

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

<b>In the Matter of: Application of</b>	:	
<b>PPL Electric Utilities Corporation</b>	:	
<b>Filed Pursuant to 52 PA. Code</b>	:	
<b>Chapter 57, Subchapter G, for</b>	:	
<b>Approval of the Siting and</b>	:	<b>Docket No. A- 2008-2022941</b>
<b>Reconstruction of the Proposed</b>	:	
<b>Coopersburg #1 and #2 138/69 kV</b>	:	
<b>TAP in Upper Saucon Township,</b>	:	
<b>Lehigh County and Springfield</b>	:	
<b>and Richland Townships, Bucks</b>	:	
<b>County, Pennsylvania</b>	:	
<b>Petition of PPL Electric Utilities</b>	:	
<b>Corporation for a Finding that a</b>	:	
<b>Building to Shelter Control</b>	:	
<b>Equipment at the Substation to be</b>	:	<b>Docket No. P-2008-2038262</b>
<b>Constructed in Springfield</b>	:	
<b>Township, Bucks County,</b>	:	
<b>Pennsylvania is Reasonably</b>	:	
<b>Necessary for the Convenience</b>	:	
<b>or Welfare of the Public</b>	:	

**MAIN BRIEF  
OF  
BOARD OF SUPERVISORS OF SPRINGFIELD TOWNSHIP,  
BUCKS COUNTY, PENNSYLVANIA**

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## **I. INTRODUCTION**

PPL Electric Utilities Corporation (“PPL Electric”) needs to improve its regional electric transmission system in its Southern Lehigh Region, which consists of portions of southern Lehigh County and northern Bucks County. The plan proposed by PPL Electric includes the construction of a new substation in Springfield Township (Bucks County), as well as the construction of a new, seven-mile transmission line from Upper Saucon Township (Lehigh County) to Quakertown Borough (Bucks County). Approximately 2.6 miles of the proposed seven-mile line would cut through Springfield Township.

The Board of Supervisors of Springfield Township, Bucks County, Pennsylvania (“Springfield Township”) filed a Protest against the proposed transmission line, and intervened as of right in the petition concerning the proposed substation building. The township took these actions in order to protect the citizens and the natural environment of the township.

Springfield Township is a predominantly rural township in northern Bucks County. Commercial, industrial, and other high-density development is clustered in the portion of the township that has the necessary infrastructure to support that development – roads, centralized water and wastewater service, and associated infrastructure. This area of the township is near State Route 309.

The remainder of the township is rural, consisting of farms, homes on very large lots without access to centralized water or wastewater service, and resource protection areas that are needed to preserve the township’s natural resources. The significant natural resource areas in the township are the Tohickon Creek and its associated watershed, much of which is forested. These areas support fish, wildlife, and plant species that are important to the biodiversity of the region and to the health of the Tohickon Creek itself.

The citizens of Springfield Township, with the assistance of the Bucks County Planning Commission, have adopted a comprehensive plan and a zoning ordinance consistent with that plan. The zoning ordinance and comprehensive plan reflect the twin goals of the township to (1) encourage growth in the areas of the township that have the infrastructure to support growth and (2) protect, and act as a wise steward of, the beauty and natural resources of the remainder of the township, while not impeding landowners from making reasonable use of their property.

One of the Township Supervisors, Mr. Oakey, described the Township's efforts as follows:

During that entire time [since 1972], there has been a major effort in this township to maintain open space and to maintain the pristine watershed that we have here  
....

And we've done that by working with builders and having them set aside lands and easements. We've done that by working with farmers and have them sell their development rights in the process of trying to establish and maintain a good open space that's conducive to native plants and animals. We've of course also set aside area for commercial development and industrial development and infrastructure.

\* \* \*

Setting aside land, having people sell the development rights is always done in anticipation of maintaining a pristine environment, trying to maintain the natural beauty that we have here ...

Tr. 215-216. In addition, in 2001, Springfield Township approved a wage tax to fund the preservation of open space in the township. Tr. 236 (Mr. Reimann).

Unfortunately, PPL Electric has proposed a plan that is directly contrary to the decisions that have been made by the citizens of Springfield Township. PPL Electric proposes to construct a seven-mile transmission line, approximately 2.6 miles of which would cut through some of the most pristine areas of Springfield Township, including along and across the Tohickon Creek. PPL Electric's plan would clear dozens of acres of woodland in Springfield Township and

neighboring Richland Township, irretrievably altering the ecosystem that thrives in the area today. In addition, PPL Electric proposes to build a seven-acre substation (on a tract of land that is 85 acres in size) in the Resource Protection District of Springfield Township.

Springfield Township understands the need to upgrade PPL Electric's transmission system in the region. The township supports PPL Electric's need to undertake significant work on the region's transmission system. Indeed, Springfield Township recognizes and appreciates that further growth in the township, and in the region as a whole, will not be possible without a properly functioning regional transmission network.

In recognition of its responsibility to the public and to this Commission, Springfield Township did not take a "do nothing" or "not in my backyard" approach to this problem. Instead, Springfield Township went to considerable expense to retain an experienced electrical engineer to review the various options that PPL Electric considered. That electrical engineer, Peter Lanzalotta, identified a plan that PPL Electric developed that would fully meet the needs of the Southern Lehigh Region during the entire 15-year planning horizon used in PPL Electric's study (approximately through the year 2020).<sup>1</sup> That plan, which the parties are calling the "Springfield Functional Configuration" would maximize the use of PPL Electric's existing facilities in the region – improving the facilities at existing substations and upgrading existing transmission lines – while constructing only approximately three or four miles of new transmission line in the region by the year 2020. The Springfield Functional Configuration would not require the construction of a new substation and would not involve the construction of

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<sup>1</sup> Mr. Lanzalotta is an electrical engineer with more than 30 years of experience in electric utility system planning and operations. He has testified as an expert witness in more than 90 proceedings throughout the United States and Canada, and has been widely recognized for his expertise in electric system planning. Springfield St. 1, pp. 1-2 and Exh. PJJL-1.

a transmission line through the Resource Protection District that protects the Tohickon Creek watershed.

As explained in more detail in the remainder of this Main Brief, Springfield Township respectfully requests the Pennsylvania Public Utility Commission (“Commission” or “PUC”) to deny PPL Electric’s proposals for a new transmission line and a new substation. While PPL Electric needs to do something, it does not need destroy the natural environment in northern Bucks County in order to provide safe and reliable electric service to its customers. PPL Electric can provide that safe and reliable service by maximizing the use of its existing substations and transmission line corridors.

## **II. STATEMENT OF THE QUESTIONS**

1. Whether an electric utility’s decision to choose among alternatives to resolve regional electric transmission deficiencies must include an evaluation of the anticipated environmental and land use impacts of each alternative. (Suggested answer: Yes)
2. Whether an electric utility acted arbitrarily and capriciously when it selected an alternative to resolve regional electric transmission deficiencies without evaluating the anticipated environmental and land use impacts of each alternative. (Suggested answer: Yes)

## **III. SUMMARY OF THE ARGUMENT**

Pennsylvania law and the Commission’s regulations require PPL Electric to demonstrate (1) a need for the specific facilities proposed, (2) that the proposed facilities are less harmful to the environment and other important resources than reasonable alternatives, and (3) that the facilities are consistent, to the extent feasible, with local land use plans and ordinances.

PPL Electric's plan to construct a seven-mile transmission line (known as the Cross Country Corridor) and seven-acre substation on an 85-acre tract of land (known as the Hickon Road Substation Site) is not consistent with these legal requirements. PPL Electric considered but rejected a plan that would enable PPL Electric to provide safe and reliable service to its customers through at least the year 2020 (the planning horizon used by PPL Electric in this case) without needing to build a new substation. Moreover that alternative, which the parties have agreed to call the Springfield Functional Configuration, would reduce the amount of new transmission line to be built during the planning period to only three or four miles. In contrast to PPL Electric's proposal, the Springfield Functional Configuration's shorter transmission line would not be located near the most important environmental resource in northern Bucks County, the Tohickon Creek and its watershed (much of which is forested).

PPL Electric rejected this alternative without conducting any comparative analysis of environmental or land use impacts. Thus, even though PPL Electric makes some conclusory statements about how it carefully considered environmental impacts, that is simply not true. Record evidence shows that PPL Electric rejected the Springfield Functional Configuration without conducting any analysis of its environmental impacts and without knowing the land use implications of that alternative.

As a matter of law, PPL Electric cannot demonstrate a need for the proposed substation building because PPL Electric can provide safe and reliable service without constructing a new substation in the Southern Lehigh Region. The public does not need a new substation in the region. PPL Electric can provide reliable service – service that meets all of PPL Electric's own planning criteria – at least through the year 2020 by improving the utilization of PPL Electric's existing substation sites, upgrading some of its existing transmission lines in the region, and

constructing a new three or four mile transmission line in a less environmentally sensitive area of Bucks County. Moreover, it appears that the Springfield Functional Alternative would upgrade and construct facilities much closer to the areas where the demand for electricity is growing in the region.

Similarly, while PPL Electric needs to do something to enhance its regional transmission network, it cannot demonstrate that the proposed seven-mile transmission line must be part of that upgrade. The Springfield Functional Configuration would avoid the need for a new transmission line of that length, and would avoid the need to build anything along or across the Tohickon Creek.

Much has been made in this case about two other alternative routes that PPL considered but rejected. Those alternatives, known as the SEPTA Corridor and Route 309 Corridor, have considerable merit but also some potential disadvantages. Ultimately, the best option for the region may turn out to be one of those options.

Importantly, though, PPL Electric's own environmental expert concluded that there would be environmental damage associated with any of those three routes (Cross Country, SEPTA, or Route 309), and that it would be preferable to avoid any of these routes. And that is precisely what the Springfield Functional Configuration does.

The Commission, however, does not need to decide on the precise configuration. The existence and feasibility of the Springfield Functional Configuration – and PPL Electric's arbitrary and capricious failure to consider the environmental and land use impacts of that alternative in its decision-making process – is sufficient for the Commission to reject the transmission line application and substation petition that are before it. Once PPL Electric's existing plan is rejected, then PPL Electric would need to develop a new plan that provides safe

and reliable service and is consistent with legal and regulatory requirements. That new plan could be the Springfield Functional Configuration (or some variation of it) without a new substation, or the SEPTA Corridor or Route 309 Corridor with a different substation site (such as the SEPTA-309 Substation Site that PPL Electric already owns (Tr. 798-799), or other locations near Route 309 (see Tr. 340 (Mr. Steskal), identifying two possible locations for a substation site)), or some other option that PPL develops and justifies.

In short, the Commission does not need to determine which alternative PPL Electric should pursue. Indeed, the Commission cannot make such a determination in this case because potentially affected landowners along alternative routes have not been given notice of this proceeding. The Commission only needs to find that the proposals made by PPL Electric do not meet the legal standards: they are not needed, PPL Electric has not met its burden of proving that they are the least intrusive options from an environmental and land use perspective, and PPL Electric acted arbitrarily and capriciously when it failed to consider the environmental and land use impacts of a major alternative. It then falls to PPL Electric to develop a new plan, preferably in consultation with affected communities and landowners, and to justify that plan in a future filing with the Commission, if necessary.

Springfield Township, therefore, respectfully submits that the Commission should deny PPL Electric's transmission line application and substation petition because those filings fail to meet the legal standards for approval.

## **IV. APPLICATION FOR TRANSMISSION LINE & SUBSTATION**

### **A. LEGAL STANDARDS**

#### Burden of Proof

As the proponent of its Application for a certificate of approval of the siting and construction of its proposed transmission line, and its Petition for the siting of a substation building, PPL Electric has the burden of proof in this proceeding. 66 Pa. C.S. § 332(a).

#### Siting and Construction of Transmission Line

The Commission has adopted regulations concerning the siting and construction of a high-voltage (or “HV”) transmission line.<sup>2</sup> 52 Pa. Code §§ 57.71-57.77. Under those regulations, a utility is required to file an application “for authorization to locate and construct a HV transmission line or any portion thereof” before the utility can begin construction of any portion of the line. 52 Pa. Code § 57.71.

The Commission’s regulations specifically provide that the Commission will consider the following matters in reaching its decision:

- (1) The present and future necessity of the proposed HV line in furnishing service to the public.
- (2) The safety of the proposed HV line.
- (3) The impact and the efforts which have been and will be made to minimize the impact, if any, of the proposed HV line upon the following:
  - (i) Land use
  - (ii) Soil and sedimentation
  - (iii) Plant and wildlife habitats
  - (iv) Terrain

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<sup>2</sup> The Commission’s regulations define a HV transmission line as “an overhead electric supply line with a design voltage greater than 100,000 volts.” 52 Pa. Code § 57.1

- (v) Hydrology
- (vi) Landscape
- (vii) Archeologic areas
- (viii) Geologic areas
- (ix) Historic areas
- (x) Scenic areas
- (xi) Wilderness areas
- (xii) Scenic rivers

(4) The availability of reasonable alternative routes.

52 Pa. Code § 57.75(e). The regulations define an “alternative route” as “a reasonable right-of-way which includes not more than 25% of the right-of-way of the applicant’s proposed route.”

52 Pa. Code § 57.1.

The regulations also make it clear that the Commission may impose conditions on the “location, construction, operation or maintenance” of the line. 52 Pa. Code § 57.76(a). That subsection continues by stating that the following four elements must be established in order for the Commission to approve the power line:

- (1) That there is a need for it;
- (2) That it will not create an unreasonable risk of danger to the health and safety of the public;
- (3) That it is in compliance with applicable statutes and regulations providing for the protection of the natural resources of this Commonwealth; and
- (4) That it will have minimum adverse environmental impact, considering the electric power needs of the public, the state of available technology and the available alternatives.

For purposes of this case, Springfield Township has challenged two of the four criteria set forth in Section 57.76(a): the need for the proposed line and the environmental impact of the line given the available alternatives. In addition, in the event that the Commission disagrees and finds that PPL should be allowed to construct the proposed line, Springfield Township has proposed conditions concerning the location, construction, and maintenance of the line.

### Standards for Determining Need for a Transmission Line

The Commission has held that the need for a transmission line “must be established ... by a detailing of such earmarks of engineering need, as a defined service area, a defined terminal point, evidence of system inadequacy, and proof that the line in question is a reasonable solution to the problems presented.” *West Penn Power Co.*, 54 Pa. PUC 319 (1980).<sup>3</sup>

### Environmental Review Standards

The Pennsylvania Constitution establishes the right of Pennsylvanians to “clean air, pure water, and to the preservation of the natural, scenic, historic, and aesthetic values of the environment.” Pa. Const. art. I, § 27. Commonwealth Court has held (and the Pennsylvania Supreme Court has affirmed) that an administrative agency’s compliance with section 27 can be determined by using a three-part test:

1. Was there compliance with all applicable statutes and regulations relevant to the protection of the Commonwealth’s public natural resources?
2. Does the record demonstrate a reasonable effort to reduce the environmental incursion to a minimum?
3. Does the environmental harm which will result from the challenged decision or action so clearly outweigh the benefits to be derived therefrom that to proceed further would be an abuse of discretion?

