Project Impact Summary

To assist the Planning Board in their SEQRA review of the Eastover Road Station and Transmission Line Loop Project, the following summary of predicted environmental impacts is provided.

Impact on Land

Topography within the Project Site can be described as rolling and hilly, with elevations in the range of 420 to 530 feet amsl. Slopes in excess of 15 percent are scattered throughout the Project Site and cumulatively cover approximately 15 percent of the site. Soils that are well drained to somewhat excessively drained dominate the Project Site, although soils that are somewhat poorly drained to very poorly drained are also prevalent (covering 77 percent and 23 percent of the Project Site, respectively). On-site soil borings encountered bedrock at depths varying from the surface (in an area of bedrock outcrops) to greater than 25 feet, although bedrock was most commonly encountered at depths in the range of three to ten feet (see Attachment E). Bedrock encountered was predominantly gray sandstone, although mudstone, siltstone, and shale were also encountered. The subsurface boring logs indicate that groundwater was encountered at depths ranging from two to seven feet.

Construction of the Project will result in disturbance of approximately 41.51 acres of land. Much of this will be temporary disturbance around the periphery of the station and access roads, transmission tower sites, and at a temporary marshaling yard (material storage/parking area) and wire pulling sites. This temporary disturbance will occur within agricultural (1.53 acres), old field (10.67 acres), wetland (4.33 acres) and forested (17.16 acres) areas. The Project will also result in the permanent conversion of 0.16 acres of active agricultural land, 4.41 acres of old field, 0.07 acres of wetland and 3.24 acres of forest land (7.88 acres, total) to built facilities (station, access roads, and transmission line structures).

Some steep slopes will be disturbed during Project construction, which could result in soil erosion and sedimentation. Erosion and sedimentation impacts during construction will be minimized and avoided through implementation of an erosion and sedimentation control plan. This plan will be developed as part of the SPDES General Permit 0-10-001 for the Project. Approximately 33.63 acres of the temporarily disturbed land will be restored following construction, including 1.53 acres of agricultural land. Overall, the Project will result in permanent conversion of approximately 7.88 acres of land into built facilities.

Impact on Water

Surface water resources within the Project Site include several wetlands and wetland/stream complexes that are likely under federal jurisdiction, including one New York State Department of Environmental Conservation
("NYSDEC")-mapped wetland. The station and the majority of the 115 kV transmission line loop is located within a principal aquifer. Wetland and stream areas were delineated by edr Companies and are identified and described in the attached Wetland Delineation Report (see Attachment C). Two on-site streams are perennial in nature and are both designated as Class C waters by the NYSDEC, which indicates that their desired uses are supporting fisheries and non-contact activities. Wetland/Stream Complex A consists of a perennial stream meandering east to west across the northern portion of the Project Site with emergent and scrub-shrub wetland communities located along or extending from the stream in some areas. Wetland/Stream Complex B is located in the central portion of the Project Site and contains forested, scrub-shrub, emergent, and perennial stream components. Wetland C is a Class II NYSDEC-mapped freshwater wetland (TN-102). It is a depressional forested and emergent wetland situated amongst rolling hills in the southwestern portion of the Project Site. Wetland D is a wet meadow located immediately off-site to the north of the Project Site adjacent to a proposed access road easement. Wetland E is located in the northern portion of the Project Site between Wetlands A and B and is comprised of forested and scrub-shrub wetland components. Based on existing mapping and visual observations of hydrologic connectivity, it appears that all five wetland/stream areas delineated on-site will likely fall under the jurisdiction of the U.S. Army Corps of Engineers ("USACE"), but that only Wetland C (and a 100-foot upland adjacent area) will fall under the jurisdiction of the NYSDEC.

Construction of the station and transmission line loops is anticipated to result in 0.17 acres of wetland/stream filling. The access road to the station will affect approximately 100 linear feet of stream channel at access road crossings. The access road along the 115 kV transmission line loops will affect approximately 34 linear feet of stream channel. No filling of NYSDEC wetland TN-102 is anticipated. The Project will also result in approximately 2.97 acres of temporary disturbance and 1.28 acres of permanent conversion of forested wetland to shrub swamp and/or emergent marsh wetland communities.

Impact on Air
The Project may have a minimal impact on air quality, and only during project construction. A dust control program will be implemented as necessary to control airborne dust that could be generated during construction as vehicles travel over unpaved access roads and exposed soil. Once construction is completed, the Project's operation will have no impact on air quality.

