



Before the
Pennsylvania Public Utility Commission

**PECKVILLE – HONESDALE 138/69 kV
REBUILD**

**ATTACHMENTS IN SUPPORT OF THE
LETTER OF NOTIFICATION**

Application Docket No. _____

Submitted by: PPL Electric Utilities Corp.

SUMMARY

This filing is submitted by PPL Electric Utilities Corporation (PPL Electric) pursuant to the Pennsylvania Public Utility Commission's (PUC) regulations at 52 Pa. Code §§57.71 through 57.77, for PUC approval to reinforce the 69 kV systems in Lackawanna and Wayne Counties. This Project is one of three separate but related transmission line projects. Each transmission line project will be the subject of a separate filing.

Studies conducted for PPL Electric's transmission system revealed that an outage of the single circuit Blooming Grove – West Damascus (BLGR-WDAM) 69 kV Line would violate PPL Electric's "Reliability Principles & Practices" (RP&P) guidelines for load loss allowed due to a contingency (unplanned outage). The three separate transmission line projects will replace a "weak link" in the 69 kV transmission system between the Peckville and Blooming Grove regional substations by replacing small, aging, low capacity #2/0 copperweld copper wire with larger, high capacity 556 kcmil ACSR wire.

Here, PPL Electric seeks PUC approval of the first transmission line project. This Project involves the reconstruction of a 19.4-mile long section of the existing Peckville – Honesdale 69 kV Line, which consists of the following: (1) a portion of the Peckville – Varden 69 kV Line (8 miles); (2) the Varden 69 kV Tap (7 miles); and (3) a portion of the Blooming Grove - Honesdale 138/69 kV Line (4.4 miles). PPL Electric proposes to replace portions of this aging, low capacity, single circuit #2/0 copperweld copper wire line with a high capacity double circuit 138/69 kV transmission line.

This Project is located in Archbald Borough and Jefferson Township, Lackawanna County and Honesdale Borough and Cherry Ridge, South Canaan and Texas Townships, Wayne County. The proposed rebuild of the existing single circuit Peckville – Honesdale 69 kV Line for double circuit 138/69 kV operation will take place within the existing right-of-way. The existing center line right-of-way allows the reconstruction and reconductoring without the need for additional right-of-way. A more detailed description of the existing and rebuilt lines involved in this Project is provided in Attachments 2 and 4.

In the filing for the second transmission line project, PPL Electric will seek PUC approval for the construction of 1.8 miles of new 230 kV line to provide a power source to a new proposed Paupack 230-69 kV Substation. This new line and substation are also needed to resolve the violations of PPL Electric's RP&P guidelines as described above. PPL Electric will also file a zoning petition for the new proposed Paupack 230-69 kV Substation.

In the filings for the third transmission line project, PPL Electric will seek PUC approval for the reconstruction of 2.9 miles of the Lakeville 138/69 kV Tap and 4.0 miles of the existing Blooming Grove – Honesdale 138/69 kV Line. The reconstruction will be within the existing right-of-way. An additional 0.5 miles of new line will be built to connect the Paupack 230-69 kV Substation to the existing Lakeville Tap Line. The total project length is 7.4 miles. These line sections will be reconstructed from single circuit 138/69 kV lines to double circuit 138/69 kV lines. These reconstructed line sections are also needed to resolve the violations of PPL Electric's RP&P guidelines as described above.

PPL Electric seeks PUC approval of this Project first because the expected construction time for it is substantially longer than the anticipated construction time for the other two transmission projects. The Letter of Notification for this Project is also being filed first to coordinate with the construction schedule of the previously approved Susquehanna – Roseland 500 kV Line, a portion of which the Peckville – Honesdale 69 kV Line will parallel.

Construction of this Project is scheduled to begin in Spring 2013, to support an in-service date of November 2014. The estimated cost to design and reconstruct this Project is \$22.3 million.

This document, which describes the need for the Project and discusses the engineering and siting analysis for the proposed construction, consists of the following exhibits and appendices:

Attachment "1" - Necessity Statement

Attachment "2" - Engineering Description

Attachment "3" - Environmental Assessment

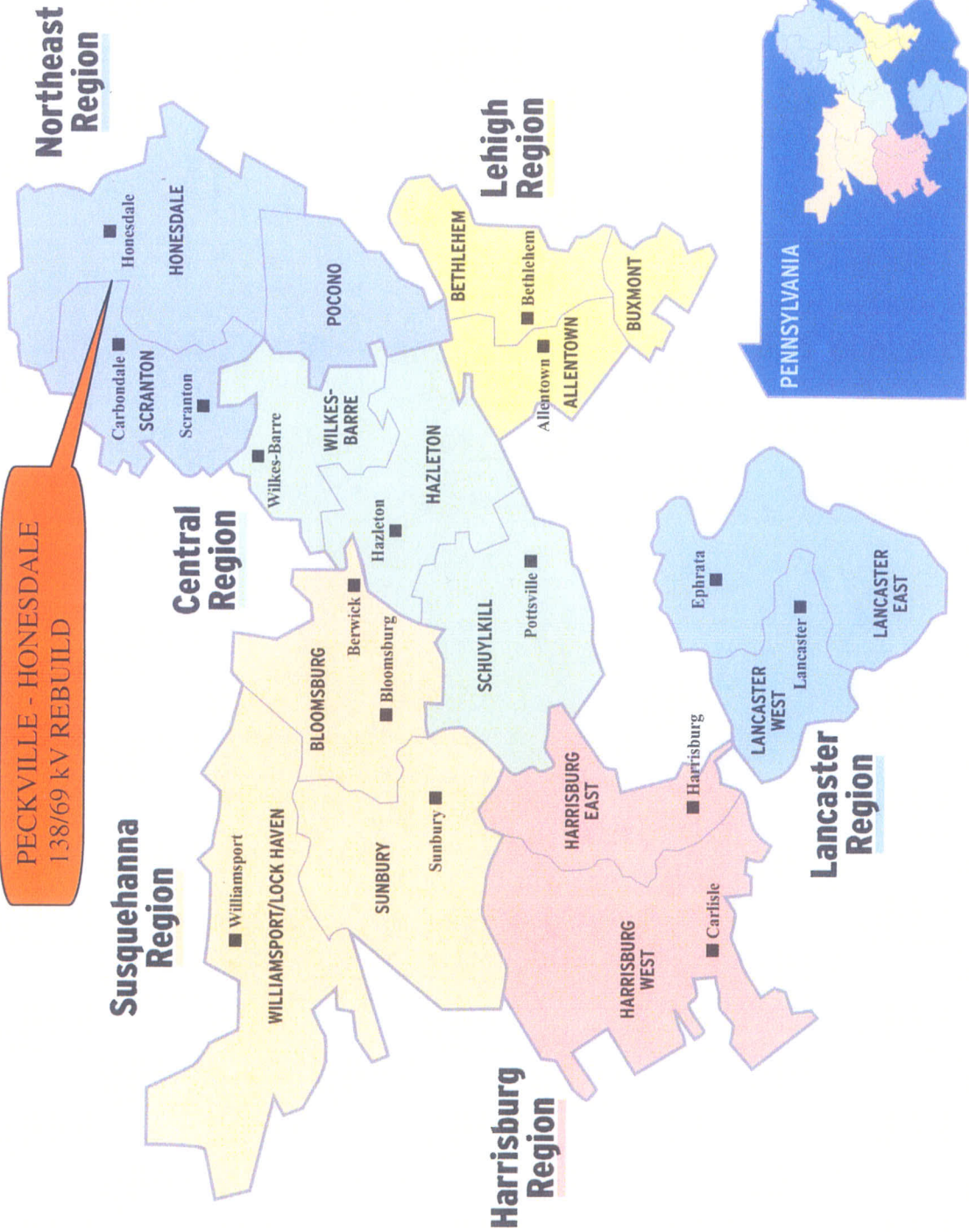
Attachment "4" - PPL Design Criteria and Safety Practices

Attachment "5" - Magnetic Field Management at PPL

Attachment "6" - List of Owners of Property within the Right-of-Way




Attachment "7" - List of Involved Governmental Agencies, Municipalities, and Other Public Entities

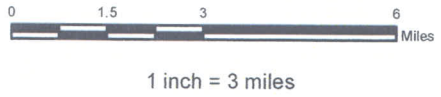
PPL ELECTRIC UTILITIES SERVICE TERRITORY





Legend

-  Substations
-  Tap Poles
-  Peckville - Honesdale 138/69 kV rebuild



Reference:
 ESRI Topographic Basemap 2010
 PPL Electric Utilities' Data
 NAD 1983 State Plane PA North
 Projection: Lambert Conformal Conic
 Linear Unit: US Foot



Job: Northeast/Pocono Reliability Project
Prepared by: MAL
Checked by: BAB
Date: 3/8/2012

Map 1
Peckville - Honesdale 138/69 kV Rebuild
 Wayne & Lackawanna Counties, Pennsylvania

Attachment 1

ATTACHMENT “1”
PECKVILLE-HONESDALE 138/69 kV REBUILD
NECESSITY STATEMENT

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Attachment “A”
Map Pocket

1.0 INTRODUCTION

PPL Electric Utilities Corporation (“PPL Electric”) proposes to reinforce the 69 kV systems in Lackawanna and Wayne Counties. This Project is one of three separate but related transmission line projects. Each transmission line project will be the subject of a separate filing.

PPL Electric conducted transmission system studies that revealed that an outage of the single circuit Blooming Grove – West Damascus (BLGR-WDAM)¹ 69 kV Line would violate PPL Electric’s “Reliability Principles & Practices” (RP&P) guidelines for load interruption due to a contingency (unplanned outage). The three separate transmission line projects will replace a “weak link” in the 69 kV transmission system that currently exists between the Peckville and Blooming Grove regional substations by replacing small, aging, low capacity #2/0 copperweld-copper (CWC) wire with larger, high capacity 556 kcmil ACSR wire.

For this Project, PPL Electric proposes to rebuild a 19.4-mile long section of the existing single circuit Peckville – Varden and Honesdale Tap 69 kV Lines for future double circuit 138/69 kV operation. The Project involves the reconstruction of the following: (1) approximately 8 miles of the existing single circuit Peckville – Varden 69 kV Line from the Archbald 69 kV Tap to the Varden 69-12 kV Substation; (2) approximately 7 miles of the existing single circuit Varden 69 kV Tap Line from the Varden 69-12 kV Substation to the Varden 69 kV Tap pole; and (3) approximately 4.4 miles of the Blooming Grove - Honesdale 138/69 kV Line (Honesdale Tap) from the Varden 69 kV Tap to the Honesdale 69-12 kV Substation. The reconstructed Peckville-Varden and Varden Tap Lines will be designed and constructed for future 138 kV double circuit operation although initially, only one circuit will be installed. The 4.4 mile long Blooming Grove – Honesdale Tap Line will be reconstructed with both circuits installed. All of the above lines will be designed for ultimate 138 kV operation, they will be operated at 69 kV until load growth in the area makes it appropriate to increase the

¹ Abbreviated names of facilities appear on the figures at the end of this Attachment.

operating voltage to 138 kV. A more detailed description of the existing and rebuilt lines involved in this Project is provided in Attachments 2 and 4.

The proposed rebuilt facilities will provide greater load capacity, operating flexibility, and improved reliability for customers in Archbald Borough and Jefferson Township in Lackawanna County, and South Canaan Township, Cherry Ridge Township, Honesdale Borough, Texas Township, Dyberry Township, and Berlin Township in Wayne County.

The estimated cost to design and construct this Project is approximately \$22,300,000. The required in-service date, which is defined as the date that the proposed facility must be placed in service, to prevent overloads that could potentially damage equipment and result in service interruptions to customers, is November 2014. In order to meet that in-service date, subject to the Commission's approval, construction is scheduled to commence in Spring of 2013.

A PPL Electric system map showing existing transmission facilities with a design voltage of 35 kV or greater is included in the Attachment "1" map pocket. This filing addresses only the existing and proposed transmission system in this portion of Wayne and Lackawanna Counties.

2.0 SYSTEM PLANNING PROCESS

System Planning is the process which assures that PPL Electric's non-bulk electric transmission system can supply electricity to all customer load in a manner that is reliable and economic. This process assures that PPL Electric's non-bulk electric system (non-BES) transmission system is planned and constructed so that:

- It can sustain probable contingencies and disturbances with minimal customer service interruption;
- It can adequately serve each customer's needs with regard to capacity, voltage, and reliability for all load levels throughout the daily load cycle; and
- It is in conformance with PPL Electric's RP&P.

The reliable and economical operation of PPL Electric's 138/69 kV transmission system requires planning guidelines for system expansion and reinforcement. The principles upon which these planning guidelines are based recognize that:

- The system expansion should be coordinated to achieve the most economical balance of construction and operating expenditures;
- It should maintain a proper balance between the degree of risk, amount and type of load interrupted, and the cost of providing the needed expansion; and
- System reliability should be maintained to prevent large scale, long term, or frequent service interruptions to avoid adverse effects and hazards to the public.

In accordance with these guidelines and PPL Electric's Reliability Criteria, PPL Electric's non-BES transmission system is planned so that:

1. Normal operation of the system will not load any electric facility beyond its normal continuous rating.
2. The loss of any single transmission line, generating unit connected to the non-BES transmission system, power transformer, substation bus, circuit breaker, or double circuit line due to the outage of a single tower or pole, does not result in any system electric facility being operated beyond its applicable emergency rating.
3. No customer load should remain interrupted for routine maintenance of non-BES transmission facilities.
4. The loss of any single facility should not result in a voltage drop of more than 5% on the 138/69 kV transmission system.
5. Stability of the electric system should be maintained from a permanent three-phase transmission line fault cleared by normal primary relay action. In addition to this, system stability should also be maintained for a permanent

single phase to ground line fault and the failure of the protective devices to operate properly resulting in a failed circuit breaker.

6. No large-scale, long-term or frequent interruption may cause excessive load loss due to their adverse effects on, and hazard to, the public.
7. Excessive load is not interrupted for the loss of a single circuit 69 kV line or double circuit 69 kV line.

These principles are incorporated in the PPL Electric Utilities Transmission Planning RP&P document.

The planning process begins with the development of a computer model of the future system. A specific study year is chosen, and the future system model is developed using the existing system plus any planned modifications to the transmission system scheduled to be completed prior to the study year. Load levels used in the system model are based on the latest forecast prepared annually by PPL Electric, based on recent summer and winter peak load forecasts that take into account ambient temperatures and humidity indices.

Once the system model is complete, comprehensive power flow simulations are performed to determine the ability of the system to comply with the PPL Electric transmission planning reliability criteria. This is accomplished by simulating an outage of each non-BES transmission and bulk electric facility. All conditions where the system is not in conformance with the reliability criteria are identified and system reinforcements are added to bring the system into conformance. Also identified are estimated costs and lead-times to implement the required reinforcements. Computer simulations of the system with the identified reinforcement alternatives are completed to identify the best overall reinforcement that will meet the needs of the region in a reliable and economic manner.

3.0 EXISTING SYSTEM

Presently, the only sources of electrical power to the northern Blooming Grove area are the Blooming Grove-West Damascus 69 kV Line, the Blooming Grove-Honesdale 69 kV line, and the Peckville-Varden 69 kV Line.

