenty or forty years. *(Mr. Baum, May 2, 2013, page 24, lines 24-25; page 25, lines 2-8)*

PUBLIC COMMENT 12: Whatever the ZBA may do about that discrepancy, under SEQR and its regulations, you must determine whether the proposed substation may have significant adverse visual effects. If your answer is "Yes," or even if it is "Maybe," you must undertake an Environmental Impact Statement (EIS).We believe that your answer to that question should be "Yes." The applicant has provided too little information for you to make any other determination. Although you have been given plans for plantings and screening, there is no visualization from which you can assure yourselves that the proposed screening and planting will conceal the substation, especially from the most likely public viewpoints, which are along South Mountain Road, close to the site, and from homes nearby. Only a computer simulation— one that has been validly composed from the applicant's construction plans and from a surveyor's information on surface contours, and from plans for existing and proposed plantings at their height and density when they are planted — will serve that purpose. *(Mr. Granirer, memo dated December 2, 2008)*

PUBLIC COMMENT 13: We did speak with the O & R officials, however, because when we went out, it was summertime and all the foliage was in full bloom. We didn't know what it might be like in the wintertime when there is no foliage. The facility might be visible. So to cover that contingency, we put a provision in our approval that if, in fact, the facility is visible from South Mountain Road in the wintertime, that Orange & Rockland plant some evergreen trees or pine trees between the facility and South Mountain Road so that when they mature it would effectively hide any vestige of them, and they agreed that they would do that. *(Mr. Knight, June 13, 2012, page 101, lines 11-25; page 102, lines 2-3)*

PUBLIC COMMENT 14: Figure III.B-1 depicts the views for photographic simulations. Later in the section on pages III.B-21 and III.B-22 the text describes the view locations. The view descriptions do not seem to correlate with the view numbers in Figure III. B-1. This must be corrected. (Rockland County Department of Planning letter, dated May 8, 2012)

PUBLIC COMMENT 15: The photographic simulations are only taken from locations immediately adjacent to the site, where overall visual impacts are localized. Photographic simulations should also be taken from the Long Path, Central Highway, or other locations that where the site is more noticeable when seen from the distance, especially given the height of some of the structures. (Rockland County Department of Planning letter, dated May 8, 2012)

PUBLIC COMMENT 16: If you look here on the proposed Landscaping Plans for the substation, you'll see there are absolutely no trees with the utility right-of-way. By law, Case 04-E-0822 from New York State Public Service Commission, they're not allowed to put tall growing trees underneath those transmission lines, so there's a noticeable clearing that would have a clear view from South Mountain Road directly toward the substation facility. *(Mr. Baum, May 2, 2012, page 22, lines 24-25; page 23, lines 2-10)*

PUBLIC COMMENT 17: When you look, and I'll show you the substation perspective from South Mountain Road first, the first thing that I noticed is that the perspective is taken from beyond the clearing point, it's actually to the east of the transmission lines sufficiently that you don't really get the clearance that exists, whatever it is, the seventy-five-foot wide clearance, whatever the clearance is for right-of-way. Usually it's like a hundred feet, so you don't see it. *(Mr. Baum, May 2, 2012, page 23, lines 11-23)*

PUBLIC COMMENT 18: South Mountain Road is a town-designated historic road and the project sponsor should work to architecturally integrate the substation into the surrounding area using the historic elements of the area and the architectural design. The facility should blend into the environment. We have several photo examples of how substations have been blended into an environment to look like a home or building, which we've attached for Board review, and those are attached to the memo to the Board. *(Mr. Geneslaw, June 6, 2012, page 25, lines 19-25; page 26, 2-8)*

RESPONSE: *The Applicant was requested to prepare an Environmental Impact Statement (EIS) for this project that addresses the possibility of significant adverse visual impacts. The EIS includes Landscaping Plans and photo-simulations that depict how the proposed substation will be screened.*

The Landscape Plan and photo-simulations from the DEIS have been revised. Appendix B is a revised Landscape Plan, Figure 9 is the key map showing where each of the view angles are located around the site and Figures 10a through 17b are the revised photo-simulations. The locations from which the visual assessments were taken as shown on Figure 9 were selected by the Planning Board. The photo-simulations depict the existing vegetation that would be preserved around the substation along with the proposed landscaping that would substantially screen the electrical substation from these vantage points.

The size and height of the proposed landscaping depicted in the photo-simulations is at the time of initial planting. As demonstrated in the revised photo-simulations, it is not only the height of the newly planted material, but a combination of the existing mature vegetation and the proposed supplemental landscaping that screens the electrical substation from the adjoining properties and adjacent roads to the greatest extent practical. Future growth of the landscaping would improve the screening affect over time. The photo-simulations provide a perspective in both the leaf-on and leaf-off conditions. The proposed substation would be substantially screened from the adjoining roadways and adjacent properties by existing wooded areas being preserved and supplemental landscaping being proposed around the perimeter of the site. The overall site is more than 10.2 acres in size. The proposed substation yard (fenced in area) only occupies approximately one (1) acre, preserving a significant amount of existing vegetation around the perimeter of the site as represented in Figure 22.

All of the photo-simulations have been revised in conjunction with the Landscape Plan to accurately reflect the size of the proposed landscaping and how this material relates to the existing vegetation. The proposed trees and evergreens called for in the Landscape Plan are generally 8-10 feet in height at the time of planting and are represented at that height in the revised photo-simulations. The revised Landscape Plan incorporates evergreens, at appropriate locations, to provide year-round screening. The material proposed in the right of way has been reviewed and approved by Orange and Rockland Utilities Vegetation Management Group. A substantial amount of mature vegetation that currently exists on the site is proposed to remain.

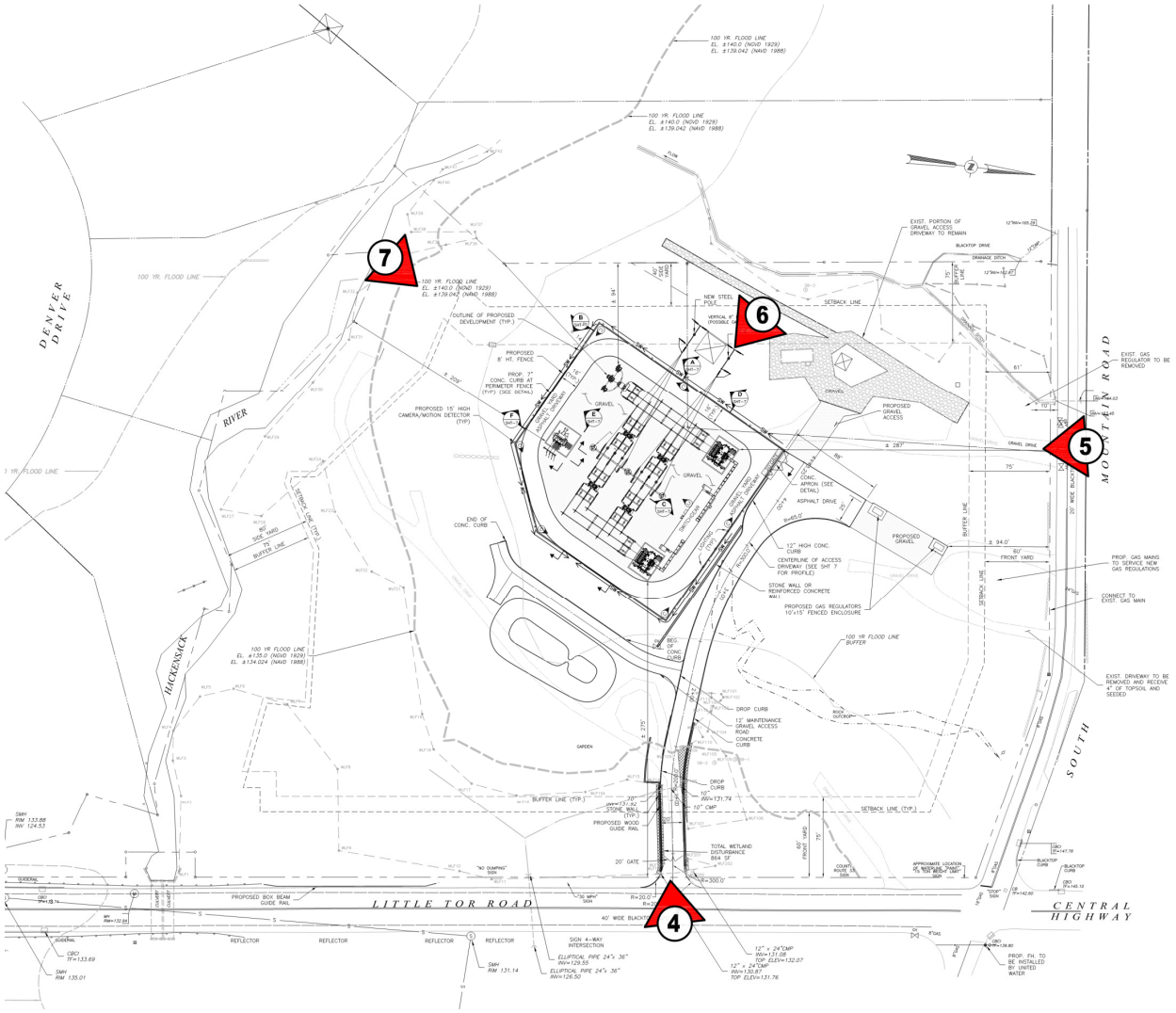
The photo-simulations included in this section as Figures 10c, 11c, 12c, 13c, and 16c are based on design drawings prepared by the applicant's Professional Engineer, a Landscape Plan prepared by a licensed Landscape Architect, a survey prepared by a licensed Professional Surveyor and computer generated photo-simulations prepared by a licensed Professional Landscape Architect. These simulations taken from locations determined by the Planning Board and their Staff indicate that to the greatest extent possible, the substation is screened from the adjacent roads and homes. The combination of information presented in this FEIS identifies the potential visual impacts (existing condition photos modified to depict the substation) and the proposed mitigation (proposed landscaping superimposed over the existing conditions with substation).

To avoid misrepresentation of the photo simulation caused by foreground vegetation blocking the camera view, vegetation in the immediate foreground is removed. Based on information gathered during site visits, the condition and nature of background trees that will be exposed in the proposed condition are assessed and the photo-simulations are adjusted accordingly. The exposed background trees that appear in photo-simulations 4 and 5, proposed condition, were adjusted to as best as possible to reflect their actual existing condition. The photo-simulation from View 5 (Figure 12b, leaf off view) taken from South Mountain Road has been adjusted to include the opening in the existing vegetation caused by the existing right-of-way and overhead lines. Figure 12c is a photo-simulation that depicts

the proposed landscaping from this perspective. For photo-simulation 6 it appears that between the time these two photographs were taken, a large majority of the weeds and ground cover around the structure and fence were removed. This was done as vegetation maintenance related to the structure containing the cell phone equipment.

Based on a detailed review of the photographs included as Figures 10a, 11a, 16a and 17a the existing characteristic of this site can be described as a partially wooded area impacted by existing overhead and underground utilities. In the developed condition as represented in the photo-simulations, the characteristic of the site from the surrounding properties and adjacent road would generally be described the same. The development plan for this site is designed to preserve a large portion of the site in its existing condition and install supplemental landscaping to preserve the natural characteristics of the site. In the transmission right-of-way that crosses South Mountain Road, there is an existing driveway from the site that would be removed and replaced with a three (3) foot high earthen berm and shrubs. The Demolition Plan included in Appendix A shows the existing driveway being removed and the revised Landscape Plan shows the supplemental landscaping proposed in this area.

The goal is to screen, to the greatest extent possible, the proposed substation and related improvements from adjoining properties. Other than a partial view from South Mountain Road where the overhead lines cross and at the main driveway to the substation on North Little Tor Road, this facility would be heavily screened from adjacent properties and the adjacent roadways. The landscaping for the new facility will also screen several existing structures from view, such as the view of the cellular building from South Mountain Road.



SCALE: NTS

FIGURE 9

Key Map for Visuals
Little Tor Substation
Orange and Rockland Utilities, Inc.

Town of Clarkstown, Rockland County, New York

LANGAN White Plains New York

Image Source: LANGAN

EXISTING
LEAF OFF VIEW 4 – LITTLE TOR ROAD

FIGURE 10a
Leaf Off View 4
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED WITHOUT SCREENING
LEAF OFF VIEW 4 – LITTLE TOR ROAD

FIGURE 10b
Leaf Off View 4
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED WITH SCREENING
LEAF OFF VIEW 4 – LITTLE TOR ROAD

NOTE: All proposed plant material is shown at planting height.
Evergreen Tree (8-10ft height), Deciduous Tree (2-1/2" – 3" Caliper)

Image Source: LANGAN

FIGURE 10c
Leaf Off View 4
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

EXISTING
LEAF ON VIEW 4 – LITTLE TOR ROAD

FIGURE 11a
Leaf On View 4
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED WITHOUT SCREENING
LEAF ON VIEW 4 – LITTLE TOR ROAD

FIGURE 11b
Leaf On View 4
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED WITH SCREENING
LEAF ON VIEW 4 – LITTLE TOR ROAD

NOTE: All proposed plant material is shown at planting height.
Evergreen Tree (8-10ft height), Deciduous Tree (2-1/2" – 3" Caliper)

Image Source: LANGAN

FIGURE 11c
Leaf On View 4
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

EXISTING
LEAF OFF VIEW 5 – SOUTH MOUNTAIN ROAD

FIGURE 12a
Leaf Off View 5
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED WITHOUT SCREENING
LEAF OFF VIEW 5 – SOUTH MOUNTAIN ROAD

FIGURE 12b
Leaf Off View 5
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED WITH SCREENING
LEAF OFF VIEW 5 – SOUTH MOUNTAIN ROAD

NOTE: All proposed plant material is shown at planting height.
Evergreen Shrub (4 ft height), Deciduous Shrub (3 ft height)

Image Source: LANGAN

FIGURE 12c
Leaf Off View 5
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

EXISTING
LEAF ON VIEW 5 – SOUTH MOUNTAIN ROAD

FIGURE 13a
Leaf On View 5
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED WITHOUT SCREENING
LEAF ON VIEW 5 – SOUTH MOUNTAIN ROAD

FIGURE 13b
Leaf On View 5
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED WITH SCREENING
LEAF ON VIEW 5 – SOUTH MOUNTAIN ROAD

NOTE: All proposed plant material is shown at planting height.
Evergreen Shrub (4 ft height), Deciduous Shrub (3 ft height)

Image Source: LANGAN

FIGURE 13c
Leaf On View 5
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

EXISTING
LEAF OFF VIEW 6– VIEW FROM WEST

FIGURE 14a
Leaf Off View 6
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED
LEAF OFF VIEW 6– VIEW FROM WEST

FIGURE 14b
Leaf Off View 6
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

EXISTING
LEAF ON VIEW 6– VIEW FROM WEST

FIGURE 15a
Leaf On View 6
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED
LEAF ON VIEW 6– VIEW FROM WEST

FIGURE 15b
Leaf On View 6
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

EXISTING
LEAF OFF VIEW 7 – VIEW FROM SOUTH

FIGURE 16a
Leaf Off View 7
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED WITHOUT SCREENING
LEAF OFF VIEW 7 – VIEW FROM SOUTH

FIGURE 16b
Leaf Off View 7
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED WITH SCREENING
LEAF OFF VIEW 7 – VIEW FROM SOUTH

NOTE: All proposed plant material is shown at planting height.
Evergreen Tree (8-10ft height)

Image Source: LANGAN

FIGURE 16c
Leaf Off View 7
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

EXISTING
LEAF ON VIEW 7 – VIEW FROM SOUTH

FIGURE 17a
Leaf On View 7
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

Image Source: LANGAN

PROPOSED
LEAF ON VIEW 7 – VIEW FROM SOUTH

NOTE: All proposed plant material is shown at planting height.
Evergreen Tree (8-10ft height), Deciduous Tree (2-1/2" – 3" Caliper)

Image Source: LANGAN

FIGURE 17b
Leaf On View 7
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York
LANGAN White Plains New York

PUBLIC COMMENT 19: You anticipated my question, but just to encapsulate it, if you would, the popular conception in the public is that anything that's underground is better than anything that's above ground or overhead. We know, most of us know better. But would you briefly give us the pros and cons of both? *(Mr. Yacyshyn, June 6, 2012, page 32, lines 3-10)*

PUBLIC COMMENT 20: I have attached several documents about underground transmission facilities to demonstrate the feasibility of such projects that significantly reduce EMF exposure and offset aesthetic and property value impacts. *(Mr. Baum, via email, June 14, 2012)*

RESPONSE: *Generally electrical substations are not built underground because of the problems and concerns that arise. The disadvantages to placing an electrical substation below ground include:*

- *The area of disturbance required to construct an underground system is greater than required to build an above ground substation, primarily because of the transition yard required to bring the overhead transmission lines underground into the underground substation. Figures 18a and 18b are pictures of a similar type transition yard. This structure would be built in the transmission right-of-way.*
- *Because of the depth of excavation required to construct an underground station, groundwater could be impacted. In the case of the Little Tor above ground substation, the groundwater is not impacted by the proposed excavation.*
- *Below ground installations require ventilation and air circulation which could require large above ground equipment. This type of equipment is not required in an above ground open air substation.*
- *Substations are typically not built underground for a variety of environmental reasons and cost substantially more to construct than an above ground open air substation. The rate structure of Orange and Rockland Utilities, set by the NY PSC, is based on the cost of installing above ground substations. The costs associated with any deviations from the approved system design must be paid for by the local customers it benefits through a special tax levy.*
- *Controlling fires and other emergency events would be much more difficult when dealing with an enclosed below grade substation which has limited access.*

The impact of EMFs is discussed in Section III.O of the DEIS and Section III.F of the FEIS and the impact on property values is discussed in Section III.P of the DEIS and Section III.G of the FEIS.

PUBLIC COMMENT 21: Okay. So, it's essentially almost in the middle of the property. So, it's not exactly where the Temporary Substation is? *(Ms. Schaefer, June 6, 2012, page 73, lines 6-9)*

RESPONSE: *This is correct; the proposed substation is generally located in the center of the parcel and is screened from adjoining properties and the adjacent roads by, in some cases more than 250 feet of wooded area and supplemental landscaping. The temporary substation would be removed and the area restored after the installation of the permanent substation.*

FIGURE 18a

Transition Yard Photo 01
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York

Image Source: LANGAN

LANGAN White Plains New York

FIGURE 18b

Transition Yard Photo 02
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York

Image Source: LANGAN

LANGAN White Plains New York

PUBLIC COMMENT 22: Below is information on Con Ed's new Academy Substation in northern Manhattan. As you can see, the design of this substation is very beautiful. Interestingly, the electricity for this substation comes via Westchester County. No similar efforts have been made by Con Edison to enhance substation appearance or design in that community basically because they've been able to get the approvals they need without making the types of concessions they need to make in NYC to get the approvals. *(Mr. Baum, via email, June 8, 2012)*

RESPONSE: *The referenced facility is located in a fully developed section of northern Manhattan, a very urban setting, cost approximately $375,000,000 to build. This is a completely different set of circumstances than exists at the Little Tor site. The primary reason for the building at the Academy site was, in essence, to screen the substation from the surrounding neighborhood. The only reasonable way to accomplish this screening was to construct an above ground building around the substation. The nature of this site, the fact that the area wide system it is serving is underground and the required size of the substation relative to the available property dictated the size of the building.*

The Little Tor site is located in a rural setting and the proposed facility is effectively screened from the adjacent properties in a way that is consistent with the rural character of the area. This is accomplished through the preservation of the existing wooded nature of the site supplemented with landscaping material in areas where the new substation is visible from the adjacent roads and properties. This approach to developing above ground substations and using the natural characteristics of the site supplemented with additional landscaping is also consistent with the Orange and Rockland Utilities tariff structure approved by the PSC.

PUBLIC COMMENT 23: To add insult to injury, I am told that all of the trees on the east side of MY property have to be chopped down because of the Right of Way jurisdiction, due to the danger that these trees will interrupt the power lines. When I purchased the house in 2009, I was told that the trees on the property would be allowed to stand. *(Ms. Walker, memo dated April 2, 2012)*

PUBLIC COMMENT 24: Instead, I was told that they were bulldozing the area in front of the lines, and removing the east facing trees. I was told that I had no choice because they were allowed to do this, and I had no say in the matter. I am told that the trees can't be pruned back, as they were in previous years. This is a significant issue since the trees provide a barrier between my neighbor and their 100 cats, and my property. (Ms. Walker, memo dated April 2, 2012)

PUBLIC COMMENT 25: I would like to see the survey plans for my property with the demarcation lines clearly drawn for the "Right of Way". I would also like to see any laws pertaining to the "Right of Way". *(Ms. Walker, memo dated April 2, 2012)*

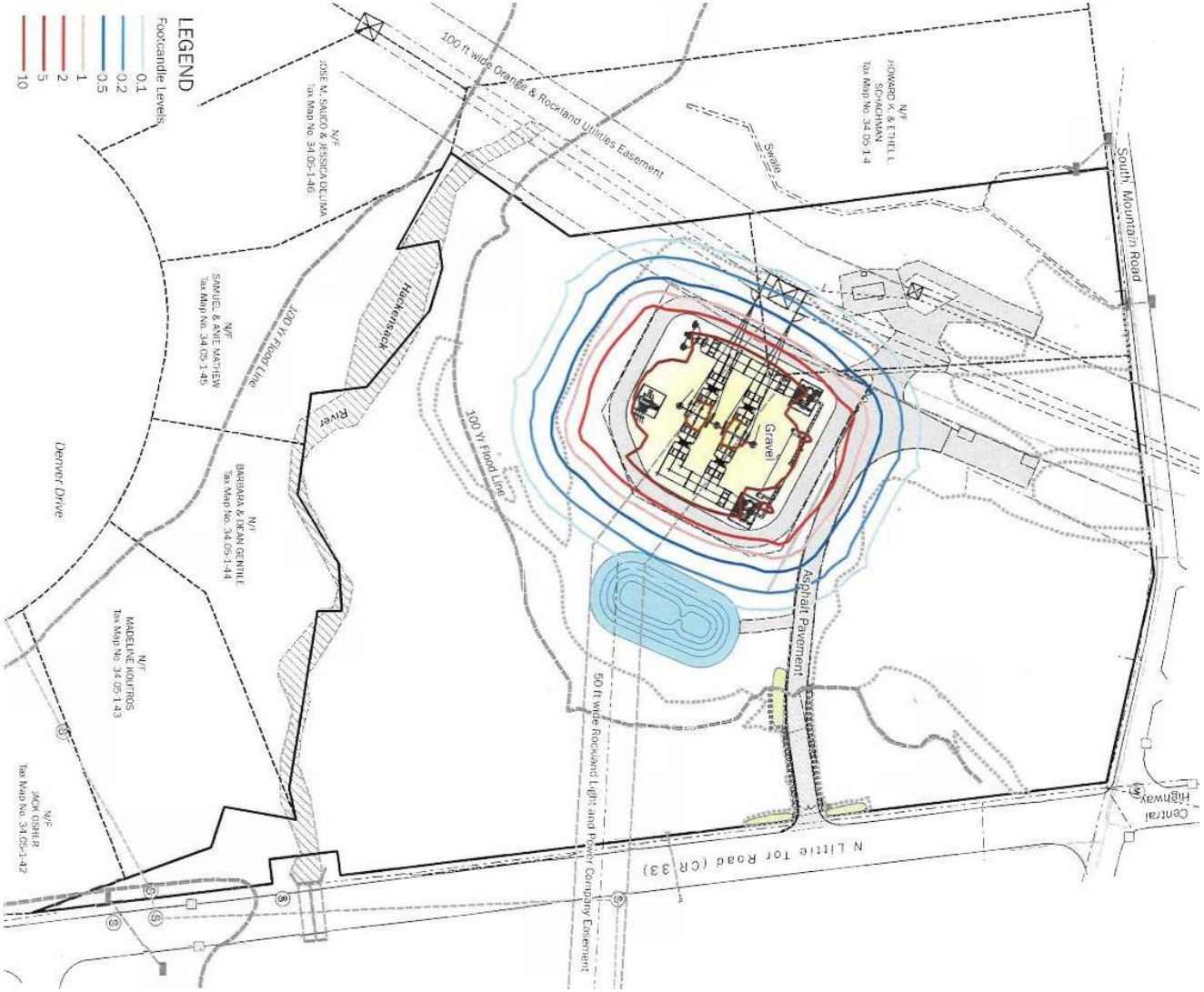
RESPONSE: *The issue is unrelated to the proposed action. This issue relates to Orange and Rockland Utilities' obligation to comply with clearance requirements for overhead*

transmissions lines. However, the revised Landscape Plan and the revised photo-simulations indicate that the preservation of a significant amount of natural vegetation supplemented with proposed landscape material effectively screen the proposed electrical substation from the adjoining roads and adjacent properties.