Impact on Plants and Animals
The Project Site consists of active and fallow agricultural land, forestland, and wetlands. None of the natural communities within the Project Site represent unique natural communities or potential threatened or endangered species habitat. Correspondence from the NYSDEC Natural Heritage Program (NHP) indicates that the NHP has no
record of rare or state-listed threatened or endangered plants or animals, significant natural communities, or other significant habitats within or adjacent to the Project Site (see Attachment B).

Deciduous forest occurs in the eastern portion of the proposed station site and along 0.47 mile of the proposed transmission line loop route. The tree canopy in these forested areas consist of white pine (*Pinus strobus*) and mixed hardwoods, including red oak (*Quercus rubra*), black birch (*Betula lenta*), hop hornbeam (*Ostrya virginiana*), shagbark hickory (*Carya ovata*), red maple (*Acer rubrum*) and sugar maple (*Acer saccharum*). The understory contains lowbush blueberry (*Vaccinium angustifolium*), sugar maple, hop hornbeam, Japanese barberry (*Berberis thunbergii*) and ironwood (*Carpinus caroliniana*) in the shrub stratum; Pennsylvania sedge (*Carex pennsylvanica*), jack in the pulpit (*Arisaema triphyllum*), wood fern (*Dryopteris spp.*), asters (*Aster spp.*) and partridgeberry (*Mitchella repens*) in the herbaceous stratum. The Project will result in the clearing of approximately 20.34 acres of forest land. Of this total, 17.10 acres will be converted to old-field and successional shrubland communities (primarily on the transmission line ROWs) and 3.24 acres will be converted to built facilities. An additional 15.08 acres of successional old field or shrubland will be disturbed during construction, of which 4.41 acres will be converted to built facilities.

It is anticipated that herbicides will be used during right-of-way (“ROW”) clearing (direct application to cut stumps), and as part of project maintenance to control the growth of vegetation within the station site and along the transmission line loop ROW. This work will be performed by a certified applicator and in accordance with all applicable label restrictions. It is anticipated that herbicide will be applied once per year at the stations and once every five to seven years along the transmission line loop ROW, in accordance with National Grid’s PSC approved Transmission ROW Management Program.

**Impact on Agricultural Land Resources**

The Project Site includes approximately 2.81 acres of active agricultural land, all of which occurs within Rensselaer County Agricultural District 5. Project construction will disturb approximately 1.69 acres of active agricultural land, 1.53 acres of which will be restored to agricultural use after construction completion. The Project will convert 0.16 acres of currently active agricultural land to built facilities and will limit the feasibility of farming fallow agricultural fields located south of the proposed station site. The Project will comply with NYS Department of Agriculture and Markets agricultural land protection guidelines to the extent practicable. These include siting recommendations, construction requirements, restoration requirements, agricultural monitoring during construction and restoration, and two years of post-construction monitoring and remediation (as necessary).
Impact on Aesthetic Resources

A comprehensive visual impact assessment ("VIA") was prepared to evaluate the potential visibility and visual impact of the proposed station and transmission line loops (see Attachment D). Topographic viewshed analysis for the station indicates that some portion of the proposed station could potentially be visible in approximately 13% of the 2-mile radius study area. This "worst case" assessment of potential visibility indicates the area where any portion of the station could possibly be seen without considering the screening effect of existing vegetation and structures. Areas with potential views of the station generally occur within 3,000 feet of the site to the northwest, northeast and southwest. More distant views are possible in discrete higher elevation areas to the northeast and southwest. The factoring of vegetation into the viewshed analysis further reduces potential Project visibility, and is a more accurate reflection of what the actual extent of station visibility is likely to be. Within a 2-mile radius, the vegetative viewshed analysis indicates that approximately 2% of the area could have views of the proposed station (i.e., the station should be screened from view in 98% of the study area). Visibility will be limited to open agricultural land immediately northeast of the site and suburban neighborhoods immediately to the west. Other than the Erie Canalway National Heritage Corridor and the Hudson Valley National Heritage Area (both of which actually include the Project Site) and two highways (State Route 40 and County Route 128), none of the inventoried sensitive sites within the study area are indicated as having potential views of the station.

Topographic viewshed analysis of the transmission line loops indicates that, based on the screening effect of topography alone, some portion of one or more of the proposed transmission structures would potentially be visible within 28% of the 2-mile radius study area. Factoring in the screening effect of mapped forest vegetation reduces the area of potential visibility to approximately 7.5% of the study area. Aesthetic resources of statewide significance located within the transmission line loop viewshed include four National Register-listed historic sites, four Heritage Areas, and a designated scenic byway. However, seven of these 10 areas are located over a mile from the nearest proposed Project structure.