The Blooming Grove-West Damascus 69 kV Line, including the length of related taps, is 38 miles long and has one normally open (sectionalizing) point located at the Honesdale Substation. This line supplies one-half of the Honesdale Substation load. A second line, the Blooming Grove-Honesdale 69 kV line, follows an independent route and supplies the other half of Honesdale Substation. This configuration results in increased reliability to Honesdale and the surrounding area. **Figure 1** shows the functional arrangement of the existing transmission facilities in the area.

From the Blooming Grove Substation to the Kimbles 69-12 kV Substation², the Blooming Grove-West Damascus 69 kV circuit is built on double circuit 69 kV structures, sharing the line route and those structures with the Blooming Grove-Honesdale (BLGR-HONE) 69 kV Line. The majority of the Blooming Grove-West Damascus 69 kV circuit is constructed for future 138 kV operation, but currently is operated at 69 kV. The Blooming Grove-West Damascus 69 kV circuit is a radial line (only one source of electrical power) with only one 69 kV tie line (Peckville-Varden, via the Blooming Grove-Honesdale / Honesdale Tap 69 kV Line) to provide a back-up source of power for a double circuit interruption of the Blooming Grove-West Damascus and Blooming Grove-Honesdale 69 kV lines occurring near the Blooming Grove Substation.

The Peckville-Varden 69 kV Line, including the length of related taps, is approximately 24 miles long and has one normally open point located at Varden Tap. Currently, the Peckville-Varden 69 kV Line provides the only alternate source of electrical power to the northern Blooming Grove area in the event that a double circuit interruption of the Blooming Grove-West Damascus and Blooming Grove-Honesdale 69 kV lines occurs.

² Assumption is that the 2.3 miles of a second 69 kV circuit is added between Wallenpaupack HES and Kimbles Substation by 2013 under a separate Letter of Notification.

However, the line is an inadequate electrical tie due to the small-sized conductor (#2/0 copperweld-copper) and its length.

From Peckville Substation to the Varden Tap, the Peckville-Varden 69 kV circuit is built on single circuit 69 kV structures. The circuit is not constructed for future 138 kV operation and currently is operated at 69 kV. Most of the Peckville-Varden Line dates to the late 1920's. Other than routine maintenance and a reconductoring of the first 1.7 miles outside of the Peckville Substation to the Archbald Tap, the line has not been upgraded since its original installation.

Under abnormal operating conditions, when PPL Electric temporarily closes the normally open point (re-sectionalize the line) at Varden Tap, the most additional load that the Peckville-Varden Line can supply is the Honesdale 69-12 kV Substation. Otherwise, the line capacity would be exceeded and the 69 kV bus voltages would drop below the lower permissible limit.

4.0 DEFINITION OF THE PROBLEM

Under winter peak load conditions with all generation at Wallenpaupack out of service, PPL Electric projects that by 2014, an outage of the Blooming Grove-West Damascus 69 kV single circuit line occurring near the Blooming Grove Substation would result in the interruption of 73 MW of load. This violates the RP&P guideline, which only allows up to 60 MW to be interrupted for that period of time until manual sectionalizing can be performed – usually a 2 hour or less duration.

The Blooming Grove-West Damascus 69 kV circuit is a radial line (only one source of electrical power) with only one 69 kV tie line (Peckville-Varden, via the Blooming Grove-Honesdale / Honesdale Tap 69 kV line) to provide a back-up source of power for a double circuit interruption of the Blooming Grove-West Damascus and Blooming Grove-Honesdale 69 kV lines between Blooming Grove Substation and the Wallenpaupack HES. Transferring load between Blooming Grove and Peckville regional substations is limited today because, as explained above, the Peckville-Varden 69 kV Line is an

inadequate electrical tie due to its small-sized conductor (#2/0 copperweld-copper) and length.

If there were an outage of the Blooming Grove-West Damascus 69 kV circuit, only the Honesdale 69-12 kV Substation load could be transferred over to the Peckville-Varden 69 kV Line without exceeding the winter emergency thermal rating of the conductor or causing low voltage levels at the end of the “re-sectionalized” Peckville-Varden 69 kV circuit. If the West Damascus 69-12 kV Substation load was also transferred, the Peckville-Varden 69 kV Line would be loaded to 106% of its winter emergency thermal rating and the West Damascus 69 kV bus voltage would be at the lower permissible limit (62 kV).

In addition, that outage of the Blooming Grove-West Damascus 69 kV circuit would cause the customer load served by distribution substations located at Tennessee Gas (customer), Indian Orchard, West Damascus, and Bohemia to remain out of service in order for the Power Dispatcher to restore 69 kV voltage along the line to within the acceptable lower limit. That outage would result in approximately 53 MW (approximately 9,500 customers) of load remaining interrupted for an extended period of time until repairs could be made. This amount of interrupted load violates the RP&P guideline, which only allows up to 30 MW to be interrupted until overhead line repairs can be completed. In general, the duration to repair a damaged overhead line would last up to an extended work day.

5.0 PROPOSED SOLUTION

To resolve the issues described above, PPL Electric, with approval from the PUC, plans to construct three separate but related transmission line projects. Here, PPL Electric seeks PUC approval of the first transmission line project. This Project involves the following:

- Rebuild approximately 15 miles of the existing single circuit Peckville-Varden 69 kV Line for double circuit (d/c) 138/69 kV operation. The rebuild of this portion of the Peckville-Varden 69 kV Line will replace approximately

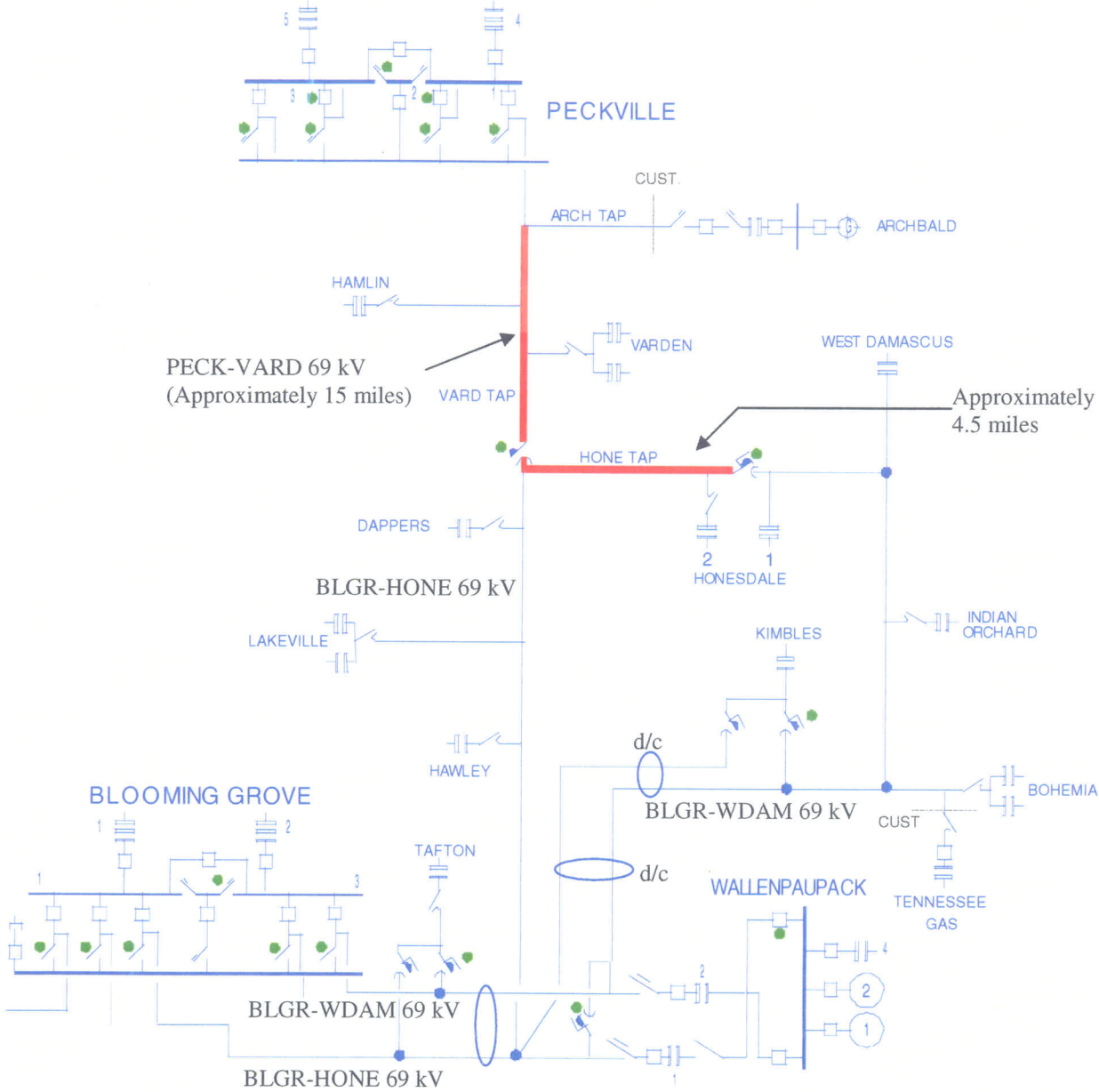
8 miles of the existing single circuit Peckville – Varden 69 kV Line from the Archbald 69 kV Tap to the Varden 69-12 kV Substation, and approximately 7 miles of the existing single circuit Varden 69 kV Tap Line from the Varden 69-12 kV Substation to the Varden 69 kV Tap (VARD TAP) Pole. PPL Electric will design the new line to current 138 kV standards, but initially operate the line at 69 kV.

- Rebuild the existing single circuit Blooming Grove – Honesdale 69 kV Line (HONE TAP) for double circuit (d/c) 138/69 kV operation. The rebuilt line will extend for a distance of approximately 4.4 miles from the Varden 69 kV Tap pole to the Honesdale 69-12 kV Substation. PPL Electric will design the new line to current 138 kV standards, but initially operate the line at 69 kV.

After this Project is complete, a single circuit outage on the Blooming Grove – West Damascus 69 kV circuit occurring near the Blooming Grove Substation would, after resectionalizing, interrupt approximately 38 MW of load for an extended period of time until repairs could be made. For this contingency, customer load served by distribution substations located at Tennessee Gas (customer) and Bohemia would remain out of service in order for the Power Dispatcher to restore 69 kV voltage along the line to within the acceptable lower limit.

The magnitude of interrupted load (38 MW) after resectionalizing still would exceed the RP&P guideline of maximum allowable load interruption (30 MW) for a single circuit line outage. However, the RP&P guideline will be attained after completion of the other two separate but related transmission line projects, including the completion of the Paupack 230-69 kV Substation with its associated transmission lines, which will be the subjects of separate filings.

Figure 2 shows the functional arrangement of the proposed transmission facilities for the three separate but related transmission line projects.



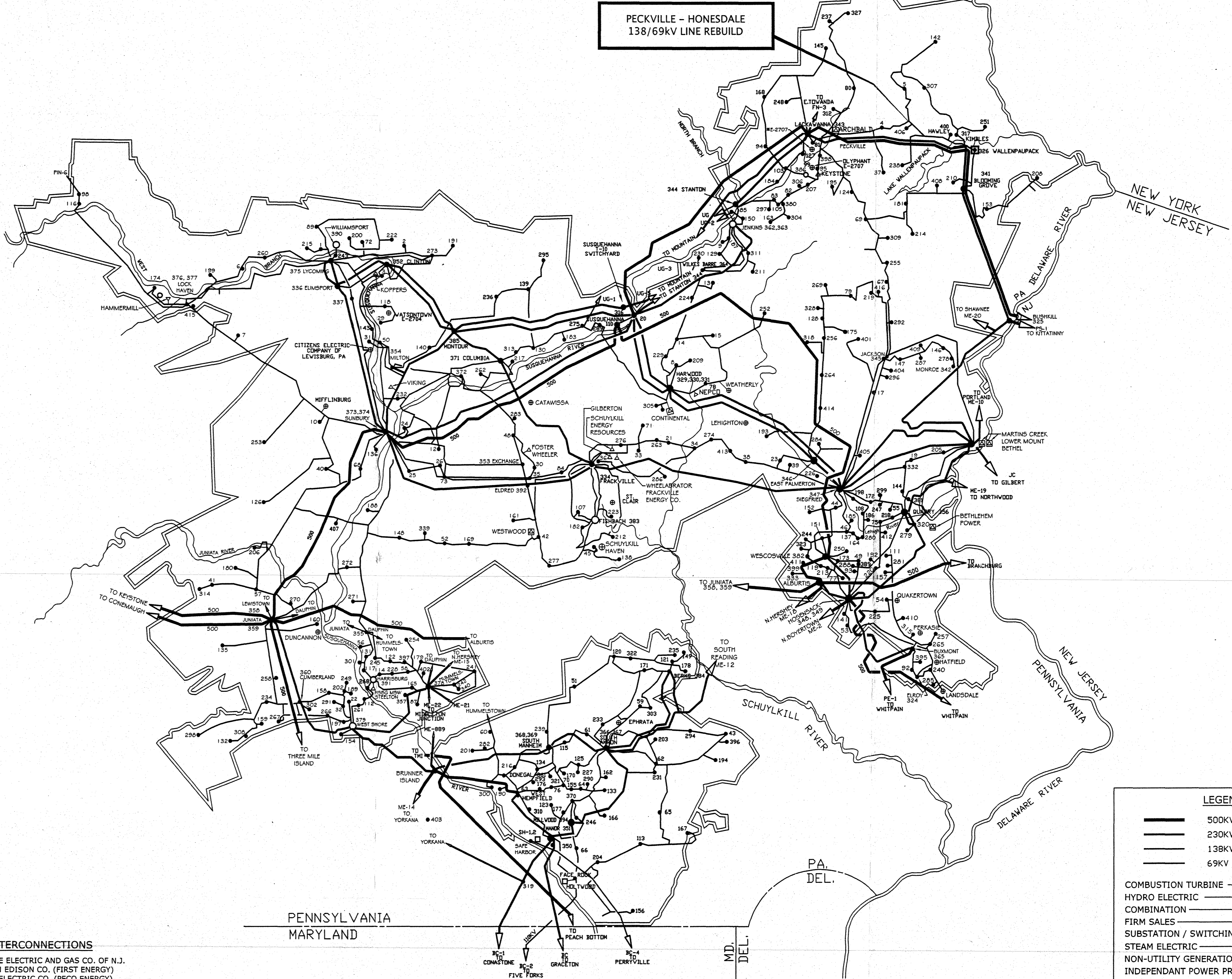
This Project, the rebuilt portion of the Peckville-Varden & Blooming Grove-Honesdale 69 kV circuits