PUBLIC COMMENT 26: Impacts of lighting: A computer simulation is the only reliable way to determine the appearance of the site at night. That is important. By design and by neighborhood preference, South Mountain Road at night presents one of the few dark areas remaining in Rockland. Although the applicant has submitted drawings showing calculated foot-candle levels diminishing at increasing distances from its floodlights, it has presented you with nothing that allows you to be sure that none of those floodlights will shine in the eyes of offsite observers. No matter how distant, directly-seen light sources do not lose their intensity. The lighting plan shows luminaries pointed away from the substation, their beams aimed at what may be close to horizontal elevations. Those lights may be visible offsite. No talk about shielding or screening can answer the question of whether these lights will shine where they should not. Only a computer-generated simulation can come close to answering the question. Visual impacts of nighttime lighting of a proposed electrical substation sited along a semi-rural road are just as important to neighborhood character as the appearance of the substation by day. *(Mr. Granirer, memo dated December 2, 2008)*

PUBLIC COMMENT 27: Continuing, Mr. Simoes inquired if any lights would be on and what visual impact, if any: Mr. Goldrick stated the lights would only be on if O&R was physically present at night for any reason; the site is not motion sensor; the camera system would trigger an alarm that would go back to the security center; no lights would come on if anyone or anything approached the fence; brief discussion ensued. *(Planning Board Meeting December 3, 2008, FKA 25B1, Page 3)*

RESPONSE: *Under normal operation, the substation is dark at night. The lights are only used in the case of emergency repair work or some similar event where Orange and Rockland Utilities personnel are working on the site at night, which is very rare. Section III.B of the DEIS provides a detailed description of the type of lights proposed for this project and their mounting height which is nine (9) feet for lights mounted on the fence or switchgear enclosure and sixty-one (61) feet for lights mounted on the station equipment. Also included, as Figure 19, is a Light Distribution Plan which demonstrates that even if all of the proposed lights were turned on during an emergency situation, the maximum light level at the property line would be less than 0.1 footcandles. This distribution pattern was developed without consideration of the wooded areas and supplemental screening that would also help shield any light glare from impacting the adjoining properties. The security system is not associated with the lights.*



SCALE: NTS

FIGURE 19

Light Distribution Plan
Little Tor Substation
Orange and Rockland Utilities, Inc.

Town of Clarkstown, Rockland County, New York

LANGAN White Plains New York

Image Source: LANGAN

2. ALTERNATIVES

As outlined in the Planning Board Issues for Little Tor FEIS document dated May 20, 2013 and in the Public Comments received on the DEIS, the following information is included in this section:

- Application and constraints of underground facilities; (See Response to Comments 1-5)
- Using a structure or building to contain a substation; (See Response to Comments 6-8)
- Substation sighting criteria; (See Response to Comments 9-13)
- Description of Gas Insulated Switchgear (GIS); (See Response to Comment 14)
- Costs associated with underground alternatives; and (See Response to Comments 15-19)
- Responses to specific comments not covered above. (Included below)

PUBLIC COMMENT 1: And the alternatives and I guess I'll jump ahead anyway, the alternatives are that the substation could be put underground and it could be enclosed. *(Mr. Baum, May 2, 2012, page 29, line 25; page 30, lines 2-4)*

PUBLIC COMMENT 2: I did bring along some documents, for instance, here transmission and distribution has a whole thing about an underground substation in Anaheim, California where a park was built right on top of it. It cost 19 million dollars, which is somewhat more than this one. This also involved ten miles of underground utility wires, ten linear miles of underground wires and the development of the park right above. So there are newer alternatives. These actually have smaller footprints and are gas cooled, I believe. So I think that'll be good to look at. *(Mr. Baum, May 2, 2012, page 32, lines 16-25; page 33, lines 2-6)*

PUBLIC COMMENT 3: May I ask you a question, Mr. Coffey? Is there anywhere in Rockland County that you have a substation where things are underground? *(Chairwoman Thormann, June 6, 2012, page 29, lines 6-10)*

PUBLIC COMMENT 4: Mr. Coffey, are there any other underground facilities in your service territory of the Rockland County area? *(Mr. Baum, June 6, 2012, page 91, lines 23-25)*

PUBLIC COMMENT 5: The design of the Little Tor Substation is in accordance with industry standards for the suburban/rural nature of ORU's service territory and its tariff as established by the New York State Public Service Commission. *(Planning Board Issues for Little TOR FEIS, May 28, 2013)*

RESPONSE: *Orange and Rockland Utilities utilizes an overhead transmission and distribution system unlike the urban, underground networks in metropolitan systems. Orange and Rockland Utilities does not have any substations that are underground in their entire service area. The applicant advised that urban applications are applied when a site is too small to accommodate conventional outdoor station requirements, land is worth millions of dollars per acre and the existing lines are underground, as in the case of the Anaheim facility. The Anaheim facility has a supply side of 69,000 volts (69kV) whereas the supply to*

the proposed Little Tor Substation is 138,000 volts (138kV). Also, the Anaheim substation isn't truly underground, but is actually 20' above street level with the "ground" mounded over it.

An underground station would not follow standard utility practice or Orange and Rockland Utilities standards, would result in greater potential environmental impacts and, due to conditions at the site, may not be constructible at this location. An underground substation must employ gas insulation (GIS – see discussion below). It would require ventilation and HVAC systems to exhaust heat generated in a confined vault and presents more immediate potential ground water penetration in areas with a high water table such as the Little Tor site. A transition structure is required whenever there is a conversion of transmission lines from overhead to underground. A new transition yard in the existing right of way (ROW) would be similar to adding an additional small substation with a substantial visual impact given the limitations of plantings and structures (ie: screening walls) in the transmission ROW.

The costs of placing a substation underground are exponentially more expensive. The applicant testified the costs associated with an underground substation are not supported by the tariffs and rate approvals governed by the Public Service Commission ("PSC").

PUBLIC COMMENT 6: Now, I know the town has tried to do some things to get substation or utility facilities looking nicer and not just being bland utility facilities. In New York City, Con Edison has spent billions of dollars to create substations that are very attractive and that blend into the neighborhood, whether it blends into the seaport style, whether it is the Academy substation where they put the transmission lines underground. And the Academy substation is right along the East River in Northern Manhattan. There they have a whole nautical design facility including a lighthouse that they put into it, and we're not getting any lighthouse or nice attractive things that will blend into the residential and wooded area of Northern New City. *(Mr. Baum, May 2, 2012, page 30, lines 5-24)*

PUBLIC COMMENT 7: Are there any sub-stations that are enclosed with building facades or within structures that appear to be buildings in Rockland County? *(Mr. Geneslaw, June 6, 2012, page 29, lines 13-16)*

PUBLIC COMMENT 8: Is there some special characteristics for that situation because of the Verizon participation? *(Mr. Geneslaw, June 6, 2012, page 29, lines 23-25; page 30, line 2)*

RESPONSE: *The applicant constructed a substation at the Verizon Corporate Headquarters on Corporate Drive in Orangeburg, New York, enclosed by a panelized wall system on three sides (not an enclosed structure). This was done to screen the substation from the users of the corporate facility since it was constructed in an existing open parking area in view of the building. The additional costs associated with constructing this perimeter wall were funded by Verizon.*

The characteristics of the Little Tor site are very different. A majority of the mature vegetation at Little Tor is being preserved and supplemented by proposed landscaping to effectively screen the proposed substation from the adjacent properties. Refer to Section B – Visual Resources and Community Character for additional information on the screening proposed for this location.

Orange and Rockland Utilities utilizes an overhead transmission and distribution system unlike the urban, underground networks in metropolitan systems. The examples cited in the public comments are for inner city substations where space is limited, the distribution and transmissions systems are generally underground, the surrounding neighborhoods are fully developed and the only way to screen the substation is to enclose it in a structure. ConEd, which constructed these enclosed substations has a much larger customer base to support the cost and the tariffs and rate structures to take into account the urban setting. These enclosed structures are designed to be consistent with their surroundings as in the example above.

In the event a building was constructed, or walls placed, to enclose the proposed substation, it would be a massive structure which would be more visible to surrounding properties, require more clearing of the site and would be out of character with the surrounding properties. An enclosed building would require the addition of a transition structure in the transmission ROW. A transition structure is required whenever there is a conversion of transmission lines from overhead to underground. A new transition yard in the existing ROW would be similar to adding an additional small substation with a substantial visual impact given the limitations of plantings and structures (ie: screening walls) in the transmission ROW.

Walls without roofing would require the same transition structure or, alternatively, the new transmission poles would need to be raised significantly to clear the walls and adhere to required clearance standards.

PUBLIC COMMENT 9: As I said earlier, alternatives were not described of an alternative location. *(Mr. Baum, May 2, 2012, page 32, lines 14-16)*

PUBLIC COMMENT 10: I also ask that the search area which is identified in the DEIS should be expanded. We have commercial facilities available in North New City along with Route 304 as well as the Tilcon facility. The Tilcon facility got the substation in West Nyack; it could get the substation up there. The line could go underground just like it did in Orangetown. I think that commercial properties should be looked at that could service Northern New City from another angle and that the broad area that they looked at was too narrow. *(Mr. Baum, June 6, 2012, page 114, lines 11-24)*

PUBLIC COMMENT 11: We're not very far in this situation from the Haverstraw/Congers quarry, which would probably be very well suited as an alternative for siting of this facility and probably would be very well suited to meeting the needs of Orange & Rockland in terms of providing power. *(Mr. Dillon, June 13, 2012, page 70, lines 2-9)*

PUBLIC COMMENT 12: It seems that that might be a more suitable location for developing additional substations. *(Mr. Dillon, June 13, 2012, page 69, lines 17-20)*

PUBLIC COMMENT 13: The Applicant gives very limited alternatives in the DEIS. The DEIS should include; A, plans placing the substation and related transmission lines underground; B, plans for alternate locations such as the Tilcon quarry in Haverstraw and at the Burkes Road industrial park in Northern New City; C, plans for meeting New City's future electrical needs using clean, locally generated solar electricity. *(Letter by Mr. Baum as read by Ms. Thal, June 13, 2012, page 40, lines 14-25)*

PUBLIC COMMENT 14: Why would you want to locate a substation near one (gas line)? Such an action could only exacerbate the dangers inherent in gaslines, and the danger of water contamination makes this scenario even more unthinkable. Please reject this application and at least try to find a better location. (Email from William Michie. June 23, 2012)

RESPONSE:

Substation locations are generally driven by the proximity of the existing distribution system and the need to reinforce the existing network. A system planning analysis limits the geographic location, search area, of the proposed substation to satisfy demand and reliability requirements for the area. In the case of Little Tor moving the search area north or south would result in unequal load relief for the existing stations in the vicinity. Shifting the search area east or west would move it out of the existing transmission right-of-way and would require that new transmission lines be installed to connect the existing lines to the proposed substation. Acquisition of additional rights-of-way would be required which significantly increases the potential adverse environmental impacts because the project would impact a significant number of additional properties. Once the general geographic area, as illustrated by the red oval in Figure 24 (DEIS Figure V-2) was established, a detailed analysis of the properties within that area was undertaken. The need to locate this station in this general area significantly limits the number of Alternative Sites. However, the value of this new substation is realized by placing it in this general geographic area and realizing the most significant benefits of improved reliability in the electrical network servicing this area.

The viability of alternate sites within the study area is determined by criteria such as property size, zoning regulations and the existing use and condition of the property.

Property Criteria:

- *Property Size: Although a Utility Use is permitted in the R40, R80 and R160 Districts, such use is governed by the Special Permit criteria including a minimum lot size within the R40 District of 100,000 square feet, R80 District of 140,000 square feet, and R160 District of 280,000 square feet.*
- *Property Configuration: The shape/geometry of the property determines whether the substation can be accommodated and can comply with required building/structure setbacks.*
- *Proximity to the existing ORU Transmission Line Right of Way.*

- *Efficient layout of Distribution Lines: ORU Engineering has determined that the 13.2kV lines must run east, west and south of the intersection of South Mountain Road and Little Tor Road.*
- *Hackensack River: Several properties are bisected by the west branch of the Hackensack River or one of its tributaries.*
- *Proximity to parkland*
- *No residential structures, uses, or occupation of property.*

DEIS Table V-1 (below) provides a summary of the available parcels in the required service area and their potential as a viable Alternative Site for the required substation. As can be seen from Figure 24, the primary search criteria is access to the transmission lines, the second is access to the distribution system which is located along the existing roadways. A total of five parcels within this search area meet the above noted criteria in addition to the zoning regulations for lot size, setbacks and shape.

Table V-1

Parcel # (Fig. V-2)	Tax Lot	Zoning Compliance	Adjacent to Transmission ROW	Accommodates Distribution	Not Bisected by Hackensack River or Tributary	No Potential Visual Impact on Parkland	Existing Residential Use
1	8		X		X		X
2	52		X			X	X
3	54.1						X
4	1		X		X		X
5 Prop. Site	5&6	X	X	X	X	X	

The Little Tor site is the only property in the viable search area that meets all the criteria. In addition, the subject parcel is already impacted by existing utilities including a gas regulator, overhead power lines and a wireless telecommunications building/ antenna.

The proposed project will not generate any electricity. It will only distribute the electricity from the existing transmission lines. The transmission lines are fed from a variety of generating sources and locations; however, since deregulation of the industry O&R no longer owns generation facilities. The applicant states that they encourage and cooperate with independent generators who have located clean energy, such as solar panels, within the service territory. This does not supplant the need for local distribution facilities such as the Little Tor Substation.

PUBLIC COMMENT 15: The last item was to investigate the use of gas-insulated switchgear technology as an alternative as there are several features of such technology that reduce adverse impacts. That was not discussed at all in the DEIS. It was apparently not something that O & R commonly uses. *(Mr. Geneslaw, June 6, 2012, page 56, lines 24-25; page 57, lines 2-7)*

RESPONSE: *The applicant has responded that Gas Insulated Switchgear (GIS) is high voltage bus and breakers enclosed in either single or three phase gas insulated pipes. This is used primarily for applications in urban areas where space is limited, conventional air insulated designs cannot be used, transmission and distribution are already underground and real estate costs are in the range of millions of dollars per acre. GIS equipment is more expensive than conventional to purchase and to maintain. The air insulated substation is the standard facility the applicant utilizes in this suburban region and the costs are supported by the tariffs approved by the PSC.*

PUBLIC COMMENT 16: I realize that there may well be no comparison between costs of New Square's underground installation and that required for an underground version of the North Little Tor Road substation, yet the costs in New Square are interesting. *(Mr. Granirer, via email, June 26, 2012)*

PUBLIC COMMENT 17: The Applicant should be asked to provide some additional information. They talk about orders of magnitude, greater cost, but I don't think the Board has much idea what that would be and what the transition structures might look like. *(Mr. Geneslaw, June 6, 2012, page 34, lines 10-16)*

PUBLIC COMMENT 18: Well, he said he would provide pictures of the structures, if I'm not mistaken. And you might provide the monetary component. *(Chairwoman Thormann, June 6, 2012, page 34, lines 17-20) Note: this question is relative to aesthetics and cost for above ground compared to below ground substations and transmission lines.*

PUBLIC COMMENT 19: May I ask who funded it? *(Chairwoman Thormann, June 6, 2012, page 94, lines 24-25) Note: this is a reference to the conversion of overhead lines to underground lines in New Square.*

RESPONSE*: Projecting a cost premium associated with building a GIS facility whether underground or enclosed, together with any transition structures, is very difficult as there are many factors which affect the overall cost of such construction. Based on its recent experiences, Orange and Rockland Utilities provided the following estimates:*

The cost of installing a 25' high wall around three (3) sides of the electrical substation at Corporate Park Drive was $1,200,000. This did not include a roof, excavation, and/or mechanical ventilation to list only a few of the additional costs associated with installing a substation that is enclosed above or underground.

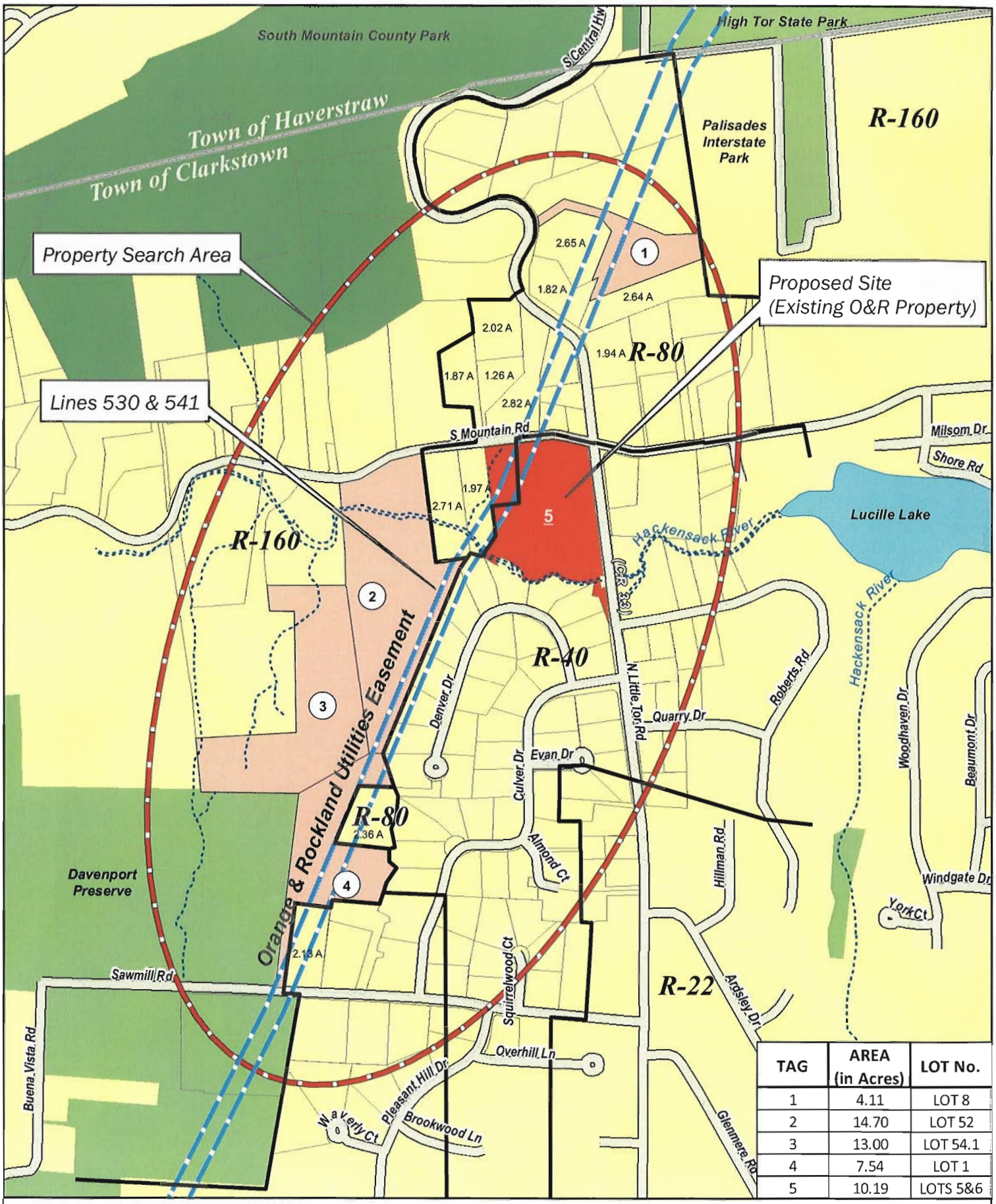
In addition to increasing the cost of constructing an underground or completely enclosed GIS substation, there would need to be constructed transition structures to convey the overhead transmission lines underground. The transition tower also has a visual impact. A transition tower is required whenever there is a conversion of transmission lines from overhead to underground. The cost of installing a transition yard at the Corporate Park Drive site was $375,000. Figures 18a and 18b are pictures of a similar type transition yard.

Orange and Rockland Utilities' system utilizes predominantly overhead transmission and distribution and its rate schedules, approved by the NYS Public Service Commission, are predicated on this type of a system.

The portion of the O&R transmission line which crosses New Square was converted from an overhead line to an underground line in 2005 at the request of the Village of New Square. The Village of New Square paid 1.5 million dollars of this cost. In addition, the customers within New Square are responsible for 1.5 million dollars of capital cost as well as carrying charges through a levelized monthly surcharge for the next forty years for this conversion.

PUBLIC COMMENT 20: The O&R DEIS proposes a project that will perpetuate an antiquated electrical distribution system design. It does not consider clean, local alternatives such as New Jersey is already pursuing on a large scale. *(Mr. Baum, via email, June 14, 2012)*

***RESPONSE**: The proposed project will not generate any electricity. It will only distribute the electricity from the existing transmission lines. The transmission lines are fed from a variety of generating sources and locations; however, since deregulation of the industry O&R no longer owns generation facilities. The applicant states that they encourage and cooperate with independent generators who have located clean energy, such as solar panels, within the service territory. This does not supplant the need for local distribution facilities such as the Little Tor Substation.*



TAG	AREA (in Acres)	LOT No.
1	4.11	LOT 8
2	14.70	LOT 52
3	13.00	LOT 54.1
4	7.54	LOT 1
5	10.19	LOTS 5&6

NORTH AMERICAN DATUM 1983
NEW YORK STATE PLANE EAST
0 250 500
GRAPHIC SCALE IN FEET

Base Data Source: NYS GIS Clearinghouse

FIGURE 24 : VICINITY MAP WITH STUDY AREA

Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York

\\510svr01\mp\0901375\GIS\Projects\Vicinity-AllSites.mxd

INSERT SECTION DIVIDER

F. PUBLIC HEALTH/EMF

PUBLIC COMMENT 1: Across the stream from the site is Denver Drive. You will find in this new packet I have you a cross-section view of the emissions from the poles or the equipment showing that there's, whatever it is, in milligaus, reaching those houses as well as reaching the houses over here for certain and a couple just west of the power line. This is a question of what the public health significance of this kind of radiation is not settled. I've seen standards that are run from anywhere from .1 to 10. I mean, it's magnitudes of order apart in milligaus as being considered bad for human health. I think the whole question of exposing people in their houses, people and their children to radiation of this sort is serious. *(Mr. Granirer, June 13, 2012, page, 25, lines 3-21)*

PUBLIC COMMENT 2: The fact is, there's a great expense that O&R does not think of from having its overhead lines, but when it comes to a site like this where the EMFs reach houses on the surrounding properties and where there's a risk that people will get cancer, the cost is in my mind immeasurably bigger. *(Mr. Granirer, June 13, 2012, page 26, lines 19-25; page 27, lines 2-3)*

PUBLIC COMMENT 3: O&R has released estimates of the amount of EMFs that will be emitted within its own property, but offers no information on off-site radiation. Instead, it cites the belief of a Town of Clarkstown consultant that the new equipment will yield no measurable off-site radiation. *(Mr. Granirer, memo to neighbors, no date)*

PUBLIC COMMENT 4: The Draft EIS does recognize that there would be an impact of increase in EMF, but it would basically say that it would be within 200 milligrams state threshold allowed. So it's not that it would be negligible or it would be just nothing. There is an impact, but it would be based on the DEIS that this would be within 200 milligrams. I discussed last time that 200 was basically picked up as an initial threshold. It's something that should be considered forever. It can be reviewed. *(Mr. Abib, June 6, 2012, page 117, lines 16-25; page 118, lines 2-4)*

PUBLIC COMMENT 5: At a minimum, it should be up to Con Ed to measure the levels of EMF on everyone's perimeter boarders, and rectify any overages in acceptable levels of EMF. *(Ms. Walker, via email, June 8, 2012)*

PUBLIC COMMENT 6: The electromagnetic forces that would be emitted. O&R provided no information about the offsite strength of electromagnetic forces that would be emitted by the substation. We discussed the public health danger of those emissions. *(Ms. Thal, via email, May 20, 2012)*

PUBLIC COMMENT 7: Well, not in my house, but if I'm in my backyard playing with my grandkids, is there any danger? *(Mr. Fiel, June 13, 2012, page 88, lines 21-23)*

RESPONSE: *The DEIS, specifically Section II-D, provides a detailed description of the proposed action which includes the installation of an electrical substation, the reconstruction of an existing gas regulator and the relocation of existing cellular antennas.*

Enertech Consultants (2009) conducted an EMF study of the existing and proposed transmission and substation facilities at the request of the applicant. The underground distribution line exits were included in the EMF models in order to complete the EMF profile of the site. The existing magnetic field levels modeled along the perimeter property line ranged from 0.2 mG to 74.5 mG, depending on the location. The post-construction calculated magnetic fields along the perimeter property line would range from 0.2 mG to 73.6 mG, depending on the location. Both the existing and anticipated levels would be well below the New York State Public Service Commission standard of 200 milligaus. Additionally, that study was then reviewed by Morton Leifer, the consultant for the Town of Clarkstown. Mr. Leifer concluded: "In summary, there would likely be no increase in magnetic field levels at the perimeter of the property due to the installation of the proposed transformers and switchgear within the substation" (Leifer, October 17, 2011).

