# RIDEM – FRESHWATER WETLANDS APPLICATION REQUEST FOR PRELIMINARY DETERMINATION LANDFILL GAS TO ENERGY ELECTRICAL TRANSMISSION LINE EASEMENT RIDGEWOOD RENEWABLE POWER FACILITY JOHNSTON, RHODE ISLAND

This narrative addresses the specific requirements for a Request for Preliminary Determination, as stipulated by Rule 9.03 of the *Rhode Island Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act*, dated December 2009. The applicant is seeking a finding of Insignificant Alteration for the construction of above ground electrical transmission lines within a recently approved utility easement linking the proposed Ridgewood Renewable Power Landfill Gas to Energy (LFGTE) Power Plant (Power Plant) to existing high voltage transmission lines, located approximately 2,000 feet to the east. The existing and proposed transmission lines are located in the Town of Johnston, Rhode Island near the Central Landfill within the Industrial Park (aka Lakeside Commerce Center). The connection is required to allow for electricity produced at the Power Plant to be transmitted to the electrical power grid. Portions of the proposed utility easement are located within the 50-foot perimeter wetland associated with the Upper Simmons Reservoir. The following evidence is provided to support this request.

Extensive efforts have been expended by the project engineers and National Grid to minimize wetland encroachment and retain the existing vegetation as much as practicable within the approved easement. As is discussed below, the structures used to support the transmission lines (poles or towers) have been selected specifically to reduce required separation distances between the lines and from adjacent vegetation and minimize clearing requirements. The proposed alignment limits the amount of total permanent vegetative clearing and maintenance in upland areas, as well as within the 50-foot perimeter wetland associated with the Upper Simmons Reservoir. Only two small, isolated areas may be affected. Areas of proposed clearing and branch/limb cutting do not encroach into flagged wetland areas and none of the small foundations required for the support structures for the transmission lines will be constructed within the 50-foot perimeter wetland or the flagged wetland areas. No fill will be placed as part of construction, either within or outside the 50-foot perimeter wetland. Access to the site will not require crossing of any wetland areas.

## BACKGROUND

The proposed 42-megawatt Power Plant will generate electricity that will be sold to National Grid. Integral to the Power Plant is a Substation (Ridgewood Substation) from which twin 115kV transmission lines (designated lines S171 and S171S) will emerge and connect to the existing 115kV transmission lines located approximately 2,000 feet to the

east, as shown on Figure 1. The existing lines run northeast, over the dam separating the Upper and Lower Simmons Reservoirs and through an industrial park along Shun Pike. The proposed lines (S171 & S171S) will loop through the facility, i.e., one line will transmit electricity into the substation and the other line will transmit electricity away from the substation. The connection point between the existing transmission lines and the proposed lines from the Power Plant will occur within the industrial park along Shun Pike. The transmission lines will be overhead lines supported by 10 single circuit (i.e., one line for each pole) steel structures, all of which will have reinforced concrete caisson foundations. Two of the structures will be H-frame deadend structures, two will be single pole deadend pull off structures, and six will be single pole davit arm deadend structures. A typical pole (single arm davit) photograph is provided in Appendix A. The conductor material used in the electrical lines will consist of 1590 Aluminum Conductor Steel Reinforced (ACSR) "Falcon".

Ridgewood Renewable Power's initial intent was to connect the Power Plant to National Grid's electrical grid in the vicinity of Shun Pike. However, after more detailed investigation, the only viable route for the electrical lines was an alignment that traverses southeast along the Upper Simmons Reservoir to the Industrial Park. The alignment of the approved easement has undergone extensive review and modification by engineers, natural resources specialists, National Grid staff, and others. The primary goal has been to reduce, as much as possible, encroachment within the 50-foot perimeter wetland while adhering to all of the safety and construction requirements of National Grid. The approved easement alignment in this application has been optimized to reduce land clearing requirements and limit clearing of existing vegetation within the 50-foot perimeter wetland to the maximum extent possible.