FIGURE 1 – ONE LINE DIAGRAM EXISTING TRANSMISSION FACILITIES

SUBSTATION LISTING

- | | | |
|------------------------|-------------------------|-------------------------------|
| 1. WEST WILLIAMSPORT | 136. SELINGROVE | 271. HALIFAX |
| 2. FAIRFIELD | 137. SUMNER | 272. MILLERSBURG |
| 3. MONTGOMERY | 138. AUBURN | 273. MUNCY |
| 4. VARDEN | 139. ROHRSBURG | 274. HAUTO |
| 5. HONESDALE | 140. DERRY | 275. BERWICK |
| 6. JERSEY SHORE | 141. EAST GREENVILLE | 276. SHENANDOAH |
| 7. LOGANTON | 142. WEST DAMASCUS | 277. PINE GROVE |
| 8. VALMONT | 143. NEW COLUMBIA | 278. STROUDSBURG |
| 9. RIVER | 144. FARMERSVILLE | 279. FARMERSVILLE |
| 10. LIMESTONE | 145. GREENVILLE | 280. ALLENTOWN |
| 11. * | 146. NORTH STROUDSBURG | 281. BINGEN |
| 12. REED | 147. TANNERSVILLE | 282. RHEIMS |
| 13. WRIGHT | 148. ELIZABETHVILLE | 283. CLEVELAND |
| 14. ST. JOHNS | 149. WYOMISSING | 284. LITTLE GAP |
| 15. FRELAND | 150. EXETER | 285. ORVILLA |
| 16. * | 151. CRACKERSPORT | 286. TUSCARORA |
| 17. GILBERT | 152. SCHNECKSVILLE | 287. BARTONSVILLE |
| 18. * | 153. HEMLOCK | 288. ALTON PARK |
| 19. CHERRY HILL | 154. MT. ALLEN | 289. SALEM |
| 20. SUSQUEHANNA 230KV | 155. PRINCE | 290. NORTH BRIDGEPORT |
| 21. TAMANEND | 156. WAKEFIELD | 291. HAMPTON |
| 22. WHITE HILL | 157. COOPERSBURG | 292. CAMELBACK |
| 23. PALMERTON | 158. WERTZVILLE | 293. SILVER SPRING |
| 24. HAMILTON | 159. WEST CARLISLE | 294. BRECKNOCK |
| 25. HUNTER | 160. BENVENUE | 295. BENTON |
| 26. FAIRVIEW | 161. HEGINS | 296. MCHICHAELS |
| 27. * | 162. WEXTER | 297. HUGHSTOWN |
| 28. * | 163. YATESVILLE | 298. NEWVILLE |
| 29. MONTOUR PUMP | 164. CENTRAL ALLENTOWN | 299. POINTE NORTH |
| 30. MT. CARMEL | 165. OBERLIN | 300. MARIETTA |
| 31. KELLY | 166. STRASBURG | 301. CENTER CITY |
| 32. SPORTING HILL | 167. ATGLEN | 302. NEW KINGSTOWN |
| 33. MAHANAY CITY | 168. BROOKSIDE | 303. REAMSTOWN |
| 34. GREENWOOD | 169. WILLIAMSTOWN | 304. DUPONT |
| 35. MOWERY | 170. EAST PETERSBURG | 305. HUMBOLT |
| 36. ALTMOUNT | 171. WERNERSVILLE | 306. CEDAR AVE. |
| 37. HAMLIN | 172. NORTH BETHLEHEM | 307. INDIAN ORCHARD |
| 38. ASHFIELD | 173. WEST ALLENTOWN | 308. NOTTINGHAM |
| 39. SOUTH SLATINGTON | 174. FLEMINGTON | 309. NORTH COOLBAUGH |
| 40. SOUTH MIDDLEBURG | 175. MECKESVILLE | 310. LETORT |
| 41. WALKER | 176. DONERVILLE | 311. EAST MOUNTAIN |
| 42. FRALRY | 177. MILLERSVILLE | 312. JERMYN |
| 43. MORGANTOWN | 178. HILLINGTON | 313. BLOOMSBURG |
| 44. EGYPT | 179. DUKE | 314. MIFFLINTOWN |
| 45. CRESSONA | 180. MCALLISTERVILLE | 315. RIDGE ROAD |
| 46. SOUTH WHITEHALL | 181. NEWFOUNDLAND | 316. SUSQUEHANNA |
| 47. * | 182. MARLIN | 317. KIMBLES |
| 48. BEAR GAP | 183. WEST BERWICK | 318. CHROMIANS |
| 49. SALISBURY | 184. KEYSER AVENUE | 319. OTTER CREEK |
| 50. SOUTH MILTON | 185. MICKLEYS | 320. STEEL CITY |
| 51. HEIDELBERG | 186. EAST ALLENTOWN | 321. MCGOVERNVILLE |
| 52. LYKENS | 187. PINE RIDGE | 322. ROBESONIA |
| 53. UPPER HANOVER | 188. DALMATIA | 323. SOUTH FOGELSVILLE |
| 54. RICHLAND | 189. PENNSBORO | 324. ELROY |
| 55. MACADA | 190. NORTH COLUMBIA | 325. BUSHKILL |
| 56. ROCKVILLE | 191. HUGHSVILLE | 326. WALLENPAUPACK |
| 57. THOMPSONTOWN | 192. SOUTH ALLENTOWN | 327. ELK MOUNTAIN |
| 58. PAXTON | 193. WEISSPORT | 328. JACK FROST |
| 59. COCALICO | 194. HONEYBROOK | 329. HARWOOD 230/69KV |
| 60. EAST ELIZABETHTOWN | 195. MOSCOW | 330. HARWOOD CTG |
| 61. WARWICK | 196. * | 331. HARWOOD 69/12KV |
| 62. EARL | 197. ROSSMOYNE | 332. NAZARETH |
| 63. HEMPFIELD | 198. NORTHAMPTON | 333. ALBURTIS |
| 64. EAST LANCASTER | 199. WOOLRICH | 334. FRACKVILLE |
| 65. KINZER | 200. FAXON | 335. * |
| 66. MT. NEBO | 201. ELIZABETHTOWN | 336. ELMSPORT |
| 67. MT. POCONO | 202. ENOLA | 337. ALLENWOOD |
| 68. PENNS | 203. TERRE HILL | 338. * |
| 69. GOULDSBORO | 204. BUCK | 339. GRATZ |
| 70. DILLERVILLE | 205. MT. BETHEL | 340. HOCKERSVILLE |
| 71. GIRARD MANOR | 206. RICHFIELD | 341. BLOOMING GROVE |
| 72. KENMAR | 207. SCRANTON | 342. MONROE |
| 73. GOWEN CITY | 208. TWIN LAKES | 343. LACKAWANNA # # |
| 74. * | 209. HARLEIGH | 344. STANTON |
| 75. ELLIOT HEIGHTS | 210. TAFTON | 345. JACKSON |
| 76. ROHRERSTOWN | 211. BEAR CREEK | 346. EAST PALMERTON |
| 77. MACUNGIE | 212. ORWIGSBURG | 347. SIEGFRIED |
| 78. EAST HAZLETON | 213. EAST TEXAS | 348. HOSENSACK 230/69KV |
| 79. WAGNERS | 214. CANDENSIS | 349. HOSENSACK 500KV |
| 80. EAST CARBONDALE | 215. LINDEN | 350. CONESTOGA |
| 81. EYNON | 216. MT. JOY | 351. MANOR |
| 82. MINOOKA | 217. WEST BLOOMSBURG | 352. CLINTON |
| 83. OLD FORGE | 218. MINSI TRAIL | 353. EXCHANGE |
| 84. FOUNTAIN SPRINGS | 219. LAKE NAOMI | 354. MILTON |
| 85. SULLIVAN TRAIL | 220. LANARK | 355. DAUPHIN |
| 86. * | 221. * | 356. QUARRY SUB. |
| 87. SWATARA | 222. MONTOURSVILLE | 357. STEELTON |
| 88. * | 223. PORT CARBON | 358. JUNIATA 500/230KV |
| 89. HEPBURN | 224. BLYTHEBURN | 359. JUNIATA 230/69KV |
| 90. * | 225. MILFORD | 360. CUMBERLAND |
| 91. * | 226. TREICHLERS | 361. DONEGAL |
| 92. FRANCONIA | 227. ROSEVILLE | 362. JENKINS 230/69KV |
| 93. EMMAUS | 228. RUTHERFORD | 363. JENKINS CTG |
| 94. MORGAN | 229. HARTLAND | 364. WILKES-BARRE |
| 95. THROOP | 230. PARRISH | 365. BUXMONT |
| 96. * | 231. WEST NEW HOLLAND | 366. SOUTH AKRON 230/138/69KV |
| 97. * | 232. POINT | 367. SOUTH AKRON 69/12KV |
| 98. CHAPMAN | 233. LINCOLN | 368. SOUTH MANHEIM 69/12KV |
| 99. SUBURBAN | 234. MIDDLETON | 369. SOUTH MANHEIM 230/69KV |
| 100. * | 235. STATE HILL | 370. ENGLESLIDE |
| 101. * | 236. MILLVILLE | 371. COLUMBIA |
| 102. * | 237. TINKER | 372. DANVILLE |
| 103. PROVIDENCE | 238. LAKEVILLE | 373. SUNBURY |
| 104. * | 239. NORTH MANHEIM | 374. HUMMELS WHARF |
| 105. AVOCA | 240. HATFIELD | 375. LYCOMING |
| 106. * | 241. HERSHEY | 376. LOCK HAVEN CTG |
| 107. CASS | 242. SOUTH HERSHEY | 377. LOCK HAVEN 69/12KV |
| 108. CATASAUQA | 243. SOUTH WILLIAMSPORT | 378. HUMMELSTOWN |
| 109. * | 244. FOGELSVILLE | 379. WEST SHORE |
| 110. SUSQUEHANNA 500KV | 245. WINDSOR | 380. MONTAGE |
| 111. SEIDERSVILLE | 246. WEST WILLOW | 381. SOUTH FARMERSVILLE |
| 112. ROSEMONT | 247. WESTGATE | 382. WESCOSVILLE |
| 113. QUARRYVILLE | 248. EDELA | 383. FISHBACH |
| 114. LAWTON | 249. SUMMERDALE | 384. BERKS |
| 115. LITITZ | 250. DORNEYVILLE | 385. MONTOUR |
| 116. RENOVO | 251. BOHEMIA | 386. SUBURBAN YARD |
| 117. WALNUT | 252. WHITE HAVEN | 387. * |
| 118. WATSON | 253. LAURELTON | 388. * |
| 119. TREXLERSTOWN | 254. LINGLESTOWN | 389. NACK |
| 120. LAVINO | 255. POCONO FARMS | 390. WILLIAMSPORT |
| 121. SPRING | 256. HICKORY RUN | 391. HARRISBURG |
| 122. COLONIAL PARK | 257. BLOOMING GLEN | 392. ELDRED |
| 123. WEST LANCASTER | 258. SHERMANDSDALE | 393. * |
| 124. MADISONVILLE | 259. * | 394. MILLWOOD |
| 125. NEFFSVILLE | 260. LARRY'S CREEK | 395. TELFORD |
| 126. BEAVERTOWN | 261. SPANGLER MILLS | 396. TWIN VALLEY |
| 127. BELMONT | 262. EAST DANVILLE | 397. DEVONSHIRE |
| 128. LAKE HARMONY | 263. DELANO | 398. JESSUP |
| 129. GEORGETOWN | 264. CARBON | 399. SCHOENECK |
| 130. SCOTT | 265. SELLERSVILLE | 400. HAWLEY |
| 131. NORTH HARRISBURG | 266. MECHANISBURG | 401. EFFORT MOUNTAIN |
| 132. MOUNT ROCK | 267. CARLISLE | 402. COPPERSTONE |
| 133. GREENLAND | 268. CEDAR | 403. RED FRONT |
| 134. LANDISVILLE | 269. ARROWHEAD | 404. APPENZEL |
| 135. GREEN PARK | 270. NEWPORT | |

* - SUBSTATIONS THAT HAVE BEEN RETIRED.
 ## - SITE OF THE EXISTING 230KV SUBSTATION AND PROPOSED 500KV SUBSTATION.



LEGEND

- 500KV OPERATION
- 230KV OPERATION
- 138KV OPERATION
- 69KV OPERATION
- COMBUSTION TURBINE
- HYDRO ELECTRIC
- COMBINATION
- FIRM SALES
- SUBSTATION / SWITCHING STATION
- STEAM ELECTRIC
- NON-UTILITY GENERATION
- INDEPENDANT POWER PRODUCERS

INTERCONNECTIONS

PS PUBLIC SERVICE ELECTRIC AND GAS CO. OF N.J.
 ME METROPOLITAN EDISON CO. (FIRST ENERGY)
 PE PHILADELPHIA ELECTRIC CO. (PECO ENERGY)
 BC BALTIMORE GAS AND ELECTRIC CO.
 SH SAFE HARBOR WATER POWER CORPORATION
 UP THE UNITED GAS IMPROVEMENT CO. - LUZERNE ELECTRIC DIVISION
 PN PENNSYLVANIA ELECTRIC CO. (FIRST ENERGY)
 JC JERSEY CENTRAL POWER AND LIGHT CO. (FIRST ENERGY)

ACCT- #05201	PPL ELECTRIC UTILITIES
SCALE- NONE	ELECTRICAL SYSTEM MAP
BY- CDW	PECKVILLE - HONESDALE 138/69KV LINE REBUILD
REVIEWED	
APPROVED G. HAKUN III	DATE 7/17/05
PPL DRAWING NO. D191830	SHEET NO. 1
	REV. 108

PPL E.U. FORM 4877 (7/03)

Attachment 2

ATTACHMENT 2

PECKVILLE - HONESDALE 138/69 kV LINE REBUILD

ENGINEERING DESCRIPTION

A. DESCRIPTION OF PROPOSED LINE

PPL Electric Utilities Corporation (“PPL Electric”) proposes to rebuild a 19.4-mile long section of the existing Peckville – Honesdale 69 kV Line. The proposed rebuilt line will be located in Archbald Borough and Jefferson Township, Lackawanna County and South Canaan Township, Cherry Ridge Township, Texas Township, Honesdale Borough, Wayne County. This Project is one of three separate but related transmission line projects to reinforce the 69 kV systems in Lackawanna and Wayne Counties. Each transmission line project will be the subject of a separate filing.

Here, PPL Electric seeks PUC approval of the first transmission line project. This Project involves the rebuild of the following: (1) approximately 8 miles of the existing single-circuit Peckville – Varden 69 kV Line from the Archbald 69 kV Tap to the Varden 69-12 kV Substation; (2) approximately 7 miles of the existing single-circuit Varden 69 kV Tap line from the Varden 69-12 kV Substation to the Varden 69 kV Tap pole; and (3) approximately 4.4 miles of the Blooming Grove - Honesdale 138/69 kV Line from the Varden 69 kV Tap to the Honesdale 69-12 kV Substation. The Aerial Exhibit at the end of Attachment 2 depicts the location of these facilities. These three sections together make up the existing Peckville – Honesdale 69 kV Line. The replacement of these sections is further explained below.

1. Rebuild of the Existing Peckville – Varden 69 kV Line.

Approximately 8 miles of the existing Peckville – Varden 69 kV line will be rebuilt from the Archbald 69 kV Tap to the Varden Substation. The new line will be designed and constructed for future 138 kV double circuit

operation, but initially only one circuit will be installed and it will be operated at 69 kV until load growth in the area makes it appropriate to increase the operating voltage. The 138/69 kV design will utilize 3-556 ACSR 24/7 conductors and one 48 count optical ground wire for lightning protection and for communication between circuit breakers that remove the line from service should a fault in the line be detected.