EMF levels due to the existing and proposed flows on the transmission lines would be well below the New York State limitation at peak load. EMF values in the study are calculated at the peak load, a condition that would only occurs for several hours on some of the hottest days of the year. Electro-Magnetic Fields at any other time are lower, corresponding to lower demand. The EMF studies performed by Enertech Consultants and confirmed by the Town's consultant, conclude this project does not result in increased EMFs on adjacent properties.

Additional modeling was done by Entertech to examine typical magnetic fields for off-site distribution lines under various locations (overhead and underground) and loading conditions in 2013 (Appendix H). This modeling showed that the maximum magnetic field at centerline for all configurations was significantly less than the New York State Public Service Commission standard of 200 milligaus.

PUBLIC COMMENT 8: And so I would like to suggest that this may be the place where to avoid the cost to the population in health, that O&R be asked to put its new equipment underground, and in fact, although I know that Mr. Yacyshyn at the last meeting thought that the underground thing was some kind of misguided popular opinion, there's no doubt that this is a very good substance for attenuating EMFs and I think that the direction this Board ought to look is to see whether O&R can't be told to bury or enclose all of this equipment so that people don't have to wonder, am I at .1 or .5? *(Mr. Granirer, June 13, 2012, page 27, lines 4-18)*

PUBLIC COMMENT 9: We talked about property value earlier, and when you look at the studies, and again it does talk about transformers, and I looked at another version of this which has some more detail that given the Oxford study, would anyone on this Board or in this room buy a house within six-hundred-feet, the two-hundred-meter meter range, approximately, that is identified either, this facility or any facility in a residential area, this should have a really high level before it gets put into a residential area, a high level to ensure that the public is safe, with things going underground, and that's why I showed the pictures from New Square earlier, you reduce approximately 99 percent of the EMF going out twenty-five feet from the facility. You significantly reduce the risk. And so I ask that you look at all things. *(Mr. Baum, June 6, 2012, page 113, lines 13-25; page 114, lines 2-10)*

PUBLIC COMMENT 10: I have attached several documents about underground transmission facilities to demonstrate the feasibility of such projects that significantly reduce EMF exposure and offset aesthetic and property value impacts. *(Mr. Baum, via email, June 14, 2012)*

PUBLIC COMMENT 11: Could it be done under-ground? *(Mr. Fiel, June 13, 2012, page 88, lines 9-10)*

RESPONSE: *Orange and Rockland Utilities utilizes an overhead transmission and distribution system unlike the urban, underground networks in metropolitan systems. Urban applications such as building enclosures are used only when space is not available and the existing lines are underground. However, even in those settings entire substations, like the one proposed in this application, are not typically located underground. The magnetic fields would not be impacted because the substation is not the significant generator of EMF as shown in the EMF study. The main generator of EMF is the transmission lines which already exist at the site. An underground station does not follow O&R standards and may not be constructible at this site. Additionally, the costs of an underground substation are not supported by the tariffs and rate approvals governed by the PSC. In addition, the construction of an underground substation which is not a generally accepted practice could result in other significant adverse environmental impacts. Refer to Section V of the FEIS for additional information on underground substations as an alternative.*

Underground stations present additional hazards to the environment with respect to oil containment and Sulfur hexafluoride gases and greater risks to company and emergency response personnel. An "enclosed substation" will require a transition structure to transition overhead lines to underground lines entering a structure. This would add more equipment to the installation. Visual impacts and property value impacts are addressed in Sections III.E.1 and III.J.6, respectively.

With respect to the EMF levels for transmission and distribution lines and their position, overhead or underground, Enertech provided the following information: Electric transmission lines and distribution lines create power-frequency (60 Hertz) magnetic fields. The strength of the magnetic field is primarily a function of current, as well as the electrical configuration of the conductors (phasing arrangement and spacing) and distance away from the line. In general, magnetic field strengths for an overhead line attenuate more slowly with distance away from the line than fields from an underground line (for similar loading conditions). The energized conductors for an overhead line generally have a greater separation or spacing, while energized conductors from underground lines are often located closer together. Field strengths from a 3-phase overhead transmission line typically decrease with distance away from the outermost conductor, usually at a rate of approximately one divided by the distance squared ($1/d^2$). In contrast, the field strength from an underground transmission line usually decreases more quickly, at a rate of approximately one divided by the distance cubed to one divided by the distance quadrupled ($1/d^3$ to $1/d^4$). However, magnetic field strengths are generally higher directly above an underground line than directly underneath an overhead line for similar loading conditions (due to the closer distance to the underground conductors than the distance from the overhead conductors). For underground transmission lines, the magnetic field can also be affected by other

parameters such as the depth of the buried cable, cable type, and system grounding. Most ordinary objects cannot easily shield magnetic fields. Many common materials (concrete, earth, etc.) do not shield magnetic fields (Enertech, 2013).

PUBLIC COMMENT 12: Public health issues of EMFs, to review data from the World Health Organization, National Cancer Institute, National Institute of Health, include the use of EMF barriers, shielding to protect the public. Since various scientific studies are not conclusive with respect to potential impacts, the Board should consider the prudent avoidance concept that the Board has applied with respect to the placement of cell phone antennas. *(Mr. Geneslaw, June 6, 2012, page 7, lines 20-25; page 8, lines 2-7)*

PUBLIC COMMENT 13: One of these attached documents is a study posted by our National Library of Medicine that comes from the British Medical Journal. This Oxford University Childhood Cancer Research Center study of 9700 children with childhood Leukemia found a significant increase in this disease when patients lived near transmission lines at time of birth. Substations generate similar EMFs, and the proposed New City substation will only increase the public's existing EMF exposure above and beyond the existing transmission lines. *(Mr. Baum, via email, June 14, 2012)*

PUBLIC COMMENT 14: So, why do so many public agencies recommend that you don't put these substations near children or residential areas? *(Mr. Fiel, June 13, 2012, page 85, lines 22-25)*

PUBLIC COMMENT 15: Mr. Coffey is referring to reports from various agencies. The reports or summaries that would be comprehensible to the lay person shall be supplied as part of the record. Part of the SEQR process is the disclosure process, and if there are conclusive statements or any information, they should be backed up by data. That would be information that the Board would review in the course of the continuing review of the application. *(Mr. Geneslaw, June 6, 2012, page 13, lines 7-18)*

PUBLIC COMMENT 16: I would like O&R to tell me whether or not based on any in-depth studies rather than just there isn't anything bad, is a problem because the World Health Organization is saying that there are problems. *(Ms. O'Connor, May 2, 2012, page 69, lines 10-15)*

PUBLIC COMMENT 17: But to make an intelligent decision, I think it incumbent upon Orange & Rockland to supply serious data whether or not this, whatever they're building, and I don't even know what it is, a substation with an antenna, a ninety-foot antenna, whether or not it increases or is a health hazard to the children and the residents of Clarkstown who are in the immediate area. (Mr. Fiel, June 13, 2012, page 74, lines 4-14)

PUBLIC COMMENT 18: O&R's DEIS claimed there are no health risks whatsoever. The strong countering evidence on this issue needs to be addressed by the DEIS. *(Mr. Baum, via email, June 14, 2012)*

PUBLIC COMMENT 19: Given the health risk information that I've provided on EMF exposure, the Town of Clarkstown should retain consultants with technical and medical expertise to better understand the risks associated with the combination of the existing transmission lines and cell tower with the proposed new substation. I can provide the Town with a list of potential expert consultants; however I've been told that David Carpenter of the

University at Albany is a top expert in this field and would potentially be a very appropriate choice. I would also recommend Dr. Gerald Draper of the Oxford Study, although he is now retired, so I don't know if he is still doing consulting work. Dr. Carl Baum (no relation) of the Yale School of Medicine is available, too. *(Mr. Baum, memo dated June 13, 2012)*

PUBLIC COMMENT 20: The proposed substation site already has a cellular communications tower from Verizon. The potential health effects of cell towers remains controversial and long-term exposure impacts are unknown, but the Town of Clarkstown has implemented regulations that take a "prudent avoidance" approach to placement of these facilities in residential neighborhoods, near schools and other areas where young children would spend significant time. Given the existing EMFs generated by the existing high voltage transmission lines and the provided data suggesting potential health impacts of EMFs on children (i.e. the Oxford University study), the DEIS should provide data about the "cumulative risks" of a cell tower, transmission lines and the proposed substation. *(Mr. Baum, memo dated June 13, 2012)*

PUBLIC COMMENT 21: It is extremely important that the Planning Board not only commissions a Health Risk Assessment, but also that its scope (again, all elements such as EMF, highvoltage, oil, etc as well as the methodologies) is clearly described. (Marzie Jafari, letter dated June 22, 2012)

RESPONSE:

The DEIS did not make a health statement regarding EMFs but did state that there is no significant change in EMF levels at the site as demonstrated in the modeling study done by Enertech (2009) and concurred by the Town's consultant, Morton Leifer, P.E.. Mr. Leifer stated "In summary, there would likely be no increase in magnetic field levels at the perimeter of the property due to the installation of the proposed transformers and switchgear within the substation" (Mr. Leifer, October 17, 2011). Additional information regarding the EMF levels at the project site and the surrounding area is provided in the first response in this section and Section II-D of the DEIS.

The World Health Organization has concluded that "Despite extensive research, to date there is no evidence to conclude that exposure to low level electromagnetic fields is harmful to human health." It further states that "the results to date contain many inconsistencies, but no large increases in risk have been found for any cancer in children or adults". Supplemental materials from the World Health Organization and the National Institute of Environmental Health Sciences and Department of Energy EMF RAPID program are included in Appendix G. The EMF RAPID report (June 2002) summarizes the reviews of studies on the health effects of EMF as prepared by expert scientific panels in the United States and other countries. This report concludes that "Over the past 25 years, research has addressed the question of whether exposure to power-frequency EMF might adversely affect human health. For most health outcomes, there is no evidence that EMF exposures have adverse effects."

PUBLIC COMMENT 22: The report forecasts significant current loads for these underground distribution lines. They are not buried deeply and are therefore much closer to the ground level than the elevated 13.2 KV distribution lines mounted on the telephone poles. The magnetic field from the underground 13.2 KV lines can be significant, and coupled with the overhead lines can represent an environmental issue for the area that must be more carefully considered. The report provides no specificity as to where these underground lines will be located, their paths and extent into the surrounding area. *(Mr. Leifer, memo dated October 17, 2011)*

PUBLIC COMMENT 23: With regard to magnetic fields, the focus of the report has been almost entirely on the electrical equipment proposed to be built within the substation. The report reasonably concludes that there would be negligible magnetic flux density outside of the property lines due to the electrical transformers and associated switchgear. *(Mr. Leifer, memo dated October 17, 2011)*

PUBLIC COMMENT 24: I believe a more in-depth study of the proposed underground distribution lines and their associated equipment, such as electrical transformers should be undertaken and specific details provided as part of the Environmental Impact Statement. *(Mr. Leifer, memo dated October 17, 2012)*

PUBLIC COMMENT 25: The FEIS will expand the EMF study to include a model of typical primary overhead distribution line magnetic fields as the load varies. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

RESPONSE: *The proposed underground lines are indicated on the utility plans included as part of the engineering drawings (Appendix A). These lines generally run from the substation location, along the access drive and connect to the overhead system along Little Tor Road.*

With respect to the EMF levels for transmission and distribution lines and their position overhead or underground Enertech provided the following information. Electric transmission lines and distribution lines create power-frequency (60 Hertz) magnetic fields. The strength of the magnetic field is primarily a function of current, as well as the electrical configuration of the conductors (phasing arrangement and spacing) and distance away from the line. In general, magnetic field strengths for an overhead line attenuate more slowly with distance away from the line than fields from an underground line (for similar loading conditions). The energized conductors for an overhead line generally have a greater separation or spacing, while energized conductors from underground lines are often located closer together. Field strengths from a 3-phase overhead transmission line typically decrease with distance away from the outermost conductor, usually at a rate of approximately one divided by the distance squared ($1/d^2$). In contrast, the field strength from an underground transmission line usually decreases more quickly, at a rate of approximately one divided by the distance cubed to one divided by the distance quadrupled ($1/d^3$ to $1/d^4$). However, magnetic field strengths are generally higher directly above an underground line than directly underneath of an overhead line for similar loading conditions (due to the closer distance to the underground conductors than the distance from the overhead conductors). For underground transmission lines, the magnetic field can also be affected by other parameters such as the depth of the buried cable, cable type, and system grounding. Most ordinary objects cannot easily shield magnetic

fields. Many common materials (concrete, earth, etc.) do not shield magnetic fields (Enertech, 2013)

Additional modeling was done by Entertech to examine typical magnetic fields for off-site distribution lines under various location (overhead and underground) and loading conditions in 2013 (Appendix H). The load flow pattern of the overhead distribution system may change (due to the change in source of electrical power), no additional electrical load will be added to the overhead distribution systems as a result of substation construction. This modeling showed that the maximum magnetic field at centerline for all configurations (nine loading scenarios), consistent with the current load, was significantly less than the New York State Public Service Commission standard of 200 milligaus.

PUBLIC COMMENT 26: The report should include details of where the links would be located, what magnetic field mitigation would be implemented and what signage would be used to keep people from unknowingly congregating in areas of high magnetic flux density. *(Mr. Leifer, memo dated October 17, 2011)*

RESPONSE: *As shown in the EMF study (2009) the highest magnetic fields exist directly under the transmission lines and within the substation. These levels attenuate exponentially as you move away from these features. The transmission Right-of-Way (ROW) contains signage to warn trespassers of the dangers and the substation would be located on private property with a sign, gated entrance, fence around the perimeter of the station and security monitoring to deter trespassers from entering these areas.*

PUBLIC COMMENT 27: Four: The DEIS should provide data about the current EMF levels along the transmission lines between the two neighboring Haverstraw substations and the Pascack Road substation in Spring Valley. With the addition of the substation at South Mountain Road and the increased usage, (for example, with a switch of Tilcon's dedicated transformer from Haverstraw to New City), closed parent, will the EMF levels along the transmission lines increase? Any comments? Usage/levels of transmission lines do impact levels and a lower powered transmission line can actually produce more EMFs than a higher powered one. *(Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 37, lines 17-25; page 38, lines 2-9)*

RESPONSE: *All three transmission lines were included in the study prepared by Enertech. The existing magnetic field levels modeled along the perimeter property line ranged from 0.2 mG to 74.5 mG, depending on the location. The post-construction calculated magnetic fields along the perimeter property line would range from 0.2 mG to 73.6 mG, depending on the location.EMF values in the study are calculated at the peak load, a condition that only occurs for several hours on some of the hottest days of the year. Magnetic fields at any other time are lower, corresponding to lower demand.*

PUBLIC COMMENT 28: Did you check the lines that go through Lake Lucille? *(Mr. Terribile, June 13, 2012, page 81, lines 19-20)*

RESPONSE: *No changes are proposed for the transmission lines through Lake Lucille therefore they were not included in the study.*

PUBLIC COMMENT 29: …but I am continuing to research this and she's researching it for me, and the biggest concern lately, and I haven't heard this mentioned, is that large electromagnetic fields they're now discovering attracts radon gas. *(Ms. Hudson, June 13, 2012, page 93, lines 4-9)*

RESPONSE: *In a publication from the Public Service Commission of Wisconsin titled "EMF-Electric & Magnetic Fields" dated January 2008 the interaction between radon and EMF was discussed. Specifically this publication states:*

"In 1996 and again in 1999, D.L. Henshaw et al. published papers suggesting that the electric fields created by large electric transmission lines could significantly increase the concentration and deposition of radon decay products in the vicinity of power lines. Inhaling the increased concentrations of radon decay products might increase the risk of cancer". This theory is sometimes referred to as the Henshaw hypothesis.

However, other measurement studies have not been able to show that power lines can significantly increase local concentrations of radon. Miles and Algar (1997) measured radon decay product concentration in high and low electric fields created by a high-voltage (400kV) power line. Their results found no significant difference in outdoor radon decay product concentrations between locations with high and low electric fields.

In another study McLaughlin and Gath (1999) studied the behavior of airborne radon decay products in the vicinity of a 400kV power line. They took measurements with the power lines on and off. They found that the fields produced by the power line did not concentrate radon decay products under or near the power line. Their study also provided no support for the Henshaw hypothesis.

Additional reviews and evaluations of the Henshaw hypothesis have been conducted by EPRI, National Radiological Protection Board (2004), and Swanson and Jeffers (1999). None of these studies was able to replicate the results from the Henshaw research. The Wisconsin PSC concluded that "there is no compelling evidence indicating that power lines increase the risk of any kind of cancer by concentrating radon and radon decay products in their vicinity." It should also be noted that the highest transmission line voltage associated with the proposed Little Tor Substation would be 138 kV (with lower voltage lines also present), which is not as significant a corona generator as higher voltage lines are and is much lower than the power line in Henshaw's study.

INSERT SECTION DIVIDER

G. COMMUNITY CHARACTER / PROPERTY VALUATION

PUBLIC COMMENT 1: The existing property, Lot 5, has been utilized for utility use for many years considering the transmission lines, gas facilities and cellular building. A substation was on the site from the mid 1920's until 1983. The condition of the additional property, Lot 6, upon purchase by ORU was that it was populated with derelict residential structures and hazardous wastes, which have since been remediated by the applicant. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

RESPONSE: *Comment noted. Lot 5 has been the site of multiple utilities starting in the mid-1920s when there was an electrical substation operating on this site, along with a gas regulator and overhead transmission lines. Lot 6 was the site of a derelict residential housing development. Orange and Rockland Utilities, after purchasing Lot 6, demolished and removed the residential structures, removed contaminated material that was found on the site and generally remediated and cleaned up what was accurately described as deteriorated residential structures. It should also be noted that the residential units located on this lot had septic systems in close proximity to the wetland areas and water courses on and adjacent to this site. These septic systems were failing, were unmaintained, and were having an adverse impact on the wells on site. Some of these septic systems were also in close proximity to the wetlands and water course and their removal insured these water resources were not adversely impacted.*

PUBLIC COMMENT 2: In summation, Mr. Simoes advised the applicant to comply with the Tree Preservation Law. (PB Meeting December 3, 2008, FKA 25B1, Page 3)

RESPONSE: *A Tree Preservation Plan and Landscape Plan conforming to the Town's Tree Preservation Ordinance are included in Appendices A and B, respectively.*

PUBLIC COMMENT 3: Section III.P of the DEIS is dedicated to Residential Property Value including a report prepared by the applicant's consultant and reviewed by the Town's consultant. The current property values already reflect the existence of electrical, gas and telecommunications facilities on this site. ORU will review previously submitted material and update and supplement as needed. *(Planning Board Issues for Little Tor FEIS, May 28, 2013))*

PUBLIC COMMENT 4: The FEIS will contain a review of previously submitted data and a supplement, if necessary. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

PUBLIC COMMENT 5: As I recall, the Town's consultants indicated the sample size was very small. *(Mr. Geneslaw, June 6, 2012, page 37, lines 23-25)*

PUBLIC COMMENT 6: I also looked through the DEIS and noticed the Beckmann report that says there will be really little or no diminution of property values as a result of this substation, and the Coyle review of that report pretty much says the same thing and agreed with them. *(Ms. Conner, May 2, 2012, page 17, lines 22-25; page 18, lines 2-5)*

PUBLIC COMMENT 7: Many of the studies I read differed in the values they said would be lost. One said three to seven percent, another 12 percent, another said 10 to 30 percent, another 15 to 34 percent, but most of the things I read said that there will be some negative effect on property values in proximity to the transmission lines and/or substations. *(Ms. Conner, May 2, 2012, page 18, lines 14-22)*

PUBLIC COMMENT 8: In one instance in Wisconsin, the power company bought a house for $221,000, erected a power line next to it, fixed up the property, eight to ten thousand dollars' worth of new paint, doors, sinks, dishwashers, all the good stuff, put it on the market at 179 and finally sold it ten months later after the initial purchase at a hundred twenty-eight five, 42 percent less than the company paid for it originally. So that's just an illustration of one of the property values being affected by being next to this stuff. *(Ms. Conner, May 2, 2012, page 19, lines 5-18)*

PUBLIC COMMENT 9: The Beckmann report dealt with comparable properties near the New Hempstead Road substation and Congers, and sales that were from 2005 to 2009. In the Coyle review of that, they pointed out that there were only about four sales within that time next to the New Hempstead project. And the Coyle Report says it does not appear to be a large enough set of data to provide any substantial result. They also point out that in Congers, two of the four sales they used as comparable were next to railroad tracks. So, it may or may not have been a good indication of what the substation does to the value. *(Ms. Conner, May 2, 2012, page 19, lines 19-25; page 20, lines 2-14)*

PUBLIC COMMENT 10: The two substations, incidentally, have been there for years, and since the comparable sales only compared from 2005-2009, it may be that the diminution of values had already been taken care of years before in the value of those properties next to the substation. *(Ms. Conner, May 2, 2012, page 20, lines 15-21)*

PUBLIC COMMENT 11: Other than monetary value, just from my experience in the real estate business, there are people who won't even look at a property that's anywhere near a power line or substation. What happens is that that cuts down the number of prospective buyers because a lot of people won't look at the properties. *(Ms. Conner, May 2, 2012, page 20, lines 22-25; page 21, lines 2-5)*

PUBLIC COMMENT 12: DEIS should provide information on similar electric substations in residential neighborhoods around the U.S. that are co-located with gas substations and cellular towers since these facilities collectively create more risks than sites with just one of those installations. Projected property value impacts should only be determined using these locations with co-existing thing-a-ma-jigs, not just by using stand-alone substation facilities." Therefore, he finds the DEIS deficient in not doing a proper evaluation. *(Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 37, lines 2-16)*

PUBLIC COMMENT 13: The next item I had in the memorandum refers to home values, and we're suggesting that the scope of the real estate valuation be increased to include the entire region, the Hudson Valley or beyond, if necessary, because the sample size that was utilized is very small. That was noted by the real estate expert that the Planning Board used to review their material, and also because some of the substation locations are immediately adjacent to railroad tracks, in the case of the Congers substation, a very active freight line and it may be that the valuations on the part of prospective home purchasers are more influenced by the sound and sight of the trains than they would be by the substations. So we're asking

that some additional analysis be done in a broader number of locations. *(Mr. Geneslaw, June 6, 2012, page 34, lines 24-25; page 35, lines 2-20)*

PUBLIC COMMENT 14: Reduced property values. We contested O&R's statement that properties near the substation would not decrease in value. We cited examples of properties near substations and power lines that had diminished in value. *(Ms. Thal, via email, May 20, 2012)*

PUBLIC COMMENT 15: I also want to mention that I did hear back from the assessment board who decided that the value of my house was decreased 10% (Though I believe that it's more like a 40% decrease). I don't know what tax adjustment is made because of that, but I believe that it should be significant. I believe that the value of my house is at about half of the purchase price. That means that I can't refinance my mortgage, and take advantage of lower mortgage rates. Which, as someone with very good credit, costs me about $650 per month. The value of my house is lower than the mortgage that is left on it. That's not because of the economy, that's because of Con. Ed. Why aren't I being compensated for that? In fact why isn't everyone on South Mountain Road being compensated? If that is the demand, from all of the residents on South Mountain Road, doesn't it become more economically advantageous for Con Ed to bury the lines, and the substation? *(Ms. Walker, via email, June 8, 2012)*

PUBLIC COMMENT 16: I am distressed at the complete DEVASTATION of my property value, which will result from the building of the substation. *(Ms. Walker, memo date April 2, 2012)*

PUBLIC COMMENT 17: The DEIS has a very limited exploration of the potential impact of electrical substations on the value of neighboring residential properties. It does not explore the combined impact of an electrical substation and related overhead transmission lines plus a gas substation and related gas lines plus a cell tower and related facilities. The DEIS should provide information on similar electrical substations in residential neighborhoods around the U.S. that are co-located with gas substations and cellular towers since these facilities collectively create more risks. Projected property value impacts should only be determined using these locations only, not by using stand-alone electrical substation facilities. *(Mr. Baum, memo dated June 13, 2012)*

RESPONSE: *Both the Town's professional real estate consultant (Coyle) and the applicant's professional real estate consultant (Beckmann) agreed with the conclusion that there would be little or no diminution of property values as a result of this substation. In addition to the multiple regression analyses used to support the Beckmann Appraisals conclusion, a review of the history, location, screening, existing visible power lines and other utility properties was provided which supported Beckmann's conclusions. This site has been used for utility purposes predating much of the more recent residential development that surrounds the site, including overhead transmission lines and towers, an electrical substation and a gas regulator. These utilities were present when much of the newer residential homes in this area were constructed and the impact on property value was factored in at that time.*

The studies referred to by the public are with respect to sites that were not previously impacted by multiple utility structures. There are times when new utility infrastructure constructed on a previously vacant parcel of land that does not have the attributes of the

subject property, may result in an initial value reduction on close neighboring property. The analysis provided in both the DEIS and FEIS supports the conclusion that the impact of utility lines and structures at this site has previously been discounted in the neighborhood and that a new substation would not affect neighborhood values to any significant extent.