*Payne v. Kassab*, 11 Pa. Commw. 14, 29-30, 312 A.2d 86, 94 (1973), aff’d, 468 Pa. 226, 361 A.2d 263 (1976).

In a subsequent case, Commonwealth Court specifically applied this standard to the Commission and held that an applicant must meet this three-part test (once a protestant or

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<sup>3</sup> In *Pa. Power and Light Co. v. Pa. PUC*, 696 A.2d 248 (Pa. Commw. 1997), Commonwealth Court held that engineering need is not the only way in which a utility could demonstrate the need for a new facility. The issue in that case centered around the difference between engineering need and the economic need of a large customer, which is not apposite here. See *Pa. Power & Light Company*, Docket Nos. A-00110500F0224, et al., 1996 Pa. PUC LEXIS 102 (Pa. PUC, Sept. 9, 1996).

intervenor raises the issue). *Department of Environmental Resources v. Pa. Public Utility Commission*, 18 Pa. Commw. 558, 567, 335 A.2d 860, 865 (1975). See also *Borough of Moosic v. Pa. Public Utility Commission*, 59 Pa. Commw. 338, 429 A.2d 1237 (1981).

The Commission later held that this standard would be applied once a protestant or intervenor raises a “substantial issue” of an “adverse impact” on the environment; “not a mere recitation of threatened environmental harm.” *Philadelphia Suburban Water Co.*, 54 Pa. PUC 127 (1980). That case also established two other important principles.

First, the burden is on the utility to show that it made a “reasonable decision, not the best possible decision.” The Commission continued: “Evidence of an alternative may be the basis for questioning the reasonableness of the company’s decision, but mere existence of an alternative site does not invalidate the company’s judgment.”

Second, any alleged environmental impact must be directly related to the proposed project. In *Philadelphia Suburban* the Commission rejected as too remote “the possibility of future development in an adjoining township.” Rather, the Commission stated that its evaluation of environmental impacts would be based on “environmental incursions at the site ... which is the subject of the application.”

In a separate case decided around the same time as *Philadelphia Suburban*, the Commission held that an electric utility failed to meet the second prong of the *Payne v. Kassab* test (reasonable efforts to minimize environmental impact). In *West Penn Power Co.*, 54 Pa. PUC 319 (1980), the Commission held that a utility must produce “on the record specific, substantial evidence which tends to show reasonable efforts to reduce environmental incursion to a minimum.”

It also is important to note that the Commission's environmental review is constrained by its jurisdiction over the project itself. For example, in *Del-AWARE Unlimited, Inc. v. Pa. Public Utility Commission*, 99 Pa. Commw. 634, 639, 513 A.2d 593, 596 (1986), the court held: "the PUC is empowered only to decide whether the proposed site of [a] ... pumphouse is reasonably necessary for the public convenience or welfare. Therefore, we hold that it may evaluate only the environmental impacts of placing the pumphouse at the proposed location." (Emphasis in original.) The court upheld the PUC's conclusion that it should not consider the environmental impacts of a proposed reservoir next to the pumphouse because the reservoir was not subject to Commission review and approval.

From these cases, then, it can be concluded that a utility must make a decision that reasonably minimizes the impact to the environment from the specific project, given the available alternatives. The utility must demonstrate that it has made a "reasonable effort to reduce the environmental incursion to a minimum" and that any resulting environmental harm is clearly outweighed by the benefits of the project.

## **B. NEED FOR THE PROPOSED FACILITIES**

PPL Electric and Springfield Township agree that PPL Electric must do something to reinforce its regional transmission system in the Southern Lehigh Region. There is, however, a significant dispute concerning the extent of a project that is needed to provide that reinforcement.

PPL Electric's existing transmission system in the region operates at 69,000 volts (69 kV). Briefly, electricity into the region is served from 230 kV transmission lines that feed 230 – 69 kV substations at Quarry, Hosensack, and Buxmont. Tr. 745; PPL Exh. 1 (Exh. A, Figure 1). A regional network of 69 kV transmission lines then brings that power to distribution substations

(69 – 12 kV) located throughout the region at Bingen, Coopersburg, Quakertown, and Richland, among others. PPL Exh. 1 (Exh. A, Figure 1).

Springfield Township is located roughly in the geographic center of the region, between the Coopersburg and Quakertown substations. Tr. 742-43. PPL Electric’s proposal is to construct a new 230 – 138/69 kV substation in Springfield and to build a new transmission line that bypasses the existing Coopersburg to Quakertown 69 kV line. Tr. 748. The new line would connect both the Coopersburg and Quakertown distribution substations to the proposed Springfield substation.

Importantly, while Springfield is in the geographic center of the region, that has little to do with where load growth is occurring in the region. It is quite telling that PPL Electric’s engineering witness, Ms. Krizenoskas, did not know where load growth was occurring in the region. Tr. 742. She knew only that load in the region as a whole was increasing, and she specifically mentioned growth along Route 309 and near the Quakertown interchange of the Pennsylvania Turnpike. Tr. 741.

Yet, when asked specifically about work that PPL Electric was doing to serve new load along Route 309, PPL Electric witness Keeler pointed out that the work was being done to the north of the study area in this case (that is, north of Coopersburg). Tr. 655-56. And, of course, the area near the Quakertown interchange is in the southwest corner of the study area (the interchange itself is actually outside of the study area).<sup>4</sup>

In contrast to PPL Electric’s witnesses, the residents of the region understand where the load growth is occurring. As Mr. Douglas testified at the Springfield public hearing: “We need

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<sup>4</sup> Maps 1 through 10 included in PPL Exh. 1 show the Turnpike along the west edge of the map. The Quakertown interchange can be seen just above the compass rose near Route 663, west of Milford Square.

more electricity, or at least the growing communities to our north and south do ...” Tr. 199 (emphasis added).

That is one of the keys to determining the need for the proposed facilities. Springfield Township does not dispute the need for PPL Electric to do something to enhance the 69 kV transmission network in the region. But there is a serious question whether something needs to be done in Springfield Township – where there does not appear to be significant load growth and where PPL Electric does not have a substation – or whether the reinforcement should be done in existing substations and transmission lines that are closer to the growing areas.

In particular, PPL Electric developed and evaluated two options that would fully meet its needs at least through the year 2020:

(1) PPL Electric could construct a new seven-mile transmission line and a new 230 – 138/69 kV substation on approximately seven acres of land in Springfield Township (known for purposes of this case as the PPL Electric Functional Configuration), or

(2) PPL Electric could upgrade its existing 230 – 69 kV substation in Hosensack, reconductor its existing lines between Hosensack and Coopersburg and between Hosensack and Milford, and build a new three or four mile 69 kV transmission line from Milford substation to Buxmont (known for purposes of this case as the Springfield Functional Configuration).

It bears repeating that, despite the names assigned to them to simplify this case, both of these options were developed by PPL Electric. PPL Electric found that both of them are capable of reliably serving the needs of PPL Electric’s customers through the entire study period (at least through 2020). Tr. 724-26 and Springfield Exh. 6 at 16. Springfield Township’s electrical engineering expert, Mr. Lanzalotta, confirmed this fact, stating: the Springfield Functional Configuration “eliminates all of the contingency reliability violations” set forth in PPL Electric’s application. PPL Electric “can provide reliable service for many years into the future ... without building a new substation ....” Springfield St. 1 at 29 (emphasis in original).

It is also important to recognize that PPL Electric’s proposed transmission line and substation are integral parts of a single project. As Ms. Krizenoskas acknowledged, if PPL Electric is permitted to build the new transmission line, it would not be able to provide reliable service through 2020 if it did not also build the substation. Tr. 725-26.

Each of these options has advantages and disadvantages. The critical question for this case is to determine whether PPL Electric made a reasonable evaluation of those advantages and disadvantages at the time it decided which option to pursue, and whether that evaluation considered the relevant factors set forth in the Commission’s regulations.

## **1. The Need for the Transmission Line**

Using the strict definition of need from prior cases (as discussed above), PPL Electric has shown that there is a “need” to do something to enhance the 69 kV transmission network in the region. But the proposed transmission line is not a necessary part of such a project. As Springfield discusses in detail below, the Springfield Functional Configuration meets all of PPL Electric’s reliability criteria and completely eliminates the need for the proposed transmission line.

## **2. The Need for the Coopersburg Tap Substation**

PPL Electric has not demonstrated a need to construct the substation control building on the Hickon Road Substation Site. Specifically, PPL Electric has requested that the Commission override local zoning requirements for a substation control building in the township’s Resource Protection District. In order to do so, the Commission must find that the “proposed situation of the building in question is reasonably necessary for the convenience or welfare of the public.”

53 P.S. § 10619.

In *Philadelphia Electric Co.*, Docket No. A-110550F058, 1992 Pa. PUC LEXIS 52 (Pa. PUC, June 1, 1992), the Commission denied an electric utility's request under section 10619 to site a substation control building because of the utility's failure to fully and accurately consider the relative costs and benefits of two alternatives. In so doing, the Commission held that the "critical standard" is "the reasonableness of PECO in determining the necessity of the ... [selected] site." The Commission also found that the utility acted arbitrarily and capriciously when it failed to consider the relative costs and benefits of two viable options.

PPL Electric does not need to construct a new substation to provide reliable service to its customers. The Springfield Functional Alternative enhances the use of PPL Electric's existing substations – upgrading aging facilities and using available space in those substations – while ensuring the reliability of service at least through the year 2020.

PPL Electric witness Krizenoskas submitted written testimony that claimed PPL Electric could not provide reliable service without a new substation. PPL Electric St. 12 at 4-5. On cross-examination, however, Ms. Krizenoskas acknowledged that this statement was not accurate, as shown in the following colloquy:

Q. Let me try to put it in context. Do you mean that building the Cross Country Route without also building the substation would violate PPL's Principles and Practices, that is you would not be able to provide reliable service?

A. That's a true statement. Without the new substation we would not, for that Alternative, we would not be able to meet the Reliability Principles and Practices.

Q. But, in fact, as we've just been discussing there is an Alternative that would allow you to provide reliable service without the new substation but that would also mean you don't build the Cross Country Line, you'd have to do a bunch of other things?

A. Right.

Tr. 725-26 (emphasis added).

Springfield witness Lanzalotta confirmed this fact when he testified:

PPL claims a centrally-located substation source, or shorter transmission lines, are needed to meet the Company's reliability planning criteria. But this claim is not borne out by the Company's own studies. Those studies show that PPL can provide reliable service for many years into the future (under Alternative 2 [the Springfield Functional Configuration]) without building a new substation or shortening the length of transmission lines.

Springfield St. 1 at 29.

As discussed below, PPL Electric did not conduct any comparative environmental or land use analysis of the two options. Moreover, while PPL Electric did prepare a comparative cost analysis, that analysis was not done until many years after PPL Electric had chosen to pursue the construction of a new substation. In fact, the comparative cost study was not prepared until after PPL Electric had made its decision to construct a new transmission line along the Cross Country Corridor and after PPL Electric had purchased the Hickon Road Substation Site.

In summary, as Springfield Township will discuss in more detail below, PPL Electric does not need to construct a new substation anywhere, let alone on the Hickon Road Site. PPL Electric's decision to pursue that construction was based on an incomplete and untimely analysis that arbitrarily and capriciously failed to consider numerous relevant factors, as set forth in the Commission's regulations.

### **C. TRANSMISSION LINE SITING AND ROUTE SELECTION**

PPL Electric has approached this case as if the only real decision it made was the selection of a route for the proposed transmission line. PPL Electric made that decision in May or June 2006. Tr. 818-19. In fact, though, the critical decision was made two or three years earlier – when PPL Electric decided that it would pursue an option that includes a new substation in Springfield Township (the PPL Electric Functional Configuration), rather than an option that would involve upgrading existing substations and transmission lines (the Springfield Functional Configuration). That decision, which appears to have been made in 2004 or earlier (Tr. 794 and

Springfield Exh. 16), was not documented at the time it was made and did not include any analysis of the environmental and land use factors set forth in the Commission's regulations (52 Pa. Code § 57.75(e)). Tr. 714-16, Tr. 733-34, and Springfield Exh. 6.

Incredibly, the PPL Electric study that documented that decision (Springfield Exhibit 6) – a document that was prepared in November 2006, after the Cross Country Route was selected and after the Hickon Road Substation Site was purchased – does not even mention, let alone analyze, the comparative environmental and land use impacts of the two options. PPL Electric witness Krizenoskas, one of the authors of that study, confirmed this in the following colloquy:

Q. Just to confirm, is there any place in this study where you consider the relative environmental impacts of the two Alternatives?

A. I do not believe there will be environmental impacts mentioned. I do recall I may have mentioned citing the difficulties with getting our transmission line rebuilt from the Seidersville to Coopersburg area because that's something we desired but we couldn't achieve. I think that was mentioned. But I do not recall mentioning anything about the environmental impacts with the substation.

Q. Obviously reading through the document I didn't find that either and the document will be part of the record, so it will speak for itself. Again, your understanding is there's nothing in this document that really compares the environmental effects of the various options; is that right?

A. Correct.

Tr. 722-723 (emphasis added).

Even today, some two years later, PPL Electric still has not performed such an analysis of the Springfield Functional Configuration. Tr. 583.

But such an analysis is critically important because of the severe environmental and land use impacts associated with PPL Electric's chosen alternative. Environmental experts for both PPL Electric and Springfield Township agree that there will be significant environmental impacts associated with the construction of a transmission line along the Cross Country Route selected by PPL Electric. PPL Electric St. 15-R, p. 20 (Mr. Mellon states: "approximately 7

acres of core forest and approximately 42 acres of edge habitat will be cleared for the proposed cross county right-of-way and an additional 48 acres of core forest habitat will become edge habitat”); Springfield St. 2 at 5 (Mr. Gallagher states: “PPL selected the worst option from an environmental and land use perspective”).<sup>5</sup> The experts dispute the severity of the impact, but there is no doubt the impact will be real and measurable – including the loss of breeding ground for locally and regionally important species, the risk of invasive plant species, and the potential to damage portions of the Tohickon Creek watershed.