The existing Peckville – Varden 69 kV line from the Archbald Tap to the Varden Substation will be removed. The existing transmission line is supported by 240 poles with an average height of approximately 60 feet and an average span of 175 feet. The existing Peckville – Varden line is primarily supported by wood poles; however, there are a few steel mono-poles along the line route. The rebuilt 138/69 kV line will consist of approximately 121 single-shaft direct embedded steel pole tangent structures equipped with upswept arms (Figure 1). The new structures will have an average height of 90-95 feet. There will be approximately 5 angle structures which may consist of single or two pole structures, direct embedded and guyed or on concrete foundations, depending on the severity of the angle (Figure 2). The rebuild of the existing Peckville - Varden line will be constructed within existing right of way. No new right-of-way is required. New steel mono-poles will be placed as close to existing pole locations as possible, although some existing locations may not be used because of PPL Electric's ability to construct longer spans.

2. Rebuild of the Existing Varden 69 kV Tap Line.

Approximately 7 miles of the existing Varden 69 kV Tap line will be rebuilt from the existing Varden 69-12 kV Substation to the Varden 69 kV Tap pole. The new tap line will be designed and constructed for future 138 kV double circuit operation, but initially only one circuit will be installed and it will be operated at 69 kV. A second circuit will be installed and voltage will be increased when load growth in the area makes it

appropriate to do so. The 138/69 kV design will utilize 3-556 ACSR 24/7 conductors and one 48 count optical ground wire for lightning protection and for communication between circuit breakers that remove the line from service should a fault in the line be detected. The existing Varden 69 kV Tap line has approximately 7.0 miles of 12 kV distribution line installed in place of the second circuit. The rebuilt Varden Tap will be designed to accommodate the existing 12 kV distribution beneath the transmission circuits.

The existing Varden 69 kV Tap line is supported by 206 poles with an average height of approximately 60 feet and an average span of 175 feet. The existing line is supported by wood poles. The rebuild of the existing Varden 69 kV Tap line involves the removal of approximately every other pole for the entirety of the line. The remaining wood poles will be cut to a distribution height of approximate 40 feet and will serve as only distribution structures. The new 138/69 kV tap line will consist of approximately 121 single-shaft steel pole direct embedded tangent structures equipped with upswept arms (Figure 1). The new poles will have an average height of 90-95 feet, with an average span length of 355 feet. There will be approximately four angle structures which may consist of single or two pole structures, direct embedded and guyed or on concrete foundations, depending on the severity of the angle (Figure 2). The rebuild of the existing Varden Tap line will be constructed within existing right of way. No additional right-of-way is required.

3. Rebuild of the Existing Blooming Grove – Honesdale 138/69 kV Line.

Approximately 4.4 miles of the Blooming Grove – Honesdale 138/69 kV Line will be rebuilt from the Varden 69 kV Tap pole to the Honesdale 69-12 kV Substation. The new line will be designed and constructed for future 138 kV double circuit operation, but initially will be operated at 69 kV until load growth in the area makes it appropriate to increase the

operating voltage. The new 138/69 kV design will utilize 6-556 ACSR 24/7 conductors and one 48 count optical ground wire for lightning protection and for communication between circuit breakers that remove the line from service should a fault in the line be detected.

The existing Blooming Grove – Honesdale 138/69 kV line primarily is supported by “H” frame wood poles; however, there are a few steel poles along the line route. The existing transmission line is supported by 96 poles with an average height of approximately 80 feet and an average span of 484 feet. The rebuild of the existing Blooming Grove – Honesdale 138/69 kV line will involve the removal of the entire “H” frame existing transmission line. The rebuilt line will consist of approximately 48 single-shaft steel pole direct embedded tangent structures equipped with upswept arms (Figure 1) and will be placed at the same location of the existing “H” frame structures, within reason. There will be approximately 17 angle structures which may consist of single or two pole structures, direct embedded and guyed or on concrete foundations, depending on the severity of the angle (Figure 2). In addition, one 69 kV Load Sectionalizing Air Break (LSAB) switch will be installed on the Blooming Grove – Honesdale line on the Peckville side of the Hamlin Tap pole. The rebuild of the existing Blooming Grove – Honesdale line will not alter the existing right-of-way.

All of the rebuilt lines will be designed to be direct embedded, self supported steel monopole structures, unless design parameters (including but not limited to angle structures) mandate concrete foundations or guying.

Altogether, this Project requires the installation of approximately 290 poles, which reflects a 24 percent decrease in the total number of poles along the entire line section. The proposed single-shaft steel poles will average approximately 90-95 feet in height and the average span length will be approximately 355 feet.

The new 138/69 kV line will be designed according to, and will generally exceed, the National Electrical Safety Code standards. Additional design criteria and safety rules practiced by PPL Electric Utilities are included in Attachment 4. The minimum conductor to ground clearance will be 30 feet which occurs at a maximum conductor temperature of 257° F. The design minimum conductor ground clearances and conductor thermal ratings are as follow:

TABLE 1

**DESIGN MINIMUM CONDUCTOR CLEARANCES
FOR 556.5 KCMIL, 24/7 STRANDING ACSR**

<u>Condition</u>	<u>Double-Circuit Design Clearance to Ground</u>
Normal load, average weather (60°F ambient temperature)	33.56 feet
Predicted extreme thermal load (257°F conductor temperature)	30.00 feet
Predicted NESC extreme wind load (60°F ambient temperature)	34.49 feet
Predicted extreme weather conditions (1-inch ice, 4 lbs. wind, 15°F)	32.72 feet

Clearances based on a maximum tension of 7000 lbs. at 0.5 inch ice, 4 lbs. wind, 0°F and a ruling span of 355 feet.

TABLE 2

**CONDUCTOR THERMAL RATING
556.5 KCMIL 24/7 STRANDING ASCR
(257°F) 125°C MAXIMUM CONDUCTOR TEMPERATURE**

<u>Condition</u>	Ambient Temperature <u>°C</u>	Wind Speed <u>Knots</u>	Ampacity <u>Amps</u>
Summer Normal	35	0	815
Winter Normal	10	0	926
Summer Emergency	35	1.5	1041
Winter Emergency	10	1.5	1163

B. MAGNETIC FIELD MANAGEMENT

PPL Electric Utilities’ Magnetic Field Management Program is summarized in Attachment 5 and applied to reconstruction and new line projects. In order to lower magnetic field exposures, the program generally prescribes the use of a line design that provides five foot higher ground clearances and reverse phasing of new double-circuit lines where it is feasible to do so at low or no cost. The implementation of additional modifications will be considered, provided those modifications can be made at low or no cost.

The rebuild of the Peckville Varden 69 kV Line and the Varden 69 kV Tap will be for single circuit operations initially, thus reverse phasing will not be accomplished, although five foot high ground clearance will be implemented. The rebuild of the Blooming Grove Honesdale 138/69 kV line for double circuit operation will allow for reverse phasing. Some reduction is anticipated with these modifications.

C. RIGHT-OF-WAY STATUS

The proposed reconstruction of all three line sections will be entirely within the existing PPL Electric-owned rights-of-way. The existing rights-of-way and easements for the Peckville-Honesdale 69 kV Line provide the necessary property rights to reconstruct the Line and switch structures in the Line. Further, the existing right-of-way is approximately 100 feet wide and sufficient to accommodate the reconstruction and reconductoring without the need for additional right-of-way. Therefore, no additional rights-of-way is required for this project.

Altogether, this Project requires the installation of approximately 290 poles, which reflects a 24 percent decrease in the total number of transmission poles along the entire line section. Although the new steel mono-poles will have a greater average height than the existing wood structures, the new steel mono-poles will be placed as close to existing pole locations as practical. Some existing locations may not be used due to PPL's ability to construct longer spans. No new poles will be placed on property where there were previously no poles. Further, approximately 4.4 miles of "H" frame wood poles will be removed and replaced by a single steel mono-pole. This will result in a reduction in the footprint of each "H" frame pole within the right-of-way and a reduction to the number of poles.

Typical H-Frame Structure on Blooming Grove – Honesdale Line



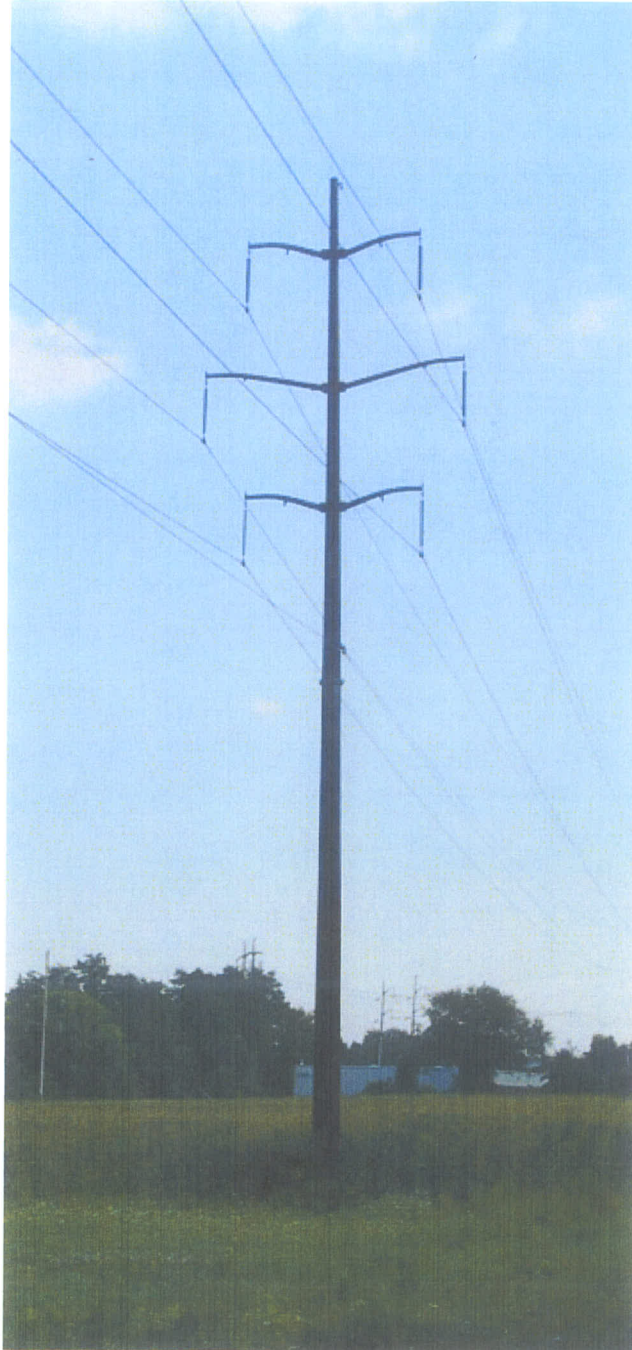
Typical Varden Tap Existing Structures



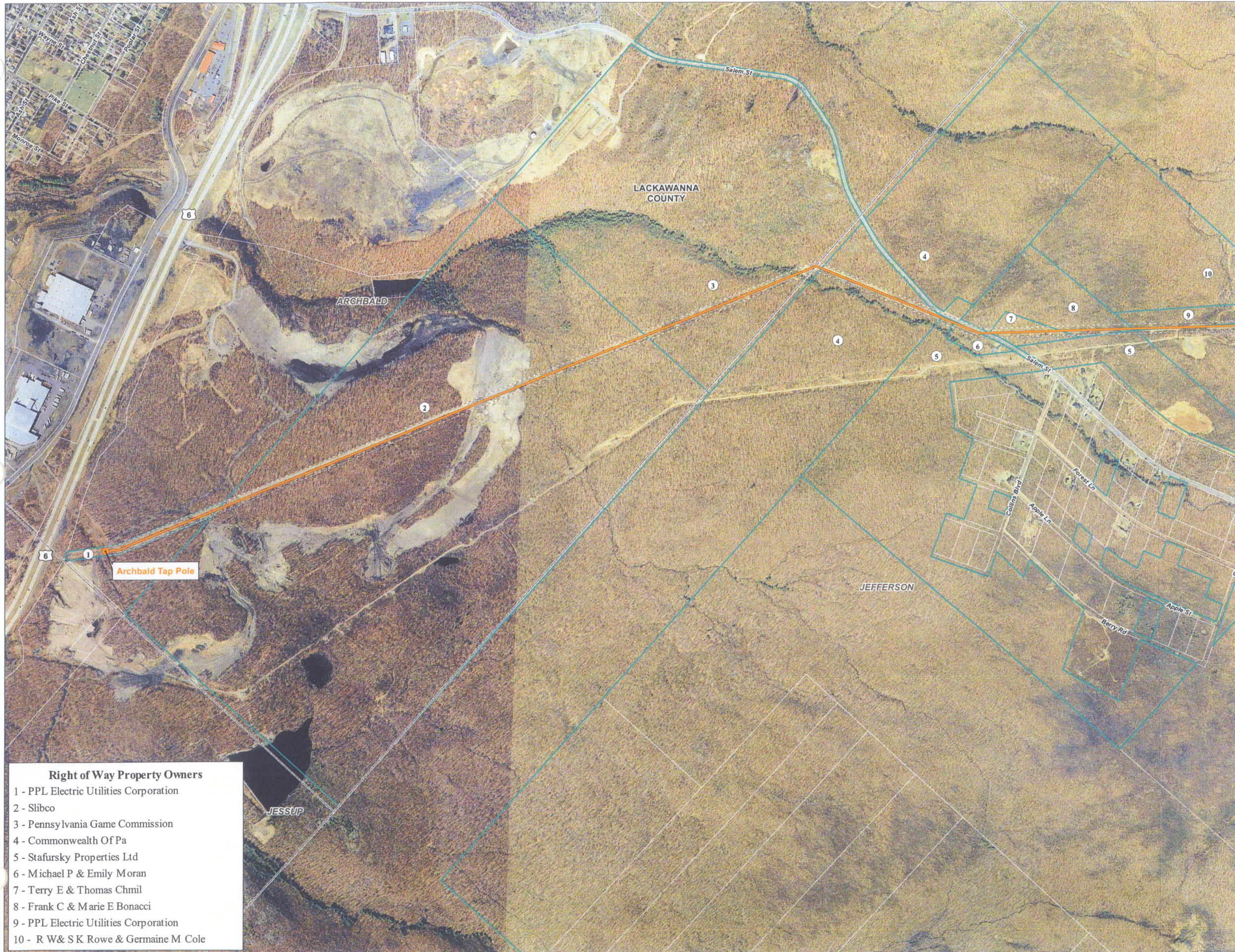
Typical Peckville-Varden Line Existing Structure



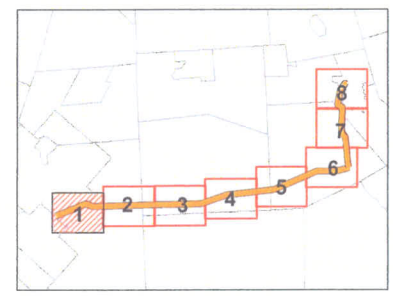
Proposed Rebuild Monopole Structure with Upswept Arms







- Legend**
- Tap Poles
 - Peckville - Honesdale 138/69 kV line rebuild
 - - - Right - of - Way
 - ▨ Substation
 - ⊕ Lackawanna County Parcels within ROW
 - ⊕ Wayne County Parcels within ROW
 - ▭ Parcel Boundaries
 - ▭ Municipality Boundary
 - ▭ County Boundary



Keep Map not to Scale

N
 NAD 1983 StatePlane Pennsylvania North
 Projection: Lambert Conformal Conic
 Linear Unit: US Foot

Lackawanna and Wayne County Parcel Data
 2008 PAMAP Imagery
 PPL provided custom data
 URS custom Data



1 inch = 500 feet

Map formatted for "D" (22"x34") size sheet.
 Ratio scale not valid for other page sizes.