With respect to the referred to Wisconsin site, we have not been able to locate any information regarding that site. However, the circumstances of the subject property are far different than that described on the unidentified Wisconsin site. The new structure would not affect neighborhood values to any significant extent given the existing utility use of the site for many years.

The Beckmann study's use of the Congers substation in conjunction with the railroad line is a reasonable proxy for a multiple impacted site. Moreover, the Congers utility/railroad improvements are far more visible and can arguably be considered a more highly impacted site than the facts of the subject property.

It is agreed that where there has been a substantial period of time since the installation of a substation or transmission lines, as mentioned above, the impacts are discounted in the marketplace over time. However, it is our opinion that the proposed substation at the large, well screened Little Tor site, that already has had multiple visible utility improvements will have little or no impacts on neighborhood residential property value. The Little Tor site has been the location of significant utility structures including, at one time, an electrical substation, overhead transmission and distribution lines, a gas regulator and more recently cellular antennas and related equipment. The presence of these utilities for an extended period of time has already had their effect on local property values. A further analysis of sales in the Congers substation area shows that the existence of the substation/railroad has not impacted nearby residential property values greater than those found about the town. This conclusion is supported by the Beckmann study and Coyle's review.

There are many additional neighborhood conditions that may affect the desirability of a residence based on personal choices and attitudes of purchasers. However, our analysis did not show that such an opinion, if there is such an opinion, affected residential values in the neighborhoods of the sites reviewed in the Beckmann study. We cannot speculate on individual or personal opinions or motivations.

The Beckmann study sought data with respect to substations in similar areas in the Hudson Valley and particularly neighboring Orange County. Beckmann was unable to locate recently sold properties with the same attributes of the Little Tor Road/South Mountain Road property. It is recognized that each property and each neighborhood are unique. However, Beckmann's analysis of similar, multi-impacted properties was sufficient to support his conclusions. It is our opinion that the studies done by others on various properties in the United States makes it unnecessary to make further inquiry. Further, value impact in far distant areas cannot be assumed to be the same or similar to those in our region. We do not believe further research would improve our analysis or change our conclusion.

We cannot comment on real estate tax assessments or re-assessment issues. We do acknowledge that there has been a nationwide, region-wide, state-wide, county-wide and town-wide general real estate recession that has caused a substantial reduction in residential property values. We have not appraised Ms. Walker's property and cannot comment as to her conclusion as to the value of her house.

The Beckmann study has been updated and is included in Appendix L (updated November, 2013). The conclusions reached in Section III.P of the DEIS did not change as a result of this update.

INSERT SECTION DIVIDER

H. TILCON

PUBLIC COMMENT 1: And the other, one of the major problems I saw, that the applicant is claiming that 85 percent of power would be dedicated to homeowners and 15 percent for commercial and municipal. But if you add up their transformers, they have two 15-megawatt transformers and one dedicated to Tilcon, which is 20-megawatts, that's 20 percent right there, not including anybody else's usage. So those numbers are not correct. *(Mr. Baum, May 2, 2012, page 34, lines 2-12)*

PUBLIC COMMENT 2: One of the concerns that I have is whether this facility which is determined for backup purposes is somehow part of the larger plan to supply more electricity to Tilcon which may in turn result in other environmental impacts elsewhere. *(Mr. Baum, May 2, 2012, page 34, lines 15-21)*

PUBLIC COMMENT 3: I mean, has some of the power from the Haverstraw facility been kind of redirected and drained off for use at Tilcon versus used for homeowners of Northern New City? *(Mr. Baum, May 2, 2012, page 34, lines 21-25)*

PUBLIC COMMENT 4: Question with this dedicated Tilcon transformer. How will the power from the dedicated transformer be delivered? Are there additional structures or wires that would need to be put in place that are formerly built or haven't been built for this purpose? *(Mr. Baum, June 6, 2012, page 101, lines 2-8)*

PUBLIC COMMENT 5: And specifically I was interested in South Mountain Road, if it's going to run along South Mountain Road down towards the quarry. *(Mr. Baum, June 6, 2012, page 101, lines 17-20)*

PUBLIC COMMENT 6: The service area diagram that is in the DEIS appears to exclude Tilcon, so I think that needs to be revised based on what we've been discussing tonight. *(Mr. Baum, June 6, 2012, page 101, lines 23-25; page 102, lines 2-3)*

PUBLIC COMMENT 7: Another thing that concerned us was there's a line that goes through our lake from O&R. This is an O&R power line that has 384 watts; it's more than the normal line. And they have an easement, Lake Lucille gave them an easement, this is going back years ago, that said that they could use this so they can feed Tilcon. Now, this was only for Tilcon, so if they're planning on having other people use this line, I would like to see the plan that who's electric is going through this because it should only be Tilcon and Tilcon only. *(Mr. Terribile, May 2, 2012, page 46, lines 21-25; page 47, lines 2-10)*

PUBLIC COMMENT 8: I have one question that I couldn't really find the answer to, and this is why is O&R closing the station at Tilcon and not keeping it operational. I looked through the document and I wasn't able to discern that reason, so that is something I would like to see answered. *(The Chairwoman, February 27, 2013, page 14, lines 19-25; page 15, line 2)*

PUBLIC COMMENT 9: Five: Why does O & R plan to move Tilcon's dedicated transformer from Haverstraw to New City? Please describe in detail and give all information

on how the 20 MVA transformer will be connected between the substation and the facility. The DEIS should provide peak load data at startup for Tilcon, not just standard load data. *(Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 38, lines 10-18)*

PUBLIC COMMENT 10: Does the move of the Tilcon transformer have anything to do with O & R being able to meet the needs of United Water? *(Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 39, lines 4-7)*

PUBLIC COMMENT 11: In essence, Rockland's many residential ratepayers will be funding the expansion of operations at Tilcon in West Nyack to help increase profits for Con Edison. *(Mr. Baum, via email, December 15, 2009)*

PUBLIC COMMENT 12: If, as I understand, this station is to make more power available for a specific industry, why place it on residential land? Surely another spot, non-residential and even closer to the end user, can be found if you try hard enough. *(Ms. Vaterlaus, via email, June 22, 2012)*

RESPONSE: *The proposed Little Tor Substation is needed to provide power to the residences and commercial/municipal customers in northern New City. The construction of this substation would provide capacity, reliability and redundancy in the electrical system that serves this area, benefitting all customers. The substation is not being built to provide more power to Tilcon, United Water, or any other specific industry or customer. The relocation of the existing dedicated Tilcon transformer is completely unrelated to the United Water filtration plant.*

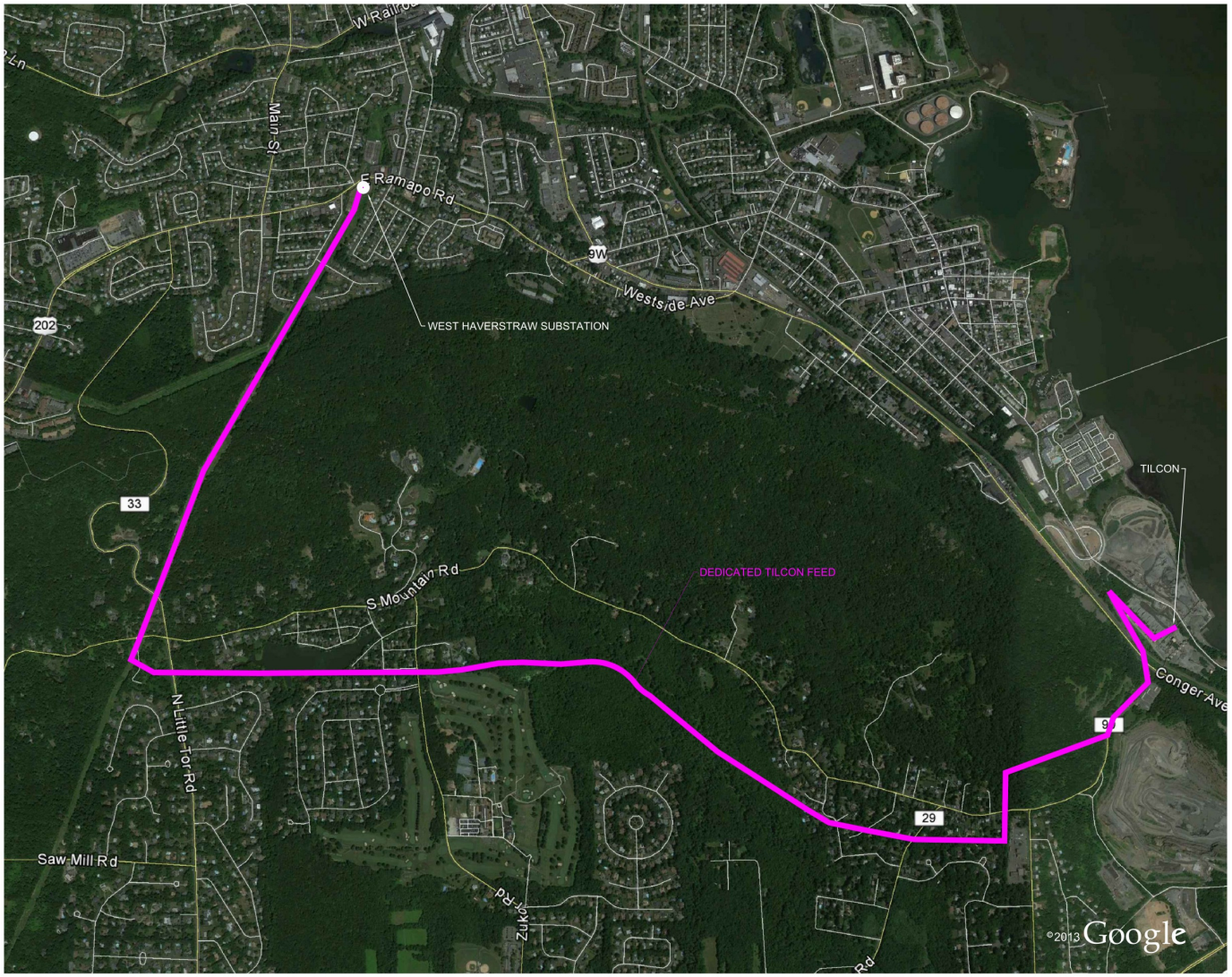
- *2002 - The Little Tor Substation was identified by Orange and Rockland Utilities as a required infrastructure improvement project to be constructed in northern New City.*
- *2007 - Orange and Rockland submitted an application for the Little Tor Substation, including the relocated Tilcon transformer, to the Town of Clarkstown in August.*
- *2008 - The New Business group of Orange and Rockland Utilities received an application for a pilot filtration plant from United Water in November.*
- *2012 - The request for service for the full scale plant was received by Orange and Rockland Utilities.*

The Little Tor substation is not meant as a backup facility, but as the primary source of electricity for northern New City. The geographical service area for the proposed substation, identified in the DEIS and FEIS, Figure 8, is the customer area that requires the substation. The figure includes the Tilcon facility located on Route 9W (Figure 8). Alternative locations for the Little Tor Substation were examined as described in the DEIS, Section V – Alternatives to the Proposed Action. After all of the critical factors are considered, there are only a small number of parcels that meet the minimum threshold requirements, one of which could not be used as it is park land. Even though this parcel is zoned residential, a large portion of it has been dedicated to utilities since the 1920's. The Gibbons Substation was originally constructed on a portion of the Little Tor site in 1926 and two (2) transformers were added to the station in 1952 and 1956. In addition, this parcel contained overhead transmission lines, distribution lines, a gas regulator (installed in 1962) and, more recently, a cellular communication facility.

Currently, the 34,500 volt (34.5kV) supply to Tilcon originates at a dedicated transformer in the West Haverstraw Substation; travels southward down the mountain and passes through the Little Tor site (refer to Figure 20 of the FEIS). The line does not run along South Mountain Road but crosses over it just west of North Little Tor Road. By relocating this transformer from West Haverstraw to Little Tor, Orange and Rockland Utilities would be able to de-energize approximately 7,000 feet of overhead line, including that crossing, (refer to Figures 20 and 21) reducing exposure and system maintenance for the Company, and improving reliability to its customers. The existing line continues east from the Little Tor site, traverses Lake Lucille and terminates at Tilcon in Haverstraw. There will be no change to this section of the line once the Little Tor Substation is energized. The right-of-way easement across Lake Lucille, purchased in 1926, is not limited to Tilcon or any particular customer.

The DEIS states that "The supply area for the Little Tor Substation consists of 85% residential customers and 15% commercial/municipal accounts". The two 50 MVA transformer banks will supply these customers and the Tilcon transformer at 13,200 volts (13.2kV). Tilcon's facility requires 34.5kV necessitating the Tilcon transformer to step up the voltage from 13.2kV to 34.5kV. Tilcon's historical average load has been less than 1 MVA. There are no plans or expectations for that usage to change. While the 25MVA transformer is over capacity for this application, Orange and Rockland is recycling a 13.2kV to 34.5kV transformer retired from another substation rather than purchase a new transformer. Furthermore, the conductor of the existing line will limit Tilcon to their current capacity. There are no additional structures required to make this conversion. The Tilcon load could continue to be supplied from West Haverstraw Substation if the proposed facility were never built. Tilcon represents only a small percentage of the capacity of either the West Haverstraw Substation or the proposed Little Tor Substation. There is no substation owned by Orange & Rockland Utilities at the Tilcon facility in Haverstraw. The references to Tilcon only relate to the relocation of the existing transformer that serves Tilcon from the West Haverstraw Substation to the Little Tor Substation. The Tilcon transformer at the West Haverstraw Substation would be de-energized and stored as a spare; however, the balance of that substation would remain in-service.

All potential adverse environmental impacts related to moving the supply source for Tilcon are included in the DEIS and FEIS for the Little Tor Substation.



SCALE: NTS

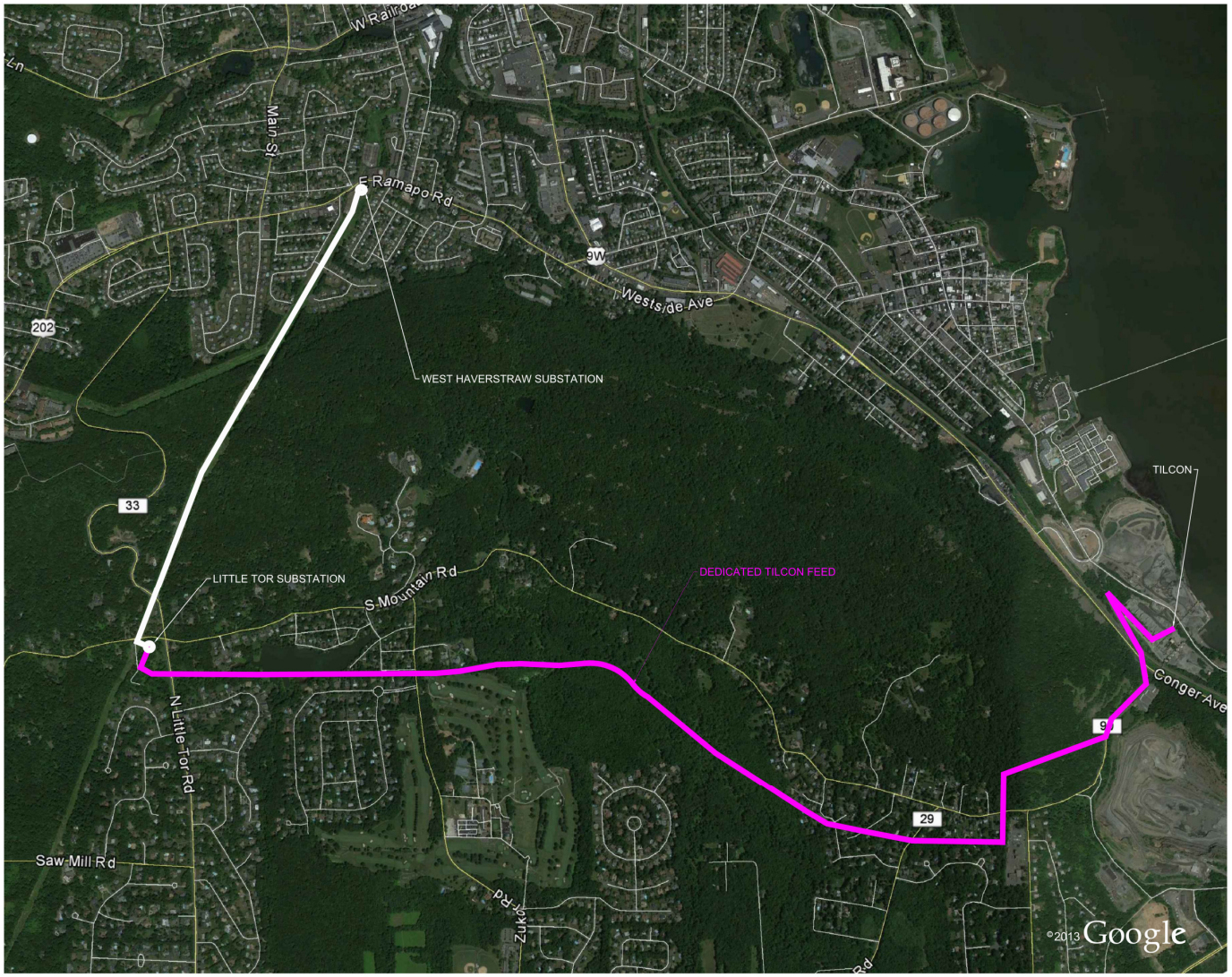
FIGURE 20

Existing Tilcon Distribution Feed
Little Tor Substation
Orange and Rockland Utilities, Inc.

Town of Clarkstown, Rockland County, New York

LANGAN White Plains New York

Image Source: LANGAN



SCALE: NTS

FIGURE 21

Proposed Tilcon Distribution Feed
Little Tor Substation
Orange and Rockland Utilities, Inc.

Town of Clarkstown, Rockland County, New York

LANGAN White Plains New York

Image Source: LANGAN

INSERT SECTION DIVIDER

I. TEMPORARY SUBSTATION

PUBLIC COMMENT 1: It means what you're telling us is that it's not for the switchover which only takes a few minutes to switch the New Hempstead just like the North Main Street and the South Main Street lines were switched over, and if you do it during low usage times, like on a Sunday morning at 5 a.m. or 4 a.m., it would have minimal impact, and it may not even result in the power coming down. I would assume that's an answer that Mr. Leifer might be able to give eventually. *(Mr. Baum, June 6, 2012, page 98, lines 20-25; page 99, lines 2-9)* (This comment relates to the New Hempstead Road widening project).

PUBLIC COMMENT 2: I just wanted to repoint out, there were discrepancies that I had identified, I just want to emphasize that for the Board, that the temporary substation which I believe was mentioned in the document, the temporary substation text differs from the DEIS, and so I think that's important when you have a temporary substation which is claiming that New City is only getting power from one substation and you have DEIS that actually gives a map showing which substations are servicing that area, it's important those be integrated, and if they're not integrated, you're getting different information and it creates more problems. So I just wanted to emphasize that discrepancy. *(Mr. Baum, February 27, 2013, page 16, lines15-25; page 17, lines 2-8)*

PUBLIC COMMENT 3: The West Haverstraw substation, according to the O&R DEIS (also attached) for the proposed New City substation, currently services northern New City, along with the New Hempstead and Congers substations. This is the information O&R failed to include in the permit application for the temporary substation in order to create their "blackout" scenario to justify the temporary substation as a Type II "Emergency Action" under SEQR. You can see the service area map with the existing substations on Page 25 of the attached O&R DEIS. *(Mr. Baum, via email, July 24, 2012)*

PUBLIC COMMENT 4: Here, again, on page 184 of the O&R DEIS, O&R states that the Little Tor area is serviced by three substations, not just New Hempstead as they falsely implied to get their building permit from the Town for the temporary substation: *(Mr. Baum, via email, July 24, 2012)*

PUBLIC COMMENT 5: Indeed, if Little Tor and downtown New City were only serviced by a single substation... then the potential for a very short outage during the transfer of the distribution lines on New Hempstead Road would exist, just like my community had a planned outage several months ago when O&R upgraded some local equipment. But since New City is serviced by multiple substations, an outage, albeit short and minor, would be extremely unlikely to take place -- contrary to the assertion made in the Building Permit application. There is no way that this "temporary" substation would be needed for a minimum of two years, until the new substation is built, as stated in the O&R application, just to deal with the transfer of the lines on New Hempstead Road. *(Mr. Baum, via email, July 20, 2012)*

PUBLIC COMMENT 6: I need to know how the temporary equipment that was installed about a month ago came to be installed without any environmental review. *(Mr. Granirer, June 13, 2012, page 11, lines 7-10)*

PUBLIC COMMENT 7: This situation once again highlights Con Edison's aggressive efforts to "get what it wants." In this light, I want to express my significant concern that Con Edison has used a Town "procedure" to bypass SEQR to get their temporary substation installed at South Mountain Road. It's no wonder that they didn't copy their Building Department application for a temporary substation to the Planning Board because the narrative in the attached document misleads the reader to believe that the Little Tor area and downtown New City are only serviced by one substation: the New Hempstead Substation. *(Mr. Baum, via email, July 20, 2012)*

PUBLIC COMMENT 8: For O&R to state in the attached Building Permit application that this is a "Type II" emergency action and to further request approval "as soon as practical in order to provide Rockland County the assurance that their project (the New Hempstead Road upgrade) can go forward so New York State funding is not forfeited" are claims that are well beyond ridiculous. Nevertheless, by not involving/informing the Planning Department of their plans for a temporary substation, O&R appears to have fooled the Town into believing their ridiculous assertions. *(Mr. Baum, via email, July 20, 2012)*

PUBLIC COMMENT 9: Given these problems, I urge you to ask the Planning Department and the Town's Consultant for the proposed Little Tor Substation, Mr. Geneslaw, to thoroughly review O&R's Narrative and application for the temporary substation and also compare it with the DEIS submitted by O&R for the permanent substation. I believe they will also conclude that the temporary substation approval was obtained to segment the permanent substation project and circumvent SEQR. *(Mr. Baum, via email, July 20, 2012)*

PUBLIC COMMENT 10: Temporary equipment. Further, allowing a "temporary" installation of equipment at the Little Tor Substation as an "emergency" measure exempt from full SEQR review is yet another form of segmentation. *(Mr. Granirer, memo dated June 25, 2012)*

RESPONSE: *The Little Tor Substation project was identified by the O&R Planning Department in 2002 and projected to be energized prior to the widening of New Hempstead Road. Due to the thorough review undertaken as part of the approval process, the road widening project occurred before the substation could be approved and built. The applicant has advised that previously, three distribution circuits exited the New Hempstead Substation and continued east along New Hempstead Road between the Palisades Interstate Parkway and Little Tor Road. In order to meet the time frames set forth by Rockland County for the widening of New Hempstead Road, Orange and Rockland Utilities began relocating this pole line in early 2012. The configuration of the three overhead lines along New Hempstead Road did not comply with current standards. The relocated poles and lines could only carry two circuits. As a result of this circuit loss, if an outage were to occur in the area, there would be a large customer outage in downtown New City and the surrounding area. A mobile substation was installed at the Little Tor site to supply the isolated area and provide the necessary redundancy Orange and Rockland Utilities is required to provide. The installation of the temporary substation (i.e. mobile transformer), and ultimately the permanent substation, is the only way to effectively replace the circuit that was lost and provide infrastructure to accept the "switchover".*

The reasons necessitating the temporary installation are the same as those necessitating the permanent Little Tor Substation. Even before the isolation of North New City from the New Hempstead Substation due to the New Hempstead Road widening project, heavy loads on the New Hempstead distribution circuit to the Little Tor area left limited available capacity to provide backup under contingency conditions. Removing the supply from New Hempstead Road forced this contingency condition, requiring an alternate source. Extending the closest Congers circuit would have put the 600 Amp-rated circuits at over 850 Amps in normal conditions, which would damage the conductor. The Congers transformer bank that supplies this circuit would also approach its recommended rating and significantly limited backup capability for other contingency conditions. Similar to Congers, extending the West Haverstraw circuit would put the 600 Amp-rated circuits at up to 790 Amps, which would damage the conductor, limit the transformer bank's backup capability under contingency conditions, and even cause difficulty in regulating voltage for this area. With transmission and distribution mainline already in the Little Tor area, simply connecting the mobile transformer at this location provided a source for the removed circuit along New Hempstead Road while improving reliability for the area under contingency conditions.