The proposed transmission line configuration and easement alignment for the S171 and S171S lines is shown on the attached figures. This easement has been conveyed by the Rhode Island Resource Recovery Corporation (RIRRC), the current owner of the property (Town of Johnston Plat 31, Lot 61), to National Grid. Appendix B provides a copy of the Official Record of the Governor's meeting during which the easement was discussed and approved. The separation between the two lines and the easement width varies according to various parameters including tower structure type, configuration, and height. Portions of the easement (five small isolated areas) will encroach into the 50-foot perimeter wetland associated with the Upper Simmons Reservoir, as shown on the attached figures. Three of these areas are essentially clear of vegetation; only two small areas may require selective cutting.

Due to safety concerns and maintenance considerations, National Grid prescribes specific standards for the allowable conditions of an easement by regulating such parameters as the amount of clearing required, acceptable vegetation types, and height of mature vegetation. The majority of the easement, as shown on the attached figures, generally follows the former Simmons Lake Drive (currently known as Recycle Way), an unpaved access road from the Power Plant to the existing transmission lines. Much of the existing ground surface cover within the easement is grass/bare soil and will not require temporary or permanent vegetative clearing. Two small areas will require clearing as indicated on

Figures 2 and 3, which show the existing tree line, the 50-foot perimeter wetland, and proposed areas of clearing. Vegetative clearing in these areas will either be temporary (for construction only) or permanent (as part of the maintained access right of way), as shown on Figures 2 and 3. Areas of permanent clearing are generally necessary within 40 feet of the transmission lines. However, the extent of clearing is dependent on many factors, including type of existing vegetation, height of trees, canopy shape, tree lean, surfacial topography, and so forth. Once construction is completed, these areas will be replanted with low growing trees and shrubs approved by National Grid for planting within electrical transmission line easement zones. These plantings will be periodically trimmed to ensure they remain at a safe distance from the transmission lines. A schedule of approved plantings and their associated maximum allowable height is attached as Appendix C. No areas of temporary clearing are anticipated at this time. However, should there be any, they will be cleared for construction only, and allowed to naturally re-vegetate after construction. Any existing vegetation within the 50-foot wetland buffer that meets National Grid's height standards will remain in place.

As shown on Figures 2 through 4, the easement overlaps the 50-foot wetland buffer in five isolated areas, labeled overlap areas 1 through 5. Each area is summarized below:

- Area 1: Based on a Site reconnaissance it appears that no tree cutting will be required in this area. Only low growth shrubs were observed. No tree limb cutting is anticipated. Surficial topography is such that the area is expected to be considerably below transmission line elevation.
- Area 2: One large diameter white oak tree was observed near the 40-foot easement limit. The lean of the tree is such that removal or trimming is not anticipated. Several low growth shrubs were observed; these will most likely remain.
- Area 3: Only low growth grass was observed. No clearing or cutting is anticipated.
- Area 4: Area is occupied by a recently constructed stone revetment. Only a few low growth shrubs were observed and no clearing or cutting will be required.
- Area 5: Several small low growth shrubs were observed. This area is predominantly void of any other cover vegetation. No cutting or trimming is anticipated.

## DELINEATION OF WETLANDS

The Upper Simmons Reservoir is a permanent waterbody with an associated 50-foot perimeter wetland. On 9 November 2009, Diprete Engineering of Cranston, Rhode Island conducted freshwater wetlands delineations along the Upper Simmons Reservoir (see Letter of Finding, attached). The flagged wetlands are depicted on the attached Figures 2-4. The field delineations were performed in accordance with the Rhode Island Fresh Water Wetlands Act (R.I.G.L. 2-1-18 et. seq.). The only wetland features identified are wetlands associated with the Upper Simmons Reservoir. Please refer to the Letter of Findings and the attached Figures 2-4 for details of the wetland delineation.