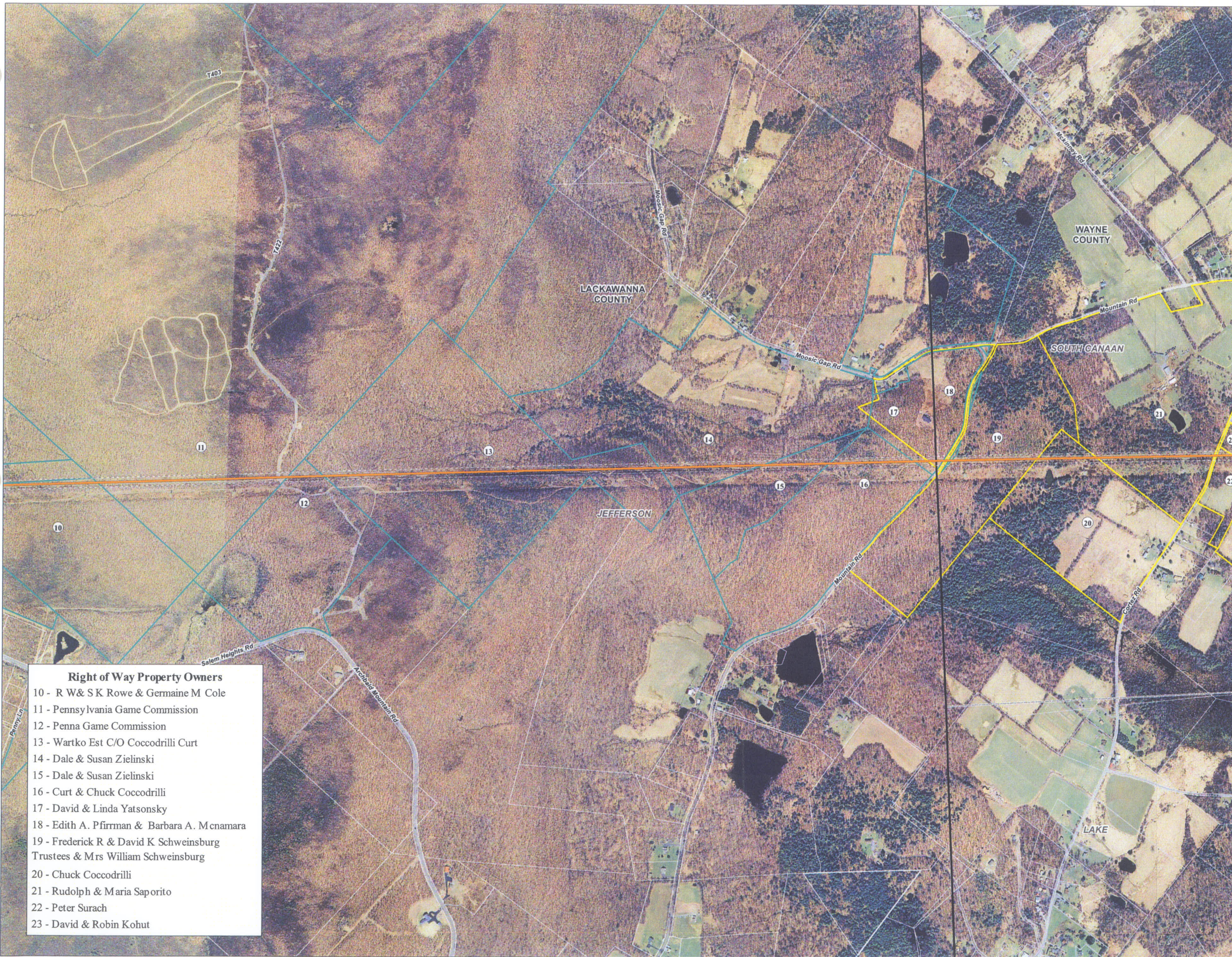
- Right of Way Property Owners**
- 1 - PPL Electric Utilities Corporation
 - 2 - Slibco
 - 3 - Pennsylvania Game Commission
 - 4 - Commonwealth Of Pa
 - 5 - Stafursky Properties Ltd
 - 6 - Michael P & Emily Moran
 - 7 - Terry E & Thomas Chmil
 - 8 - Frank C & Marie E Bonacci
 - 9 - PPL Electric Utilities Corporation
 - 10 - R W & S K Rowe & Germaine M Cole



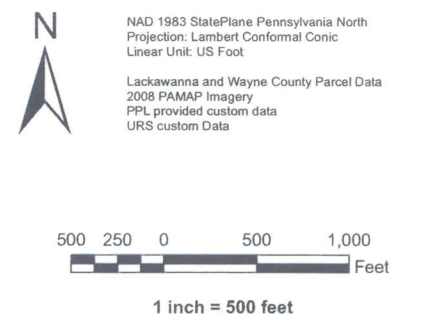
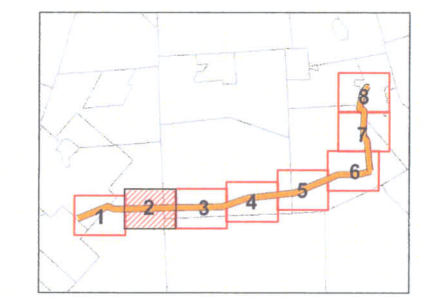
Property Owners - Map Extent 1
Peckville - Honesdale
138/69 kV Line Rebuild

Wayne & Lackawanna Counties, Pennsylvania

Prepared By: MAL	Checked By: BAB
Job: NE/ Pocono Reliability Project	Date: April 2012



- Legend**
- Tap Poles
 - Peckville - Honesdale 138/69 kV line rebuild
 - - - Right - of - Way
 - ▨ Substation
 - ▣ Lackawanna County Parcels within ROW
 - ▣ Wayne County Parcels within ROW
 - ▭ Parcel Boundaries
 - ▭ Municipality Boundary
 - ▭ County Boundary



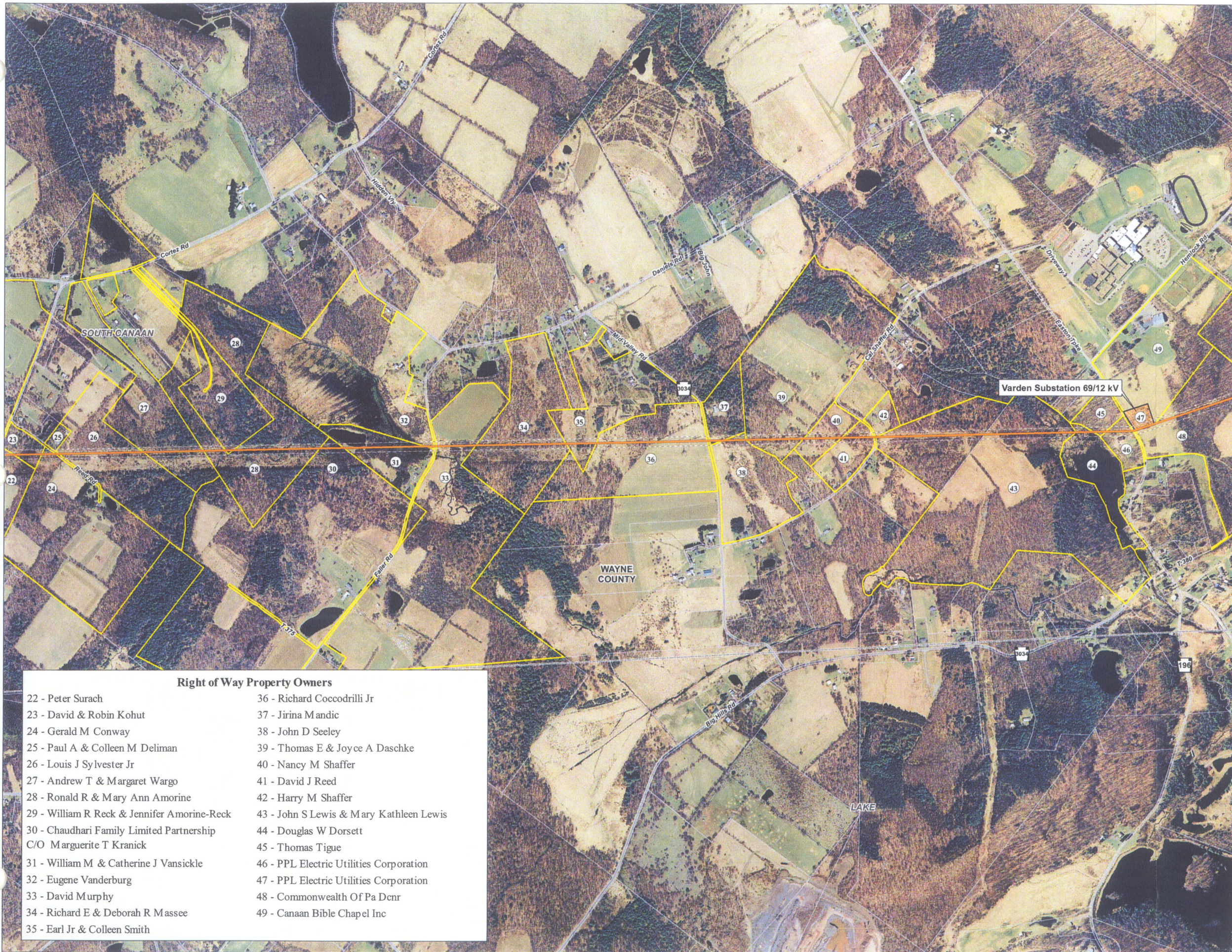
- Right of Way Property Owners**
- 10 - R W & S K Rowe & Germaine M Cole
 - 11 - Pennsylvania Game Commission
 - 12 - Penna Game Commission
 - 13 - Wartko Est C/O Coccodrilli Curt
 - 14 - Dale & Susan Zielinski
 - 15 - Dale & Susan Zielinski
 - 16 - Curt & Chuck Coccodrilli
 - 17 - David & Linda Yatsonsky
 - 18 - Edith A. Pfirman & Barbara A. Mcnamara
 - 19 - Frederick R & David K Schweinsburg
Trustees & Mrs William Schweinsburg
 - 20 - Chuck Coccodrilli
 - 21 - Rudolph & Maria Saporito
 - 22 - Peter Surach
 - 23 - David & Robin Kohut

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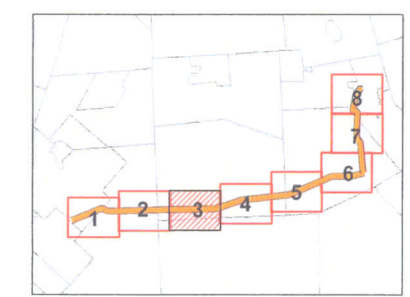
Property Owners - Map Extent 2
Peckville - Honesdale
138/69 kV Line Rebuild

Wayne & Lackawanna Counties, Pennsylvania

Prepared By: MAL	Checked By: BAB
Job: NE/ Pocono Reliability Project	Date: April 2012

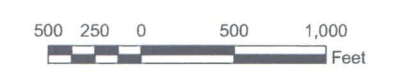


- Legend**
- Tap Poles
 - Peckville - Honesdale 138/69 kV line rebuild
 - - - Right - of - Way
 - ▨ Substation
 - ⊕ Lackawanna County Parcels within ROW
 - ⊕ Wayne County Parcels within ROW
 - ▭ Parcel Boundaries
 - ▭ Municipality Boundary
 - ▭ County Boundary



Keep Map not to Scale

N
 NAD 1983 StatePlane Pennsylvania North
 Projection: Lambert Conformal Conic
 Linear Unit: US Foot
 Lackawanna and Wayne County Parcel Data
 2008 PAMAP Imagery
 PPL provided custom data
 URS custom Data



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Map formatted for "D" (22"x34") size sheet.
 Ratio scale not valid for other page sizes.

Right of Way Property Owners

22 - Peter Surach	36 - Richard Coccodrilli Jr
23 - David & Robin Kohut	37 - Jirina Mandic
24 - Gerald M Conway	38 - John D Seeley
25 - Paul A & Colleen M Deliman	39 - Thomas E & Joyce A Daschke
26 - Louis J Sylvester Jr	40 - Nancy M Shaffer
27 - Andrew T & Margaret Wargo	41 - David J Reed
28 - Ronald R & Mary Ann Amorine	42 - Harry M Shaffer
29 - William R Reck & Jennifer Amorine-Reck	43 - John S Lewis & Mary Kathleen Lewis
30 - Chaudhari Family Limited Partnership C/O Marguerite T Kranick	44 - Douglas W Dorsett
31 - William M & Catherine J Vansickle	45 - Thomas Tigie
32 - Eugene Vanderburg	46 - PPL Electric Utilities Corporation
33 - David Murphy	47 - PPL Electric Utilities Corporation
34 - Richard E & Deborah R Massee	48 - Commonwealth Of Pa Dcnr
35 - Earl Jr & Colleen Smith	49 - Canaan Bible Chapel Inc



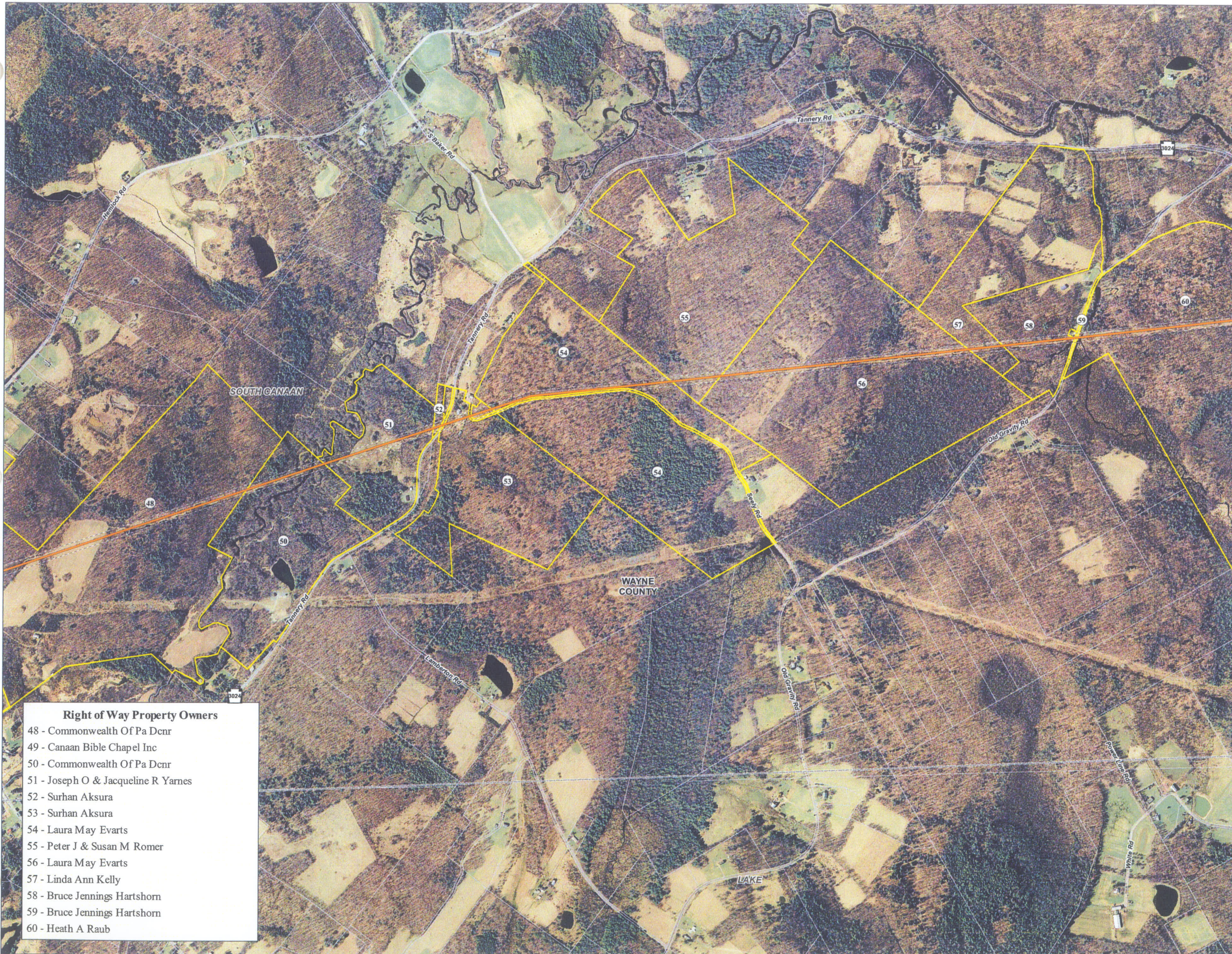
**Property Owners - Map Extent 3
 Peckville - Honesdale
 138/69 kV Line Rebuild**