Field verification and photo documentation indicate that the actual visibility of the proposed station and transmission line loops are likely to be even less than the vegetation viewshed mapping suggests. Areas of visibility were generally limited to residences and roads immediately adjacent to the Project Site, and a few higher elevation locations within 0.75 mile of the proposed Project. No open views were documented from any of the aesthetic resources of statewide or local significance documented within the 2-mile radius study area (other than the Erie Canalway National Heritage Corridor and the Hudson Valley National Heritage Area, which actually include the Project Site).

Five viewpoints were selected for the development of visual simulations to show representative views of the proposed Project. These viewpoints offered the most open available views of the proposed transmission line loops.
and station. Additionally, because distant visibility of the Project is limited (due to structure size and screening), the selected viewpoints are all within one mile of the proposed Project. Computer-assisted simulations were created by building a computer model of the proposed Project and placing the model in the proper location in each photograph. These simulations indicate that from the closest, most unobstructed viewpoints (i.e. the back property lines of the closest adjacent residences) the Project will have a moderate to appreciable visual impact due to the contrast it presents with the existing undeveloped site and adjacent residential land use. This impact is largely associated with the station due to its contrast with the existing landscape, in terms of line, color, form and scale. From nearby public roads and neighborhoods, the visual impact of the station is significantly reduced due to the effects of distance and intervening screening. The visibility and visual impact of the proposed transmission line loops generally will be limited due to the narrow profile and dark brown color of the proposed structures, their distance from viewers and the extent of vegetative screening that will remain following project completion. The station is at minimum approximately 950 feet from the nearest adjacent residence, and none of the proposed transmission line loops cross public roads or are directly adjacent to private homes. The distance of these features from adjacent residences and intervening vegetative screening will generally result in minimal visual impact from most locations.

Impact on Historic and Archaeological Resources
None. No known historic or archaeological resources are located within the Project Site or immediate vicinity according to the New York State Office of Parks, Recreation and Historic Preservation’s (OPRHP) online Geographic Information System for Archeology and the National Register. A letter was sent to the OPRHP (May 12, 2010) to inquire whether the office has any concerns regarding the proposed Project. The agency provided a response letter dated May 21, 2010, in which they indicated that the proposed Project will have no effect upon cultural resources listed or eligible for listing the National Register of Historic Places, and that no further study was required. Due to subsequent changes in the proposed Project Site boundaries, a second letter was sent to the OPRHP (March 9, 2011) to determine if the revised site boundary altered the previous determination of no effect. The agency provided a response letter dated March 16, 2011, indicating that the proposed Project will have no effect upon cultural resources listed or eligible for listing the National Register of Historic Places (see Attachment B).

Impact on Open Space and Recreation
The Project occurs entirely on private land that is not currently available for public use or recreation. Consequently, the proposed Project will not have a significant impact on recreation. A substantial portion of the Project Site is active and fallow agricultural land that borders on residential properties to the northeast. As such, it does represent open space that these residents may value. Construction of the Project will reduce this open space value by converting approximately 7.88 acres of natural communities to built facilities. However, because the station is set well away from any residential properties (950 feet minimum), significant open space will be maintained.
Impact on Critical Environmental Areas

None. There are no Critical Environmental Areas in the Project vicinity. The nearest Critical Environmental Area is located over nine miles away, in Washington County.

Impact on Transportation

Project construction will temporarily generate increased traffic levels as construction vehicles and personnel travel to and from the site. It is anticipated that several activities associated with construction will result in as many as 12 vehicular trips per hour during a nine hour work period per day. Construction vehicles will include concrete trucks, dump trucks, delivery trucks and pick-up trucks. The most construction traffic is anticipated to occur during the delivery of stone for the station and its associated access road. This activity could generate up to 12 dump truck trips per hour each day over a period of up to two weeks. Along with traffic on Eastover Road, these vehicles will create noise and have the potential to generate dust that could affect adjacent residences. To mitigate these impacts, the contractor will be required to develop and implement a traffic control/safety plan and a dust control plan. The traffic control/safety plan is anticipated to include posting of flagmen, regular road inspection and repair as necessary, coordination with the school district (to avoid conflicts with school buses), placement of temporary maintenance and protection of traffic signs advising drivers to reduce speed, and possible temporary re-direction of traffic to alternate routes/other than Eastover Road. Noise impacts will be minimized by prohibiting truck drivers from using engine brakes (except in emergency situations) or from idling their vehicles for more than 15 minutes. Construction vehicle turn-around and stacking will be restricted to the Project Site, and will not be allowed on adjacent residential streets. The dust control program will involve regular monitoring of dust generation, application of water to road surfaces by a water truck as needed to suppress fugitive dust, and establishment of a telephone number residents can call to register a complaint. Construction traffic will generally be limited to the hours of 7:00 am to 5:00 pm. Following construction, there will be *de minimus* traffic generation. In the event that Eastover Road is disturbed or damaged during Project construction, the Project Sponsor will improve the road to preconstruction conditions or better following completion of construction activities.