## INCLUDED DRAWINGS

A locus plan depicting the Site location is provided as Figure 1. Figures 2 through 4 show existing conditions, proposed conditions, topographic relief, flagged wetlands, the 50-foot perimeter wetland associated with the Upper Simmons Reservoir, the approved utility easement, proposed transmission line alignment, and proposed areas of vegetative clearing. Figures 2 through 4 also show the proposed limits of disturbance (which coincide with the 40-foot easement limit) and the recommended placement of erosion controls (hay bales) around the structure foundations during construction to control migration of sediment into the 50-foot perimeter wetland.

## EXISTING PERMITS

A wetlands permit (Finding of Insignificant Alternation, Permit # 08-0356 dated 17 March 2010) was previously issue by RIDEM for the LFGTE Power Plant and associated facilities (proposed gas conditioning plant, power plant, and associated landfill gas transmission pipe lines). As noted above, the initial proposed location of the electrical transmission lines that are the subject of this request was northeast of the Power Plant, outside of all freshwater wetlands. Hence, they were not incorporated into the initial permit application. Logistical and safety considerations required that the lines be moved further south and east, toward Upper Simmons Reservoir.

## LIMITS OF DISTURBANCE

The limits of disturbance (LOD) are shown on Figures 2 through 4 and represent the minimum area required to construct the transmission lines. The LOD corresponds with the 40-foot easement limits.

## INSIGNIFICANT ALTERATION

As described in Rule 4.00 of the Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, an insignificant alteration is defined as a "...proposed alteration, limited in scope, area or duration, which appears to results in no more than a minimal change or modification to the characteristics, functions or values of any freshwater wetland(s), and is not random, unnecessary or undesirable". GZA believes the scope of this project qualifies as an insignificant alteration. The following is provided as support of this determination.

### Rule 9.03 – Request for Preliminary Determination

In accordance with the Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, all persons applying for a Request for Preliminary Determination are required to submit:

- Triplicate site plans, which include the overall project proposed or contemplated;
- Documentation in compliance with impact avoidance and minimization requirements;
- Triplicate copies of supporting documentation.

Triplicate copies of site plans and supporting documentation are attached to this application. Documentation relative to the avoidance and minimization requirements follows.

**Rule 9.02D – Impact Avoidance and Minimization Requirement.**

We have reviewed Rule 9.02D of the Wetlands Rules and Regulations. Reasonably foreseeable probable impacts to freshwater wetlands (including the 50-foot perimeter wetland) have been avoided. In order to best present our disruption minimization strategies, we have formatted our discussion to outline specific items in Rule 9.02D of the Regulations.

Avoidance:

a) *Is primary activity water dependent?* No. The electric transmission lines do not require water access as a central element of their primary purpose.

b) *Are there alternate areas on site to achieve the same result?* No. Considerable effort has been expended to minimize encroachment of the transmission line corridor into the 50-foot perimeter wetland. There are no other feasible locations for the transmission line corridor. This alignment takes maximum advantage of existing cleared areas around the former Simmons Lake Drive. All support towers (i.e., poles) and tower foundations will be located outside the 50-foot perimeter wetland. The proposed alignment also minimizes the length of the transmission line.

c) *Are there any other alternate properties to achieve the same result?* No. Other specific properties adjacent to the existing line to locate the switch yard were considered but were not feasible for transmission line construction.

d) *Are there alternate designs to minimize impacts?* No. National standards and National Grid control requirements for electric transmission lines including heights, tower types, easement widths, vegetation, and so forth. The proposed alignment minimizes impacts to wetlands as described above. As stated above, no other viable locations exists on Site.

e) *Have attempts been made to overcome zoning, infrastructure, and other constraints*? Yes. As stated above, the proposed location is necessary based on the specific location of the power plant and the existing high voltage electric transmission lines.

f) *Impacts of available alternatives to health, safety, and/or the environment*. There are no acceptable alternatives for this project. In addition, the proposed project minimizes impacts to health, safety, and the environment. The proposed alignment minimizes the amount of vegetative clearing needed for the easement to the maximum extent possible.