PPL Electric’s expert asserts that the damage from the Cross Country Route is not much different from the damage that would occur if it constructed the new line along the Route 309 Corridor or the SEPTA Corridor. PPL Electric St. 15-RJ, p. 17 (Mr. Mellon: “There does not appear to be a significant difference between the three routes from an ecological perspective.”). Springfield Township’s expert disagrees with that characterization, finding that the Cross Country Corridor will be far more damaging than the other two corridors. Springfield St. 2, p. 5 (Mr. Gallagher: “The Cross Country Route will cause far more environmental disruption than the alternatives. Those impacts will be difficult or impossible to mitigate, and are likely to result in permanent damage to sensitive and irreplaceable environmental resources in Northern Bucks County.”).

But that debate misses the central point. There is little doubt that any of the routes to implement the PPL Electric Functional Alternative would be harmful to the environment. Given the proximity of those routes to the Tohickon Creek and its watershed, including the forested areas that support much of the area’s native plant and animal species, it would be difficult if not

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<sup>5</sup> Mark Gallagher is an environmental consultant with degrees in Biology, Botany, and Plant Physiology. He has performed dozens of environmental studies for a wide range of clients, including state and local governments, citizens groups, and project developers. Springfield St. 2, Appendix A; Tr. 582.

impossible to site a new transmission line corridor and substation in this portion of Bucks County without causing significant environmental harm.

In fact, PPL Electric's environmental expert, Mr. Mellon, showed that all three options to implement the PPL Electric Functional Configuration would cause significant environmental disruption. As he testified:

[A]pproximately 7 acres of core forest and approximately 42 acres of edge habitat will be cleared for the proposed cross country right-of-way and an additional 48 acres of core forest habitat will become edge habitat.

Along the east-west line from the Springfield substation to the SEPTA and Route 309 alternative routes, approximately 9 acres of core forest and 31 acres of edge forest will be cleared and 35 acres of core forest will become edge forest.

PPL Electric St. 15-R, p. 20.

Mr. Mellon then described as follows the impact associated with this loss of habitat:

In the new edge habitat, interior forest species will continue to breed, but these individuals generally will have reduced breeding success rates. The seven acres of core forest and 42 acres of edge habitat within the right-of-way will be lost as breeding habitat for interior forest species, but not for open area species which will move into the cleared habitat. So the overall number of breeding individuals in the seven acres may not change drastically, just the composition. The question then becomes which species are more important and why, the interior forest species or the open area species.

PPL Electric St. 15-R, p. 21.

With all due respect to PPL Electric and its environmental expert, Springfield Township submits that the real questions should be: Is any of this habitat destruction necessary? Is there an option which avoids destruction of this magnitude? Who are we to choose which species thrive and which do not?

Springfield Township's environmental experts have shown that either the Route 309 Corridor or the SEPTA Corridor would be less harmful to the environment than the Cross Country Route, but Springfield Township acknowledges that each of the options to implement

the PPL Electric Functional Configuration is likely to cause at least some harm to the natural environment.

Indeed, PPL Electric's own environmental expert, Mr. Mellon, testified that the Cross Country Corridor, Route 309 Corridor, and SEPTA Corridor would all have significant environmental impacts that should be avoided, if possible. Specifically, he stated:

There does not appear to be a significant difference between the three routes from an ecological perspective. There are "good" habitats in the cross country route and in the two alternate routes. Avoidance of these routes, all things being equal, would be preferable.

PPL Electric St. 15-RJ, p. 17 (emphasis added). He then continued, stating: "All three alternatives, including the necessary Springfield substation tap line to the Route 309 and SEPTA lines, negatively impact core forest habitat to a similar degree." Id., p. 18.

While Springfield Township believes that Mr. Mellon has overstated the impacts of the Route 309 and SEPTA options (because he assumes that a substation could not be sited closer to those routes than the Hickon Road site that is approximately two miles away), his conclusion is exactly right: There are significant environmental impacts from any of the options that would implement the PPL Electric Functional Configuration.

It cannot be emphasized enough that PPL Electric's own environmental expert concluded that it would be preferable to avoid any of these routes. And that is precisely what the Springfield Functional Configuration does.

But, inexplicably, PPL Electric did not even study the likely environmental impact associated with the Springfield Functional Configuration. That option avoids the construction of a new substation and involves the construction of a much shorter, lower-voltage transmission line (only three or four miles of a 69 kV circuit, rather than seven miles of a 138 kV circuit) through a very different portion of the region. Further, as described below in greater detail, the

transmission line for this alternative does not appear to go through any significant amount of woodlands or floodplain, does not involve construction in a Resource Protection District, and it is far removed from the Tohickon Creek or any outstanding natural areas. This option has the added benefit of placing a new transmission line near one of the areas that is experiencing significant load growth – the area near the Quakertown interchange of the Pennsylvania Turnpike.

In summary, as Springfield Township discusses in detail in the remainder of this section, PPL Electric erred as a matter of law when it failed to include environmental and land use impacts in its decision to select the PPL Electric Functional Configuration over the Springfield Functional Configuration. Springfield Township submits that if PPL Electric had objectively considered such environmental and land use impacts in its decision-making process, the Springfield Functional Configuration would have been found to be the preferred option. Of course, we cannot know this for certain because PPL Electric never did the analysis. Thus, at a minimum, the Commission should direct PPL Electric to conduct such studies and to include objective measures of environmental and land use impacts for the Springfield Functional Configuration in its decision-making process.

## **1. PPL Cross County Line**

### *a) Description*

PPL Electric's proposed Cross Country Line would replace the existing single-circuit 69 kV line from PPL Electric's Coopersburg substation (in Upper Saucon Township, Lehigh County) to its existing Buxmont - Quakertown 69 kV transmission line (the line runs primarily along State Route 309) in Richland Township, Bucks County. PPL Exh. 1, Exh. C, p. 2. The

new line would be a double-circuit line designed to operate at 138 kV (but initially it would operate at 69 kV) along a new right-of-way. The existing line is approximately 5.4 miles in length and uses 2/0 copper conductor. PPL Electric Exh. 1, Exh. A, p. 10. The new line would be approximately 7.1 miles in length and would use 556 ACSR conductor. PPL Electric Exh. 4 (unnumbered page 7) and PPL Exh. 1, Exh. A, p. 10. The new line also would connect to a new 230 – 138/69 kV substation that PPL Electric proposes to build in Springfield Township, Bucks County, on an 85-acre site along Hickon Road.

***b) Engineering and Technical Considerations***

Springfield Township is not addressing this issue.

***c) Cost Considerations***

In November 2006, PPL Electric estimated that the new transmission line and substation would cost approximately \$36 million (expressed as a present value of revenue requirements). PPL Electric Exh. 1, Exh. A, p. 12. Of that amount, approximately \$14.0 million was projected to be the cost of the transmission line. Springfield Exh. 3, p. 2. That cost estimate, however, did not include increased operations and maintenance (O&M) costs associated with the proposed new substation. While O&M costs for a new transmission line are expected to be de minimis (Tr. 652-53), PPL Electric estimated that O&M costs for the new substation would total more than \$2.3 million over a 20-year period. Springfield Exh. 4. But those costs were not included in PPL Electric's November 2006 study. Tr. 727.

In PPL Electric's November 2006 cost estimate, it was assumed that the new transmission line would be only 6.0 miles in length. Springfield Exh. 1, p. 11. PPL Electric also projected at that time that it would cost approximately \$7.3 million to construct the new line,

with another \$4.9 million for siting (those figures were expressed in 2006 dollars and were then adjusted for inflation and taxes to develop estimated annual revenue requirements which were discounted back to 2006). Tr. 726-27.

By January 2008, however, the length of the new line had increased to 7.1 miles and its construction cost was estimated to be \$8.5 million. PPL Electric Exh. 4 (unnumbered pages 1 and 7).<sup>6</sup>

When comparing the cost of its preferred approach to the other options, PPL Electric used both sets of costs. The cost of the entire functional alternative (including the proposed new substation) were compared to the Springfield Functional Configuration using the November 2006 cost estimates. The cost of only the transmission line (construction and siting) along the Cross Country Corridor was compared to the costs of building the line along the SEPTA Corridor and Route 309 Corridor using the January 2008 cost estimates.

***d) Real Estate Interest and Right-of-Way***

Springfield Township is not addressing this issue.

***e) Environmental Impact***

PPL Electric describes a portion of the Cross Country Corridor in Springfield Township as follows: “[T]he line turns to the southeast for approximately 1.9 miles to the Richland Township border at Hickon Road. The area is mostly wooded. National Wetland Inventory Maps note the presence of several wetland areas. This section of [the Cross Country Corridor] crosses two tributaries of Tohickon Creek.” PPL Exh. 1, Exh. C, p. 7.

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<sup>6</sup> The same exhibit shows that PPL Electric’s estimate of the siting costs decreased from \$4.9 million in November 2006 to \$4.6 million in January 2008. PPL Electric Exh. 4 (unnumbered p. 9). That estimate is questionable, however, because it continues to be based on a line length of only 6.1 miles, rather than the correct length of 7.1 miles. *Id.* (unnumbered p. 13).

The line would then continue south to Richland Township, where the line route is described as “3.9 miles across areas of open land, woodlands and farmland. This alternative crosses Tohickon Creek several times ...” Id.

In total, PPL Electric estimates that approximately 5 miles of the 7.1 mile length of the Cross Country line would involve the clearing of wooded areas. Tr. 645; PPL Electric Exh. 4 (unnumbered page 7). PPL Electric summarizes other impacts of the Cross Country Corridor as follows: 4.87 acres of wetlands, 1.44 miles in the floodplain, 13 stream crossings, and 46.3 acres of woodlands lost. PPL Electric Exh. 1, Exh. C, p. 13.

PPL Electric witness Mellon summarized the habitat loss associated with the Cross Country Route, as follows: “approximately 7 acres of core forest and approximately 42 acres of edge habitat will be cleared for the proposed cross country right-of-way and an additional 48 acres of core forest habitat will become edge habitat.” PPL Electric St. 15-R, p. 20.

Mr. Mellon then described as follows the impact associated with this loss of habitat:

In the new edge habitat, interior forest species will continue to breed, but these individuals generally will have reduced breeding success rates. The seven acres of core forest and 42 acres of edge habitat within the right-of-way will be lost as breeding habitat for interior forest species, but not for open area species which will move into the cleared habitat. So the overall number of breeding individuals in the seven acres may not change drastically, just the composition. The question then becomes which species are more important and why, the interior forest species or the open area species.

Id., p. 21. Mr. Mellon also concluded that this type of forest fragmentation should be avoided.

Specifically, he testified: “In northern Bucks County, where large areas of unfragmented forest exist, fragmentation should be avoided, where possible ...” Id., p. 22.

In other words, cleared forested land will negatively affect plant and animal species that thrive in an interior forest habitat. New species may come into the newly cleared area – some of which are native to the area and some of which are not (known as “invasive” species). But there

is no question that the natural environment will be significantly affected. And, as Mr. Mellon stated, in northern Bucks County, this type of forest fragmentation should be avoided, if possible.

Springfield Township's environmental expert, Mr. Gallagher, concurs with Mr. Mellon's assessment. Mr. Gallagher further explained the harm from the type of forest fragmentation that would result from the Cross Country Route, stating:

Large habitat patches are critical for maintaining viable populations of area-sensitive species while fragmented patches of forest habitat support fewer species and smaller populations of species that are sensitive to habitat change.

Springfield St. 2, Exh. MG-2, p. 31.

Mr. Gallagher also highlighted the fact that the Pennsylvania Game Commission's Wildlife Action Plan states that one of its goals is to "minimize fragmentation of remaining, large contiguous forest tracts." The plan further states: "The largest forest blocks, especially those within well-forested landscapes, should be targeted for protection efforts. These large blocks represent the foundations from which conservation actions should begin for the mature forest suite of species ..." Id.

Moreover, the environmental impact cannot be assessed simply by counting the number of acres that would be cleared. Mr. Gallagher found – using data from Mr. Mellon's own report – that the forested areas that would be cleared included several bird species of conservation concern, including species listed by the Game Commission in its Wildlife Action Plan. Mr. Gallagher describes the reasons for concern with these species in some detail (id., pp. 31-32) and concludes: "Clearly, the species listed above are all indicators of high quality forest communities and are sensitive to disturbance such as that related to fragmentation and edge effects. Transmission line corridors also create edge habitat that is avoided by habitat-sensitive birds and utilized by more common generalist species and nest predators ..." Id., p. 32.

In addition, Springfield Township presented the testimony and report of Dr. Ann Rhoads, one of the preeminent botanists in Pennsylvania, to discuss the impacts of the proposed Cross Country Route on sensitive plant species.<sup>7</sup> Dr. Rhoads concluded that four plant species listed by the Pennsylvania Natural Heritage Program (PNHP) were present in or near the Cross Country Corridor. These plant species are listed by PNHP as being rare, vulnerable, or on the watch list. Springfield St. 3, pp. 5-6. In each instance, the designation means that the plant species are in danger and are deserving of protection. Springfield St. 3-SR, pp. 2-3.

Finally, all of these experts agree that PPL Electric's Cross Country Route will also affect numerous sensitive wetlands, vernal pools, and forested areas in the Tohickon Creek floodplain (known as riparian forests).

Wetlands: PPL Electric acknowledges that the Cross Country Corridor would affect several acres of wetlands. PPL Electric originally stated that approximately 4.87 acres of wetlands would be affected. PPL Electric Exh. 1, Exh. C, p. 13. Mr. Mellon subsequently prepared a report that showed approximately 12 acres of wetlands would be affected. See Springfield St. 2, Exh. MG-2, p. 25. Mr. Mellon later explained, however, that this 12-acre estimate was very conservative, so it is likely that the acreage affected may be less than that. PPL Electric St. 15-R, p. 5. There is no support, however, for the 4.87 acres included in PPL Electric's Exhibit 1. Springfield witness Gallagher also reviewed wetlands data and maps and found that the impacted areas were likely to be closer to the 12 acres indicated in Mr. Mellon's report. Springfield St. 2, Exh. MG-2, p. 25.

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<sup>7</sup> Dr. Rhoads is a Senior Botanist with the Morris Arboretum and an Adjunct Professor in the Biology Department of the University of Pennsylvania. She performs botanical surveys for the Pennsylvania Bureau of State Parks and is a former President of the Pennsylvania Biological Survey. She is the author of two seminal works on Pennsylvania plant life: *The Plants of Pennsylvania, an Illustrated Manual* (2<sup>nd</sup> edition published in 2007) and *Trees of Pennsylvania, a Complete Reference Guide* (published in 2005). She also has extensively studied the plant life of Bucks County for the Bucks County Commissioners. Springfield St. 3, Exh. AFR-1.