Installing a temporary substation at the proposed Little Tor Substation site has improved backup for a contingency to 100%.

The DEIS states that the Little Tor area is served by three substations, (see Figure II-4 of the DEIS/Figure 7 of the FEIS). The DEIS also indicates that as a result of the increase in demand in this area, the existing substations that serve the Little Tor area have reached their capacity, are no longer capable of satisfying the increased demand, and fail Orange and Rockland Utilities' criteria for reliability and redundancy. The information provided in the DEIS (specifically Section II-E) describes why the Little Tor Substation was required. The information provided as part of the building permit application for the mobile substation describes why the temporary substation needed to be installed immediately in conjunction with the New Hempstead Road widening project. There is no inconsistency in the information.

The temporary substation was reviewed by the Town and found to be a Type II action. As such, it is not part of this Application and no further review was required. This determination by the Town satisfied the requirement of SEQRA. The time to appeal that determination by the Town has long since expired. The mitigation of any temporary adverse impacts from the temporary substation will be addressed by the installation of the proposed permanent substation, allowing the temporary substation to be removed.

The "segmentation" argument raised in the public comments suggests the temporary substation / mobile transformer should not have been approved without a review and approval of the new permanent substation that is the subject of this application. This could not have occurred given the immediate need imposed by the road widening project on New Hempstead Road. It was also suggested that this application should include a review of all of the other potential substations O&R has indicated may be constructed in its long range plan to meet the required needs of its customers in the future. This segmentation argument was considered by the Town during the Planning Board hearings and rejected (refer to Section III.J.5 for additional information). The temporary substation / mobile transformer approved by the Town as a stand-alone project required due to the timing of the widening of New Hempstead Road and the immediate need for load relief for local customers. The need

for the temporary substation was immediate and necessary to supply the needs of residential customers in New City. That application and approval by the Town does not constitute segmentation.

INSERT SECTION DIVIDER

J. MISCELLANEOUS

1. HISTORIC AND ARCHAEOLOGICAL RESOURCES

PUBLIC COMMENT 1: So, we did add a provision, it's in our approval, that Orange & Rockland take pains to protect that quarry site. Since they hadn't planned on disturbing that area anyway, they saw no problem with it. *(Mr. Knight, June 13, 2012, page 103, lines 11-16)* *Author's note: The Historical Review Board wishes to have two conditions added to resolution of approval, should the project be approved, that the facility not be visible from South Mountain Road and that the sandstone quarry be protected.

RESPONSE: *The FEIS Section III.E.1 provides a visual assessment of the proposed action along with proposed mitigation to screen the project in such a way as to minimize the visual impact to the greatest extent practical. In addition, the proposed development plan would not impact the area of the stone quarry. The limit of disturbance for the project will be survey located and flagged prior to site clearing to avoid any disturbance to the former quarry.*

PUBLIC COMMENT 2: …the Clarkstown Planning Board will be reviewing O & R Utilities' DEIS submission for the proposed substation on South Mountain Road, which is a Town-designated historic road. *(Mr. Baum, via email, March 2, 2012)*

RESPONSE: *South Mountain Road is identified as a historic road designated by the Towns of Clarkstown & Orangetown. This information is based on a map prepared by The Rockland County Planning Department – GIS dated April 2010. The Town of Clarkstown Ordinance Chapter 153 Historic Road Preservation notes the legislative intent and included the following items;*

(1) It is the legislative intent and spirit of this chapter to:

- *(a) Preserve, protect and enhance Clarkstown's rich historical, architectural, aesthetic and cultural resources.*
- *(b) Foster civic pride in its heritage, and enjoyment of the scenic qualities.*
- *(c) Ensure the harmonious and orderly growth and neighborhood character of the districts.*
- *(d) Preserve the natural environment of the roads.*
- *(e) Protect and respect the many properties which have received commendation for their historic importance by the state, and are listed on the National Registry of Historic Places.*

The development proposes to remove the existing driveway entrances on South Mountain Road in an effort to restore the historical and aesthetic character of the roadway. Additionally, the existing gas regulator area is proposed to be removed and the new upgraded gas regulator moved further from the South Mountain Road. The existing regulator is located approximately 10 feet from the South Mountain Road southern right-of-way line and the new gas regulator would be approximately 94 feet from the right-of-way line. The closest transformer to a property line would be located approximately 287 feet from the southern right-of-way line. The existing vegetation between South Mountain Road and the

substation would remain and provide screening of the proposed construction. There would also be landscape material added to infill potential understory voids in the existing landscape to assist with screening the electrical substation and gas regulator, where required.

PUBLIC COMMENT 3: O&R should be required to include in the Supplemental DEIS how the study was conducted, where the significant or sensitive archeological resources probably are, how it intends to find them, how it will mitigate any damage that might come to them from its work. The DEIS states (pages 111.K-96 & 97) that "no significant national or cultural resources are present within or adjacent to the APE." [Area of Potential Effect] It also states that "RGA (Richard Grubb and Associates, a consulting firm) reports that due to the proximity of known prehistoric resources, topographic setting and distance from water the APE has a high potential for containing prehistoric archeological resources" and that "given the proximity of this site to the Hackensack River, the general topography, the presence of other although not significant historic resources in the area and the presence of map-documented structures within the APE, the sensitivity for historical archeological resources is considered high." [my emphasis]

Yet, O&R's section on Mitigation Measures (page IILK-97) says only that "there will not be any significant environmental impacts upon cultural resources." And in the Introduction/Executive Summary, on page 1-6, it says, "...This study concludes based on a detailed review of significant data that the site may contain Historical or Archeological significant resources. For that reason a Phase 113 study was performed. This study concluded that the project as proposed will not have any significant adverse environmental impacts upon cultural resources." [My emphasis] *(Ms. Thal, via email, June 22, 2012)*

RESPONSE: *As indicated in Section III.K of the DEIS, an initial Phase IA Archeological Survey was conducted for this site by a qualified firm. The results of the Phase IA, which is a data base study concluded that there was sufficient evidence that this site might contain significant historic and archeological resources (refer to Appendix M of the DEIS for the referenced study). For this reason, the portion of the site intended for development was further studied. A Phase IB study which is an actual field investigation was performed (refer to Appendix M of the DEIS). The results of this study concluded that development of the portion of the site required to accommodate the proposed project would not result in any significant adverse environmental impacts upon cultural resources. The New York State Historic Preservation Office was provided copies of the referenced studies and supported this conclusion.*

2. LAKE LUCILLE

PUBLIC COMMENT 1: Is this what you consider, your Safety and Engineer Department, is this what they consider safe and on a standard par with what your maintenance requirements are? Yes or no? *(Mr. Trevor, June 13, 2012, page 59, lines 7-11)*

PUBLIC COMMENT 2: And lastly, I hate to say the same things that Bill was saying, but shame on you, really. These poles, leaning. How can you say they're operational? They're leaning. They're like at an angle going towards people's property. Thank God they're not going the other way into the lake or people will be electrocuted. *(Ms. Schaefer, June 6, 2012, page 75, lines 15-23)*

PUBLIC COMMENT 3: Another thing that I saw was, you know, I was here back in 2008 and I told O&R at the time that they had problems with their telephone poles. *(Mr. Terribile, May 2, 2012, page 47, lines 22-25)*

PUBLIC COMMENT 4: I'm out there every single day and I know how dangerous this pole is. And what you're doing is you're telling them now you can even put more electricity through it. And they're telling you this is safe. This has been like this for three years. *(Mr. Terribile, June 13, 2012, page 55, lines 14-20)*

RESPONSE: *The applicant has stated the poles are inspected annually in accordance with Orange and Rockland's standard maintenance program. The inspection is based on standard industry practices and consists of a visual inspection and mechanical sounding (and boring, if necessary) of the poles to validate the structural integrity of the pole. Leaning poles are visually assessed to determine if the effects impact electrical clearance requirements, impact the structural integrity of the pole and adjacent poles or are merely cosmetic. If the condition is suspected to impact electrical clearance requirements or impact the structural integrity of the pole line resulting in non-linear loading or causing secondary stresses that could result in reduced load capacity, then the condition is referred to Transmission Engineering for further investigation and review.*

The proposed substation will not increase the capacity of the transmission line that crosses Lake Lucille (Line 39) and the applicant has presently no plans to increase the capacity of that line. The annual inspection of the poles by Orange and Rockland Utilities determined that the poles were stable. However, as of January 24, 2014 the two poles in Lake Lucille that were leaning have now been straightened by the Orange and Rockland Utilities line crews.

3. LAND USE, ZONING AND PUBLIC POLICY

PUBLIC COMMENT 1: Overall, the DEIS should discuss accessory uses of the planned substation in New City including chemical storage, wire storage, bathroom facilities, picnic/rest areas for company personnel, etc. *(Mr. Baum, via email June 21, 2012)*

RESPONSE: *There are no Accessory Uses planned for this facility. There will be no bathroom facilities or picnic/rest areas for employees. Limitations on accessory uses shall be listed as conditions of the special use permit, should one be granted.*

PUBLIC COMMENT 2: What will the environmental consequences be for Clarkstown if this explosion happens in a heavily wooded area??? O&R needs a special permit from Clarkstown to build this substation. Why should this special permit be granted? *(Mr. Baum, via email December 17, 2009)*

RESPONSE: *As indicated in the Town's Zoning Code, in order for the Zoning Board of Appeals ("ZBA") to issue a Special Permit, the ZBA must find that the proposed use meets the threshold requirements set forth in the Town code. The requirements for issuing a special permit are enumerated in both the DEIS and FEIS. The ZBA will determine if the requirements have been met or not.*

Section D of the FEIS provides a more detailed analysis of the proposed emergency response plans in response to a fire or explosion. In addition, the proposed substation design and related tree clearing and landscaping have been modified to further prevent the possibility of a fire or explosion reaching the adjacent wooded areas. As can be seen in Figure 22, the overall size of the proposed substation yard is approximately 193 wide and 209 feet long (fenced area) and the transformers and the other major electrical equipment would be generally set back approximately 26 feet from the perimeter fence. Across this area the ground cover would be gravel. Beyond the fenced in portions of the substation yard there would be an additional 60 feet minimum and in some cases approximately 100 feet of separation from the perimeter fence to the nearest wooded area. Across this distance the ground cover would be generally grass. In essence the major electrical equipment would be separated from any wooded area by 60 feet to 100 feet.

Relative to the risk of an "out of control fire", the Chief Fire Safety Inspector for the Town has reviewed the design of the proposed electrical substation. He has indicated the separation between the substation equipment and the nearest wooded area, and the other emergency response measures proposed for this site, including the installation of a new fire hydrant, provide adequate mitigation and protection. In addition to these provisions, the New City Fire Department has received training from Orange and Rockland Utilities as how to handle a fire at an electrical substation and will be offered additional training before and after the substation is energized to minimize the threat of a fire spreading to other areas.

PUBLIC COMMENT 3: For a public utility substation to obtain a special permit, the substation must:

1. Be "housed in a structure that harmonizes with the character of the neighborhood," and it must
2. Have adequate screening and landscaping.

Town of Clarkstown Code, Use Table 2, Column 3. (Excerpt) *(Mr. Granirer, memo dated December 2, 2008)*

PUBLIC COMMENT 4: Would you recommend this substation be installed in a non-residential area, commercial area? Do you have an opinion on that? *(Mr. Fiel, June 13, 2012, page 87, lines 15-18)*

RESPONSE: *Table 2 of the Clarkstown Zoning code indicates the Uses permitted by Special Permit from theZBA and these uses include (excerpt):*

- *"Public utility substations or pump stations*
- *Telephone exchanges housed in a structure*

Provided these uses are designed to harmonize with the character of the neighborhood and have adequate fences and other safety devices and adequate screening and landscaping".

The applicant has submitted material required for the Special Permit as follows: Included in Appendix B is a detailed Landscaping plan and photo simulations that demonstrate that the existing perimeter character of this site will not change as a result of the construction of this new substation. The photo simulations confirm that the proposed landscaping will adequately screen this facility from the immediate neighbors. In addition, the traveling public will not see this substation through the heavily wooded portions of this site that will remain and the supplemental landscaping that is proposed. The plan provides for adequate fencing and security and will include 24/7 video monitoring of the site.

To address the question of this use being designed in harmony with the character of the surrounding area, the history of the site usage must first be identified. This site has been used for utility purposes since the 1920s. In addition to the electrical substation, this site has included a gas regulator, which has been active since the early 1960s. In addition to both the electrical substation and the gas regulator, this site has contained overhead transmission lines which cross the site, overhead distribution lines and most recently cellular equipment which includes cellular antennas mounted on an electrical transmission pole and an enclosure which houses the cellular equipment. The surrounding neighborhood is residential in nature. In many instances, however, the homes were constructed after the utility usage began at this site, and the overhead lines were installed. The addition of the proposed substation and upgrades to the gas regulator conform with the historical utility use of this site.

The addition and location of a new substation to the existing electrical distribution system of Orange and Rockland Utilities is determined by a multitude of factors, such as the location of the increased demand, the configuration of the existing overhead distribution and

transmission system, and the age and capacity of the existing electrical substations in the system. None of the significant factors that are used to determine the need and location of a new substation are related to the existing land use of an area.

Once it is confirmed that a new electrical substation is required, the supporting information is submitted to the Public Service Commission and Orange and Rockland Utilities receives approval to add this component to the system. The target area where an electrical substation is to be located is based on demand and other system factors which are analyzed during the planning process. This process defines the target area, which is the area where the demand or condition of the existing system warrants the need for an electrical substation. The next step is to determine the minimum size and configuration of the property required to accommodate the new electrical substation. This information is then used to identify parcels of land in the target area that meet the size requirements. In addition to being of sufficient size to accommodate the electrical substation, a parcel must be in close proximity to an existing transmission line that can supply the substation. The applicant has stated that it tries to locate these types of facilities in areas with the least potential for significant environmental impacts, provided the location is in close proximity to the increased electrical demand and the overhead transmission and distribution systems that serve that demand. Orange and Rockland Utilities prefers to select a site located outside a residential district, versus one in a residential area; however, this is not always possible. In the case of the Little Tor Substation, the parcels that fit all of the requirements as outlined above are either parkland or parcels in a residential area.

As indicated in Chapter V-6 of the DEIS, the location of this electrical substation must be in proximity to overhead transmission lines 530 and 541 and generally in this part of Clarkstown because this is where the increase in demand is having the greatest impact on the existing electrical system. The current zoning in this target area is either park land or residential and the residential zoning varies from R-22 to R-160.

Although locating these types of facilities in heavily developed residential areas is not the preferred solution, it is sometimes necessary because of the increase in demand and the proximity of the overhead transmission lines and distribution lines. It should be noted that the Town of Clarkstown Zoning Ordinance permits public utilities and electrical substations to be constructed in the R-40 and R-80 residential zoning districts under the special use provisions of the code and this site and the surrounding properties are zoned R-40 and R-80.

The issuance of a Special Permit is subject to the Town performance standards (§290-13) and special findings (§290-15). Responses for each of the requirements in these sections are as follows. Section 290-13A of the Town Zoning Code allows for a non-residential use if it conforms to the district regulations and the regulations of 290-13. Among other things, Section 290-13F contains certain specific regulations which are delineated as follows:

(1) Fire and Explosion Hazards. There will be no storage of flammable or explosive materials or storage of explosives. The implementation of procedures to limit the hazard of fire and explosion at the substation are detailed in this FEIS. Among other things, the site will be continuously monitored with video cameras 24/7. Firefighting procedures will be provided to the firefighting department having jurisdiction and training will be provided on an as needed basis. The proposed plan has been reviewed by the Town fire inspector who has

confirmed he is satisfied with the plans, as proposed. The plan will include the addition of a new fire hydrant, which was requested by the fire inspector.

(2) Radioactivity or Electrical Disturbance. There will be no radioactivity produced by the proposed substation. No electrical disturbance adversely affecting the operation of any equipment for the surrounding properties will be created. The applicant obtained a report from its consultant about the EMFs which will be generated from the operation of the substation and that report confirmed the EMFs will be below the established safety thresholds. The Town also retained a consultant who reviewed the applicant's report and commented about the production of EMFs at the site. That consultant's reports, which agreed the EMFs are within the established guidelines, and the applicants reports are contained herein.

(3) Smoke. There will be no smoke produced by the operation of the substation.

(4) Fly Ash, Dust, Fumes, Vapors, Gases and other Forms of Air Pollution. There will be none of these produced by the operation of the substation. In the event of a fire at the substation, any such material produced by such a fire will be of a short duration and limited by the implementation of firefighting procedures.

(5) Liquid or Solid Wastes. There will be no liquid or solid wastes produced by the operation of the substation. There will be no discharge into any private sewer disposal system or sanitary sewer lines. In the event of a catastrophic event at the substation, the design of the substation, its retention basin, and other drainage facilities, are designed to prevent the leakage of any liquid into any stream or into the ground water. Detailed information about the containment of contamination from the site and protection of wetlands and water resources in the event of a catastrophic event, are contained in the FEIS in the "Water Resources and Wetlands" section of this FEIS.

Section 290-15 of the Town Zoning Code also requires that the ZBA make specific special findings prior to the issuance of a Special Permit. These special findings are recited in section 290-15B of the Town Zoning Code. These include the following:

(1) Be appropriately located with respect to transportation, water supply, waste disposal, fire and police protection and other public facilities. No access to public transportation for the operation of the substation is required. The substation does not need to be connected to a public water supply and is being designed to protect water resources in the area as described in the "Water Resources and Wetlands" section of this FEIS. The substation will not generate solid or liquid waste which requires disposal. The Town fire inspector and the New City Fire Department, which will provide fire protection, have reviewed the plans and found them to be acceptable. The Clarkstown Police Department will provide police protection. For security purposes, the site will be monitored through video cameras 24/7. There will be a security fence around the entire perimeter of the substation. There will one means of ingress and egress and this gate will be locked, except when visited by O&R employees.

(2) Not Cause Undue Traffic Congestion or Create a Traffic Hazard. There will no traffic generated by the substation. While the site will be periodically inspected by O&R employees on an as needed basis, these typically involve no more than two visits by one person each month. The location of the gate for the substation has been reviewed and determined to be acceptable by the Town and County highway department.

(3) Not create, at any point of determination set forth in Section 290-13F, G and H any more dangerous and objectionable elements referred to in Section 290-13A than is characteristic of the uses expressly permitted as of right in the same district. The issues contained in Section 290-13F are each responded to above. Section 290-13G is concerned with vibration which should be measured at the lot line or any point beyond the lot line. There will be no vibration at any time produced by the substation above the limitations specified in the Town code. Section 290-13H is concerned with noise, odors, and glare. With respect to noise, the applicant has produced a report from its consultant regarding the generation of noise through the operation of the substation. The Town retained an outside consultant to review these reports and has confirmed that the substation will operate in accordance with all applicable Town regulations regarding noise. Copies of those reports are included in the FEIS. Upon completion of the substation, a further test will be conducted to confirm compliance with the Town's noise ordinance. The operation of the substation will not produce any odors. With respect to glare, the substation will not produce any direct or sky reflected glare and there will be no high temperature combustion or welding conducted during the regular operation of the substation. Any lights or flood lights at the site will conform with Town regulations regarding the production of light at the site.

(4) Not adversely affect the character of or property values in the area. The applicant retained an outside consultant who produced reports confirming that there should be no adverse impact on the character of the property or property values in the area. The Town retained its own outside consultant to review these reports and provide its opinion. The Town's consultant agreed with the applicant's outside consultant that there should be no negative impact to the character of the property or the property values in the area. Copies of these reports are included in the FEIS.

(5) Not otherwise impair the public health, safety, morals, convenience, comfort, prosperity and other aspects of the general welfare of the town. The reports submitted by the applicant from its outside consultants regarding EMFs, noise, and property values confirm that there will be no negative impacts in these areas. Those reports were reviewed by the Town's own consultants which agreed with the opinions rendered by the applicant's consultants. The public health and safety have been reviewed as part of this application by the appropriate commissions and departments of the Town and county having jurisdiction including the Rockland County Drainage Agency, the County Planning Department, the Town Fire Inspector, the Town Environmental Department, the New City Fire Department, the New City Ambulance Corps, the New York State Office of Parks, Recreation and Historic Preservation and the Rockland County Office of Fire and Emergency Services.

(6) Comply with all other regulations applicable to such use. The substation, when completed, will be in conformance with all applicable regulations regarding the construction, operation, and maintenance of substations.

SCALE: NTS

FIGURE 22

Dimensions from Equipment to Tree Line
Little Tor Substation
Orange and Rockland Utilities, Inc.

Town of Clarkstown, Rockland County, New York

LANGAN White Plains New York

Image Source: LANGAN

4. NOISE

PUBLIC COMMENT 1: My other question, I have a lot of questions, but everyone's is touching everything and they did amazingly, but the impact of the noise. *(Ms. Stava, May 2, 2012, page 54, lines 10-13)*

PUBLIC COMMENT 2: Page 3-The DEIS was prepared under SEQRA regulations requiring the Lead Agency to consider the potential for adverse environmental impacts. The NYSDEC has an established Program Policy entitled Assessing and Mitigating Noise Impacts (DEP-00-1, Feb. 2, 2001) applicable for projects under SEQRA review. The relevant noise impact criteria in the NYSDEC guidance document should be given consideration and addressed appropriately when considering potential project impacts and the need for mitigation, in addition to review of compliance with the local ordinance and the Rockland County noise regulations. *(Mr. Potenta, memo dated September 15, 2012)*

PUBLIC COMMENT 3: The report basically said all areas are in compliance except north and west of the property, which they are planning on using barriers to mitigate that. Historical, they --basically they're saying that this will be provided later and there will be an impact. *(Mr. Adib, May 2, 2012, page 58, lines 4-11)*

RESPONSE: *Orange and Rockland Utilities retained Ostergaard Acoustical Associates (OAA) to conduct an Acoustical Analysis of the site under current and proposed conditions. A full copy of the report (2010) and subsequent supplemental reports (2011 & 2012) are located in Appendix F.*

Section III.J of the DEIS and the subsequent reports include a discussion of how the existing and proposed conditions compare to the criteria in the Town of Clarkstown ordinance, the Rockland County Sanitary Code and the NYSDEC guidance document. Data collected and interpreted by OAA and included in the DEIS and FEIS showed that the existing gas regulator station would exceed both county and local noise codes at the nearest property line. Calculations show that the proposed regulators in the new locations, while farther from the property line and with the whisper trim acoustical package, would still exceed the local noise code of 46 dB(A). Mitigation in the form of acoustical barriers will be installed as part of the project to bring the gas regulator stations into compliance with applicable regulations.