Minimization:

a) *Is the proposed scale of the project necessary?* Yes. The size of the easement and

the vegetative clearing required for the transmission lines has been reduced to the maximum extent possible. The transmission line themselves are required to transfer electricity from the point of generation, the Power Plant, to National Grid's electrical power grid.

b. *Is the proposed location necessary?* Yes. No other alignment is suitable based on the location of the Power Plant and National Grid's existing high voltage power lines.

c. *Are there alternate designs with less impact?* No. The footprint of the electrical lines has been reduced to the maximum extent possible by using specific support structures as described above. In addition, the alignment has been positioned to minimize vegetative clearing, especially within the 50-foot perimeter wetland.

d. *Would further reduction in scale present serious consequences?* Yes. If reductions in the easement size or vegetative clearing were conducted, the electrical transmission line would not meet National Grid's rigorous standards to enhance safety in the vicinity of power transmission facilities and reduce the possibility of fire and/or electrocution.

## WETLANDS REVIEW CRITERIA

To assist with your review efforts, we provide the following narrative addressing the specific issues cited as RIDEM's review criteria.

1. The Project will not reduce in any way overall production of wildlife and/or diversity of wetlands. Wildlife will be allowed to meander freely around the transmission line support structures with no change in habits or access to Upper Simmons Reservoir. Only limited temporary clearing will be required within the 50-foot perimeter wetland.

2. There will be no reduction in the ability of the wetland to satisfy needs of a particular wildlife species.

3. There will be no displacement or extirpation of any wildlife species from the wetland or surrounding area.

4. Project will not reduce the ability of the wetland to ensure long-term viability of any rare animal or area plant species.

5. There will be no degradation in natural characteristics of any rare wetland type.

6. There will be no reduction in the suitability of any wetland for use by any resident, migratory, seasonal, transient, facultative, or obligate wildlife species, in either the short- or long-term as a travel corridor; feeding site; resting site; nesting site; escape cover; seasonal breeding and/or spawning area.

7. The transmission line will not result in intrusion of, or increase in, less valuable, invasive and/or exotic plant or animal species in a wetland. All plantings conducted within the transmission line easement zone will be of native species, in accordance with the schedule of approved plantings, attached as Appendix C.

8. There will be no significant reduction in the wildlife habitat functions and values of the 50-foot perimeter wetland.

9. There will not be any reduction in the existing ability of the Upper Simmons Reservoir to provide recreational activities to public.

10. There will be no significant disruption of on-going scientific studies.

11. This project will not eliminate traditional human access to this wetland area because there has not been any at this site for many years.

12. There will be no reduction in water quality functions and values and absolutely no negative impacts to the Upper Simmons Reservoir's water characteristics such as changes in water elevations, water temperatures, volumes, velocity, turbidity, dissolved oxygen concentration, and pollutants.

13. The transmission line construction will involve no permanent placement of any material below water elevations.

14. There will be no loss of any open space or significant modification of any uncommon geologic or archaeological features.

15. There will be no significant modification to the natural characteristics of any wetland area of unusually high visual quality.

16. There will be no decrease in the flood storage capacity of the 50-foot riverbank wetland. No grade changes will be made during transmission line construction

17. There will be no impact to flood storage as a result of this project.

18. There will be no restriction or significant modification of the path and/or velocities of flood flow in the wetland or the 50-foot perimeter wetland.

19. The project will not increase the 100-year flood elevation and will not cause any harm to life or property.

20. Any increase in runoff volumes and discharge rates as a result of this project is deemed to be insignificant.

21. Flooding conditions will not be exacerbated by the proposed project.

22. There are no isolated wetlands and no potential of the project to alter discharge rates to wetlands.

23. The 50-foot perimeter wetland will not be used as a detention or retention facility.

24. There will be no decrease in surface or groundwater elevations within the 50-foot perimeter wetland.

25. This project is in full compliance with the Rhode Island Water Quality Regulations.

26. There will be no detrimental modification to the 50-foot perimeter wetland in its ability to filter and/or retain nutrients or act as a natural pollution filter.

In summary, it is our professional opinion that the proposed project will not significantly alter the natural characteristics of the Upper Simmons Reservoir, or associated wetlands, present in the project area.