Vernal pools: Vernal pools are areas that are filled with water in winter and spring which are important breeding sites for various species. Springfield St. 3, p. 7. Dr. Rhoads found that several vernal pools would be destroyed by the Cross Country Corridor. As she explained:

[Vernal pools] are important because they serve as breeding sites for frogs, toads, and salamanders, providing a safe haven for them to complete the aquatic stage of their life cycle. Vernal pools must be surrounded by forest in order to provide habitat for terrestrial forms of these animals. In addition, three of the previously identified plant species of concern ... are plants of forested riparian corridors. The Cross Country Route would destroy the riparian forest which is habitat for these plants.

Id. (emphasis added).

While there is some dispute among the experts about the precise impact that the loss of vernal pools might have, PPL Electric witness Mellon acknowledges that several vernal pools would be affected by the Cross Country Corridor and that at least some loss of animal life will result. He concludes, rather cavalierly: "I note that this does not mean there will be no increase in mortality due to construction and maintenance of the right-of-way. Instead, I am stating that the existing research and evidence suggests that there may not be a substantial loss of these animals." PPL Electric St. 15-R, p. 17.

Riparian forest: Riparian forests are woodlands that are near streams and other bodies of water. Dr. Rhoads describes the importance of riparian forests as follows:

The value of riparian forests in maintaining water quality and quantity in streams has been demonstrated again and again. Streams through forested areas are broad and shallow with maximum underwater surfaces for the maintenance of aquatic life which generate oxygen and reduce pollutants. Shading helps to maintain cool water temperatures important to aquatic vertebrates and invertebrates. Native vegetation along stream banks is also an important part of the food chain.

Forested riparian also increase filtration of surface water flowing into streams thereby reducing siltation and water pollution. Forest cover permits maximum percolation of rain and snow water into the ground to maintain water aquifers.

Springfield St. 3, pp. 8-9.

Much of the Cross Country Corridor would involve the destruction of the forest cover that is so important to the Tohickon Creek. As Dr. Rhoads concluded: “Because so much of the proposed PPL Cross Country corridor lies along the Tohickon Creek and its headwaters tributaries, the potential for damage to stream ecosystems through deforestation of the riparian zone is great.” *Id.*, p. 9.

Similarly, Dr. Silldorff (a stream ecologist who is one of the authors of the Upper Tohickon Rivers Conservation Plan) testified to “emphasize the remarkable quality of the Upper Tohickon Creek.” Tr. 277. He testified that the conservation plan is focused on the “preservation and restoration of stream-side riparian forests.” Tr. 278. Importantly, he stated: “To maintain the current health of the streams under consideration tonight, disturbances to the riparian forests should be avoided or minimized. Failure to protect the riparian corridors will lead to the loss of species from these streams through degradation of both the water quality and the in-stream habitats.” Tr. 278. Finally, he concluded by emphasizing “the healthy condition of the Upper Tohickon streams near the proposed transmission corridor routes. These streams are sensitive to human disturbance, particularly disturbance within the riparian corridors ....” Tr. 279.

Dr. Kyde (a biologist who directed the Lower Tohickon Watershed Conservation Plan) echoed these concerns when she testified as follows: “[I]t is very bad policy to cut an open swath through an unbroken contiguous forest, or to destroy the major part of the protective riparian vegetation of a stream segment.” Tr. 349. She explained that the impacts of cutting through a riparian forest include warming the water which will kill off certain temperature-sensitive organisms, as well as “edge effects” that can make interior forest animals “vulnerable to predator species” that normally would not gain access to the interior forest. Tr. 351-352.

Mr. Mellon does not address this issue, but another PPL Electric environmental expert, Mr. Foote, discusses some of the impacts of clearing the right-of-way. Mr. Foote concludes that if PPL Electric retained a “20-foot high tree canopy adjacent to the Creek [it] would adequately shade this part of the stream.” PPL Electric St. 21-R, pp. 2-3. Mr. Foote suggests that: “As a result, within the Tohickon Watershed, PPL Electric will only alter the riparian condition adjacent to one densely forested stream for a small portion of its length.” *Id.*, p. 3.

Springfield Township witness Rhoads responded by noting that Mr. Foote’s testimony as based on a fallacy. Specifically, Dr. Rhoads testified:

It might be true that a 20-foot tree canopy would provide adequate shade to avoid serious habitat destruction, but I do not consider it either reasonable or accurate for Mr. Foote to assume that PPL’s policies would result in a 20-foot tree canopy.

When PPL states that it will not remove vegetation that will grow less than 20 feet in height, that is not the same as saying that there will be a 20 foot tall canopy remaining. Most understory trees will grow more than 20 feet high and I would expect PPL to remove them. Vegetation that will grow less than 20 feet means shrubs, including perhaps large shrubs such as alder and witch-hazel, and herbaceous species.

That is, the remaining vegetation is likely to be considerably less than 20 feet in height and is unlikely to include many, if any, shade trees. From what I have observed in this region, the canopy under PPL’s transmission lines is likely to be much less than 20 feet in height and would not qualify as forested buffer.

Springfield St. 3-SR, pp. 8-9.

In other words, PPL Electric acknowledges that the Cross Country Route will have at least some adverse effect the forested riparian area that is so important to protecting the Tohickon Creek watershed. While there is a dispute about the extent of that impact, there is no doubt that there will be at least some impact on the Creek. As one witness stated: “PPL’s plan basically undoes all the accomplishments of the Preservation Board and the Tohickon River’s Conservation Plan.” Tr. 357 (Ms. Fedorocsko).

In summary, while the parties disagree about some of the details, the environmental experts for PPL Electric and Springfield Township, as well as those who testified at the public hearings, agree that there will be significant environmental impacts from the proposed Cross Country Route. These impacts include the loss of habitat that supports important plant and animal species in the region, and likely impacts on the water quality of the Tohickon Creek and its tributaries. These impacts would result from PPL Electric's plan to clear dozens of acres of woodlands including important riparian forest, which will result in fragmenting an important, unfragmented forested area in northern Bucks County. In addition, there will be considerable construction in the floodplain, including an estimated 13 stream crossings of the high-quality Tohickon Creek and its tributaries.

Importantly, as Springfield Township discusses below, all of these impacts would be avoided if PPL Electric pursued the Springfield Functional Configuration.

*f) Health and Safety*

*iii. Use of Herbicides*

Due to the proximity of the proposed line to the Tohickon Creek and its watershed, PPL Electric should be prohibited from using any type of aerial spraying of the line along this corridor. PPL Electric has stated that it does not use aerial spraying and that it will follow strict procedures for the application of herbicides. PPL St. 2-R (Kuhns), pp. 13-14. Mr. Kuhns also states that PPL Electric will not use herbicides if the landowner does not consent to their use. Id., pp. 14 and 38-39. If Springfield Township's objections to the project are denied and PPL Electric is permitted to construct the transmission line along the Cross Country Corridor, Springfield Township would not object to PPL Electric's procedures regarding the use of

herbicides and would suggest that they be included as specific conditions to the approval of PPL Electric's Application.

## **2. Route 309**

### *a) Description*

The main section of the Route 309 Corridor is approximately 5.4 miles long. It begins at the Coopersburg substation and follows PPL Electric's existing right-of-way to the existing Buxmont – Quakertown transmission line. PPL Exh. 1, Exh. C, p. 8.

The Route 309 Corridor, however, is located approximately two miles away from the Hickon Road Substation Site. Tr. 630-631, 637-638. Further, the connection between the corridor and the substation requires two double-circuit lines, so the two mile distance from the substation actually adds approximately four miles to the length of the line route. *Id.* Thus, PPL Electric's Application shows the length of this line route as being 9.59 miles. PPL Exh. 1, Exh. C, p. 8.

In fact, though, there are other substation sites available that are very close to the Route 309 Corridor and existing 230 kV transmission lines. PPL Electric actually owns one such site (Tr. 797-800) and other potential sites in the Corridor (an area zoned for commercial and industrial uses; PPL Exh. 1, Exh. A, Map 3) were identified at the public hearing (Tr. 340).

As PPL Electric witness Kuhns acknowledged, if it had decided to pursue the Route 309 Corridor (or the SEPTA Corridor, which is close by), it would have tried to use a substation site closer to the corridor than the Hickon Road Site. Tr. 798-799. Mr. Kuhns also testified that the Hickon Road Site was purchased because of its proximity to the Cross Country Corridor (Tr.

798), not because it was a reasonable location for a substation if the Route 309 Corridor were used.

***b) Engineering and Technical Considerations***

Springfield Township is not addressing this issue.

***c) Cost Considerations***

PPL Electric has estimated the cost of the Route 309 Corridor option to be \$25.2 million. PPL Exh. 1, Exh. C, p. 15; PPL St. 3, p. 9; PPL Exh. 3. Approximately \$6.6 million of that cost is for connecting the Route 309 Corridor to the Hickon Road Substation Site. Tr. 637-638; PPL Exh. 3 (unnumbered page 12).

***d) Real Estate Interest and Right-of-Way***

Springfield Township is not addressing this issue.

***e) Environmental Impact***

There is considerable dispute about the environmental impact associated with the Route 309 Corridor. The existing transmission line runs along this corridor and, while PPL Electric may need to widen its right-of-way in some locations, the environmental impact associated with the main portion of the line should be relatively minor. Springfield St. 2, Exh. MG-2, pp. 24-25.

If, however, the Route 309 Corridor must be connected to the Hickon Road Substation Site – and not to a much closer substation site – then there would be a significant environmental impact. Much of the area between Route 309 and the Hickon Road Site is wooded and there would be a substantial impact if two, two-mile transmission lines were built through that area. For that reason, PPL Electric shows that the Route 309 Corridor would impact approximately

four acres of wetlands and 51 acres of woodlands and involve 15 stream crossings. PPL Electric Exh. 1, Exh. C, p. 13. Most of those impacts are associated with the connection between the corridor and the Hickon Road Site.

PPL Electric witness Mellon confirmed this when he testified as follows:

Along the east-west line from the Springfield substation to the SEPTA and Route 309 alternative routes, approximately 9 acres of core forest and 31 acres of edge forest will be cleared and 35 acres of core forest will become edge forest.

PPL Electric St. 15-R, p. 20. In contrast, the main portion of the Route 309 Corridor would involve clearing only 10 acres of edge forest. Id. Thus, the environmental impact associated with the main portion of the Route 309 Corridor is relatively small, but the connection of that corridor to the Hickon Road Site would cause a significant environmental impact – involving the clearing of at least four times as much woodland as the main corridor itself.

*f) Health and Safety*

Springfield Township is not addressing this issue.

**3. SEPTA Rail Corridor**

*a) Description*

The main section of the SEPTA Corridor is approximately 5.7 miles long. It begins at the Coopersburg substation and follows SEPTA's existing right-of-way for the Bethlehem Branch railroad to a connection with the existing Buxmont – Quakertown 69 kV transmission line. PPL Exh. 1, Exh. C, pp. 4-5.

As is the case with the Route 309 Corridor, the SEPTA Corridor also is located approximately two miles away from the Hickon Road Substation Site. Tr. 630-631. Further, the connection between the corridor and the substation requires two double-circuit lines, so the two

mile distance from the substation actually adds approximately four miles to the length of the line route. *Id.* Thus, PPL Electric's Application shows the length of this line route as being 9.45 miles. PPL Exh. 1, Exh. C, p. 4.

The same concerns with the substation location for this option exist as were discussed for the Route 309 Corridor, above.

***b) Engineering and Technical Considerations***

Springfield Township is not addressing this issue.

***c) Cost Considerations***

PPL Electric has estimated the cost of the SEPTA Corridor option to be \$31.0 million. PPL Exh. 1, Exh. C, p. 15; PPL St. 3, p. 9; PPL Exh. 2. Approximately \$6.2 million of that cost is for connecting the SEPTA Corridor to the Hickon Road Substation Site. Tr. 633; PPL Exh. 3 (unnumbered page 12).

***d) Real Estate Interest and Right-of-Way***

Springfield Township is not addressing this issue.

***e) Environmental Impact***

The environmental impact associated with the SEPTA Corridor is essentially the same as the impact from the Route 309 Corridor, and it is primarily the result of PPL Electric's assumption that the corridor would be connected to the Hickon Road Substation Site. See section IV.C.2.e for a discussion of those impacts.

***f) Health and Safety***

Springfield Township is not addressing this issue.

#### 4. Springfield Functional Route

PPL Electric developed the Springfield Functional Alternative and PPL Electric acknowledges that this option would meet all of the reliability requirements in the region at least through the end of the study period (the year 2020). Springfield Exh. 6, p. 16; Tr. 724.

Springfield's electrical engineering expert, Mr. Lanzalotta, reviewed PPL Electric's analysis and confirmed that, in fact, this option would meet all of the region's transmission reliability needs throughout the study period. Springfield St. 1, p. 32.

In addition to meeting the region's reliability needs, Mr. Lanzalotta also found that this option (called "Alternative 2" in his testimony) had several other benefits. He summarized the benefits of the Springfield Functional Configuration as follows:

In fact, there are a number of reasons to prefer Alternative 2. The cost differential of \$5 million in terms of present value revenue requirements, or about 14%, is offset by some attractive benefits of Alternative 2. Alternative 2 requires no new substation. Instead, Alternative 2 makes more complete use of the Company's existing substation sites. As I mentioned earlier in my testimony, a number of the smaller transformers that supply the 69 kV system in the Region are 40 years old or older. Much of the substation infrastructure that connects these transformers to the system is sized to the demands of these small, old transformers and would have to be replaced if larger transformers are used to replace these small transformers, as described by the Company in the above quote. However, by rebuilding the existing substation facilities as described in Alternative 2, the Company increases its utilization of these substation locations and can avoid the need to build a new substation.

In addition, by eliminating the need for a new substation, Alternative 2 removes the need to reroute the rebuilt Coopersburg 69 kV Tap along virgin right of way so as to intersect the location of the new substation proposed by the Company. Instead, Alternative 2 provides for reconductoring the existing Coopersburg 69 kV Tap with 556 ACSR conductor to more than double its capacity.

It may be slightly less expensive to build a new substation than it is to rebuild and modernize facilities in an existing substation. But, the new substation is not needed if existing substations can be rebuilt to replace old facilities, or if capacity can otherwise be added at the existing substation sites, as is the case with Alternative 2. Similarly, building a new transmission line along a largely virgin

right of way, as proposed by the Company for its preferred approach to rebuilding the Coopersburg Tap, may be somewhat less expensive or less complicated than rebuilding an existing, in-service, transmission line. However, the need for new transmission right of way for the proposed rebuilt Coopersburg Tap is eliminated in Alternative 2, which provides only for reconductoring the existing line that makes up the Coopersburg Tap.

In my opinion, it is preferable to make better use of existing substation sites and existing transmission line rights-of-way to meet projected needs, if it is possible to do so, as opposed to building a new substation or new transmission lines in locations or along routes that currently do not have such facilities.