PUBLIC COMMENT 4: Page 5-The report should clarify what sources dominating the ambient measurements were included in the noise levels presented, whether they reflect the time period least affected by these identified extraneous sources or the average over the entire daytime and nighttime monitoring periods. The latter appears to be the case which might underestimate the project impact on the ambient nighttime conditions during the more sensitive 2-5AM period on weekends when fewer extraneous sounds affect ambient noise levels. The NYSDEC impact criteria should be addressed for ambient noise levels considering the existing character of the surrounding land use *(Mr. Potenta, memo dated September 15, 2011)*

RESPONSE: *The noise studies and subsequent reports have been revised to document and discuss the sources dominating the ambient measurements taken at the site. Location 1 (refer to Appendix F for a reference map) is most influenced by the existing gas regulator station on site. Traffic from South Mountain Road also affects the ambient sound level*

throughout the day at this location. Influences from the higher speed traffic on CR-33 affect measured levels at Location 2 where measured daytime levels were in the upper 50's while nighttime levels dropped to the mid 30's at times in between infrequent traffic passbys. Location 3 measured steady noise levels due to the proximity of the steady water flowing in the Hackensack River and greater distance from local traffic. Average levels remained in the mid 40's during the day and night. Location 4 was also more remote from local traffic and measured daytime levels in the mid 40's while at nighttime, levels decreased to the low 40's.

PUBLIC COMMENT 5: Page 22-The octave band standards in the local noise code are not provided in the report and should be presented in Table form for ease of comparison with Table 1 ambient level results and later reference for the project impact noise levels and assessment. *(Mr. Potenta, memo dated September 15, 2011)*

RESPONSE: *In Attachment B of the response letter from OAA dated October 7, 2011 (Appendix F), four charts are provided that allow conclusions to be drawn about the impact in octave bands in each of the four compass directions. Each chart shows the site modeled sound emissions compared with the Clarkstown Night Code octave band limits and the prevailing octave band ambient. The results show that projected emissions would be generally below both the Code and prevailing ambient emissions and would have little to no impact on the surroundings.*

PUBLIC COMMENT 6: Page 24-The site modeling methodology describes the use of manufacturer's noise data for the transformer fans and actual measurements of the existing gas regulator units as input data for the proposed sources. This backup information should be included for the equipment sources in the technical report along with a discussion justifying use of the existing unit data for the proposed gas regulator model unit. It should also be clarified whether the noise measurements of the existing gas regulator were taken under maximum operating load conditions. *(Mr. Potenta, memo dated September 15, 2011)*

PUBLIC COMMENT 7: Page 24-The report states that noise modeling was performed but does not identify the noise model that was used. Both model input and output summary sheets should be provided for all receptor sites analyzed. *(Mr. Potenta, memo dated September 15, 2011)*

PUBLIC COMMENT 8: Page 26-The report states that manufacturer's noise data was used for modeling the impact of the proposed gas regulators which appears to be in conflict with the methodology described on Page 24 (see Comment 4) regarding the use of measurement data of the existing regulator onsite. *(Mr. Potenta, memo dated September 15, 2011)*

PUBLIC COMMENT 9: Page 28-The report should define emergency use of the second gas regulator and confirm that it would not involve use under heavy load conditions to reduce the strain on the other operating unit and result in both regulators operating simultaneously. *(Mr. Potenta, memo dated September 15, 2011)*

RESPONSE: *Figure 3 of the report prepared by OAA dated April 12, 2010 (Appendix F) provides the worst-case future sound emissions with mitigation of sound from the gas regulators. The mitigation would be in the form of U-shaped acoustical barriers placed around each regulator and is fully discussed in the April 12, 2010 letter. The acoustical model was created using CadnA. Transformers were modeled using manufacturers' worst-case NEMA sound rating, assuming all cooling fans would be ON. The NEMA ratings were*

converted to octave band sound power levels using the EEI Method specified in the letter report. Existing gas regulators were modeled using acoustical data measured by OAA in the field. Future regulators were modeled using worst-case A-weighted sound level ratings from the manufacturer, with the spectrum shaped to mimic the sound produced by the existing regulators surveyed in the field.

Existing gas regulators were modeled using acoustical data measured by OAA in the field. Future regulators were modeled using worst-case A-weighted sound level ratings from the manufacturer, with the spectrum shaped to mimic the sound produced by the existing regulators surveyed in the field.

The new regulator station consists of two parallel regulators and two parallel monitors. All equipment would be operated within their manufacturer-recommended operating ranges under all circumstances. Redundancy of equipment is built into the station design for station reliability. Acoustical considerations are also incorporated into the station design to insure quiet operation. These measures include sound attenuating equipment.

PUBLIC COMMENT 10: Page 28-No data was provided to review the projected octave band noise levels in comparison with the local standards to conclude project compliance. This information should be provided in graphics for all receptors analyzed showing comparison with the local octave band standards. No summary data for the projected LI, noise levels is provided for comparison with the ambient levels and the conclusion of receptor compliance with the Rockland County L10 noise standards. *(Mr. Potenta, memo dated September 15, 2011)*

PUBLIC COMMENT 11: Page 31-The assessment criteria for addressing acoustical impact is described as property line standards (Page 3) yet Figures 22-25 only provide the octave band analysis results and maximum SPL for the nearest residences (Sites L11-L14). Explain why the property line noise levels are not addressed in the impact assessment. Similar figures should be provided for both the property line receptors (L5-L10) for comparison with the local maximum and octave band noise standards and for the measurement sites (LI -L4) for comparison with the ambient data and determination of receptor noise impacts. The graphics should present the local octave band standard as well. *(Mr. Potenta, memo dated September 15, 2011)*

RESPONSE: *The county code calls for the L10 emissions at night not to exceed 55 dB(A). The site noise is nominally steady in nature, that is the site emissions have L90=L50=L10 and would be projected (with mitigation) to be in the 28-to-35 dB(A) range at the property lines and homes. Hence, there is a wide margin of compliance with the requirement that L10 not exceed 55 dB(A).*

In their October 7, 2011 letter report (Appendix F), OAA discusses the potential acoustical impact of site development in each direction. In summary, the maximum increase in the minimum level in any direction is 3 decibels which indicates an "unnoticed" situation per the NYSDEC Program Policy guidelines.

To the north, the lowest ambient A-weighted sound level documented is 42 dB(A) at L1. The expected site emissions to the north, as typified by modeling locations L5, L10, L11, L16 and L17, are in the range of 30-34 dB(A). As such, future minimum levels would be in the 42-to-43 dB(A) range, a change of 0-to-1 dB. This puts the situation in the lowest category of

impact, "under 5" dB, given in Table B of the NYSDEC Program Policy. Essentially, there is no impact. As the policy points out, increasing the ambient by 0-to-3 dB should have no appreciable effect on receptors.

To the east, the lowest ambient A-weighted sound level documented is 29 dB(A) at L2. Site emissions to the east at L6 and L12 are in the 28-to-29 dB(A) range. Minimum levels at these locations may increase by 3 dB to 32 dB(A). Once again, the impact would be the lowest range given in the NYSDEC Program Policy.

Southern emissions at L7 and L13 would be in the range of 30-to-32 dB(A). Comparing these levels to the lowest ambient level obtained near the stream at L3, 42 dB(A), minimum levels would remain at 42 dB(A). Essentially there is no change in level and no impact.

To the west, the minimum level observed is 38 dB(A), Future noise contributed by the site at L8, L9, L14 and L15 would be in the 32-to-36 dB(A) range, such that the minimum level may increase by 1-to-2 dB(A).

PUBLIC COMMENT 12: Page III.J-91-There is no detailed documentation provided in the DEIS/Appendix C for the noise mitigation analysis summarized in the DEIS text which recommends an 8-foot high noise barrier around the two gas regulators. Model input and output summary sheets supporting the recommended mitigation measure and sound reduction should be submitted for technical review. *(Mr. Potenta, memo dated September 15, 2011)*

PUBLIC COMMENT 13: Page 33-The supporting data for the mitigation analysis and the recommended noise bather discussion included in the DEIS is not provided in the technical noise report in Appendix C (see DEIS Comment 1). The documentation should include both analyses input and output results indicating expected noise attenuation levels and a figure showing the recommended noise barrier locations and described orientation. *(Mr. Potenta, memo dated September 15, 2011)*

PUBLIC COMMENT 14: All the comment and response letters on the noise study are included in the DEIS Appendices -Volume II document. There was a recommendation that the Planning Board consider having an independent sound test conducted at the nearest affected residences (our December 20, 2011 comment letter) after all the equipment and recommended acoustical barriers were installed, on page 111.J-94 of the DEIS and in their January 10, 2012 response letter, the Applicant agreed to conduct the sound test. To avoid any issue of potential conflict, note that it was suggested that the sound test be conducted by an independent consultant, meaning someone other than the Applicant's sound consultant, to be selected by the Planning Board to perform the test and ensure compliance with the local noise code. *(Mr. Potenta, memo dated April 30, 2012)*

PUBLIC COMMENT 15: Due to several factors including the complex site terrain, the equipment noise modeling procedures, and the need for sound barrier attenuation of the proposed equipment noise, it is recommended that the Town consider requiring the monitoring of project-generated site noise at the critical receptors to the North and West of the site as a condition of approval and issuance of a certificate of occupancy for the project site. The independent sound test should be performed after installation of the proposed equipment and recommended acoustical barriers is completed to ensure that the attenuated site noise levels will result in compliance with the local noise code and to verify the ambient

noise assessment conclusions regarding the NYSDEC Program Policy. *(Mr. Potenta, memo dated December 20, 2011)*

RESPONSE: *Supporting information for the proposed noise barrier to mitigate the impact from the gas regulator stations is included in a letter from OAA dated April 12, 2010 and located in Appendix F.*

The project sponsor, Orange and Rockland Utilities has agreed to perform a post construction sound survey to confirm that the site noise levels are less than the regulatory criteria set by the Town of Clarkstown, Rockland County and the NYSDEC guidance policy.

PUBLIC COMMENT 16: I am a resident here on South Mountain Road whom had recently attended the planning board meeting regarding the substation that O&R is planning on erecting on the corner of my street and Little Tor. May I suggest that members of the Clarkstown Planning Board take a drive up to the site and sit in the driveway of the old Ernie Kovak's home (211 South Mountain Road?) directly across the street from the entrance in use by O&R where the alleged 'screening' fence was erected. Just sit there with your window rolled down and listen. It is impressive. (Ms. Stava, memo to S. Thormann – no date)

RESPONSE: *The source of the noise referenced in this comment is generated by the Temporary Substation which would be removed when the permanent station is constructed. The permanent station would be located farther into the site and away from South Mountain Road. Section III.J of the DEIS and Section III.J.4 of the FEIS demonstrate that the anticipated noise generated by the permanent substation, reduced by the proposed mitigation, would be below allowable levels at the property lines and thus would not result in any significant adverse environmental impacts.*

5. SEGMENTATION

PUBLIC COMMENT 1: It needs to be disputed because the question of whether your review is being segmented occurred partly because you've got a whole thing, an installation that's not even mentioned in the EIS and I think that's improper segmentation. *(Mr. Granirer, June 13, 2012, page 15, lines 23-25; page 16, lines 2-5)* *Author's note: The speaker is disputing the Town's D.E.C. issuance of the permit to install the temporary mobile transformer, claiming this violates SEQRA's definition of an emergency action and therefore the review is segmented.

PUBLIC COMMENT 2: There is a gas line. I know Mr. Baum mentioned it too, a gas substation that's meant to be installed. Same site, same owner, same site plan, but it is not part of the EIS. That's a segment that was lifted out, and by the definition of segmentation, it means breaking the action up into separate, more easily approved steps than if you look at them all together. *(Mr. Granirer, June 13, 2012, page 19, lines 8-17)*

PUBLIC COMMENT 3: What I was talking about was that Orange and Rockland plans this substation expansion along with perhaps thirty more. SEQRA requires that you look at the entire action, not segments of it. I know this question has come up before, but there is no question now that this is not an isolated extension. I think when it came up before, what I'm talking about is considered speculative and it might not happen, but Orange and Rockland has announced plans to enlarge thirty-two substations, three or four of them in Clarkstown. To consider this substation expansion by itself is examining a segment of a larger action. *(Mr. Granirer, May 2, 2012, page 40, lines 9-25)*

PUBLIC COMMENT 4: If I can take a "wild guess"... there is either a plan or will be a plan before the Village of Spring Valley or Ramapo Planning Board (I don't know which agency has jurisdiction in this matter) to upgrade the Burns Substation off of Pascack Road to complete this highly segmented project, in violation of SEQR. *(Mr. Baum, via email, December 13, 2009)*

PUBLIC COMMENT 5: Purpose: Is there a common purpose or goal for each segment? In the case of the Line 702, the stated goal of Mr. McGoldrick in his Affidavit is to deliver more electricity on this line from the proposed South Mountain Road substation to several large customers in West Nyack for which it has submitted a separate proposal specifically for a Tilcon substation and will require a separate project to upgrade the Route 59 West Nyack substation and most likely the Burns substation, along with extending Line 702 through Ramapo back into Clarkstown. Having now read the narratives for both the Tilcon and South Mountain Road projects, neither mentions the other. The South Mountain Road narrative, while mentioning Tilcon, is referring to the nearby Tilcon operation in Haverstraw, not West Nyack. There is no indication whatsoever in either narrative that the South Mountain Road substation is needed to deliver more electricity to Tilcon in West Nyack for what the Tilcon narrative describes as Tilcon's "undertaking an expansion of their load in the near future," nor does either narrative explain exactly what Tilcon's "expansion" is or how it will impact the environment. Neither narrative mentions the necessary extension of Line 702, which has major environmental implications. Neither narrative states whether the poles and transmission lines on Line 702 will be changed and/or upgraded beyond 138kV, and the potential implications of these changes, including increased EMF exposure. Only the

Affidavit of Mr. McGoldrick reveals the true intentions of Orange & Rockland's massive upgrade project.

- Time: Is there a common reason for each segment being completed at or about the same time. In this case, the answer is absolutely yes. Mr. McGoldrick states that when the South Mountain Road substation comes online in 2010, which is also the year that the Tilcon substation will come online, "several large customers will be directly served by Line 702." Without the Tilcon substation and changes to Route 59 West Nyack substation, it would not be possible for Line 702 to provide service to these "several large customers." Similarly, the Verizon and Haring's Corners substations will be coming online at approximately the same time. This is not a coincidence.
- Location: Is there a common geographic location involved? Again, the answer is yes — that geographic location is Line 702 that ties together at least 5-6 new or upgraded substations with a total construction cost that is likely well in excess of $60 million.
- Impacts: Do any of the activities being considered for segmentation share a common impact that may, if the activities are reviewed as one project, result in a potentially significant adverse impact? The common impact is on Line 702 property owners. Independently, these projects are positioned as being smaller projects on small parcels of land with a limited number of neighbors being impacted. The Tilcon West Nyack project uses a Short Environmental Assessment Form, which can only be used for project of less than 10 acres. In question #7, the acreage is given as 2.70 acres, but if all of the properties along the existing Line 702 and proposed Line 702 extension are considered, based on O&R's own admission that this transmission line will be critical to delivering more electricity to Tilcon, the Palisades Center and United Water, then the Line 702 properties are indeed subject to SEQR review on this point alone.
- Ownership: Are the different segments under the same ownership or control. Without question, the existing and proposed extended Line 702, and the new substations and upgraded stations are under the same ownership and control of Con Edison's Orange & Rockland Division.
- Planning: Is a given segment a component of an identifiable overall plan? Will the initial phase direct the development of subsequent phases or will it preclude or limit the consideration of alternatives in subsequent phases? The answer to all of these questions is "yes." Once approval is given to the Haring's Corning, Verizon, South Mountain Road and Tilcon substation projects, consideration of alternatives for the upgrades to the West Nyack and Burns substations, the extension of Line 702 and the upgrades to the towers and lines along the existing route of Line 702 will be severely limited.

  Utility: Can any of the phases of the various projects be considered functionally dependent on each other? Mr. McGoldrick makes exceedingly clear in his Affidavit that the delivery of increased electricity to meet the needs of Tilcon, Palisades Center and United Water is absolutely dependent upon the building of the South Mountain Road substation and the extension of Line 702.
- Inducement: Does the approval of one phase or segment commit the agency to approve the other phases? The answer is yes because of the massive expense associated with these substation projects are ultimately charged to ratepayers. If the $50 or $100 million spent on Line 702 upgrades can't be utilized, it will be a tremendous burden on ratepayers without yielding even the smallest of benefits. This is the reason why the approval of one

phase or segment of the Line 702 upgrade will, in essence, force the approving agencies to approve other segments of the project. *(Mr. Baum, via email, December 18, 2009)*

PUBLIC COMMENT 6: The danger to the community of the segmented approvals of the temporary substation and permanent substation in New City are now even further highlighted by O&R's accident in Nyack. *(Mr. Baum, via email, June 22, 2012)*

PUBLIC COMMENT 7: We also talked about Clarkstown's segmented review: O&R plans to build or expand 27 substations in the region, but Clarkstown is considering the environmental impact of only the substations being built in the town. And, even those are being considered as independent, not related, sites. SEQRA requires the reviewer to consider the impact of the entire project, not just of individual segments that separately seem less harmful than if they are considered together. *(Ms. Thal, via email, May 20, 2012)*

PUBLIC COMMENT 8: Segmentation of an action into components for individual review is contrary to the intent of SEQR; the segments are almost always easier to pass review. *(Mr. Granirer, memo dated June 25, 2012)*

PUBLIC COMMENT 9: There is a temporary substation that is on the site now, and I have quite a bit of concern from the segmentation standpoint. This I'm raising with the Board that there was a process that did not include incorporating the temporary substation and the supposed need for the temporary substation into the DEIS. *(Mr. Baum, June 6, 2012, page 95, lines 7-15)*

PUBLIC COMMENT 10: Are there any plans to add, upgrade or modify any stations that directly or indirectly connect to the proposed New City substation, including the Haverstraw substation, the New Hempstead substation, the Pascack Road substation, the Congers substation and the Route 59 West Nyack substation? *(Letter from Mr. Baum as read by Ms. Thal, June 13, 2012, page 40, lines 5-13)*

RESPONSE: *With respect to the segmentation argument under SEQRA, reference should be made to Section III.I, Temporary Substation, of the FEIS which is incorporated as part of the responses in this Section.*

Section I of the DEIS, Executive Summary provides a description of the existing utilities on the site which include a Verizon equipment building, cellular antennas mounted on an Orange and Rockland Utilities tower, electrical transmission/distribution lines and pole, and a gas regulator. This section also provides a description of the proposed action which would include the removal of four (4) existing driveways and a 79.5' tower, the construction of an electrical substation, the relocation and upgrade of the gas regulator and other site improvements. Section II.C of the DEIS also provides a detailed description of the proposed action which will include the electrical substation, an upgraded gas regulator, relocation of the existing cellular antennas and other site improvements.

During this application, an argument was raised by some members of the public that the planning board needed to review and consider the other long range plans of the applicant related to anticipated upgrades to the power grid and other improvements to the applicant's other facilities. It was contended the failure to do this or incorporate a review of the

temporary substation and the upgrades to the gas regulator at the site, would constitute segmentation under SEQRA. This issue, that the temporary substation, and long range plans of the applicant (which included the possible construction of other substations and overall upgrades to its overhead lines and facilities) constituted segmentation, was considered and rejected by the Town Attorney and the Town Planning Board. The Town determined that the proposed Little Tor substation is a standalone project which does not require a larger review of possible future projects which are speculative at this time. The plans submitted for this application include the proposed new substation, the upgrade to the gas regulator and relocation of the existing cellular antennas and is not segmented.

Orange and Rockland Utilities has a 5 year capital improvement plan that identifies all of the proposed upgrades and improvements required to maintain the safe, efficient and reliable operation of their system. This plan is reassessed yearly to accommodate shifts in demand and replacement of aging or poorly performing equipment. We are advised there are no pending applications before the Village of Spring Valley or the Town of Ramapo which support a claim of segmentation, related to this application.

With respect to the temporary substation installed at the Little Tor site, the DEIS was prepared and actually submitted prior to the installation of the temporary substation. The first version of the DEIS was submitted before 2011 and the temporary substation was installed and energized in 2012, with the application submitted to the Town for a building permit for the temporary substation in 2011. The need for the temporary substation was triggered by the schedule of the Rockland County road widening project and was not required at the time the DEIS was originally submitted to the Town. An application for the temporary substation was made to the Town which issued the required permit for the temporary substation. Of necessity, the Town reviewed that application and determined no further review under SEQRA was required. The time to appeal the issuance of the permit by the Town has long since expired. See also the responses in the section about the temporary substation which is incorporated by reference. The FEIS does include questions and answers relative to the temporary substation which address potential environmental impacts and associated mitigation.

6. SOCIO-ECONOMIC IMPACTS

PUBLIC COMMENT 1: In several areas of the DEIS, O&R indicates that, if approved, the proposed substation will "benefit" Town of Clarkstown and the local school district from increased property taxes generated, but they don't identify exactly who will be funding these taxes. *(Mr. Baum via email, June 14, 2012)*

PUBLIC COMMENT 2: If my understanding is correct, the people funding the taxes will be O&R's ratepayers... the same people who pay local taxes. The payment of these taxes will drive up the overall cost of living in Clarkstown, offsetting the benefit that is being touted in the DEIS. *(Mr. Baum via email, June 14, 2012)*

PUBLIC COMMENT 3: Therefore, the DEIS should, at each discussion of the tax revenue generated, identify the source of funding for these increased taxes (i.e. through rate increases imposed upon ratepayers by the PSC). *(Mr. Baum via email, June 14, 2012)*

RESPONSE: *Improvements made to real property added in the form of infrastructure improvements are taxed by local municipalities. These taxes are paid from the profits of the overall company. The cost of the construction for the substation would be paid by electric customers of Orange & Rockland Utilities in the State of New York of which there are approximately 218,000. However, most of the real estate taxes for the substation would remain in the Town of Clarkstown as Town and School taxes with the residual going to the County and State.*

Unlike other tax payers who place an increased demand on community services such as schools, garbage pickup and other community sponsored services, the development of this site as an electrical substation would not. The net benefit to the community would be an increase in tax revenue with no significant added impact on community services. For example, this project would not result in an increase in school aged children, resulting in a net benefit from a tax perspective with no increase in cost to the school district.