Impact on Energy

Studies conducted by National Grid have identified concerns related to the performance of the electrical transmission system in eastern New York. Evaluation of the condition of existing transmission facilities, as well as predicted electrical demand under normal and contingency conditions, resulted in the conclusion that system improvement/reinforcement was warranted. Improvements were necessary to avoid required load shedding during periods of heavier demand, and possible thermal overloads and transformer failures. Review of various alternative means of addressing these problems concluded that construction of the proposed Eastover Road Station and
transmission line loops was the best alternative for maintaining reliable electrical service in eastern New York, in terms of cost, performance, and other considerations (see Alternatives Analysis in Attachment H).

**Noise and Odor Impact**

A Noise Report was prepared by TRC to assess ambient noise conditions and future noise levels predicted to result from operation of transformers at the proposed station (see Attachment F). Although no state or local noise ordinances were identified, predicted Project noise levels were evaluated with respect to the NYSDEC Program Policy Assessing and Mitigating Noise Impacts (NYSDEC, 2001). This policy essentially defines a cumulative increase in overall sound level of 6 dBA as the threshold between no significant impact and a potentially adverse impact.

TRC conducted an ambient noise monitoring program in the vicinity of the Project Site on August 26 and 27, 2010. The existing noise environment was characterized through short term noise monitoring at four representative locations throughout the surrounding neighborhoods (15 minutes in duration at each location), and 24-hour monitoring at the nearest residence to the proposed site. The area in the vicinity of the Project consists of mostly residential land uses. Existing noise sources during the daytime included very light road traffic on local roads, distant traffic sounds, and aircraft. Natural sounds such as wind and insects were also noted. Noise sources at night were predominantly insect noise, but also included some distant traffic and occasional local traffic. Short term monitoring results indicated that daytime ambient noise levels ranged from 42.3 dBA to 51.3 dBA, while nighttime ambient noise levels ranged from 38.2 dBA to 44.8 dBA (see Table 1). Since insect noise is not present throughout the year, methodology (described in Attachment F) was applied to remove insect noise from the measured levels. The nighttime ambient noise levels with insect noise removed, ranged from 33.3 dBA to 40.3 dBA. To determine worst-case noise impacts, these nighttime ambient noise levels were used to assess the predicted change in noise levels resulting from the proposed Project. Continuous 24-hour monitoring was conducted near the Project Site, in the ROW off of Millbrook Drive. Results indicated ambient noise levels in the range of 45 dBA to 55 dBA during daytime and 30 dBA to 35 dBA at night at this location.

Construction of the Eastover Road Station will involve the following phases/activities:

- Grading and excavation;
- Foundations
- Transformer installation and connections;
- Finish and cleanup.
Much of this work will be performed by using heavy equipment (bulldozers, dump trucks, cement mixers) that will generate noise from diesel engines. Exhaust noise usually is the predominant source of diesel engine noise, which is the reason that maintaining functional mufflers on all equipment will be a requirement of the Project.

Based on documented noise levels generated by operating construction equipment, and the distance of this equipment from adjacent residences, it is estimated that construction noise at the nearest residences will be as low as 49 dBA, when the minimum amount of equipment is in use, up to about 62 dBA when the maximum amount of equipment is in use. Because existing daytime ambient noise levels in the area ranged from 41 dBA to 52 dBA at residential locations, construction noise will at times be louder than existing daytime ambient noise levels in the area. However, it is important to note that construction equipment is not generally operated continuously, nor is the equipment always operated simultaneously. It is also important to note that these predicted construction noise levels are those which would be experienced by people outdoors. A building (house) will provide significant attenuation for those who are indoors. Sound levels can be expected to be up to 27 dBA lower indoors with the windows closed. Even in homes with the windows open, indoor sound levels can be reduced by up to 17 dBA. Construction noise will also be temporary in nature and, as such, no long term or significant noise impacts due to construction are anticipated.

The operating Project will include a single 230 kV/115 kV 333 MVA transformer, and the Project Sponsor has specified that a low noise transformers will be utilized. Therefore, the transformer specifications have a rating of 75 dBA when operating at 100 percent load with cooling fans in operation. Calculated Project noise levels, along with the existing ambient nighttime levels and projected increases in noise, are provided in Table 1 below. As shown, increases over ambient nighttime noise levels (without insect noise) are predicted to be less than 2 dBA at all locations, below the NYSDEC guideline of 6 dBA.