Springfield St. 1, pp. 26-27 (emphasis added).

In other words, the Springfield Functional Configuration would allow PPL Electric to reliably serve the region for the entire study period while avoiding much of the environmental impact associated with the Cross Country Corridor or the other options to implement the PPL Electric Functional Configuration. The Springfield Functional Configuration would maximize the use of PPL Electric's existing facilities in the region, including upgrading substations and transmission lines that are more than 40 years old.

This is eminently reasonable. Rather than essentially abandoning its existing facilities (or allowing them to continue in service until they fail), PPL Electric should be required to upgrade its existing substations and transmission lines before it can justify the taking of additional property – and the destruction of important environmental resources – for a new substation and transmission line.

As Springfield Township explains below, the Springfield Functional Configuration is a reasonable, cost-effective, and environmentally responsible solution to the region's electric transmission needs.

*a) Description*

The Springfield Functional Configuration consists of a series of projects that would enhance and upgrade the use of PPL Electric's existing regional transmission lines and substations. In addition, this option would include the construction of a new three- or four-mile transmission line in the southwestern portion of the study area, between Milford and Quakertown.<sup>8</sup>

Specifically, the Springfield Functional Configuration includes the following project elements:

- By 2009: Reconductor the existing Coopersburg 69 kV tap using high-capacity 556 ACSR conductor (replacing the existing 2/0 copper conductor)
- By 2009: Reconductor the existing Quarry #1 – Coopersburg 69 kV tap between Seidersville and Coopersburg substation with high-capacity 556 ACSR conductor (replacing the existing 2/0 copper conductor)
- By 2011: Rebuild the single circuit 69 kV line between Hosensack substation and Milford substation with 556 ACSR conductor for double-circuit 138/69 kV operation
- By 2011: Construct a new approximately three mile double-circuit transmission line from Milford substation to the Buxmont – Quakertown 69 kV transmission line using 556 ACSR conductor
- By 2011: Upgrade the Hosensack substation by (a) installing a new 69 kV bay, (b) replacing three existing 75 MVA transformers with 150 MVA transformers, and (c) replacing overdutied circuit breakers.

Springfield St. 1 at 23-24; PPL Exh. 1, Exh. A, p. 10.

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<sup>8</sup> The Springfield Functional Configuration, as set forth by PPL Electric, also includes various projects that would occur well after the year 2020. Neither the cost nor other issues associated with those longer-term projects are addressed here, in order to be consistent with PPL Electric's presentation of the PPL Functional Configuration which also excludes projects that might be needed after 2020. See Springfield Exh. 3 and Tr. 719-721.

*b) Engineering and Technical Considerations*

Electrical engineering experts for PPL Electric and Springfield Township debated several issues related to the technical considerations involved in constructing the Springfield Functional Configuration. PPL Electric asserts that there might be some difficulty in moving load onto other circuits during substation upgrades, which would require the construction of a temporary substation. Springfield's engineering expert does not believe this would be necessary, especially if the work can be performed during non-peak months. Compare PPL Electric St. 1-R, p. 3 and Springfield St. 1-SR, pp. 1-4.

On the other hand, Mr. Lanzalotta stated that it was equally likely that a more detailed engineering analysis of the Springfield Functional Configuration could lower the cost of the project. Thus, he testified:

In reviewing [the Springfield Functional Configuration], I identified instances where a more thorough planning process might result in modifications that could reduce the option's cost and potentially further maximize the use of existing facilities. For example, [the option] contemplates the construction of a new transmission line on a new right of way between the Milford substation and the Buxmont – Quakertown #1 and #2 69 kV lines around 2011. It appears to me, however, that it might be possible to provide much of the same reliability benefit by reconductoring and otherwise enhancing the existing line between Milford and the Buxmont – Quakertown #2 69 kV line. This would actually shorten the length of the line and avoid the need to construct a line along virgin right of way. Simply, if PPL chose to pursue [the Springfield Functional Configuration], I would expect it to further refine its plans, improve the utilization of its existing facilities and rights of way, and possibly achieve cost savings.

Springfield St. 1 at 31-32.

Springfield submits that this and the other engineering disputes are not significant. They might slightly affect the ultimate project cost of the Springfield Functional Configuration – just as the current cost estimate of the Cross Country Corridor increased by more than 15% between November 2006 and January 2008 (largely because a more precise identification of the route

resulted in the line being one mile longer than originally anticipated). Such changes are to be expected, and some costs will increase while others will decrease as the project is more precisely defined. As PPL Electric witness Krizenoskas testified:

Q. So it's fair to say that the November, 2006 study looking at these functional Alternatives was somewhat preliminary in nature and both of these Alternatives would be fine tuned over time if you decided to build them, right?

A. Correct.

Q. You might find things that increase the cost like the line being a mile longer, or you might find things that decrease the cost like being able to use a smaller conductor, correct?

A. Correct.

Tr. 738-739.

There is no question that the Springfield Functional Configuration is a technically feasible project. PPL Electric knows how to reconductor existing transmission lines and upgrade substation capacity. While there is some uncertainty over the cost of the project, that is to be expected because PPL Electric did not perform the same level of detailed analysis (after November 2006) for this configuration as it did for the Cross Country Corridor.

*c) Cost Considerations*

In November 2006, PPL Electric estimated the cost of the Springfield Functional Configuration to be \$41 million, expressed as a present value of revenue requirements. Springfield Exh. 3; PPL Exh. 1, Exh. A, p. 14. This is approximately \$5 million more than the \$36 million estimated cost of the PPL Electric Functional Configuration prepared at the same time. Springfield Exh. 3; PPL Exh. 1, Exh. A., p. 12.

That is, the estimated cost difference at that time was approximately 14 percent. Springfield Township submits that a cost difference of this magnitude is not significant,

particularly given the uncertainties involved in those cost estimates. At that time (and even as of early 2008 when it filed this case), PPL Electric had not performed the detailed engineering or siting work for either project. Tr. 623-624. Further, the cost estimates did not include O&M costs for the substation, which PPL Electric has estimated to be approximately \$100,000 per year (which would increase the present value of revenue requirements by at least one million dollars or more for the PPL Electric Functional Configuration). Springfield Exh. 4.

Moreover, as discussed above, as projects are fine-tuned opportunities for cost savings are identified, as well as factors that lead to increased costs. Indeed, when it prepared those November 2006 cost estimates, PPL Electric used contingency factors of 30 percent for labor, materials, and other significant cost components. Springfield Exh. 1, p. 6 and Springfield Exh. 2, p. 6. As PPL Electric witness Keeler explained, contingencies of that size were necessary because of the preliminary nature of these cost projections:

Normally when we start out estimating a project if we don't have a route picked we usually put a 30 percent contingency on that because we really don't know where it is going to go. It could go a circuitous route or it could go direct. As the project time frame advances and we become more aware of exactly where the line route might be or a better location for the line route then we decrease that contingency because the uncertainties go down.

Tr. 622.

Given the extent of these uncertainties, Springfield Township submits that it was arbitrary and capricious for PPL Electric to eliminate the Springfield Functional Configuration on the basis of cost, without considering each project alternative's impact on the environment and land use. That is, the two functional configurations were close enough in cost (differing by less than 15%, or only one-half of the contingency factor being used), that a more detailed environmental and land use assessment should have been performed before deciding on a preferred alternative.

Indeed, as one Springfield Township resident wisely observed: “The biggest cost of this [the Cross Country] route, if it was to be approved, would be the environment, the clear-cutting of trees which would lead to land erosion and water runoff which would eventually lead to worse flooding.” Tr. 128 (Mr. Hemmert).

*d) Real Estate Interest and Right-of-Way*

Springfield Township is not addressing this issue.

*e) Environmental Impact*

The environmental impact of the Springfield Functional Configuration has not been studied – and that is the fundamental flaw in PPL Electric’s case. PPL Electric made a decision not to pursue this option without conducting any environmental or land use analysis, let alone comparing the environmental and land use impacts to those associated with the PPL Electric Functional Configuration.

From the maps that PPL Electric has provided, as well as the very cursory testimony on this issue, it appears that any environmental impacts associated with this option will be minimal compared to those associated with construction of the Cross Country Corridor or any of the other options to implement the PPL Electric Functional Configuration.

Initially, the Springfield Functional Configuration does not require a new substation, so there are no impacts associated with the construction and operation of a substation. Further, all of the work during the study period (through the year 2020) involved in the Springfield Functional Configuration would occur in existing substations or along existing transmission rights-of-way, with one exception. That exception is the construction of a new transmission line

from the Milford Substation to the existing Coopersburg Tap north of Quakertown (this is being referred to generally as the “Milford-Quakertown line”).

PPL Electric witness Kuhns describes one likely route for the Milford-Quakertown line as follows: “Alternative 1 would generally run parallel to State route 663 and is 4.08 miles in length. Based on the available mapping, it appears that this alternative would not traverse any critical plant or animal habitat areas ....” PPL Electric St. 2-R (Supplemental), p. 4.

The maps that PPL Electric provided as part of its Application (the maps are in PPL Exhibit 1, Exhibit A) confirm this fact. Map 3 shows that existing zoning along this portion of Route 663 is a mix of Rural Residential, Suburban Residential, Commercial, and Light Industrial. There are no Environmental Protection zones in this portion of the study area, and only a small portion of the route would be in a floodplain (where Route 663 already exists).

Map 6 shows that while there are two wooded areas adjacent to Route 663, those wooded areas are small and already have Route 663 cutting through them.

Thus, while we do not have an environmental analysis of this route, it appears unlikely that the environmental impacts would be significant, and they certainly would not of the magnitude anticipated with the Cross Country Route or the other options to implement the PPL Electric Functional Configuration.

*f) Health and Safety*

Springfield Township is not addressing this issue.

## **D. PROPOSED CONFIGURATIONS RE: SUBSTATION**

### **1. Coopersburg Tap**

#### *a) Description*

According to PPL Electric, the proposed Springfield Substation would be a 230 – 138/69 kV substation located on approximately seven acres of an approximately 85 acre site. PPL St. 12, p. 8. The substation installation will include a control equipment building that will be approximately 40 feet by 60 feet in size. Id., p. 9.

#### *b) Engineering and Technical Considerations*

Springfield Township is not addressing this issue.

#### *c) Cost Considerations*

In November 2006, PPL Electric estimated that the cost to construct the new Springfield Substation would be approximately \$13.9 million (expressed as a present value of revenue requirements). Springfield Exh. 3. PPL Electric has not provided any update of this cost estimate.

#### *d) Real Estate Interest and Right-of-Way*

Springfield Township is not addressing this issue.

#### *e) Environmental Impact*

Springfield Township is not asserting that there is an adverse environmental impact associated with the construction of the substation as such. Rather, the adverse environmental impacts from the proposed Cross Country Corridor are directly related to the location of the substation in a relatively undeveloped portion of the Township's Resource Protection District.

Similarly, the bulk of the environmental impacts associated with the Route 309 Corridor and SEPTA Corridor are a result of PPL Electric's unreasonable assumption that those transmission routes would need to connect to a substation at the Hickon Road Site – a location that is approximately two miles away from those transmission corridors.

*f) Health and Safety*

Springfield Township is not addressing this issue.

## **2. Springfield Functional Configuration**

The relevant issues for the Springfield Functional Configuration are addressed in section IV.C.4, above.

### **E. COMPLIANCE WITH APPLICABLE STATUTES AND REGULATIONS**

At this point in PPL Electric's process, it is not possible to know whether it will be able to comply with applicable environmental statutes and regulations. On April 30, 2008, the Pennsylvania Department of Environmental Protection (DEP) sent a letter to PPL Electric to express numerous concerns about the proposed project. That letter concluded:

Of all of the alternatives, the Cross Country Route appears to have the most environmental impact. The loss or degradation of intact forested tracts, intact forested stream buffers, and wetlands should be considered. PPL has considered the potential impact to homes in their review. However, the possibility of degraded streams and wetlands, and the prospect of increased flooding due to the loss of buffers should also be considered. This area of Bucks County is largely groundwater dependent and impacts on water wells by possible groundwater contamination and/or diminution should be considered.

Springfield Exh. 15, p. 4.

In reaching those conclusions, DEP relied on the following factors, among others:

- “[T]he construction and maintenance of the Cross Country Route will cause significant fragmenting of large expanses of intact forests” (*Id.*, p. 2)

- “Construction of the Cross Country Route will destroy or degrade several miles of intact riparian and upland forest within the Tohickon Creek watershed.” (Id.)
- “[T]he required periodic maintenance of the completed line, which will include exclusion of tall growing trees using chemical and mechanical methods, will deliberately and systematically prevent forested areas from becoming reestablished.” (Id.)
- “Since this area comprises the headwaters of Tohickon Creek, the presence of intact forested stream buffers is especially important for controlling thermal pollution, providing habitat for aquatic and wetland flora and fauna, controlling erosion and sedimentation, and providing adequate groundwater recharge. The value of forested riparian buffers is well documented and it appears that the long-term effects on this resource have not been considered by PPL ...” (Id., pp. 2-3)
- “Construction and maintenance of the Cross Country Route will create a new linear pathway for invasive plants to colonize and move into previously undisturbed, natural settings. Invasive plants degrade habitat and crowd out native plants. Disturbance in intact forested areas should be avoided in order to prevent invasive plants from spreading.” (Id., p. 3)

PPL Electric witness Kuhns (to whom DEP’s letter was addressed) stated that PPL Electric had not responded to DEP’s letter. Tr. 816. At this time, therefore, it is unclear whether and how PPL Electric would be able to meet DEP’s concerns and obtain the necessary permits to construct the Cross Country Route and associated facilities. See also Springfield St. 2, pages 12-14 and Exhibit MG-2, pages 14-22, where Mr. Gallagher discusses some of the permitting obstacles that PPL Electric may face for the Cross Country Corridor (including permits from the US Army Corps of Engineers and from DEP).

## **V. EMINENT DOMAIN**

Springfield Township is not addressing this issue.

## VI. EXEMPTION FROM LOCAL ZONING

### A. LEGAL STANDARD

The Municipalities Planning Code requires public utilities to comply with local zoning ordinances for the construction of buildings unless the Commission “shall, after a public hearing, decide that the present or proposed situation of the building in question is reasonably necessary for the convenience or welfare of the public.” 53 P.S. § 10619.

With regard to utility facilities other than buildings, local zoning and land use ordinances do not apply. Instead, the Commission has the authority to regulate the siting, construction, and operation of such facilities. *Duquesne Light Co. v. Upper St. Clair Twp.*, 377 Pa. 323, 105 A.2d 287 (1954). Importantly, in that case the Supreme Court also specifically ruled that an electric transmission line is not a “building” and does not fall under that statutory exception. *Id.*, 377 Pa. at 333, 105 A.2d at 292. See also *Chester County v. Philadelphia Electric Co.*, 420 Pa. 422, 426, 218 A.2d 331, 333 (1966) (holding that counties also lacked authority to control the siting and operation of utility facilities).