7. UTILITIES

PUBLIC COMMENT 1: The first question that we have is last week Mr. Coffey said that he'd find out for us how many fire hydrants were on Denver Drive. I didn't get that number on how many there were. *(Mr. Terribile, June 13, 2012, page 47, lines 23-25; page 48, lines 2-3)*

PUBLIC COMMENT 2: Is it more than one hydrant on Denver Drive *(Chairwoman Thormann, June 13, 2012, page 48, lines 14-15)*

PUBLIC COMMENT 3: Well, I think you should really consider extending the water line and the fire inspector himself said that he wants more hydrants. *(Chairwoman Thormann, June 13, 2012, page 50, lines 20-23)*

PUBLIC COMMENT 4: The last thing I just wanted to say is, I told you last time about the fire hydrants. And what you're talking about is over on Denver, going over on Denver, if you have -- by the way, this is all wooded area here. If you have a fire up here and your closest fire hydrant is here, you're going through woods, streams, everything to get to a fire hydrant. And I don't know how firemen could that. *(Mr. Terribile, June 6, 2012, page 71, lines 10-20)*

PUBLIC COMMENT 5: Also, there are not a lot of fire hydrants in this area. *(Mr. Dillon, June 13, 2012, page 68, lines 8-10)*

PUBLIC COMMENT 6: The applicant has committed to extending the water supply and providing a hydrant at the driveway entrance based on initial discussions with United Water. *(Planning Board Issues for Little Tor FEIS, May 28, 2013)*

PUBLIC COMMENT 7: Okay. I just ---- the fires, I just want to reiterate that I can't imagine how our fire department would say that they could handle a fire in that wooded area. How, if the fire goes up the mountain, do they get up there to put it out? How do they use one hydrant, like Bill said, to get a hose, water through wooded area and streams? But if the fire spread, I mean, there is no way to put a fire out with one hydrant in that area. *(Ms. Schaefer, June 6, 2012, page 74, lines 2-13)*

PUBLIC COMMENT 8: Correct. So all the other substations that O & R has in the community surrounding the substations have fire hydrants. They would be able to handle those fires if they blew up, but we don't have that ability. *(Mr. Gianondo, June 6, 2012, page 119, lines 16-21)*

RESPONSE: *Figure 23 shows the location of hydrants along Denver Drive, Culver Drive and Roberts Road in proximity to the site. In addition, this figure shows the location of a proposed hydrant that would be installed at the northwest corner of North Little Tor Road and South Mountain Road. The Chief Fire Safety Inspector, Vincent Narciso, has reviewed both the existing and proposed hydrants in the vicinity of the site and found them to be adequate for fighting a fire at the Little Tor Substation site. United Water has agreed to install the hydrant.*

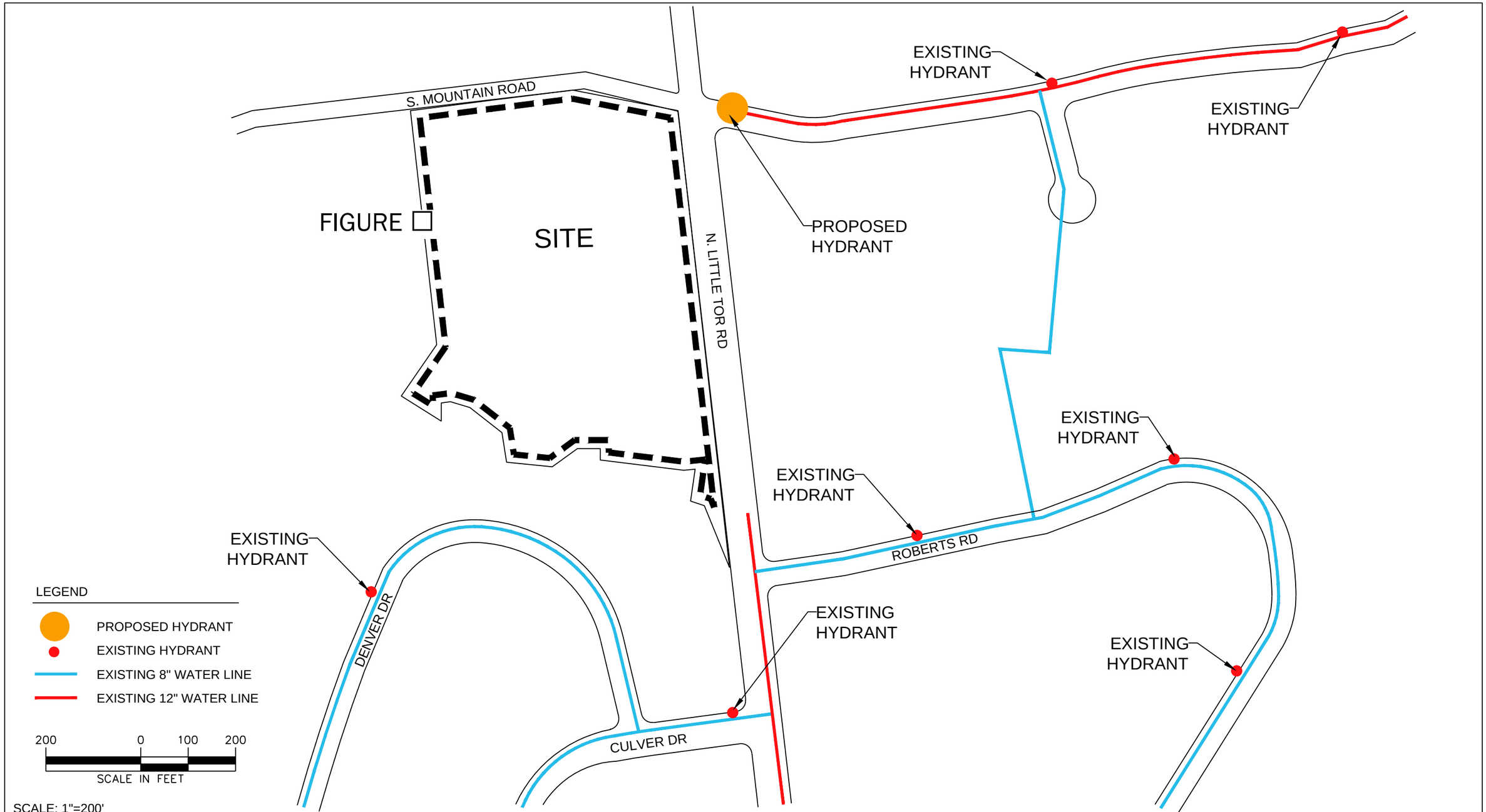
In addition, the Chief Fire Safety Inspector has reviewed the proposed access to and around the site and the proposed development plan that calls for all wooded areas to be setback a

minimum of 60 feet from any one transformer and found all of these proposed measures to be adequate.

PUBLIC COMMENT 9: Are there municipal water mains that can feed master stream devices or do we need to request a captive water supply such as a cistern or water storage tank for firefighting? *(Mr. Longhitano, memo dated July 23, 2012)*

PUBLIC COMMENT 10: A description of areas within 500 feet of the project site serviced by United Water with a municipal water supply will be provided. (Planning Board Issues for the Little Tor FEIS, May 28, 2013)

RESPONSE: *Figure 23 shows the areas within 500' of the site that are serviced by public water. Land use in this area is primarily low density single family residential properties. This plan also shows the location and size of the municipal water distribution system in the vicinity of the site and the existing and proposed hydrants on this system. United Water has agreed to install a fire hydrant at the corner of Little Tor Road and South Mountain Road as indicated on Figure 23.*



NOTE: Information taken from data provided by United Water

FIGURE 23

Surrounding Water Distribution Map
Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York

Image Source: LANGAN

LANGAN White Plains New York

8. OTHER

PUBLIC COMMENT 1: Now, we've heard before that Orange & Rockland doesn't want to underground any of this equipment because it isn't what O&R does. It's what they do in the city with Con Edison, O&R does not underground its equipment and it would be expensive. *(Mr. Granirer, June 13, 2012, page 25, lines 22-25; page 26, lines 2-4)*

RESPONSE: *The applicant has advised that, while ConEd owns Orange & Rockland Utilities, they remain separate companies and maintain different systems for transmission of electricity. As discussed in more detail in Section III.E.2-Alternatives of the FEIS, Orange and Rockland Utilities is primarily an overhead utility system and its expansion, operation and maintenance are based on an overhead system as are their rate structures. All electrical substations in the Orange and Rockland Utilities system are above ground, open air stations. Construction of below ground substations have not be utilized by the applicant. At times, ConEd has employed enclosed or underground substations when conditions are appropriate. Substations enclosed in a structure are only considered when the transmission and distribution systems are underground, the land area required to accommodate an open air substation is not available, the urban nature of the site dictates the station be enclosed in a structure and the rate structure supporting the system has been developed considering these factors. These factors do not exist at the Little Tor site.*

PUBLIC COMMENT 2: At a minimum, it is up to Con Ed to provide a suitable barrier for my property, as well. *(Email from Kirsten Walker sent June 8, 2012 as read by Mr. Simoes, June 13, 2012, page 63, lines 17-20)*

PUBLIC COMMENT 3: If he makes it across the street and touches an electrified fence, what will Con Ed do for me. *(Email from Kirsten Walker sent June 8, 2012 as read by Mr. Simoes, June 13, 2012, page 64, lines 4-6)*

RESPONSE*: The single driveway that provides access for vehicles would be gated and locked at all times. The proposed electrical substation would be enclosed by an 8' high chain link fence with barbed wire at the top as detailed on the engineering drawings. This perimeter fence which completely encloses the substation would not be an electrified fence. For someone to access this substation, other than through the locked gate, they would have to climb over the 8' fence with barbed wire on the top.*

PUBLIC COMMENT 4: I mean, point blank, is this a hazard to the residents? *(Mr. Fiel, June 13, 2012, page 72, lines 15-16).*

RESPONSE: *The proposed project, including all of the proposed mitigation, would not result in any significant adverse environmental impacts or hazards to the residents.*

PUBLIC COMMENT 5: And I think its incumbent upon them and not at taxpayers' expense to do all these studies, but they should initially supply the information. *(Mr. Fiel, June 13, 2012, page 74, lines 22-25)*

RESPONSE: *The DEIS includes a detailed analysis of the potentially significant environmental impacts associated with the development of this project and recommended mitigation for any of those potential environmental issues which could result in potentially adverse impacts. The FEIS also answers in detail with supporting studies and analyses all questions raised by the public and the Town during the public review of the DEIS.*

PUBLIC COMMENT 6: Additional trees along the "NYSDEC Pocket Ponds' are shown in 2-4' of fill and will probably not survive. *(Mr. Haelen, memo dated November 25, 2008)*

RESPONSE: *The Landscaping plan has been revised and some of the proposed trees along the edge of the stormwater practice have been adjusted. However, with appropriate care, trees can be planted and survive in a fill section of this nature. Often, berms are constructed and landscape material is planted on top of the berm. The applicant will be required to replace trees installed as part of the landscape plan, in the event they die.*

PUBLIC COMMENT 7: Tree removal plan should include a chart with the number of trees to be removed and to remain. *(Mr. Haelen, memo dated November 25, 2008)*

RESPONSE: *The tree removal plan has been revised to include the number of trees to be removed and to remain.*

PUBLIC COMMENT 8: Some of the evergreen trees along South Mountain Road should be increased in size from 7-8' to 8-10' *(Mr. Haelen, memo dated November 25, 2008)*

RESPONSE: *The Landscape Plan has been revised to include larger plant material, including evergreens where necessary and acceptable, due to the height restrictions on vegetation within the transmission right-of-way.*

PUBLIC COMMENT 9: Indicate type and size of proposed fence. *(Mr. Haelen, memo dated November 25, 2008)*

RESPONSE: *The type and height of the proposed fence is shown on the engineering drawings included in Appendix A. The proposed fence that encloses the substation will be an 8' high galvanized chain link fence with barbwire along the top.*

PUBLIC COMMENT 10: Identify the rectangular block symbols along the northern edge of the proposed structures. *(Mr. Haelen, memo dated November 25, 2008)*

RESPONSE: *The rectangular block symbols along the northern edge of the proposed transformers that connect two (2) of the transformers is designed as an above ground conduit that connects the transformers to the switch gear.*

PUBLIC COMMENT 11: Verify if there is enough room to pull a large service vehicle off the road and open the gate without interfering with traffic on Little Tor Road. *(Mr. Haelen, memo dated November 25, 2008)*

RESPONSE: *The gate at the main driveway would be located 50 feet away from the edge of road to allow a large truck or emergency vehicle to park and open the gate, without blocking traffic along Little Tor Road.*

PUBLIC COMMENT 12: Landscape, Lighting and Building plans to be submitted to ALC for review and approval. *(Mr. Haelen, memo dated November 25, 2008)*

RESPONSE: *Comment noted.*

PUBLIC COMMENT 13: I urge the Planning Board to insist that detailed indexes or tables of contents be part of future amendments or supplements to the DEIS. *(Mr. Granirer, memo dated June 25, 2012)*

RESPONSE: *The DEIS as well as the FEIS include a table of contents, and a list of figures and appendices. In addition, the FEIS includes a list of all questions asked during the public review process, the source of the question and the page in the FEIS it is answered on.*

PUBLIC COMMENT 14: The proposed access road cuts directly through an existing dwelling as well as two wooden sheds that are NOT labeled as being removed. Is this an oversight on the plan or are the structures really being left in place? These structures do not appear on Sheet 4 of 9, which plan is correct? *(Mr. Longhitano, memo dated July 23, 2012)*

RESPONSE: *The Existing Conditions and Demolition Plan has been revised to clearly indicate which of the existing structures have been removed. All of the existing structures (residential units and sheds) have been removed by Orange and Rockland Utilities, except those directly related to the utility use on the property (Verizon Bldg).*

PUBLIC COMMENT 15: Dwellings A, C, D, H, one unlabeled dwelling and the Verizon building are all within a reasonably predictable explosion damage range. Are they being removed? Except for the Verizon building, they do not appear on Sheet 4 of 9. Which plan is correct? *(Mr. Longhitano, memo dated July 23, 2012)*

RESPONSE: *Both plans are correct, one plan is an existing conditions and demolition plan, the other is a site plan. When Orange and Rockland Utilities purchased this property, there were a variety of old structures on the site that posed a danger and health risk. Orange and Rockland Utilities has removed these structures, with the appropriate permits and approvals from the Town. The Existing Conditions and Demolition Plan includes a note stating: "All existing buildings have been previously demolished."*

PUBLIC COMMENT 16: This sheet shows none of the existing buildings and sheds except the Verizon building. Is it intended that all other existing structures are being razed? *(Mr. Longhitano, memo dated July 23, 2012)*

RESPONSE: *All of the structures on the site except for the Verizon structure were removed by Orange and Rockland Utilities after the property was acquired.*

PUBLIC COMMENT 17: Town Planner Simoes, referring to the EAF, advised it refers to a cell tower and cell tower support building: the records show there are antennas on an O & R tower, and wanted this issue clarified for the record. Further inquired if the antennas are being moved, this might trigger additional permits. *(PB Meeting December 3, 2008, FKA 25B1, Page 3)*

RESPONSE: *There is currently a Verizon Equipment structure located on the site as indicated on the site plan. There are also existing Verizon antennas mounted on the existing electrical transmission tower. This transmission tower would be replaced with transmission poles as part of the proposed project and therefore the cellular antennas would be relocated to one of the new transmission poles as indicated on the engineering drawings.*

INDEX OF COMMENTS AND RESPONSES				
Commentator	**Commentator / Date**	**Comment Source**	**FEIS Subsection**	**Comment/ Response Number**
Adib, Faud	MB 5/2/12	Transcript, pg. 57	II. D. Description of Proposed Project	II-23
Adib, Faud	MB 6/23/2012	Email	II. D. Description of Proposed Project	II-8
Adib, Faud	FA 6/6/12	Transcript pg. 117	III. A. 3. Spill Containment System	A.3-10
Adib, Faud	FA 6/13/12	Transcript pg. 98-99	III. A. 3. Spill Containment System	A.3-11
Adib, Faud	FA 3/3/2012	Email	III. A. 3. Spill Containment System	A.3-15
Adib, Faud	FA 6/23/2012	Email	III. A. 3. Spill Containment System	A.3-16
Adib, Faud	FA 6/6/12	Transcript pg. 116	III. A. 3. Spill Containment System	A.3-17
Adib, Faud	FA 2/27/13	Transcript pg. 15-16	III. A. 3. Spill Containment System	A.3-18
Adib, Faud	FA 5/2/12	Transcript pg. 57	III. A. 3. Spill Containment System	A.3-21
Adib, Faud	FA 6/23/12	Memo	III. A. 3. Spill Containment System	A.3-22
Adib, Faud	FA 5/2/12	Transcript pg. 61	III. A. 3. Spill Containment System	A.3-36
Adib, Faud	FA 5/2/12	Transcript pg. 61	III. A. 3. Spill Containment System	A.3-37
Adib, Faud	FA 6/23/12	Memo	III. A. 3. Spill Containment System	A.3-41
Adib, Faud	FA 6/23/12	Email	III. A. 3. Spill Containment System	A.3-42
Adib, Faud	FA 6/23/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-11
Adib, Faud	FA 6/6/12	Transcript pg. 117-118	III. F. Public Health/EMF	F-4
Adib, Faud	FA 5/2/12	Transcript pg. 58	III. J. 4. Noise	J.4-3
Baum, Marvin	MB 5/2/2012	Transcript pg. 35	II. D. Description of Proposed Project	II-10
Baum, Marvin	MB 6/13/2012	Transcript pg. 39	II. D. Description of Proposed Project	II-15
Baum, Marvin	MB 6/6/2012	Transcript pg. 84	II. D. Description of Proposed Project	II-16
Baum, Marvin	MB 6/6/2012	Transcript pg. 85	II. D. Description of Proposed Project	II-17
Baum, Marvin	MB 7/24/2012	Email	II. D. Description of Proposed Project	II-18
Baum, Marvin	MB 6/13/2012	Transcript pg. 39	II. D. Description of Proposed Project	II-19
Baum, Marvin	MB 6/13/2012	Transcript pg. 38-39	II. D. Description of Proposed Project	II-20
Baum, Marvin	MB 6/13/2012	Transcript pg. 39	II. D. Description of Proposed Project	II-21
Baum, Marvin	MB 6/13/2012	Transcript pg. 42-43	II. D. Description of Proposed Project	II-22
Baum, Marvin	MB 6/13/2012	Transcript pg. 41	II. D. Description of Proposed Project	II-4
Baum, Marvin	MB 6/13/2012	Transcript pg. 42	II. D. Description of Proposed Project	II-5
Baum, Marvin	MB 7/24/2012	Email	II. D. Description of Proposed Project	II-6
Baum, Marvin	MB 7/24/2012	Email	II. D. Description of Proposed Project	II-7
Baum, Marvin	MB 12/13/2009	Email	III. A. 1. Wells and Aquifers	A.1-5
Baum, Marvin	MB 5/2/12	Transcript pg. 32-33	III. A. 3. Spill Containment System	A.3-23
Baum, Marvin	MB 6/6/12	Transcript pg. 80	III. A. 3. Spill Containment System	A.3-31
Baum, Marvin	MB 5/2/12	Transcript pg. 32-33	III. A. 3. Spill Containment System	E.2-2
Baum, Marvin	MB 6/8/2012	Email	III. C. Facility Materials	C-2
Baum, Marvin	MB 5/25/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-22
Baum, Marvin	MB 5/25/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-23
Baum, Marvin	MB 6/6/12	Transcript pg. 82	III. D. Air / Fire & Explosion / Emergency Services	D-24
Baum, Marvin	MB 6/6/12	Transcript pg. 83	III. D. Air / Fire & Explosion / Emergency Services	D-25
Baum, Marvin	MB 6/14/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-26

INDEX OF COMMENTS AND RESPONSES				
Commentator	**Commentator / Date**	**Comment Source**	**FEIS Subsection**	**Comment/ Response Number**
Baum, Marvin	MB 6/13/12	Transcript pg. 43	III. D. Air / Fire & Explosion / Emergency Services	D-29
Baum, Marvin	MB 6/14/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-30
Baum, Marvin	MB 5/25/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-32
Baum, Marvin	MB 5/25/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-33
Baum, Marvin	MB 6/21/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-34
Baum, Marvin	MB 6/22/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-35
Baum, Marvin	MB 5/2/2012	Transcript pg. 22	III. E. 1. Aesthetics	E.1-1
Baum, Marvin	MB 5/2/2012	Transcript pg. 22-23	III. E. 1. Aesthetics	E.1-11
Baum, Marvin	MB 5/2/2012	Transcript pg. 23	III. E. 1. Aesthetics	E.1-12
Baum, Marvin	MB 5/2/2012	Transcript pg. 24-25	III. E. 1. Aesthetics	E.1-13
Baum, Marvin	MB 6/14/2012	Email	III. E. 1. Aesthetics	E.1-18
Baum, Marvin	MB 6/8/2012	Email	III. E. 1. Aesthetics	E.1-19
Baum, Marvin	MB 5/2/2012	Transcript pg. 23-24	III. E. 1. Aesthetics	E.1-2
Baum, Marvin	MB 5/2/2012	Transcript pg. 24	III. E. 1. Aesthetics	E.1-4
Baum, Marvin	MB 5/2/2012	Transcript pg. 25	III. E. 1. Aesthetics	E.1-5
Baum, Marvin	MB 5/2/12	Transcript pg. 29-30	III. E. 2. Alternatives	E.2-1
Baum, Marvin	MB 6/6/12	Transcript pg. 114	III. E. 2. Alternatives	E.2-10
Baum, Marvin	MB 6/13/2012	Transcript pg. 40	III. E. 2. Alternatives	E.2-13
Baum, Marvin	MB 6/14/12	Email	III. E. 2. Alternatives	E.2-20
Baum, Marvin	MB 6/6/12	Transcript pg. 91	III. E. 2. Alternatives	E.2-4
Baum, Marvin	MB 5/2/12	Transcript pg. 30	III. E. 2. Alternatives	E.2-6
Baum, Marvin	MB 5/2/12	Transcript pg. 32	III. E. 2. Alternatives	E.2-9
Baum, Marvin	MB 6/14/12	Email	III. F. Public Health/EMF	F-10
Baum, Marvin	MB 6/14/12	Email	III. F. Public Health/EMF	F-13
Baum, Marvin	MB 6/14/12	Email	III. F. Public Health/EMF	F-18
Baum, Marvin	MB 6/13/12	Memo	III. F. Public Health/EMF	F-19
Baum, Marvin	MB 6/13/12	Memo	III. F. Public Health/EMF	F-20
Baum, Marvin	MG 6/13/12	Transcript pg. 37-38	III. F. Public Health/EMF	F-27
Baum, Marvin	MB 6/6/12	Transcript pg. 113-114	III. F. Public Health/EMF	F-9
Baum, Marvin	MB 6/13/12	Transcript pg. 37	III. G. Community Character / Property Valuation	G-12
Baum, Marvin	MB 6/13/12	Memo	III. G. Community Character / Property Valuation	G-17
Baum, Marvin	MB 5/2/12	Transcript pg. 34	III. H. Tilcon	H-1
Baum, Marvin	MB 6/13/12	Transcript pg. 39	III. H. Tilcon	H-10
Baum, Marvin	MB 12/15/09	Email	III. H. Tilcon	H-11
Baum, Marvin	MB 5/2/12	Transcript pg. 34	III. H. Tilcon	H-2
Baum, Marvin	MB 5/2/12	Transcript pg. 34	III. H. Tilcon	H-3
Baum, Marvin	MB 5/6/12	Transcript pg. 101	III. H. Tilcon	H-4
Baum, Marvin	MB 5/6/12	Transcript pg. 101	III. H. Tilcon	H-5
Baum, Marvin	MB 5/6/12	Transcript pg. 101-102	III. H. Tilcon	H-6
Baum, Marvin	MB 6/13/12	Transcript pg. 38	III. H. Tilcon	H-9
Baum, Marvin	MB 6/6/12	Transcript pg. 98-99	III. I. Temporary Substation	I-1
Baum, Marvin	MB 2/27/13	Transcript pg. 16-17	III. I. Temporary Substation	I-2