Wayne & Lackawanna Counties, Pennsylvania

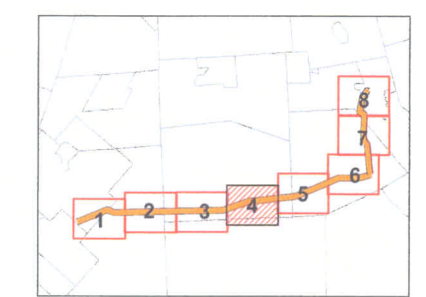
Prepared By: MAL Checked By: BAB

Job: NE/ Pocono Reliability Project Date: April 2012

Path: S:\Projects\MS\PPL\POCONO\Projects\Real Estate\Peck\Hones\PEL Peck-Hones ROW Property Owners Extent.mxd



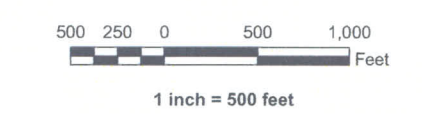
- Legend**
- Tap Poles
 - Peckville - Honesdale 138/69 kV line rebuild
 - - - Right - of - Way
 - Substation
 - Lackawanna County Parcels within ROW
 - Wayne County Parcels within ROW
 - Parcel Boundaries
 - Municipality Boundary
 - County Boundary



Keep Map not to Scale

NAD 1983 StatePlane Pennsylvania North
 Projection: Lambert Conformal Conic
 Linear Unit: US Foot

Lackawanna and Wayne County Parcel Data
 2008 PAMAP Imagery
 PPL provided custom data
 URS custom Data



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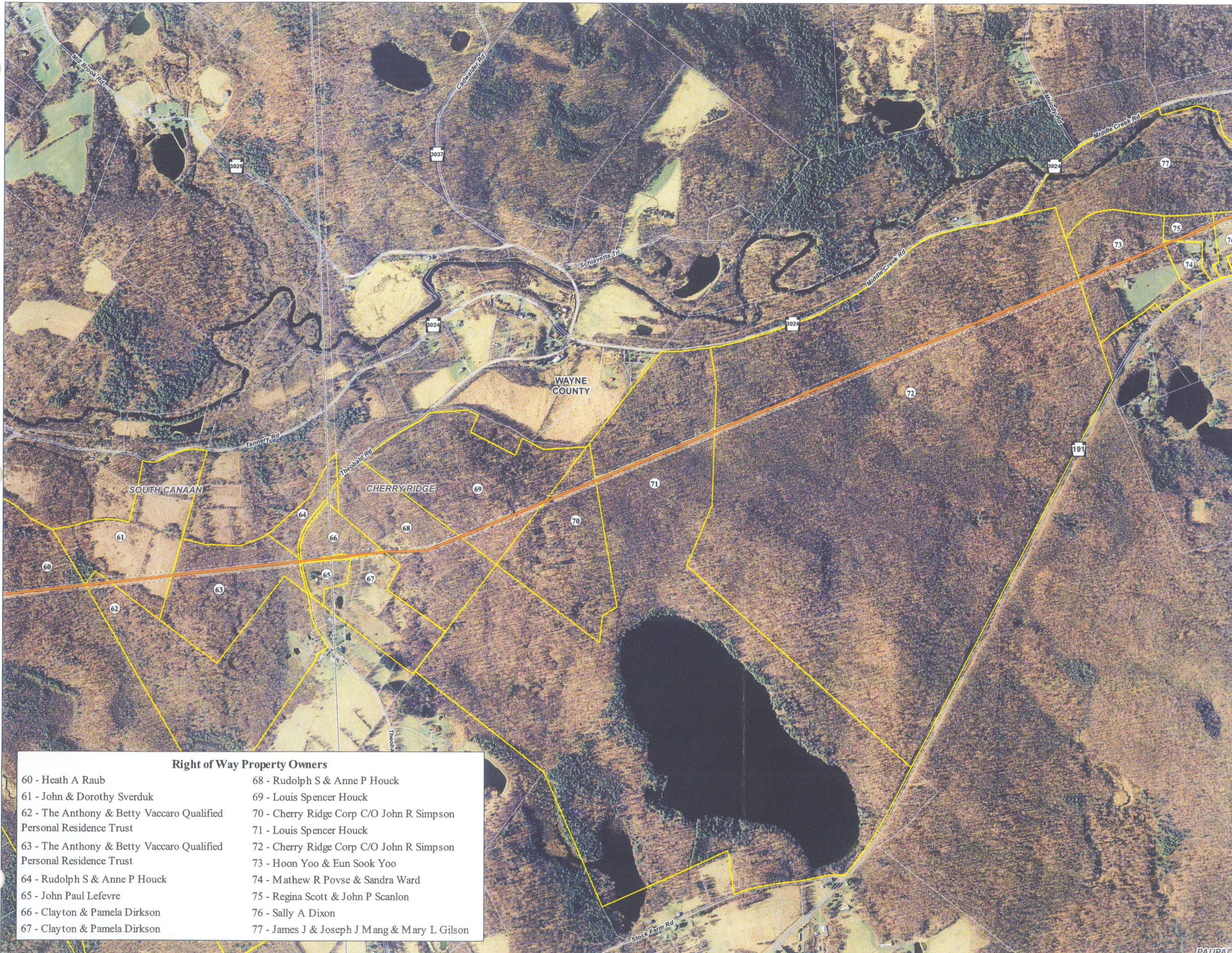
- Right of Way Property Owners**
- 48 - Commonwealth Of Pa Dcnr
 - 49 - Canaan Bible Chapel Inc
 - 50 - Commonwealth Of Pa Dcnr
 - 51 - Joseph O & Jacqueline R Yarnes
 - 52 - Surhan Aksura
 - 53 - Surhan Aksura
 - 54 - Laura May Everts
 - 55 - Peter J & Susan M Romer
 - 56 - Laura May Everts
 - 57 - Linda Ann Kelly
 - 58 - Bruce Jennings Hartshorn
 - 59 - Bruce Jennings Hartshorn
 - 60 - Heath A Raub



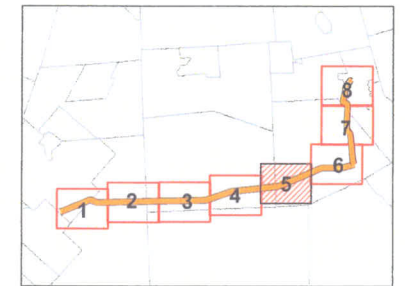
**Property Owners - Map Extent 4
 Peckville - Honesdale
 138/69 kV Line Rebuild**

Wayne & Lackawanna Counties, Pennsylvania

Prepared By: MAL	Checked By: BAB
Job: NE/ Pocono Reliability Project	Date: April 2012



- Legend**
- Tap Poles
 - Peckville - Honesdale 138/69 kV line rebuild
 - - - Right - of - Way
 - ▨ Substation
 - ▣ Lackawanna County Parcels within ROW
 - ▣ Wayne County Parcels within ROW
 - ▭ Parcel Boundaries
 - ▭ Municipality Boundary
 - ▭ County Boundary

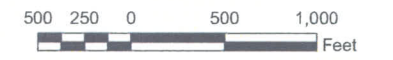


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NAD 1983 StatePlane Pennsylvania North
 Projection: Lambert Conformal Conic
 Linear Unit: US Foot

Lackawanna and Wayne County Parcel Data
 2008 PAMAP Imagery
 PPL provided custom data
 URS custom Data



1 inch = 500 feet

Map formatted for "D" (22"x34") size sheet.
 Ratio scale not valid for other page sizes.



**Property Owners - Map Extent 5
 Peckville - Honesdale
 138/69 kV Line Rebuild**

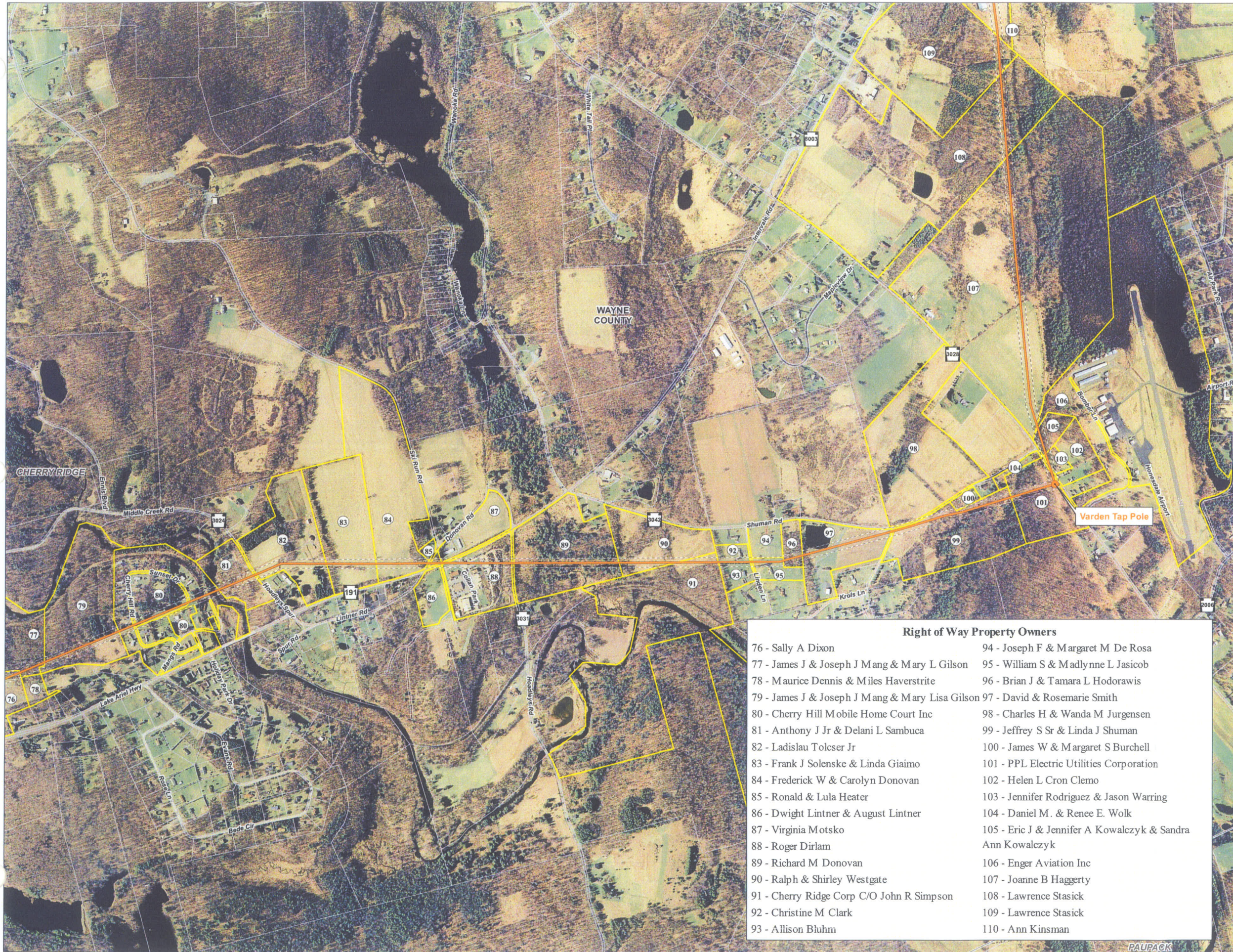
Wayne & Lackawanna Counties, Pennsylvania

Prepared By: MAL Checked By: BAB

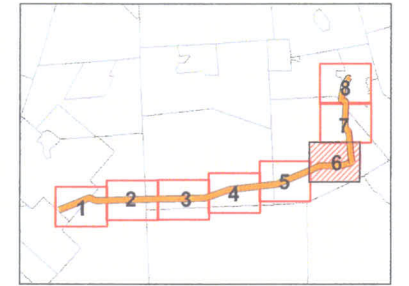
Job: NE/ Pocono Reliability Project Date: April 2012

Right of Way Property Owners

60 - Heath A Raub	68 - Rudolph S & Anne P Houck
61 - John & Dorothy Sverduk	69 - Louis Spencer Houck
62 - The Anthony & Betty Vaccaro Qualified Personal Residence Trust	70 - Cherry Ridge Corp C/O John R Simpson
63 - The Anthony & Betty Vaccaro Qualified Personal Residence Trust	71 - Louis Spencer Houck
64 - Rudolph S & Anne P Houck	72 - Cherry Ridge Corp C/O John R Simpson
65 - John Paul Lefevre	73 - Hoon Yoo & Eun Sook Yoo
66 - Clayton & Pamela Dirkson	74 - Mathew R Povse & Sandra Ward
67 - Clayton & Pamela Dirkson	75 - Regina Scott & John P Scanlon
	76 - Sally A Dixon
	77 - James J & Joseph J Mang & Mary L Gilson

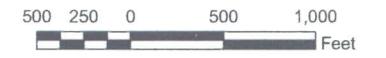


- Legend**
- Tap Poles
 - Peckville - Honesdale 138/69 kV line rebuild
 - - - Right - of - Way
 - ▨ Substation
 - ⊕ Lackawanna County Parcels within ROW
 - ⊕ Wayne County Parcels within ROW
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 PPL provided custom data
 URS custom Data



1 inch = 500 feet

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Right of Way Property Owners