Pennsylvania statutes enacted after these decisions, however, require that the Commission “consider and may rely upon comprehensive plans and zoning ordinances when reviewing applications for the funding or permitting of infrastructure or facilities.” 53 P.S. § 10619.2(a) and 53 P.S. § 11105(a)(2).<sup>9</sup> The statutes, however, also note that they do not limit the ultimate authority of the Commission – but they do require the Commission to consider local ordinances and comprehensive plans when reviewing applications. 53 P.S. § 11105(d).

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<sup>9</sup> Section 10619.2 was added by Act 68 of 2000. Section 11105 was added by Act 67 of 2000. Both were enacted on June 22, 2000, and took effect 60 days later.

In 2001, the PUC adopted a policy statement, 52 Pa. Code § 69.1101, to address these recently enacted statutes, the inter-relationship between local zoning and land use regulations, and the Commission’s review of various types of applications that could affect land use. The policy statement echoes the statutory provisions and states that the Commission “will consider the impact of its decisions upon local comprehensive plans and zoning ordinances” in cases involving electric transmission lines and utility buildings.

Thus, the Commission must consider how the proposed projects would affect local zoning and land use ordinances in the project area.

## **B. PPL’S REQUEST FOR EXEMPTION FROM LOCAL ZONING REGULATIONS**

Springfield Township’s zoning ordinance and comprehensive land use plan are designed to preserve the township’s irreplaceable natural resources, including the Tohickon Creek watershed, numerous family farms, and historic buildings that date back two centuries or more. C. Robert Wynn, the township’s engineer, testified concerning the purposes and goals of the township’s plan and how PPL Electric’s proposal is not consistent with the township’s plan.<sup>10</sup>

Mr. Wynn explained that the township’s zoning ordinance and comprehensive plan are designed to preserve the rural character of most of the township, while fostering commercial and industrial growth along the area bordering Route 309. This is important because the Route 309 area has the “road and utility infrastructure” to support such development. Springfield St. 4-SR, p. 4. As he explained: “we do not support industrial development in portions of the township that do not have the roads to support it. Much of the township is served by two-lane country

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<sup>10</sup> Mr. Wynn has been a registered professional engineer in Pennsylvania for more than 25 years. The engineering firm that he founded represents 11 municipalities, including Springfield Township, in the greater Lehigh Valley. Springfield St. 4, pp. 1-2. He assisted in the preparation of Springfield Township’s comprehensive plan and zoning ordinance. Springfield St. 4-SR, pp. 2-3.

roads that are not consistent with most industrial enterprises.” Id. Mr. Wynn continued to explain:

Other parts of the township, including the area where PPL proposes to build its substation and transmission line, are very rural in character and include important natural resources that the township is trying to protect. In those rural areas, higher-density development and industrial-type development is not permitted.

Id., pp. 4-5.

PPL Electric’s proposed substation, and most of the transmission line corridor through Springfield Township, would be located in the township’s Resource Protection District. The purpose of this zoning classification is to “protect areas consisting largely of natural features such as mature forest, steep slopes, scenic areas, wetlands, streams, floodplains and ponds including those identified in the latest version of the Bucks County Natural Resources Plan.” Springfield St. 2, p. 16.

Mr. Gallagher concluded that PPL Electric’s plans to clear acres of woodlands in the Resource Protection District are “in direct conflict with the purposes of the Resource Protection District.” Id.

In addition, PPL’s plan to construct portions of the transmission line directly along the Tohickon Creek are in conflict with the zoning ordinance’s restrictions on development within the floodplain. Springfield St. 4, pp. 6, 9-10.

While Springfield Township recognizes the authority of the Commission to override local zoning and land use requirements, the Commission can do so only when there is a need for the utility facilities. In this case, PPL Electric has several options that would be consistent with local zoning and land use requirements and still enable it to provide reliable electric service.

As discussed above, the Springfield Functional Alternative would meet all of PPL Electric’s requirements and would not involve the construction of any new facilities in

environmentally sensitive areas of Bucks County. Either the SEPTA Corridor or the Route 309 Corridor, with a substation appropriately located in Springfield Township's commercial and industrial area near Route 309, would meet the region's reliability needs without being in direct conflict with Springfield Township's zoning and land use requirements.

In other words, numerous plans are available to PPL Electric that would be consistent with local zoning and land use requirements. Inexplicably, PPL Electric has selected the one plan that would require massive exemptions to local requirements. There is no reason for the Commission to approve such a plan.

#### Recommended Conditions In The Event of Approval

If, however, the Commission disagrees with Springfield Township and approves PPL Electric's Cross Country Route and Hickon Road Substation Site, the Commission should place conditions on that approval to attempt to preserve some of Springfield Township's right to protect the natural environment in the township. Specifically, Springfield Township would urge the Commission to adopt the following conditions recommended by Mr. Wynn:<sup>11</sup>

1. Design and construction of the proposed substation should address Zoning Ordinance requirements of the Township, including regulations applicable to the specific zoning district in which the facility is located (the Resource Protection district), use regulations associated with Use F1, buffer requirements, and environmental protection standards of the Zoning Ordinance. Additionally, PPL should be required to submit a detailed engineered site plan to the Township for review, which contains design information and details associated with the proposed site access and any associated street improvements that are required to facilitate access to the site, compliance with Zoning Ordinance provisions, compliance with provisions of the Township Stormwater Management Ordinance, a plan to control erosion and sedimentation during construction activity, and a plan for long-term maintenance of the facility that considers health, safety, and welfare issues of property owners in the immediate vicinity of the site, as well as all residents of the Township.

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<sup>11</sup> These recommendations are also consistent with the mitigation measures proposed by Springfield witness Gallagher. Springfield St. 2, Exh. MG-2, p. 41.

2. The route of utility line construction should incorporate modifications to minimize the potential impacts of the line construction on natural resources, by avoiding unnecessary disturbance to woodlands and wetlands. In addition, any facilities in or near stream corridors should cross at right angles to the stream. Any proposed rights of way parallel to streams must be relocated to be outside the stream margin areas. Vegetation along stream corridors must be replanted to mitigate the loss of existing mature vegetation during stream crossing installation. Further, PPL must provide mitigation areas to replace wetlands disturbed during power line construction.

3. Design of temporary/permanent stormwater management facilities and erosion/sediment control measures should also be reviewed by the Township prior to application for Federal and State permits, which may be accomplished by submission of a detailed engineered site plan identifying locations of proposed utilities, access roadways, limits of disturbance, stormwater management facilities, resources requiring protection, and proposed Best Management Practices to mitigate adverse impacts on stormwater runoff during construction, and in the future condition.

4. Conditions of approval should also address the detrimental environmental effects of future maintenance of right-of-way areas by PPL (which may entail periodic trimming/vegetation removal and spraying of herbicides), as well as implementing a means to control unauthorized access (e.g. four wheel vehicles/dirt bikes) to the right-of-way areas such that natural resources within the right-of-way areas may be protected from unauthorized activities that could contribute to degradation of vegetation and wildlife within the right-of-way area.

5. If access to right-of-way corridors from public roadways is proposed, design of driveway access within the right-of-way of public roadways should also be obtained from the Township by PPL to ensure access design considers issues relative to vehicular/pedestrian safety, provision of roadside drainage, and restoration of the public right-of-way upon completion of construction activity.

Springfield St. 4, pp. 15-16.

In addition, Springfield Township recommends that the Commission adopt Mr. Wynn's proposal for PPL Electric to "provide the Township with detailed design and construction plans for review by the Township Engineer for each phase, such that technical review items may be offered for consideration by PPL, prior to any construction activity." *Id.*, p. 17.

The Township also requests that the Commission should "authorize a formal, expedited review process – either by an Administrative Law Judge, the Commission's mediation staff, or

the Township’s Zoning Hearing Board – in case PPL and the Township Engineer cannot agree.”

Id.

## **VII. CONCLUSION**

For the reasons set forth above, the Board of Supervisors of Springfield Township, Bucks County, respectfully requests the Pennsylvania Public Utility Commission to: (1) deny PPL Electric’s Application for permission to construct a 138 kV transmission line along the Cross Country Corridor, and (2) deny PPL Electric’s Petition for a waiver of local zoning requirements for the construction of a substation control building on the Hickon Road Substation Site in Springfield Township. These two components of an integrated project are not needed in order to provide reliable electric service to the public and would result in significant harm to the natural environment in northern Bucks County. Both projects could be avoided through the Springfield Functional Configuration – a series of projects that involves upgrading PPL Electric’s existing transmission lines and substation facilities, along with the construction of a much shorter transmission line in a portion of the Southern Lehigh Region that is experiencing significant load growth. This alternative would meet all of PPL Electric’s planning criteria through at least the

year 2020 (the planning period used in this case), and it would do so without impacting the sensitive natural environment surrounding the Tohickon Creek and its forested watershed.

Respectfully submitted,



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Board of Supervisors of Springfield Township

Dated: December 3, 2008

## APPENDIX A GLOSSARY OF TERMS

<b>TERM</b>	<b>DEFINITION</b>
Cross Country Corridor	Route preferred by PPL Electric for the siting of the proposed Coopersburg Tap Project, which includes the substation site on Hickon Road.
Route 309 Corridor	Route for the siting of the proposed Coopersburg Tap Project transmission line that follows State Route 309 for a substantial portion of its length, which includes a site for construction of a substation.
SEPTA Corridor	Route for the siting of the proposed Coopersburg Tap Project transmission line that follows the pertinent part of Bethlehem Branch Line for a substantial portion of its length and which includes a site for construction of a substation.
Tie Lines	Line routes for two double circuit tie lines that would be required to connect the proposed transmission line, if it were constructed along the Route 309 Corridor or the SEPTA Corridor, to a substation at the Hickon Road Substation Site.
PPL Electric	PPL Electric Utilities Corporation
SEPTA	Southeastern Pennsylvania Transportation Authority
Springfield or Springfield Township	Springfield Township, Bucks County, Pennsylvania
PPL Electric Functional Configuration	Option adopted by PPL Electric for reinforcement of its transmission system in its Southern Lehigh Region, which includes constructing a new substation. This project is preferred by PPL Electric for reasons explained in testimony of Lisa Krizenoskas.
Springfield Functional Configuration	Option considered but rejected by PPL Electric for reinforcement of its transmission system in its Southern Lehigh Region, which would not include constructing a new substation. This project is preferred by Springfield Township for reasons explained in testimony of Peter Lanzalotta.

Hickon Road Substation Site	Approximately 85 acre site that was purchased by PPL Electric for a substation along Hickon Road and traversed by the Cross Country Corridor.
SEPTA-309 Substation Site	Approximately 20 acre site that was purchased by PPL Electric for a substation adjacent to the SEPTA Corridor and in close proximity to the Route 309 Corridor.
Coopersburg Tap Project	Construction of a 138/60 kV transmission line between the Coopersburg 69-12 kV Substation and the Quakertown 69-12 kV substation along any of the three alternative corridors, including a substation at either the Hickon Road Substation Site or the SEPTA-309 Substation Site.
kV	kilovolt, or 1000 volts
ACSR	aluminum conductor – steel reinforced
MVA	megavolt ampere, a measure of electrical capacity
MW	megawatt, or 1,000,000 watts
PUC or Commission	Pa. Public Utility Commission
DEP	Pa. Department of Environmental Protection
Corps or COE	U.S. Army Corps of Engineers
DVRPC	Delaware Valley Regional Planning Commission
EPA	U.S. Environmental Protection Agency
PNHP	Pa. Natural Heritage Program
FEMA	Federal Emergency Management Agency
pertinent part of Bethlehem Branch Line	That part of the railroad right-of-way that is owned by SEPTA which is included within the SEPTA Corridor

## APPENDIX B PROCEDURAL HISTORY

PPL Electric filed an Application for approval of a proposed high-voltage electric transmission line on February 14, 2008.

Springfield Township filed a Request for Leave to Intervene on February 29, 2008, and a Protest on March 21, 2008. PPL Electric timely filed answers thereto on March 19, 2008, and April 3, 2008, respectively.

On March 21, 2008, Springfield Township filed a Preliminary Objection, alleging that PPL Electric should be required to file a petition concerning the siting of a substation building that is associated with the proposed transmission line. PPL Electric filed an Answer to the Preliminary Objection on April 3, 2008, in which it indicated that it would be filing such a petition.

PPL Electric's substation building petition was filed on April 24, 2008. Springfield Township filed a Notice of Intervention and an Answer in that proceeding on May 5, 2008.

Prehearing conferences were held in these proceedings on May 14, 2008, and June 3, 2008. Actions at those conferences were memorialized in written prehearing orders dated May 15, 2008, and June 9, 2008. Among the actions taken at that time were the consolidation of these proceedings.

Public input hearings were held in Springfield Township and Richland Township on July 14 and 17, 2008. Two hearings were held each day and a total of approximately 61 people testified during those hearings.

A view and tour of the proposed transmission line route, proposed substation site, and alternatives thereto was held on August 12, 2008.

PPL Electric and Springfield Township submitted prefiled written testimony and exhibits in accordance with the schedule established for this proceeding, and their witnesses were made available for cross-examination at evidentiary hearings on November 6, 7, and 10 at the State Office Building in Philadelphia.

## APPENDIX D PROPOSED FINDINGS OF FACT

### Background

1. Springfield Township has continuously exerted a major effort to maintain open space, the pristine watershed and the natural beauty that exists in the Township. The Township continues to pursue these goals by obtaining easements and zoning specific areas for commercial and industrial development and infrastructure. Tr. 215-216.
2. In 2001, Springfield Township approved a wage tax to fund the preservation of open space in the township. Tr. 236.
3. PPL Electric's existing transmission system in the region operates at 69,000 volts (69 kV).
4. Electricity into the region is served from 230 kV transmission lines that feed 230 – 69 kV substations at Quarry, Hosensack, and Buxmont. Tr. 745; PPL Exh. 1 (Exh. A, Figure 1).
5. A regional network of 69 kV transmission lines then brings that power to distribution substations (69 – 12 kV) located throughout the region at Bingen, Coopersburg, Quakertown, and Richland, among others. PPL Exh. 1 (Exh. A, Figure 1).
6. Springfield Township is located roughly in the geographic center of the region, between the Coopersburg and Quakertown substations. Tr. 742-43.
7. PPL Electric's proposal is to construct a new 230 – 138/69 kV substation in Springfield and to build a new transmission line that bypasses the existing Coopersburg to Quakertown 69 kV line. Tr. 748.
8. The new line would connect both the Coopersburg and Quakertown distribution substations to the proposed Springfield substation.
9. While load growth in the region is increasing, PPL Electric's witnesses were unaware of specifically where load growth is occurring in the region. Tr. 741-42.
10. It appears that the significant areas of load growth in the region are along Route 309 north of Coopersburg and near the Quakertown interchange of the Pennsylvania Turnpike, which is in the southwest corner of the study area. Tr. 655-56 and 741; PPL Exh. 1 (Exh. A, Maps 1-10).
11. Springfield Township residents recognize that load growth is increasing to the north and south of the Township, but not within the Township. Tr. 199.