INDEX OF COMMENTS AND RESPONSES				
Commentator	**Commentator / Date**	**Comment Source**	**FEIS Subsection**	**Comment/ Response Number**
Baum, Marvin	MB 7/24/12	Email	III. I. Temporary Substation	I-3
Baum, Marvin	MB 7/24/12	Email	III. I. Temporary Substation	I-4
Baum, Marvin	MB 7/20/12	Email	III. I. Temporary Substation	I-5
Baum, Marvin	MB 7/20/12	Email	III. I. Temporary Substation	I-7
Baum, Marvin	MB 7/20/12	Email	III. I. Temporary Substation	I-8
Baum, Marvin	MB 7/20/12	Email	III. I. Temporary Substation	I-9
Baum, Marvin	MB 3/2/12	Email	III. J. 1. Historic & Archaeological Resources	J.1-2
Baum, Marvin	MB 6/21/2012	Email	III. J. 3. Land Use, Zoning & Public Policy	J.3-1
Baum, Marvin	MB 12/17/2009	Email	III. J. 3. Land Use, Zoning & Public Policy	J.3-2
Baum, Marvin	MB 6/13/12	Transcript pg. 40	III. J. 5. Segmentation	J.5-10
Baum, Marvin	MB 12/13/09	Email	III. J. 5. Segmentation	J.5-4
Baum, Marvin	MB 12/18/09	Email	III. J. 5. Segmentation	J.5-5
Baum, Marvin	MB 6/22/12	Email	III. J. 5. Segmentation	J.5-6
Baum, Marvin	MB 6/6/12	Transcript, pg. 95	III. J. 5. Segmentation	J.5-9
Baum, Marvin	MB 6/14/12	Email	III. J. 6. Socio-Economic Impacts	J.6-1
Baum, Marvin	MB 6/14/12	Email	III. J. 6. Socio-Economic Impacts	J.6-2
Baum, Marvin	MB 6/14/12	Email	III. J. 6. Socio-Economic Impacts	J.6-3
Coffey, John	MB 6/6/12	Transcript, pg. 94	III. E. 2. Alternatives	E.2-18
Conner, Jan	JC 5/2/12	Transcript pg. 20	III. G. Community Character / Property Valuation	G-10
Conner, Jan	JC 5/2/12	Transcript pg. 20-21	III. G. Community Character / Property Valuation	G-11
Conner, Jan	JC 5/2/12	Transcript pg. 17-18	III. G. Community Character / Property Valuation	G-6
Conner, Jan	JC 5/2/12	Transcript pg. 18	III. G. Community Character / Property Valuation	G-7
Conner, Jan	JC 5/2/12	Transcript pg. 19	III. G. Community Character / Property Valuation	G-8
Conner, Jan	JC 5/2/12	Transcript pg. 19-20	III. G. Community Character / Property Valuation	G-9
Dillon, Robert	RD 6/13/2012	Transcript pg. 67	III. A. 3. Spill Containment System	A.3-3
Dillon, Robert	RD 6/13/12	Transcript pg. 69	III. D. Air / Fire & Explosion / Emergency Services	D-10
Dillon, Robert	RD 6/13/12	Transcript pg. 68	III. D. Air / Fire & Explosion / Emergency Services	D-16
Dillon, Robert	RD 6/13/12	Transcript pg. 70	III. E. 2. Alternatives	E.2-11
Dillon, Robert	RD 6/13/12	Transcript pg. 69	III. E. 2. Alternatives	E.2-12
Dillon, Robert	RD 6/13/2012	Transcript pg. 68	III. J. 7. Utilities	J.7-5
Fiel, Martin	MF 6/13/12	Transcript pg. 88	III. F. Public Health/EMF	F-11
Fiel, Martin	MF 6/13/12	Transcript pg. 85	III. F. Public Health/EMF	F-14
Fiel, Martin	MF 6/13/2012	Transcript pg. 74	III. F. Public Health/EMF	F-17
Fiel, Martin	MF 6/13/12	Transcript pg. 88	III. F. Public Health/EMF	F-7
Fiel, Martin	MF 6/13/2012	Transcript pg. 87	III. J. 3. Land Use, Zoning & Public Policy	J.3-4
Fiel, Martin	MF 6/13/2012	Transcript pg. 72	III. J. 8. Miscellaneous	J.8-4
Fiel, Martin	MF 6/13/2012	Transcript pg. 74	III. J. 8. Miscellaneous	J.8-5
Geneslaw, Robert	RG 6/6/12	Transcript pg. 17	III. A. 3. Spill Containment System	A.3-8
Geneslaw, Robert	RG 6/6/12	Transcript pg. 38-39	III. D. Air / Fire & Explosion / Emergency Services	D-8
Geneslaw, Robert	RG 6/6/2012	Transcript pg. 25-26	III. E. 1. Aesthetics	E.1-14
Geneslaw, Robert	RG 6/6/12	Transcript pg. 56-57	III. E. 2. Alternatives	E.2-15
Geneslaw, Robert	RG 6/6/12	Transcript pg. 34	III. E. 2. Alternatives	E.2-17

INDEX OF COMMENTS AND RESPONSES				
Commentator	**Commentator / Date**	**Comment Source**	**FEIS Subsection**	**Comment/ Response Number**
Geneslaw, Robert	RG 6/6/12	Transcript pg. 29	III. E. 2. Alternatives	E.2-7
Geneslaw, Robert	RG 6/6/12	Transcript pg. 29-30	III. E. 2. Alternatives	E.2-8
Geneslaw, Robert	RG 6/6/12	Transcript pg. 7-8	III. F. Public Health/EMF	F-12
Geneslaw, Robert	RG 6/6/12	Transcript pg. 13	III. F. Public Health/EMF	F-15
Geneslaw, Robert	RG 6/6/12	Transcript pg. 34-35	III. G. Community Character / Property Valuation	G-13
Geneslaw, Robert	RG 6/6/12	Transcript pg. 37	III. G. Community Character / Property Valuation	G-5
Gianondo, Pat	PG 6/6/12	Transcript pg. 118	III. D. Air / Fire & Explosion / Emergency Services	D-9
Gianondo, Pat	PG 6/6/2012	Transcript pg. 119	III. J. 7. Utilities	J.7-8
Granirer, Martus	MG 6/13/2012	Transcript pg. 19	II. D. Description of Proposed Project	II-1
Granirer, Martus	MG 6/25/2012	Memo	II. D. Description of Proposed Project	II-2
Granirer, Martus	MG No Date	Memo	II. D. Description of Proposed Project	II-3
Granirer, Martus	MG 12/2/2008	Memo	III. A. 2. Stormwater Management	A.2-1
Granirer, Martus	MG 12/2/2008	Memo	III. A. 3. Spill Containment System	A.3-19
Granirer, Martus	MG 5/2/12	Transcript pg. 43	III. A. 3. Spill Containment System	A.3-35
Granirer, Martus	MG 12/2/2008	Memo	III. A. 3. Spill Containment System	A.3-5
Granirer, Martus	MG 6/28/12	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-27
Granirer, Martus	MG 6/25/12	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-28
Granirer, Martus	MG 12/2/2008	Memo	III. E. 1. Aesthetics	E.1-23
Granirer, Martus	MG 12/2/2008	Memo	III. E. 1. Aesthetics	E.1-24
Granirer, Martus	MG 5/2/2012	Transcript pg. 42-43	III. E. 1. Aesthetics	E.1-8
Granirer, Martus	MB 6/26/12	Email	III. E. 2. Alternatives	E.2-16
Granirer, Martus	MG 6/13/12	Transcript pg. 25	III. F. Public Health/EMF	F-1
Granirer, Martus	MG 6/13/12	Transcript pg. 26-27	III. F. Public Health/EMF	F-2
Granirer, Martus	MG No Date	Memo	III. F. Public Health/EMF	F-3
Granirer, Martus	MG 6/13/12	Transcript pg. 27	III. F. Public Health/EMF	F-8
Granirer, Martus	MG 6/25/12	Memo	III. I. Temporary Substation	I-10
Granirer, Martus	MG 6/13/12	Transcript pg. 11	III. I. Temporary Substation	I-6
Granirer, Martus	MG 12/2/2008	Memo	III. J. 3. Land Use, Zoning & Public Policy	J.3-3
Granirer, Martus	MG 6/13/12	Transcript pg. 15-16	III. J. 5. Segmentation	J.5-1
Granirer, Martus	6/13/2012	Transcript pg. 19	III. J. 5. Segmentation	J.5-2
Granirer, Martus	MB 5/2/12	Transcript pg. 40	III. J. 5. Segmentation	J.5-3
Granirer, Martus	MG 6/25/12	Memo	III. J. 5. Segmentation	J.5-8
Granirer, Martus	MG 6/13/2012	Transcript, pg. 25-26	III. J. 8. Miscellaneous	J.8-1
Granirer, Martus	MG 6/25/2012	Memo	III. J. 8. Miscellaneous	J.8-13
Haelen, Mr.	Haelen 11/25/2008	Memo	III. J. 8. Miscellaneous	J.8-10
Haelen, Mr.	Haelen 11/25/2008	Memo	III. J. 8. Miscellaneous	J.8-11
Haelen, Mr.	Haelen 11/25/2008	Memo	III. J. 8. Miscellaneous	J.8-12
Haelen, Mr.	Haelen 11/25/2008	Memo	III. J. 8. Miscellaneous	J.8-6
Haelen, Mr.	Haelen 11/25/2008	Memo	III. J. 8. Miscellaneous	J.8-7
Haelen, Mr.	Haelen 11/25/2008	Memo	III. J. 8. Miscellaneous	J.8-8
Haelen, Mr.	Haelen 11/25/2008	Memo	III. J. 8. Miscellaneous	J.8-9

INDEX OF COMMENTS AND RESPONSES				
Commentator	**Commentator / Date**	**Comment Source**	**FEIS Subsection**	**Comment/ Response Number**
Hudson, Pamela	PH 6/13/12	Transcript	III. A. 3. Spill Containment System	A.3-34
Hudson, Pamela	PH 6/13/12	Transcript pg. 93	III. F. Public Health/EMF	F-29
Jafari, Marzie	MJ 6/22/12	Letter	III. F. Public Health/EMF	F-21
Keigler, Larry	LK 6/13/12	Transcript pg. 97	III. A. 3. Spill Containment System	A.3-32
Keigler, Larry	LK 6/13/12	Transcript pg. 97	III. A. 3. Spill Containment System	A.3-33
King, Ms.	King 6/23/12	Email	III. A. 3. Spill Containment System	A.3-4
King, Ms.	King 6/23/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-13
Knight, Robert	RK 6/13/2012	Transcript pg. 101-102	III. E. 1. Aesthetics	E.1-17
Knight, Robert	RK 6/13/2012	Transcript pg. 101	III. E. 1. Aesthetics	E.1-6
Knight, Robert	RK 6/13/12	Transcript pg. 103	III. J. 1. Historic & Archaeological Resources	J.1-1
Koch, Nana	NK 6/22/12	Email	III. A. 3. Spill Containment System	A.3-13
Koch, Nana	NK 6/22/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-14
Landman, Ms.	Landman 6/23/12	Email	III. A. 3. Spill Containment System	A.3-14
Leifer, Morton	ML 10/17/11	Memo	III. F. Public Health/EMF	F-22
Leifer, Morton	ML 10/17/11	Memo	III. F. Public Health/EMF	F-23
Leifer, Morton	ML 10/17/11	Memo	III. F. Public Health/EMF	F-24
Leifer, Morton	ML 10/17/11	Memo	III. F. Public Health/EMF	F-26
Letson, Dennis	Letson 6/6/2012	Transcript pg. 89	II. D. Description of Proposed Project	II-12
Letson, Dennis	DL 6/6/12	Transcript pg. 54	III. A. 3. Spill Containment System	A.3-27
Longhitano, Alfred	AL 7/23/12	Memo	III. A. 2. Stormwater Management	A.2-2
Longhitano, Alfred	AL 7/23/12	Memo	III. A. 2. Stormwater Management	A.2-3
Longhitano, Alfred	AL 7/23/12	Memo	III. C. Facility Materials	C-4
Longhitano, Alfred	AL 7/23/12	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-19
Longhitano, Alfred	AL 7/23/12	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-2
Longhitano, Alfred	AL 7/23/12	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-20
Longhitano, Alfred	AL 7/23/12	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-21
Longhitano, Alfred	AL 7/23/12	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-37
Longhitano, Alfred	AL 7/23/2012	Memo	III. J. 7. Utilities	J.7-9
Longhitano, Alfred	AL 7/23/12	Memo	III. J. 8. Miscellaneous	J.8-14
Longhitano, Alfred	AL 7/23/12	Memo	III. J. 8. Miscellaneous	J.8-15
Longhitano, Alfred	AL 7/23/12	Memo	III. J. 8. Miscellaneous	J.8-16
Michie, William	BM 6/23/12	Email	III. E. 2. Alternatives	E.2-14
Newman, Janet	JN 6/22/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-15
O'Connor, Mary Jane	MJO 6/6/12	Transcript pg. 47-48	III. A. 3. Spill Containment System	A.3-24
O'Connor, Mary Jane	MJO 6/6/12	Transcript pg. 46	III. D. Air / Fire & Explosion / Emergency Services	D-31
O'Connor, Mary Jane	MJO 5/2/12	Transcript p. 69	III. F. Public Health/EMF	F-16
Planning Board	PB	Memo	II. D. Description of Proposed Project	II-9
Planning Board	PB	Memo	III. A. 1. Wells and Aquifers	A.1-1
Planning Board	PB	Memo	III. A. 1. Wells and Aquifers	A.1-2
Planning Board	PB	Memo	III. A. 1. Wells and Aquifers	A.1-3
Planning Board	PB	Memo	III. A. 1. Wells and Aquifers	A.1-4
Planning Board	PB	Memo	III. A. 3. Spill Containment System	A.3-1

INDEX OF COMMENTS AND RESPONSES				
Commentator	**Commentator / Date**	**Comment Source**	**FEIS Subsection**	**Comment/ Response Number**
Planning Board	PB	Memo	III. A. 3. Spill Containment System	A.3-2
Planning Board	PB	Memo	III. A. 3. Spill Containment System	A.3-45
Planning Board	PB	Memo	III. A. 3. Spill Containment System	A.3-46
Planning Board	PB	Memo	III. B. Natural Resources	B-1
Planning Board	PB	Memo	III. B. Natural Resources	B-2
Planning Board	PB	Memo	III. C. Facility Materials	C-1
Planning Board	PB	Memo	III. C. Facility Materials	C-3
Planning Board	PB	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-1
Planning Board	PB	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-17
Planning Board	PB	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-18
Planning Board	PB	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-38
Planning Board	PB	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-39
Planning Board	PB	Memo	III. E. 1. Aesthetics	E.1-10
Planning Board	PB 12/3/2008	Memo FKA 25B1, pg. 3	III. E. 1. Aesthetics	E.1-25
Planning Board	PB 12/3/2008	Memo FKA 25B1, pg. 3	III. E. 1. Aesthetics	E.1-3
Planning Board	PB	Memo	III. E. 1. Aesthetics	E.1-9
Planning Board	PB	Memo	III. E. 2. Alternatives	E.2-5
Planning Board	PB	Memo	III. F. Public Health/EMF	F-25
Planning Board	PB	Memo	III. G. Community Character / Property Valuation	G-1
Planning Board	PB 12/3/2008	Memo FKA 25B1, pg. 3	III. G. Community Character / Property Valuation	G-2
Planning Board	PB	Memo	III. G. Community Character / Property Valuation	G-3
Planning Board	PB	Memo	III. G. Community Character / Property Valuation	G-4
Planning Board	PB	Memo	III. J. 7. Utilities	J.7-10
Planning Board	PB	Memo	III. J. 7. Utilities	J.7-6
Planning Board	PB 12/3/08	Memo FKA 25B1, pg 3	III. J. 8. Miscellaneous	J.8-17
Potenta, Mr.	Potenta 9/15/11	Memo	III. J. 4. Noise	J.4-10
Potenta, Mr.	Potenta 9/15/11	Memo	III. J. 4. Noise	J.4-11
Potenta, Mr.	Potenta 9/15/11	Memo	III. J. 4. Noise	J.4-12
Potenta, Mr.	Potenta 9/15/11	Memo	III. J. 4. Noise	J.4-13
Potenta, Mr.	Potenta 9/15/11	Memo	III. J. 4. Noise	J.4-14
Potenta, Mr.	Potenta 9/15/11	Memo	III. J. 4. Noise	J.4-15
Potenta, Mr.	Potenta 9/15/2011	Memo	III. J. 4. Noise	J.4-2
Potenta, Mr.	Potenta 6/15/12	Memo	III. J. 4. Noise	J.4-4
Potenta, Mr.	Potenta 4/30/12	Memo	III. J. 4. Noise	J.4-5
Potenta, Mr.	Potenta 9/15/11	Memo	III. J. 4. Noise	J.4-6
Potenta, Mr.	Potenta 9/15/11	Memo	III. J. 4. Noise	J.4-7
Potenta, Mr.	Potenta 9/15/11	Memo	III. J. 4. Noise	J.4-8
Potenta, Mr.	Potenta 9/15/11	Memo	III. J. 4. Noise	J.4-9

INDEX OF COMMENTS AND RESPONSES				
Commentator	**Commentator / Date**	**Comment Source**	**FEIS Subsection**	**Comment/ Response Number**
Rockland County Dept. of Planning	RCDOP, 5/8/12	Letter	III. A. 1. Wells and Aquifers	A.1-6-9
Rosen, Bob	BR 6/6/12	Transcript pg. 76-77	III. A. 3. Spill Containment System	A.3-29
Rosen, Bob	BR 6/6/12	Transcript pg. 78	III. A. 3. Spill Containment System	A.3-30
Schaefer, Julie	JS 6/6/2012	Transcript pg. 73	III. E. 1. Aesthetics	E.1-16
Schaefer, Julie	JS 6/6/12	Transcript pg. 75	III. J. 2. Lake Lucille	J.2-2
Schaefer, Julie	JS 6/6/2012	Transcript pg. 74	III. J. 7. Utilities	J.7-7
Simoes, Jose	JS 6/6/12	Email	III. A. 3. Spill Containment System	A.3-44
Smith, Doris	DS 6/21/12	Memo	III. A. 3. Spill Containment System	A.3-43
Smith, Doris	DS 6/21/12	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-12
Smith, Doris	DS 6/21/12	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-36
Smith, Doris	DS 6/21/12	Memo	III. D. Air / Fire & Explosion / Emergency Services	D-6
Stava, Susan	SS 5/2/12	Transcript pg. 53	III. A. 3. Spill Containment System	A.3-12
Stava, Susan	SS 5/2/12	Transcript pg. 54	III. J. 4. Noise	J.4-1
Stava, Susan	SS No Date	Memo	III. J. 4. Noise	J.4-16
Terribile, Bill	BT 6/13/12	Transcript pg. 56	III. A. 3. Spill Containment System	A.3-20
Terribile, Bill	BT 6/6/12	Transcript pg. 70	III. A. 3. Spill Containment System	A.3-28
Terribile, Bill	BT 6/6/12	Transcript pg. 63-64	III. A. 3. Spill Containment System	A.3-38
Terribile, Bill	BT 6/6/12	Transcript pg. 64	III. A. 3. Spill Containment System	A.3-39
Terribile, Bill	BT 6/6/12	Transcript pg. 65	III. A. 3. Spill Containment System	A.3-40
Terribile, Bill	BT 6/13/12	Transcript pg. 81	III. F. Public Health/EMF	F-28
Terribile, Bill	BT 5/2/12	Transcript pg. 46-47	III. H. Tilcon	H-7
Terribile, Bill	BT 5/2/12	Transcript pg. 47	III. J. 2. Lake Lucille	J.2-3
Terribile, Bill	BT 6/13/12	Transcript pg. 55	III. J. 2. Lake Lucille	J.2-4
Terribile, Bill	BT 6/13/2012	Transcript pg 47-48	III. J. 7. Utilities	J.7-1
Terribile, Bill	BT 6/6/2012	Transcript pg. 71	III. J. 7. Utilities	J.7-4
Thal, Terri	TT 5/2/2012	Transcript pg. 15-16	III. A. 3. Spill Containment System	A.3-6
Thal, Terri	TT 5/2/2012	Transcript pg. 17	III. A. 3. Spill Containment System	A.3-7
Thal, Terri	TT 5/20/2012	Email	III. E. 1. Aesthetics	E.1-7
Thal, Terri	TT 5/20/12	Email	III. F. Public Health/EMF	F-6
Thal, Terri	TT 5/20/12	Email	III. G. Community Character / Property Valuation	G-14
Thal, Terri	TT 6/22/12	Email	III. J. 1. Historic & Archaeological Resources	J.1-3
Thal, Terri	TT 5/20/12	Email	III. J. 5. Segmentation	J.5-7
Thormann, Shirley	ST 6/6/2012	Transcript pg. 60	II. D. Description of Proposed Project	II-11
Thormann, Shirley	ST 6/2/2012	Transcript pg. 94	II. D. Description of Proposed Project	II-14
Thormann, Shirley	ST 6/6/12	Transcript pg. 39-40	III. D. Air / Fire & Explosion / Emergency Services	D-7
Thormann, Shirley	ST 6/6/12	Transcript pg. 34	III. E. 2. Alternatives	E.2-19
Thormann, Shirley	ST 6/6/12	Transcript pg. 94	III. E. 2. Alternatives	E.2-20
Thormann, Shirley	ST 6/6/12	Transcript pg. 29	III. E. 2. Alternatives	E.2-3
Thormann, Shirley	ST 2/27/13	Transcript pg. 14-15	III. H. Tilcon	H-8
Thormann, Shirley	ST 6/13/2012	Transcript pg. 48	III. J. 7. Utilities	J.7-2
Thormann, Shirley	ST 6/13/2012	Transcript pg. 50	III. J. 7. Utilities	J.7-3

INDEX OF COMMENTS AND RESPONSES				
Commentator	**Commentator / Date**	**Comment Source**	**FEIS Subsection**	**Comment/ Response Number**
Trevor, Thomas	TT 6/6/12	Transcript pg. 52	III. A. 3. Spill Containment System	A.3-25
Trevor, Thomas	TT 6/6/12	Transcript pg. 50	III. A. 3. Spill Containment System	A.3-26
Trevor, Thomas	TT 6/6/12	Transcript pg. 49	III. A. 3. Spill Containment System	A.3-9
Trevor, Thomas	TT 6/13/12	Transcript pg. 59	III. J. 2. Lake Lucille	J.2-1
Vaterlaus, Eve	EV 6/22/12	Email	III. H. Tilcon	H-12
Walker, Kirsten	KW 6/8/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-4
Walker, Kirsten	KW 6/8/12	Email	III. D. Air / Fire & Explosion / Emergency Services	D-5
Walker, Kirsten	KW 4/2/2012	Memo	III. E. 1. Aesthetics	E.1-20
Walker, Kirsten	KW 4/2/2012	Memo	III. E. 1. Aesthetics	E.1-21
Walker, Kirsten	KW 4/2/2012	Memo	III. E. 1. Aesthetics	E.1-22
Walker, Kirsten	KW 6/8/12	Email	III. F. Public Health/EMF	F-5
Walker, Kirsten	KW 6/8/12	Email	III. G. Community Character / Property Valuation	G-15
Walker, Kirsten	KW 4/2/12	Email	III. G. Community Character / Property Valuation	G-16
Walker, Kirsten	KW 6/13/2012	Transcript pg. 63	III. J. 8. Miscellaneous	J.8-2
Walker, Kirsten	KW 6/13/2012	Transcript pg. 64	III. J. 8. Miscellaneous	J.8-3
Yacyshyn, Rudolph	RY 6/6/2012	Transcript pg. 89	II. D. Description of Proposed Project	II-13
Yacyshyn, Rudolph	RY 6/6/2012	Transcript pg. 32	III. E. 1. Aesthetics	E.1-15

INSERT SECTION DIVIDER

IV. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The irreversible and irretrievable resources associated with this project include:

- *Materials and energy required to construct the proposed improvements associated with the proposed action.*
- *Loss of natural resources including open space.*
- *Loss of land designated by the Town Zoning Ordinance for residential housing stock.*

Commitment of resources associated with the proposed action include, but are not necessarily limited to; concrete, asphalt, steel, lumber, paint products, transformer oil, other metals, gravel, landscape materials and other building materials. There will also be a commitment of labor resources to construct the facility and the consumption of energy such as electricity and gas required to construct the proposed improvements

The other natural resource that will be committed to this project is the land required to accommodate the proposed improvements. The overall site is 10.2 acres zoned residential, of which 3.25 acres will be committed to the proposed action and lost as a natural resource. The balance of the parcel, 6.95 acres (68%) will remain undeveloped and will consist of wildlife habitat, wetlands and open space.

INSERT SECTION DIVIDER

V. UNAVOIDABLE ADVERSE IMPACTS

During the implementation of any project, certain unavoidable impacts occur that cannot be mitigated. Energy usage is one of these. Energy is required to do or build anything. Energy use in the project area during the construction would temporarily increase during the 18-month construction period. However, this use of energy will provide a more reliable and less stressed electrical supply system in the local area.

Traffic and noise impacts will be temporary during the construction period only. It is anticipated that these types of temporary impacts will last for the duration of the construction process. However, upon completion these temporary impacts will stop. Under normal operation, the proposed action including mitigation will not result in increased noises level measured at the property lines and there will be very little vehicular traffic associated with the operation. As indicated in the DEIS, this is an unmanned facility anticipated to generate approximately four (4) trips per month to and from the Site for maintenance and routine inspections of the facility.

There will be short term visual impacts during the construction of the project; however, based on the visual assessment, these impacts have been mitigated to the greatest extent practicable.

Wetland and vegetation (trees) will also be impacted by the Proposed Project.

Approximately 0.090 acre of wetland will be permanently disturbed to allow for the construction of the access drive. Additionally, approximately 6,300 cubic feet of flood storage will be lost as a result of the access driveway. Both of these impacts are mitigated through the creation of compensatory flood storage and wetland mitigation.