- | | |
|---|--|
| 76 - Sally A Dixon | 94 - Joseph F & Margaret M De Rosa |
| 77 - James J & Joseph J Mang & Mary L Gilson | 95 - William S & Madlynn L Jasicob |
| 78 - Maurice Dennis & Miles Haverstrite | 96 - Brian J & Tamara L Hodorawis |
| 79 - James J & Joseph J Mang & Mary Lisa Gilson | 97 - David & Rosemarie Smith |
| 80 - Cherry Hill Mobile Home Court Inc | 98 - Charles H & Wanda M Jurgensen |
| 81 - Anthony J Jr & Delani L Sambuca | 99 - Jeffrey S Sr & Linda J Shuman |
| 82 - Ladislau Tolcser Jr | 100 - James W & Margaret S Burchell |
| 83 - Frank J Solenske & Linda Giaimo | 101 - PPL Electric Utilities Corporation |
| 84 - Frederick W & Carolyn Donovan | 102 - Helen L Cron Clemo |
| 85 - Ronald & Lula Heater | 103 - Jennifer Rodriguez & Jason Warring |
| 86 - Dwight Lintner & August Lintner | 104 - Daniel M. & Renee E. Wolk |
| 87 - Virginia Motsko | 105 - Eric J & Jennifer A Kowalczyk & Sandra Ann Kowalczyk |
| 88 - Roger Dirlam | 106 - Enger Aviation Inc |
| 89 - Richard M Donovan | 107 - Joanne B Haggerty |
| 90 - Ralph & Shirley Westgate | 108 - Lawrence Stasick |
| 91 - Cherry Ridge Corp C/O John R Simpson | 109 - Lawrence Stasick |
| 92 - Christine M Clark | 110 - Ann Kinsman |
| 93 - Allison Bluhm | |

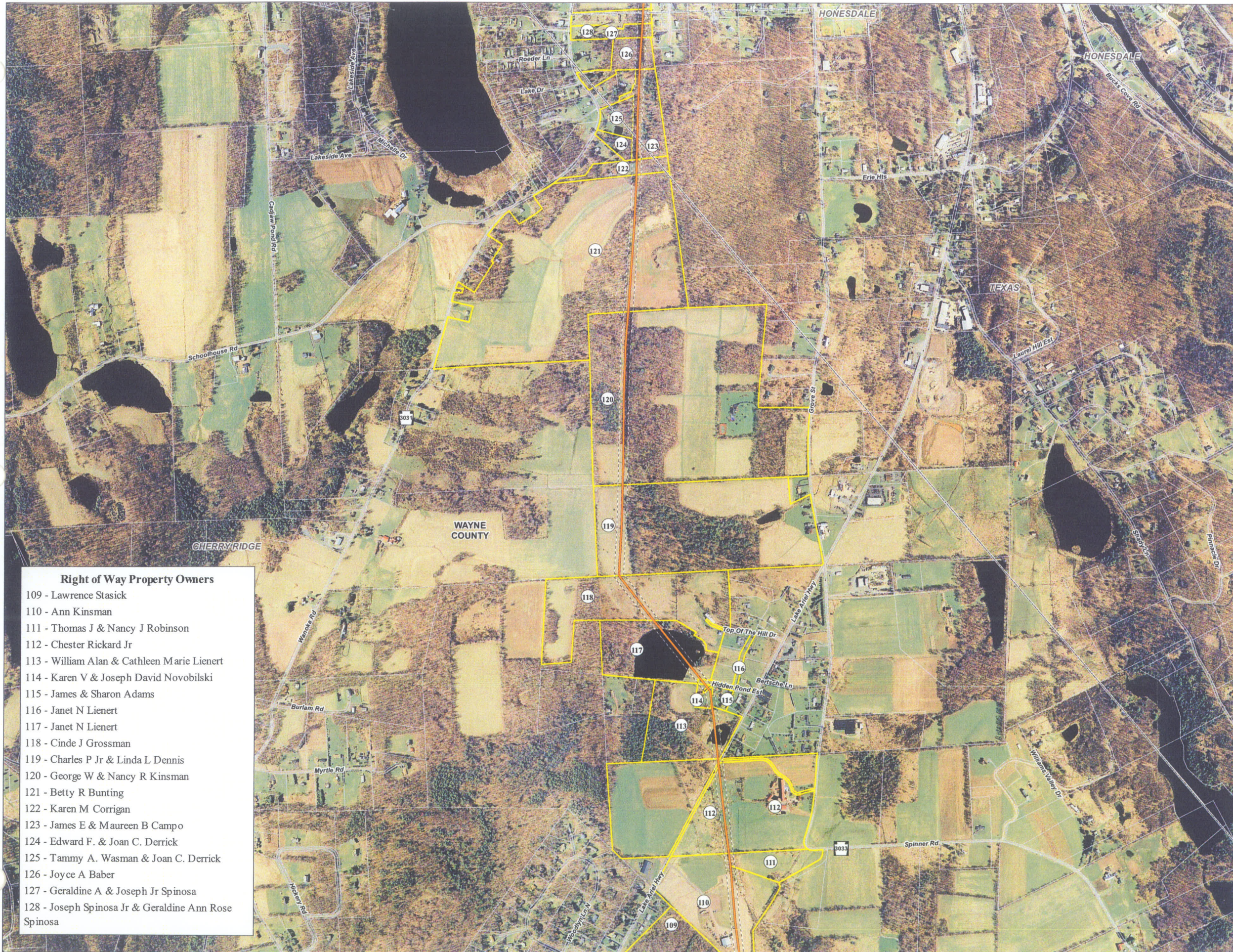


**Property Owners - Map Extent 6
 Peckville - Honesdale
 138/69 kV Line Rebuild**

Wayne & Lackawanna Counties, Pennsylvania

Prepared By: MAL Checked By: BAB

Job: NE/ Pocono Reliability Project Date: April 2012



- Right of Way Property Owners**
- 109 - Lawrence Stasick
 - 110 - Ann Kinsman
 - 111 - Thomas J & Nancy J Robinson
 - 112 - Chester Rickard Jr
 - 113 - William Alan & Cathleen Marie Lienert
 - 114 - Karen V & Joseph David Novobilski
 - 115 - James & Sharon Adams
 - 116 - Janet N Lienert
 - 117 - Janet N Lienert
 - 118 - Cinde J Grossman
 - 119 - Charles P Jr & Linda L Dennis
 - 120 - George W & Nancy R Kinsman
 - 121 - Betty R Bunting
 - 122 - Karen M Corrigan
 - 123 - James E & Maureen B Campo
 - 124 - Edward F. & Joan C. Derrick
 - 125 - Tammy A. Wasman & Joan C. Derrick
 - 126 - Joyce A Baber
 - 127 - Geraldine A & Joseph Jr Spinosa
 - 128 - Joseph Spinosa Jr & Geraldine Ann Rose Spinosa

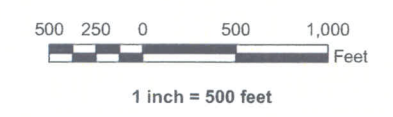
- Legend**
- Tap Poles
 - Peckville - Honesdale 138/69 kV line rebuild
 - - - Right - of - Way
 - ▨ Substation
 - ▭ Lackawanna County Parcels within ROW
 - ▭ Wayne County Parcels within ROW
 - ▭ Parcel Boundaries
 - ▭ Municipality Boundary
 - ▭ County Boundary



Key Map not to Scale

N
 NAD 1983 StatePlane Pennsylvania North
 Projection: Lambert Conformal Conic
 Linear Unit: US Foot

Lackawanna and Wayne County Parcel Data
 2008 PAMAP Imagery
 PPL provided custom data
 URS custom Data



Map formatted for "D" (22"x34") size sheet.
 Ratio scale not valid for other page sizes.



**Property Owners - Map Extent 7
 Peckville - Honesdale
 138/69 kV Line Rebuild**

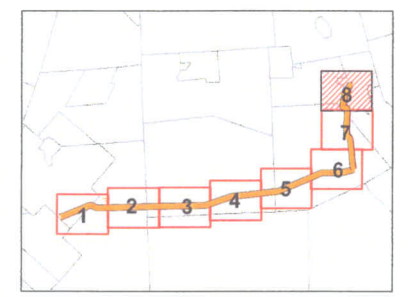
Wayne & Lackawanna Counties, Pennsylvania

Prepared By: MAL	Checked By: BAB
Job: NE/ Pocono Reliability Project	Date: April 2012



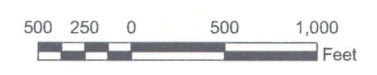
- Right of Way Property Owners**
- 129 - Thomas C Jr & Linda S Tallman
 - 130 - Gary & Kathleen M Flood
 - 131 - Bernard Jr & Claire Harvey
 - 132 - Thomas C Jr & Linda S Tallman
 - 133 - Thomas C Jr & Linda S Tallman
 - 134 - Michael T & Catherine Tallman
 - 135 - William J & Catherine M Kelly
 - 136 - George J. & Grace M. Chesek
 - 137 - Wayne Highlands School Dist
 - 138 - John J Czar Jr
 - 139 - Paul J & Elizabeth Douglas
 - 140 - John J & Wendy H Czar
 - 141 - Rudolph Jr & Karen Desio & Marissa Desio
 - 142 - John J & Wendy H Czar
 - 143 - Gary J. Swartz Sr
 - 144 - Margaret Loscig
 - 145 - Robert A Jr & Sabrina L Loscig
 - 146 - Don & Kevin Doney & Shawn Doney
 - 147 - Firmstone Oil Co
 - 148 - PPL Electric Utilities Corporation

- Legend**
- Tap Poles
 - Peckville - Honesdale 138/69 kV line rebuild
 - - - Right - of - Way
 - ▨ Substation
 - ▣ Lackawanna County Parcels within ROW
 - ▣ Wayne County Parcels within ROW
 - ▭ Parcel Boundaries
 - ▭ Municipality Boundary
 - ▭ County Boundary



NAD 1983 StatePlane Pennsylvania North
 Projection: Lambert Conformal Conic
 Linear Unit: US Foot

Lackawanna and Wayne County Parcel Data
 2008 PAMAP Imagery
 PPL provided custom data
 URS custom Data



1 inch = 500 feet

Map formatted for "D" (22"x34") size sheet.
 Ratio scale not valid for other page sizes.



Property Owners - Map Extent 8
Peckville - Honesdale
138/69 kV Line Rebuild

Wayne & Lackawanna Counties, Pennsylvania

Prepared By: MAL	Checked By: BAB
Job: NE/ Pocono Reliability Project	Date: April 2012

Path: S:\Projects\MS\PP\POCONO\Projects\Real Estate\Peck\Hones\PP\Peck-Hones ROW Property Owners Extent8.mxd

ATTACHMENT “3”
PECKVILLE-HONESDALE 138/69 kV TRANSMISSION LINE REBUILD
ENVIRONMENTAL ASSESSMENT

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ATTACHMENT “3”
PECKVILLE-HONESDALE 138/69 kV TRANSMISSION LINE REBUILD
ENVIRONMENTAL ASSESSMENT

A. INTRODUCTION

PPL Electric Utilities Corporation (PPL Electric) plans to rebuild the 1920’s-era transmission line structures located within the existing Peckville-Honesdale 69 kV right-of-way (ROW). These upgrades are being completed in order to improve local electrical system reliability. This Project is one of three separate but related transmission line projects to reinforce the 69 kV systems in Lackawanna and Wayne Counties. Each transmission line project will be the subject of a separate filing.

Here, PPL Electric seeks Pennsylvania Public Utility Commission (PUC) approval of the first transmission line project. This Project involves the reconstruction of the existing Peckville – Honesdale 69 kV Line to replace a 19.4-mile long section of aging, low capacity, single circuit #2/0 copperweld copper wire line with a high capacity double circuit 138/69 kV transmission line. The Project involves the removal of the existing pole structures and replacement with single-shaft steel poles that will average approximately 90-95 feet in height. This Project requires the installation of approximately 284 poles, which reflects a 24 percent decrease in the total number of transmission poles along the entire line section.

The rebuilt line will be constructed entirely within existing right-of-way. No new rights-of-way are needed for this rebuild. A more detailed description of the existing and rebuilt lines involved in Part 1 of the Project is provided in **Attachment 2**.

PPL Electric is seeking approval of the rebuild of the Peckville-Honesdale 138/69 kV transmission line through this Letter of Notification (LON). Given the length of the line to be rebuilt and the varying geography the ROW crosses, PPL Electric deemed it prudent to provide an assessment of potential alternative routes although such an evaluation is not required as part

of the LON process. PPL Electric also deemed it prudent to provide a review of the surrounding natural and man-made environmental landscape.

The existing Peckville-Honesdale 69 kV ROW traverses high-density commercial development, forested mountain terrain, open farmlands, and suburban residential areas. PPL Electric determined through a review of the surrounding landscape, as discussed in the following narrative, that any alternative route outside of the existing ROW would result in significantly greater impacts to both the social and natural environments, and increase project costs. Therefore, the existing Peckville-Honesdale 69 kV ROW was deemed the best option for rebuilding the transmission line.

B. LOCATION

The main portion of the existing Peckville-Honesdale 69 kV Transmission Line runs for 14.9-miles in a west to east direction through eastern sections of Lackawanna County and western sections of Wayne County, Pennsylvania. At the Varden Tap Pole, located near the Cherry Ridge Airport, the Peckville-Honesdale 69 kV Transmission Line turns to the north for 4.5-miles toward the town of Honesdale. The western terminus of the Project area, the Archbald Tap Pole, is located approximately 1.6-miles east of the Peckville Substation in Archbald Borough, Lackawanna County. The eastern terminus is the Honesdale Substation, located within Honesdale Borough, Wayne County. Townships where activities will occur for the Peckville-Honesdale 138/69 kV Rebuild Project include Archbald Borough and Jefferson Township in Lackawanna County, and South Canaan Township, Cherry Ridge Township, Texas Township, and Honesdale Borough in Wayne County (**Figure 1**).

C. ALTERNATIVE ROUTE ASSESSMENT

PPL Electric conducted a map-based and field assessment of potential alignment options to determine if an alternative route to rebuilding within the Peckville-Honesdale 69 kV transmission line ROW could be developed. Specific project requirements, such as assuring the proposed transmission line maintains connection to the Varden Tap Pole in Cherry Ridge

Township, were acknowledged throughout the assessment process. During this process, major constraints to a potential alternative route, such as the higher-density residential development in Lake Township and the numerous large non-spannable lakes in Canaan and South Canaan Townships, were identified and used to define the focus area. Assessment of potential alternatives involved reviewing maps illustrating natural features, cultural resources, and existing land uses, including other electric transmission line ROWs, which are located within the focus area. The potential impacts to these elements were then evaluated relative to rebuilding the Peckville-Honesdale 69 kV transmission line within its existing ROW.

Evaluation of the focus area noted potential alternative alignments through several undeveloped areas, such as along existing transmission line ROWs, stream valleys, and across agricultural areas. For example, alternatives to the north of the existing Peckville-Honesdale 69 kV transmission line ROW could be developed to follow the Middle Creek valley or to use the numerous areas of open agricultural fields to develop an alignment to connect the Archbald Tap Pole to the Varden Tap Pole. Similarly, alternatives to the south of the existing alignment could parallel the existing Blooming Grove-Peckville 230 kV transmission line toward the east from where the alignments currently split near the Varden Conservation Area. The alternative could then turn to the northeast along the existing Blooming Grove-Honesdale 69 kV transmission line to connect to the Varden Tap Pole. Options heading north from the Varden Tap Pole to the Honesdale Substation could be developed on the west or east side of the existing line by also using the open agricultural lands and the undeveloped portions of several tributaries, but these options would become more constrained as they entered the commercially and residentially dense Honesdale area.