### PPL Electric's Development and Evaluation of Alternative Functional Configurations

12. PPL Electric developed and evaluated two options that would fully meet its customers' needs at least through the year 2020: (1) PPL Electric could construct a new seven-mile

transmission line and a new 230 – 138/69 kV substation on approximately seven acres of land in Springfield Township (the “PPL Electric Functional Configuration”), or (2) PPL Electric could upgrade its existing 230 – 69 kV substation in Hosensack, reconductor its existing lines between Hosensack and Coopersburg and between Hosensack and Milford, and build a new three or four mile 69 kV transmission line from Milford substation to Buxmont (the “Springfield Functional Configuration”). Tr. 724-26; Springfield Exh. 6, p. 16.

13. PPL Electric can provide reliable service for many years into the future without building a new substation. Springfield St. 1 at 29.

14. PPL Electric’s proposed transmission line and substation are integral parts of a single project.

15. If PPL Electric is permitted to build the new transmission line, it would not be able to provide reliable service through 2020 if it did not also build the substation. Tr. 725-26.

16. PPL Electric did not conduct any comparative environmental or land use analysis of the two options. Tr. 715-716 and 722-723.

17. PPL Electric’s cost analysis was not performed until many years after PPL Electric had chosen to pursue the construction of a new substation. Tr. 729-730 and 794-796.

18. Sometime in 2004 or earlier, PPL Electric decided that it would pursue an option that includes a new substation in Springfield Township (the PPL Electric Functional Configuration), rather than an option that would involve upgrading existing substations and transmission lines (the Springfield Functional Configuration). Tr. 794 and Springfield Exh. 16.

19. PPL Electric’s decision to pursue an option that includes a new substation was not documented at the time it was made and did not include any analysis of the environmental and land use factors set forth in the Commission’s regulations (52 Pa. Code § 57.75(e)). Tr. 714-16, Tr. 733-34, and Springfield Exh. 6.

20. PPL Electric never performed an environmental or land use analysis of the Springfield Functional Configuration. Tr. 583.

#### Description of the Cross Country Corridor

21. PPL Electric’s proposed Cross Country Line would replace the existing single-circuit 69 kV line from PPL Electric’s Coopersburg substation (in Upper Saucon Township, Lehigh County) to its existing Buxmont - Quakertown 69 kV transmission line (the line runs primarily along State Route 309) in Richland Township, Bucks County. PPL Exh. 1, Exh. C, p. 2.

22. The new line would be a double-circuit line designed to operate at 138 kV (but initially it would operate at 69 kV) along a new right-of-way. PPL Exh. 1, Exh. C, p. 2.

23. The existing line is approximately 5.4 miles in length and uses 2/0 copper conductor. PPL Electric Exh. 1, Exh. A, p. 10.

24. The new line would be approximately 7.1 miles in length and would use 556 ACSR conductor. PPL Electric Exh. 4 (unnumbered page 7) and PPL Exh. 1, Exh. A, p. 10.
25. The new line also would connect to a new 230 – 138/69 kV substation that PPL Electric proposes to build in Springfield Township, Bucks County, on an 85-acre site along Hickon Road.
26. In November 2006, PPL Electric estimated that the new transmission line and substation would cost approximately \$36 million (expressed as a present value of revenue requirements). PPL Electric Exh. 1, Exh. A, p. 12.
27. Approximately \$14.0 million of the estimated \$36 million cost was projected to be the cost of the transmission line. Springfield Exh. 3, p. 2.
28. Operation and maintenance (O&M) costs for a new transmission line are expected to be de minimis. Tr. 652-53.
29. PPL Electric estimated that O&M costs for the new substation would total more than \$2.3 million over a 20-year period. Springfield Exh. 4.
30. The substation O&M costs were not included in PPL Electric's November 2006 study. Tr. 727.
31. In PPL Electric's November 2006 cost estimate, it was assumed that the new transmission line would be only 6.0 miles in length. Springfield Exh. 1, p. 11.
32. PPL Electric also projected at that time that it would cost approximately \$7.3 million to construct the new line, with another \$4.9 million for siting (those figures were expressed in 2006 dollars and were then adjusted for inflation and taxes to develop estimated annual revenue requirements which were discounted back to 2006). Tr. 726-27.
33. By January 2008, the length of the new line had increased to 7.1 miles and its construction cost was estimated to be \$8.5 million. PPL Electric Exh. 4 (unnumbered pages 1 and 7).
34. The Cross Country Corridor in Springfield Township includes a portion that is 1.9 miles long that is mostly wooded, contains several wetland areas, and crosses two tributaries of the Tohickon Creek. PPL Exh. 1, Exh. C, p. 7.
35. The Cross Country Corridor in Richland Township includes 3.9 miles that goes across areas of open land, woodlands, and farmland, and crosses the Tohickon Creek several times. PPL Exh. 1, Exh. C, p. 7.

#### Environmental Impacts of the Cross Country Corridor

36. There will be significant environmental impacts associated with the construction of a transmission line along the Cross Country Route selected by PPL Electric. PPL Electric St. 15-R, p. 20.

37. Approximately 7 acres of core forest and approximately 42 acres of edge habitat will be cleared for the proposed Cross Country Corridor and an additional 48 acres of core forest habitat will become edge habitat. Springfield St. 2 at 5.
38. PPL Electric estimates that approximately 5 miles of the 7.1 mile length of the Cross Country line would involve the clearing of wooded areas. Tr. 645; PPL Electric Exh. 4 (unnumbered page 7).
39. PPL Electric summarizes other impacts of the Cross Country Corridor as follows: 4.87 acres of wetlands, 1.44 miles in the floodplain, 13 stream crossings, and 46.3 acres of woodlands lost. PPL Electric Exh. 1, Exh. C, p. 13.
40. The detrimental impacts associated with the construction of a transmission line along the Cross Country Route include the loss of breeding ground for locally and regionally important species, the risk of invasive plant species, and potential damage to portions of the Tohickon Creek watershed.
41. Large habitat patches are critical for maintaining viable populations of area-sensitive species while fragmented patches of forest habitat support fewer species and smaller populations of species that are sensitive to habitat change. Springfield St. 2, Exh. MG-2, p. 31.
42. The Cross Country Route will be far more damaging to the environment than the other two corridors. Springfield St. 2, p. 5.
43. Habitat destruction will lead to a disturbance in breeding success rates for species living in this area. PPL Electric St. 15-R, p. 21.
44. Four plant species listed by the Pennsylvania Natural Heritage Program (PNHP) are present in or near the Cross Country Corridor. These plant species are listed by PNHP as being rare, vulnerable, or on the watch list. Springfield St. 3, pp. 5-6.
45. PPL Electric's Cross Country Route will also affect numerous sensitive wetlands, vernal pools, and forested areas in the Tohickon Creek floodplain.
46. The Cross Country Corridor would affect between 4.87 and 12 acres of wetlands. PPL Electric Exh. 1, Exh. C, p. 13; Springfield St. 2, Exh. MG-2, p. 25; PPL Electric St. 15-R, p. 5.
47. PPL Electric originally stated that approximately 4.87 acres of wetlands would be affected. PPL Electric Exh. 1, Exh. C, p. 13.
48. Mr. Mellon subsequently prepared a report that showed approximately 12 acres of wetlands would be affected. Springfield St. 2, Exh. MG-2, p. 25.
49. Vernal pools are areas that are filled with water in winter and spring which are important breeding sites for various species. Springfield St. 3, p. 7.
50. Several vernal pools would be destroyed by the Cross Country Corridor. Springfield St. 3, p. 7.

51. Vernal pools are important because they serve as breeding sites for frogs, toads, and salamanders, providing a safe haven for them to complete the aquatic stage of their life cycle. Springfield St. 3, p. 7.
52. Vernal pools must be surrounded by forest in order to provide habitat for terrestrial forms of these animals. Springfield St. 3, p. 7.
53. Riparian forests are woodlands that are near streams and other bodies of water.
54. The value of riparian forests in maintaining water quality and quantity in streams has been demonstrated again and again. Streams through forested areas are broad and shallow with maximum underwater surfaces for the maintenance of aquatic life which generate oxygen and reduce pollutants. Shading helps to maintain cool water temperatures important to aquatic vertebrates and invertebrates. Native vegetation along stream banks is also an important part of the food chain. Springfield St. 3, pp. 8-9.
55. Forested riparian also increase filtration of surface water flowing into streams thereby reducing siltation and water pollution. Forest cover permits maximum percolation of rain and snow water into the ground to maintain water aquifers. Springfield St. 3, pp. 8-9.
56. Because so much of the proposed PPL Cross Country corridor lies along the Tohickon Creek and its headwaters tributaries, the potential for damage to stream ecosystems through deforestation of the riparian zone is great. Springfield St. 3, p. 9.
57. Failure to protect the riparian corridors will lead to the loss of species from the streams through degradation of both the water quality and the in-stream habitats. Tr. 278.
58. The impacts of cutting through a riparian forest include warming the water which will kill off certain temperature-sensitive organisms, as well as “edge effects” which can make interior forest animals “vulnerable to predator species” that normally would not gain access to the interior forest. Tr. 351-352.
59. There are large areas of unfragmented forest in northern Bucks County. PPL Electric St. 15-R, p. 22.
60. Forest fragmentation should be avoided when there are large areas of unfragmented forest. PPL Electric St. 15-R, p. 22.
61. Fragmenting a forest creates edge habitat which can reduce the ability of interior forest species to breed and thrive, and can open the area to predators and other invasive species. PPL Electric St. 15-R, p. 21; Springfield St. 2, Exh. MG-2, p. 31.
62. The Pennsylvania Game Commission’s Wildlife Action Plan states that one of its goals is to “minimize fragmentation of remaining, large contiguous forest tracts.” Springfield St. 2, Exh. MG-2, p. 31.
63. The Pennsylvania Game Commission’s Wildlife Action Plan states: “The largest forest blocks, especially those within well-forested landscapes, should be targeted for protection

efforts. These large blocks represent the foundations from which conservation actions should begin for the mature forest suite of species.” Springfield St. 2, Exh. MG-2, p. 31.

64. The forested areas along the Cross Country Corridor include several bird species that are listed by the Pennsylvania Game Commission as being of conservation concern. Springfield St. 2, Exh. MG-2, pp. 31-32.

65. Four plant species listed as rare, vulnerable, or on the watch list by the Pennsylvania Natural Heritage Program (PNHP) were present in or near the Cross Country Corridor. Springfield St. 3, pp. 5-6.

66. The PNHP designations means that a plant species is in danger and is deserving of protection. Springfield St. 3-SR, pp. 2-3.

67. If PPL Electric retained a 20-foot high tree canopy adjacent to Tohickon Creek, it would adequately shade the stream. PPL Electric St. 21-R, pp. 2-3.

68. PPL Electric’s vegetation management practices would not permit a 20-foot high tree canopy under a transmission line. Most understory trees will grow to more than 20 feet high and PPL Electric states that it will remove vegetation that will grow to more than 20 feet in height. Springfield St. 3-SR, pp. 8-9.

69. PPL Electric’s transmission lines in the region have a canopy that is much less than 20 feet in height and would not quality as forested buffer. Springfield St. 3-SR, p. 9.

70. The Pennsylvania Department of Environmental Protection (DEP) found that the Cross Country Route “appears to have the most environmental impact” of any of the alternatives considered. Springfield Exh. 15, p. 4.

71. DEP found that construction and maintenance of the Cross Country line will “cause significant fragmenting of large expanses of intact forests.” Springfield Exh. 15, p. 2.

72. DEP found that construction of the Cross Country line “will destroy or degrade several miles of intact riparian and upland forest within the Tohickon Creek watershed.” Springfield Exh. 15, p. 2.

73. DEP found that maintenance of the Cross Country line “will deliberately and systematically prevent forested areas from becoming reestablished.” Springfield Exh. 15, p. 2.

74. DEP found that there is important to keep forested riparian buffers intact in the area of the Cross Country Corridor because it is near the headwaters of the Tohickon Creek. Springfield Exh. 15, pp. 2-3.

75. DEP found that construction and maintenance of the Cross Country line “will create a new linear pathway for invasive plants to colonize and move into previously undisturbed, natural settings.” Springfield Exh. 15, p. 3.

76. DEP stated that “disturbance in intact forested areas should be avoided in order to prevent invasive plants from spreading.” Springfield Exh. 15, p. 3.

77. PPL Electric has not responded to DEP’s concerns. Tr. 816.

#### Description of Route 309 Corridor

78. The main section of the Route 309 Corridor is approximately 5.4 miles long. It begins at the Coopersburg substation and follows PPL Electric’s existing right-of-way to the existing Buxmont – Quakertown transmission line. PPL Exh. 1, Exh. C, p. 8.

79. The Route 309 Corridor is located approximately two miles away from the Hickon Road Substation Site. Tr. 630-631, 637-638.

80. The connection between the Route 309 Corridor and the substation requires two double-circuit lines, so the two mile distance from the substation actually adds approximately four miles to the length of the line route. Tr. 630-631, 637-638.

81. PPL Electric’s Application shows the length of the Route 309 Corridor as being 9.59 miles. PPL Exh. 1, Exh. C, p. 8.

82. Other substation sites are available that are very close to the Route 309 Corridor and the existing 230 kV transmission lines. PPL Electric actually owns one such site. Tr. 797-800.

83. Other potential substation sites near the Route 309 Corridor were identified at the public hearing. Tr. 340.

84. If PPL Electric had decided to pursue the Route 309 Corridor (or the SEPTA Corridor, which is close by), it would have tried to use a substation site closer to the corridor than the Hickon Road Site. Tr. 798-799.

85. The Hickon Road Site was purchased because of its proximity to the Cross Country Corridor, not because it was a reasonable location for a substation if the Route 309 Corridor were used. Tr. 798.

86. PPL Electric has estimated the cost of the Route 309 Corridor option to be \$25.2 million. PPL Exh. 1, Exh. C, p. 15; PPL St. 3, p. 9; PPL Exh. 3.