### Table 1: Future Increase Over Night Time Ambient Conditions

<table>
<thead>
<tr>
<th>Location</th>
<th>Current Night Time Ambient (without insect noise)</th>
<th>Facility Sound</th>
<th>Combined Sound Level</th>
<th>Increase Over Ambient</th>
</tr>
</thead>
<tbody>
<tr>
<td>136 Eastover Road</td>
<td>35.9</td>
<td>33.2</td>
<td>37.8</td>
<td>1.9</td>
</tr>
<tr>
<td>6 Bennett Road</td>
<td>35.9</td>
<td>32.7</td>
<td>37.6</td>
<td>1.7</td>
</tr>
<tr>
<td>90 Bentley Drive</td>
<td>33.3</td>
<td>30.5</td>
<td>35.1</td>
<td>1.8</td>
</tr>
<tr>
<td>Beverly/Bentley Intersection</td>
<td>33.5</td>
<td>29.8</td>
<td>35.0</td>
<td>1.5</td>
</tr>
<tr>
<td>1 Duncan Drive</td>
<td>40.3</td>
<td>22.9</td>
<td>40.4</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Source: Table 3 from the *Eastover Road New 230/115 kV Station Noise Report* by TRC (Attachment F).

In addition to the transformer, the proposed station will include an emergency generator. The emergency generator will be tested once a week during the day time. Calculated project noise levels when both the generator and
transformer are operating were compared to the existing daytime and night time sound levels. During the day (without insect noise) cumulative Project-related noise levels will be below 48 dBA, representing an increase of less than 5 dBA at all locations. In emergency instances when the generator would have to run during the night (without insect noise) project noise levels will be below 48 dBA, but the increase in noise levels will exceed 9 dBA above ambient at all but one location (1 Duncan Drive). Project-related noise levels will thus conform with NYSDEC guidelines during the daytime under all instances, but will exceed these guidelines during nighttime emergencies. However, such emergencies are extremely rare.

With respect to odor, operation of the Project will not generate any odors. Project construction may result in some temporary and localized exhaust odors associated with operation of construction machinery.

Impact on Public Health
The proposed Project is not anticipated to have any impact on public health. One area of potential public concern is the possibility of health effects from exposure to electric and magnetic fields (“EMF”) associated with the production, transmission, and use of electric power. The National Institute of Environmental Health Sciences (“NIEHS”) has reviewed more than two decades of research regarding this topic and has concluded that “the scientific evidence suggesting that ELF-EMF [extremely low frequency electric and magnetic fields] exposures pose any health risk is weak” (NIEHS, 1999). Due to this lack of strong evidence, there is no established threshold of EMF exposure with respect to potential health risks. However, the New York State Public Service Commission has set guidelines for maximum EMF at the edge of ROWs. An EMF study was prepared by Commonwealth Associates, Inc. to predict EMF levels within, at the edges of, and beyond the Project ROW and determine compliance with the State of New York EMF guidelines (see Attachment G). The electric and magnetic field levels were calculated at the New York standard height of one meter above ground for the existing and proposed lines combined. Calculations were performed for each of the three line/support structure configurations proposed (see Attachment G). This study concluded that the maximum calculated electric field levels are well below the New York State limit of 1.6 kV/m at the edge of the ROW (maximum edge of ROW results of 0.45 kV/m, 0.11 kV/m, and 0.14 kV/m depending on the configuration) and that the maximum calculated magnetic field levels are well below the New York State limit of 200 mG at the edge of the ROW (maximum edge of ROW results of 79.26 mG, 70.66 mG, and 98.24 mG depending on the configuration).

Electric and magnetic fields generated by the station are not a concern, as these fields typically comply with New York State thresholds at the fence line. At this particular site the proposed fence line is a minimum of 950 feet from the nearest adjacent residence.
Impact on Growth and Character of Community or Neighborhood

As indicated by the results of the VIA (Attachment D), construction of the proposed Project will change the character of the landscape as viewed from some nearby roads and residences. This change results from the addition of built utility structures to what is currently a largely undeveloped/agricultural site. However, this change will only be perceived from a limited number of sites within 1.0 mile of the proposed Project. The magnitude of this change will be further mitigated by the distance of the Project from adjacent roads and residences (minimum of 950 feet), the presence of an existing 230 kV transmission line on site, and the presence of forest vegetation which significantly screens the Project from all public vantage points (see simulations from public roads in Attachment D). Only from the back property lines of a few adjacent residents will a moderate to appreciable visual change be perceived. Consequently, the Project is not anticipated to have a significant impact on the growth and character of Town or the adjacent neighborhoods.
References