87. Approximately \$6.6 million of that cost is for connecting the Route 309 Corridor to the Hickon Road Substation Site. Tr. 637-638; PPL Exh. 3 (unnumbered page 12).

#### Description of SEPTA Corridor

88. The main section of the SEPTA Corridor is approximately 5.7 miles long. It begins at the Coopersburg substation and follows SEPTA’s existing right-of-way for the Bethlehem Branch railroad to a connection with the existing Buxmont – Quakertown 69 kV transmission line. PPL Exh. 1, Exh. C, pp. 4-5.

89. As is the case with the Route 309 Corridor, the SEPTA Corridor also is located approximately two miles away from the Hickon Road Substation Site. Tr. 630-631.
90. The connection between the SEPTA Corridor and the substation requires two double-circuit lines, so the two mile distance from the substation actually adds approximately four miles to the length of the line route. Tr. 630-631.
91. PPL Electric's Application shows the length of the SEPTA line route as being 9.45 miles. PPL Exh. 1, Exh. C, p. 4.
92. The same concerns with the substation location for the SEPTA option exist as were discussed for the Route 309 Corridor, above.

#### Environmental Impacts of the Route 309 and SEPTA Corridors

93. The existing transmission line runs along the Route 309 Corridor and, while PPL Electric may need to widen its right-of-way in some locations, the environmental impact associated with the main portion of the line should be relatively minor. Springfield St. 2, Exh. MG-2, pp. 24-25.
94. If the Route 309 Corridor must be connected to the Hickon Road Substation Site – and not to a much closer substation site – then there would be a significant environmental impact. Much of the area between Route 309 and the Hickon Road Site is wooded and there would be a substantial impact if two, two-mile transmission lines were built through that area.
95. PPL Electric shows that the Route 309 Corridor would impact approximately four acres of wetlands and 51 acres of woodlands and involve 15 stream crossings. PPL Electric Exh. 1, Exh. C, p. 13.
96. Most of those impacts are associated with the connection between the corridor and the Hickon Road Site.
97. Along the east-west line from the Springfield substation to the SEPTA and Route 309 alternative routes, approximately 9 acres of core forest and 31 acres of edge forest will be cleared and 35 acres of core forest will become edge forest. PPL Electric St. 15-R, p. 20.
98. The main portion of the Route 309 Corridor would involve clearing only 10 acres of edge forest. PPL Electric St. 15-R, p. 20.
99. The alternative routes proposed by PPL Electric would also result in detrimental impacts to the environment. PPL Electric St. 15-R, p. 20.
100. All three routes will result in “good” habitats being destroyed to a similar degree. Avoidance of all of these routes would be preferable. PPL Electric St. 15-RJ, p. 17-18.
101. The environmental impact associated with the SEPTA Corridor is essentially the same as the impact from the Route 309 Corridor, and it is primarily the result of PPL Electric's assumption that the corridor would be connected to the Hickon Road Substation Site.

### Benefits of Springfield Functional Configuration

102. The Springfield Functional Configuration would meet all of the reliability requirements in the region at least through the end of the study period (the year 2020). Springfield Exh. 6, p. 16; Tr. 724.
103. The Springfield Functional Configuration makes more complete use of PPL Electric's existing substations. Springfield St. 1, p. 26.
104. The Springfield Functional Configuration eliminates the need to build a new substation in the region. Springfield St. 1, p. 26; Tr. 726.
105. The Springfield Functional Configuration eliminates the need to reroute the Coopersburg 69 kV Tap along virgin right-of-way. Springfield St. 1, p. 26.
106. PPL Electric estimated the cost of the Springfield Functional Configuration to be \$41 million, expressed as a present value of revenue requirements, or approximately 14% more than the cost of the PPL Electric Functional Configuration. Springfield Exh. 3; PPL Exh. 1, Exh. A, p. 14.
107. PPL Electric's cost estimates for both functional configurations used contingency factors of 30% for labor, materials, and other significant cost components. Springfield Exh. 1, p. 6 and Springfield Exh. 2, p. 6.

### Environmental Impacts of Springfield Functional Configuration

108. The environmental impact of the Springfield Functional Configuration has not been studied. Tr. 722-723.
109. All of the work during the study period (through the year 2020) involved in the Springfield Functional Configuration would occur in existing substations or along existing transmission rights-of-way, except for the construction of a new transmission line from the Milford Substation to the existing Coopersburg Tap north of Quakertown (this is being referred to generally as the "Milford-Quakertown line").
110. One likely route for the Milford-Quakertown line would generally run parallel to State route 663 and is 4.08 miles in length. PPL Electric St. 2-R (Supplemental), p. 4.
111. This route does not appear to traverse any critical plant or animal habitat areas. PPL Electric St. 2-R (Supplemental), p. 4.
112. Existing zoning along this portion of Route 663 is a mix of Rural Residential, Suburban Residential, Commercial, and Light Industrial. PPL Exh. 1, Exh. A, Map 3.
113. There are no Environmental Protection zones in this portion of the study area, and only a small portion of the route would be in a floodplain (where Route 663 already exists). PPL Exh. 1, Exh. A, Map 3.

114. There are two wooded areas adjacent to Route 663, but those wooded areas are small and already have Route 663 cutting through them. PPL Exh. 1, Exh. A, Map 6.

115. It appears unlikely that the environmental impacts of a new Milford – Quakertown line would be significant.

#### Description of Hickon Road Substation

116. The proposed Springfield Substation would be a 230 – 138/69 kV substation located on approximately seven acres of an approximately 85 acre site. PPL St. 12, p. 8.

117. The substation installation will include a control equipment building that will be approximately 40 feet by 60 feet in size. PPL St. 12, p. 9.

118. The substation site is located in Springfield Township’s Resource Protection District. Springfield St. 4, p. 15.

#### Springfield Township Zoning and Land Use Plan

119. Springfield Township’s zoning ordinance and comprehensive land use plan are designed to preserve the township’s irreplaceable natural resources, including the Tohickon Creek watershed, numerous family farms, and historic buildings that date back two centuries or more. Springfield St. 4-SR, Exh. CRW-1 (Comprehensive Plan) and Exh. CRW-2 (Zoning Ordinance).

120. Springfield Township’s zoning ordinance and comprehensive plan are designed to preserve the rural character of most of the township, while fostering commercial and industrial growth along the area bordering Route 309. This is important because the Route 309 area has the “road and utility infrastructure” to support such development. Springfield St. 4-SR, p. 4.

121. Springfield Township does not support industrial development in portions of the township that do not have the roads to support it. Much of the township is served by two-lane country roads that are not consistent with most industrial enterprises. Springfield St. 4-SR, p. 4.

122. PPL Electric’s proposed substation, and most of the transmission line corridor through Springfield Township, would be located in the township’s Resource Protection District. PPL Electric Exh. 1, Exh. A, Map 3.

123. The purpose of Springfield Township’s Resource Protection District classification is to “protect areas consisting largely of natural features such as mature forest, steep slopes, scenic areas, wetlands, streams, floodplains and ponds including those identified in the latest version of the Bucks County Natural Resources Plan.” Springfield St. 2, p. 16.

124. PPL Electric’s plans to clear acres of woodlands in the Resource Protection District are in direct conflict with the purposes of the Resource Protection District. Springfield St. 2, p. 16.

125. PPL Electric plans to construct portions of the transmission line directly along the Tohickon Creek. Springfield St. 4, pp. 6, 9-10.

126. Construction directly along the creek is in conflict with Springfield Township's zoning ordinance which restricts development within the floodplain. Springfield St. 4, pp. 6, 9-10.

## APPENDIX E PROPOSED CONCLUSIONS OF LAW

1. PPL Electric is a public utility providing electric distribution service under certificates of public convenience and necessity issued by the Commission.
2. Springfield Township is a local government unit and political subdivision of the Commonwealth of Pennsylvania.
3. PPL Electric has the burden of proof in this proceeding. 66 Pa. C.S. § 332(a).
4. The Commission has the authority to regulate the siting, construction, and operation of electric transmission lines; and local government units and political subdivisions have no such authority. *Duquesne Light Co. v. Upper St. Clair Twp.*, 377 Pa. 323, 105 A.2d 287 (1954).
5. Springfield Township has adopted a zoning ordinance and comprehensive land use plan in accordance with the provisions of the Municipalities Planning Code.
6. The Commission is required to consider, and may rely upon, the zoning ordinance and comprehensive land use plan of Springfield Township. 53 P.S. § 11105.
7. The Commission will consider the impact of its decisions for the siting of electric transmission lines and public utility buildings on local comprehensive plans and zoning ordinances. 52 Pa. Code § 69.1101.
8. PPL Electric's proposed transmission line would have a design voltage of 138,000 volts and therefore is considered to be a high-voltage (or HV) transmission line under the Commission's regulations. 52 Pa. Code § 57.1.
9. PPL Electric's proposed transmission line does not meet the criteria for letter of notification in lieu of application. 52 Pa. Code § 57.72(d).

10. PPL Electric is required to prove that there is a need for the proposed transmission line.  
52 Pa. Code § 57.76(a).
11. PPL Electric is required to produce “specific, substantial evidence” showing that its proposed transmission line route “will have minimum adverse environmental impact” in light of the available alternatives. 52 Pa. Code § 57.76(a); *West Penn Power Co.*, 54 Pa. PUC 319 (1980).
12. In order to approve the proposed transmission line, the Commission must find that PPL has made “a reasonable effort to reduce the environmental incursion to a minimum.”  
*Payne v. Kassab*, 11 Pa. Commw. 14, 312 A.2d 86 (1973), *aff’d*, 468 Pa. 226, 361 A.2d 263 (1976); *Department of Environmental Protection v. Pa. Public Utilities Commission*, 18 Pa. Commw. 558, 335 A.2d 860 (1975).
13. PPL Electric acted arbitrarily and capriciously when it decided between the PPL Electric Functional Configuration and the Springfield Functional Configuration without considering the relative environmental and land use impacts of the two options.
14. PPL Electric has not met its burden of proving that the proposed facilities will have minimum environmental impact in light of the available alternatives.
15. PPL Electric has not met its burden of proving that the proposed facilities are in compliance with applicable statutes and regulations providing for the protection of the natural resources of this Commonwealth.
16. PPL Electric has not met its burden of proving that the proposed Cross Country Route is in compliance with the Commission’s siting regulations.
17. PPL Electric has not met its burden of proving that the proposed substation control building is reasonably necessary for the convenience or welfare of the public.

## APPENDIX F PROPOSED ORDERING PARAGRAPHS

THEREFORE, IT IS ORDERED:

1. That the Application of PPL Electric Utilities Corporation for authorization and certification to locate, construct, operate, and maintain certain high-voltage electric transmission lines is denied.
2. That the Petition of PPL Electric Utilities Corporation for approval of an exemption from municipal zoning regulation with respect to the construction of a substation control building is denied.

## ALTERNATIVE PROPOSED ORDERING PARAGRAPHS (CONDITIONS IN THE EVENT OF APPROVAL)

THEREFORE, IT IS ORDERED:

1. That the Application of PPL Electric Utilities Corporation for authorization and certification to locate, construct, operate, and maintain certain high-voltage electric transmission lines is conditioned as follows:
  - a. The route of utility line construction should incorporate modifications to minimize the potential impacts of the line construction on natural resources, by avoiding unnecessary disturbance to woodlands and wetlands. In addition, any facilities in or near stream corridors should cross at right angles to the stream. Any proposed rights of way parallel to streams must be relocated to be outside the stream margin areas. Vegetation along stream corridors must be replanted to mitigate the loss of existing mature vegetation during stream crossing installation.

Further, PPL Electric must provide mitigation areas to replace wetlands disturbed during power line construction.

- b. Design of temporary/permanent stormwater management facilities and erosion/sediment control measures should also be reviewed by Springfield Township prior to application for Federal and State permits, which may be accomplished by submission of a detailed engineered site plan identifying locations of proposed utilities, access roadways, limits of disturbance, stormwater management facilities, resources requiring protection, and proposed Best Management Practices to mitigate adverse impacts on stormwater runoff during construction, and in the future condition.
- c. PPL Electric shall take reasonable actions to eliminate the detrimental environmental effects of future maintenance of right-of-way areas (which may entail periodic trimming/vegetation removal and spraying of herbicides), as well as implementing a means to control unauthorized access (e.g. four wheel vehicles/dirt bikes) to the right-of-way areas such that natural resources within the right-of-way areas may be protected from unauthorized activities that could contribute to degradation of vegetation and wildlife within the right-of-way area.
- d. If access to right-of-way corridors from public roadways is proposed, design of driveway access within the right-of-way of public roadways should also be obtained from Springfield Township by PPL Electric to ensure access design considers issues relative to vehicular/pedestrian safety, provision of roadside

drainage, and restoration of the public right-of-way upon completion of construction activity.

- e. PPL Electric shall provide Springfield Township with detailed design and construction plans for review by the Township Engineer for each phase of construction such that technical review items may be offered for consideration by PPL Electric, prior to any construction activity.
2. That the Petition of PPL Electric Utilities Corporation for approval of an exemption from municipal zoning regulation with respect to the construction of a substation control building is conditioned as follows:
- a. Design and construction of the proposed substation should address Zoning Ordinance requirements of Springfield Township, including regulations applicable to the specific zoning district in which the facility is located (the Resource Protection district), use regulations associated with Use F1, buffer requirements, and environmental protection standards of the Zoning Ordinance. Additionally, PPL Electric shall submit a detailed engineered site plan to Springfield Township for review, which contains design information and details associated with the proposed site access and any associated street improvements that are required to facilitate access to the site, compliance with Zoning Ordinance provisions, compliance with provisions of the Township Stormwater Management Ordinance, a plan to control erosion and sedimentation during construction activity, and a plan for long-term maintenance of the facility that considers health, safety, and welfare issues of property owners in the immediate vicinity of the site, as well as all residents of Springfield Township.

3. That any disputes between PPL Electric and Springfield Township (or its Engineer) concerning construction plans and/or mitigation actions shall be brought to the Commission's mediation staff to be resolved in an expedited manner. If any such dispute cannot be resolved through mediation, then the matter shall be assigned to the Office of Administrative Law Judge for an expedited proceeding.
4. That the Commission shall retain jurisdiction over this matter, and this docket shall remain open, until PPL Electric and Springfield Township jointly certify that the consultation and review process set forth herein has been completed.

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CERTIFICATE OF SERVICE

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I hereby certify that I have this day served a true copy of the foregoing upon the following parties to this proceeding by first class mail.

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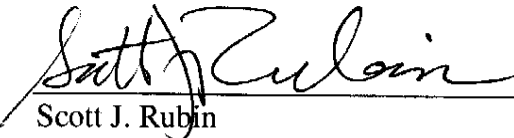
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Scott J. Rubin

Dated: December 3, 2008