Assessment of these alternative alignments however, indicates that the impacts to the natural and cultural aspects of the area would be much greater than if the existing ROW is used to rebuild the Peckville-Honesdale 138/69 kV transmission line. Options to the north would cross many more high-quality designated streams and impact more wetlands and floodplain areas relative to the existing ROW. Options to the south would also cross more high-quality streams as well as impact the Heron Rookery Natural Area that borders the existing Blooming Grove-Peckville 230 kV transmission line. Each of these options would also involve an increase in forest impacts,

which could initiate the need to address impacts to specific threatened and endangered species, such as the federally-listed Indiana bat and other state-listed bat species. Depending on the alignment, these options may also produce impacts to protected lands associated with State Game Lands #300, the Lackawanna State Forest, and the Varden Conservation Area, as well as create a new disturbance through the Moosic Mountain Barrens Natural Area. Options from the Varden Tap Pole to the Honesdale Substation would also impact more streams and forest area relative to rebuilding within the existing ROW.

Any of these alternative alignments to the existing ROW would require crossing numerous private parcels, many of which are invested in agriculturally oriented businesses. The northern option, for example, would travel through several agricultural security areas. Although the new alignment could potentially be sited to minimize effects to the activities of these farming communities, the need to have some poles located in an active crop field could generate some level of local concern and resistance to the project. Other social impacts to these options could also result during the process to secure a viable route through the Borough of Honesdale. Given the dense residential and commercial development near the Honesdale Substation, there would be a strong potential need for the condemnation process. Additionally portions of the alternatives would introduce visual and aesthetic concerns in areas where no existing transmission structures are currently located.

Similarly, the impacts and costs associated with developing these options from an engineering perspective would be considerably greater than using the existing ROW. Developing these alternatives would result in a ROW longer than the existing transmission line ROW and would require acquisition of new easements from landowners, some of whom may not be receptive of the project. Assuming these easements were obtained, the ROW corridor would also need to be cleared of vegetation and new access roads would need to be developed for the construction process and ongoing maintenance. Obtaining the new easements and developing the new ROW over a longer area would involve costs that would not be realized if the Peckville-Honesdale 138/69 kV transmission line were rebuilt within the existing ROW.

Ultimately while some potential alternatives were identified, none were determined to be practicable alternatives when compared to the existing ROW, due to the significant social, natural environment, and economic costs. All of the options would require acquisition of substantial new ROW, require the permitting of new stream and wetland crossings, and be considerably longer than the existing line. Based on this assessment of potential alternative route options, PPL Electric concluded that rebuilding within the existing Peckville-Honesdale 69 kV transmission line ROW was the best option.

D. EXISTING LAND USE

Land use information for the Lackawanna County portion of the Project area is based on review of preliminary land use maps generated by the Lackawanna County Regional Planning Commission (LCRPC) in conjunction with the Luzerne County Planning Commission in their joint effort to produce a Bi-County Comprehensive Plan. As illustrated by these maps, land use in this area of the Project consists of a mix of development types ranging from retail and industrial to agricultural and vacant (LCRPC 2009). For the portion of the Project area that is located in Wayne County, land use information was obtained from review of the *Wayne County Agricultural Land Use/Land Cover Study* coordinated by the Wayne County Planning Commission (WCPC). Land uses in this area of the Project range from forest and croplands to commercial and residential (WCPC 2002). A list of land use types and the percent identified within each township along the Peckville-Honesdale 69 kV ROW is provided in **Table 1**.

The extreme western part of the Project area is located within urban sections of Archbald Borough, which is characterized by retail and industrial land uses. Agricultural and vacant land uses increase as the Project progresses east into Jefferson Township, which is dominated by the forested expanse of Moosic Mountain. This mountain possesses important areas of heath barren habitat associated with the Moosic Mountain Barrens complex (*See Natural Features section*). Two short portions of the Project area also traverse State Game Lands #300 (*See State Lands section*). Few residential clusters, located mainly in Jefferson Township, are noted along the Lackawanna County portion of the Project area (**Figure 2**).

Central parts of the Project area are in South Canaan and Cherry Ridge Townships, Wayne County and are composed primarily of forest cover, pastures, and croplands. This section passes through the Varden Conservation Area, a 343-acre forested preserve managed by the Pennsylvania Department of Conservation and Natural Resources (PADCNR) (*See State Lands section*). Residential land use is sparse in South Canaan Township and western portions of Cherry Ridge Township, which are largely agricultural and rural, but generally increases in eastern portions of Cherry Ridge Township specifically between the village of Hoadleys and the Varden Tap Pole, located near the Cherry Ridge Airport. According to the *Wayne County Comprehensive Plan*, rural agricultural land use is predominant in the county, with less than 7% of the land area dedicated to residential development (WCPC 2010).

TABLE 1: Percent Existing Land Use within ROW by Township

Municipality	Land Use Classification*	Percent Land Use Type Within ROW
Archbald Borough, Lackawanna County	Retail	62%
	Recreational	24%
	Agriculture and Vacant	14%
Jefferson Township, Lackawanna County	Agriculture and Vacant	51%
	Residential – Single Family Detached	35%
	Vacant	12%
	Recreational	2%
South Canaan Township, Wayne County	Pasture/Brush	65%
	Forest	27%
	Cropland	6%
	Residential	1%
	Utilities	1%
	Water	< 1%
Cherry Ridge Township, Wayne County	Pasture/Brush	41%
	Forest	32%
	Cropland	14%
	Residential	8%
	Water	2%
	Commercial	1%
	Water Government/Institution	1%
Texas Township, Wayne County	Forest	45%
	Pasture/Brush	45%
	Government/Institution	6%
	Residential	4%
Honesdale Borough, Wayne County	Forest	47%
	Pasture/Brush	28%
	Residential	10%
	Cropland	8%
	Utilities	7%

*Land use classifications differ between Lackawanna County and Wayne County

The northern part of the Peckville-Honesdale 69 kV ROW is located within Cherry Ridge Township, Texas Township, and Honesdale Borough. From the Varden Tap Pole, the land use in Cherry Ridge Township becomes characterized by forested land, pasture/brush land, and cropland, but does contain sections of residential land uses, primarily near road crossings. As the Project area crosses into Texas Township and Honesdale Borough, the land use within the ROW indicates that the area is forested and pasture/brush land. Although the ROW in this area is properly classified as pasture/brush, these municipalities are relatively densely populated as noted through aerial imagery and field reviews. Within these two municipalities, the Project area does cross several sections of residential land use and other developed lands. One such pocket of

developed land is the Honesdale High School property, which is identified as a Governmental/Institutional land use located in Texas Township.

Land use impacts as a result of the Peckville-Honesdale 138/69 kV Rebuild Project are anticipated to be minimal. The Project will be located within existing PPL Electric ROW and no additional property will be required to complete the Project. The Project is also located in areas that contain existing PPL Electric facilities which will be upgraded. Interference with existing land uses will be further minimized because, where possible, PPL Electric will use previously established access roads for construction.

Zoning and Comprehensive Land Use Plans

According to the *Lackawanna County 2010 Annual Report*, all of the municipalities within Lackawanna County have local zoning ordinances in effect, many of which have been updated within recent years (LCRPC 2010). The zoning districts outlined in these ordinances reflect the mixed industrial and rural character of northeastern Lackawanna County, which consists of dense urban/suburban and industrial centers that transition to large areas of rural open space and forest cover (**Figure 3**). The specific types and percent of various zoning districts identified within each township along the Lackawanna County portion of the Peckville-Honesdale 69 kV ROW are listed in **Table 2**. Ordinances defining the allowances and restrictions associated with the various zoning districts identify “Open Essential Services”, which includes distribution, transmission, or collection systems associated utilities such as water, gas, and electric, to be conditionally exempt from local regulations, as long as the required actions are approved by the Pennsylvania Public Utility Commission (PUC).

As previously noted, Lackawanna County has been working jointly with Luzerne County to develop a Bi-County Comprehensive Plan that is still in draft form. One component of the proposed Comprehensive Plan includes the Lackawanna-Luzerne Counties’ *Open Space, Greenways, and Outdoor Recreation Master Plan*, which provides an overview analysis of the cultural and natural resources in the two counties while also providing guidance on areas to be preserved and methods for increasing their accessibility for public use (LCRPC 2004). Examples include the preservation of highland areas along Moosic Mountain, that contain plant

communities unique to the Commonwealth, and the development of greenways through the conversion of old railroad lines into public pathways. Development and modification of transmission line systems do not hinder the objectives devised for this Plan, and may actually be considered viable options for greenways that provides hiking or biking opportunities.

TABLE 2: Percent Municipal Zoning District within ROW by Township (Lackawanna County)

Municipality	Zoning District	Percent Zoning District Within ROW
Archbald Borough, Lackawanna County	Heavy Industrial (I-2)	76%
	Special Purpose Open Space (S-1)	24%
Jefferson Township, Lackawanna County	Agriculture (A-1)	45%
	Residential (R-1)	27%
	Conservation (S-1)	17%
	Commercial (C-3)	11%

In Wayne County, several townships do not presently have zoning ordinances in effect, typically due to the extensive agricultural and forested land uses present. In these situations, a township will use general subdivision and land development ordinances produced by Wayne County. These ordinances do not specify zoning districts nor do they provide guidance on land use restrictions. South Canaan Township is one of the townships that do not have specific zoning ordinances. In contrast, Cherry Ridge Township has implemented zoning ordinances that are used to guide local land uses. Although similarly rural in character as South Canaan Township, Cherry Ridge Township does contain sections of concentrated residential and commercial development that require local government oversight. This residential and commercial character is increasingly evident in the zoning districts established by Texas Township and Honesdale Borough (**Figure 3**). Specific types and percent of the zoning districts identified within each township along the Wayne County portion of the Project area are listed in **Table 3**.

Wayne County does possess a comprehensive plan, which was updated in September 2010 by the Wayne County Planning Commission (WCPC). The *Wayne County Comprehensive Plan Update* provides an assessment of the cultural, community, and natural resources within the county, as well as an analysis of the population, economic, and housing trends. Goals identified by the Plan include preserving and enhancing the small town nature of the county, protecting the county's natural resources, and promoting local economic development (WCPC 2010). Considering that the proposed modifications will be conducted within an existing transmission

corridor and that no other specific natural or cultural conflicts will be incurred, the Peckville-Honesdale 69 kV Rebuild Project appears to be consistent with the principles of the Wayne County Comprehensive Plan.

TABLE 3: Percent Municipal Zoning District within ROW by Township (Wayne County)

Municipality	Zoning District	Percent Zoning District Within ROW
South Canaan Township, Wayne County	NO ZONING	100%
Cherry Ridge Township, Wayne County	Rural Development (RD)	89%
	Residential-Mobile Home Parks (R-2)	6%
	Low Density Residential (R-1)	5%
Texas Township, Wayne County	Rural (RU)	61%
	Multi - Family Residential (R-2)	39%
Honesdale Borough, Wayne County	Single Family Residential (R-2)	49%
	Low Density Residential (R-1)	38%
	Industrial (ID)	13%

Agricultural Areas

No agricultural land uses are located within the Lackawanna County portion of the Peckville-Honesdale 69 kV ROW. Such land uses are more abundant on the western side of the Moosic Mountain along the Wayne County portion of the Peckville-Honesdale 69 kV ROW. These land uses include pastures, croplands, and open brush areas that are used to produce feed crops or raise farm animals. Many of these farms are associated with agricultural security areas or agricultural conservation easements. According to the Pennsylvania Farmland Preservation Association (PFPA), agricultural security areas are *“intended to promote more permanent and viable farming operations over the long term by strengthening the farming community's sense of security in land use and the right to farm”* (PFPA 2011). Alternatively, an agricultural conservation easement is a protective purchase using county funds that *“prevent(s) development or improvement of a parcel for any purpose other than agricultural production”* (PFPA 2011). The incidence and density of these agricultural security areas and conservation easements

reiterates the importance of farming and agriculture to the surrounding community. Not only is there abundant farmland in the area, but also residents and members of local government have taken steps to protect and promote the farming community. The Peckville-Honesdale 69 kV ROW passes through one property associated with an agricultural conservation easement and fourteen properties associated with agricultural security areas. All of these properties are located within South Canaan, Cherry Ridge, and Texas Townships along the eastern portion of the route (**Figure 4**). Rebuilding the Peckville-Honesdale 138/69 kV line is not anticipated to have any effect on these conserved lands. Construction of the new system will use the existing ROW, which generally parallels the edges of these properties, and strategic pole locations to span across active use areas.

State Lands

The Peckville-Honesdale 69 kV ROW presently crosses three state-owned properties: (1) a 2,000-acre parcel located in Jefferson Township that is part of the Lackawanna State Forest; (2) the 5,500-acre State Game Land #300 located along the Lackawanna and Wayne County border; and (3) the 343-acre Varden Conservation Area located in South Canaan Township (**Figure 4**). The Peckville-Honesdale 138/69 kV Rebuild Project will not require any new ROW from these state-owned lands. Due to the use of the existing maintained ROW and the reduction in the number of poles required, upgrading the electrical facilities on these lands is anticipated to have minimal effect on the resources.

The Lackawanna State Forest parcel is located along the top of the Moosic Mountain and is bisected by Salem Road (State Road 1012). A 5,500-foot (1.04-mile) segment of the Project area crosses the northern part of the state forest from west to east, as well as crossing Salem Road. PADCNR notes that further coordination with the Bureau of Forestry regarding botanical surveys required for the Project will be necessary for work conducted on state forest lands (*See Threatened and Endangered Species section*).

State Game Land #300 is also located on top of the Moosic Mountain and is crossed by the Peckville-Honesdale 69 kV ROW in two separate locations: an approximate 2,000-foot (0.38-mile) segment located south of Salem Road in Archbald Borough; and an approximate 2,500-

foot (0.47-mile) segment located north of Salem Road in Jefferson Township. The Pennsylvania Game Commission (PGC), which oversees the state game land system, has indicated that additional coordination with its Northeast Regional Office will be necessary for work conducted within State Game Land #300.

The Project area also traverses along a 4,700-foot (0.89-mile) portion of the PADCNR-managed Varden Conservation Area, which is located along Easton Turnpike (State Route 196) in the village of Varden. The Peckville-Honesdale 69 kV ROW, which bisects the center of the conservation area from west to east, is used as part of the trail network. PADCNR similarly notes that further coordination with the Bureau of Forestry regarding botanical surveys required for the Project will be necessary for work conducted within this conservation area.

Airports

A portion of the Peckville-Honesdale 69 kV ROW is presently located approximately 0.25 miles to the west of the Cherry Ridge Airport, a public facility equipped for single-engine airplanes. Removal of the current poles and installation of the taller monopoles would require notification of the Federal Aviation Administration (FAA) and the Pennsylvania Department of Transportation (PennDOT) Bureau of Aviation. FAA coordination would involve completion of Form 7460-1 “Notice of Proposed Construction or Alteration” and coordination with PennDOT’s Bureau of Aviation would involve completion of Form AV-57, similarly titled “Notice of Proposed Construction or Alteration.” Since the current configuration runs parallel to the airport runway and has been previously approved, the proposed modification is not anticipated to be considered a hazard to flight operations at the Cherry Ridge Airport.

E. CULTURAL RESOURCES

A desktop survey of archaeological and historic architectural resources within the Peckville-Honesdale 69 kV ROW area was completed. The survey consisted of accessing the Pennsylvania Historical and Museum Commission (PHMC) Cultural Resources Geographic Information System (CRGIS) system to review available information on previously-recorded

archaeological and historic architectural sites on and near the transmission ROW. Based on this review, two eligible National Register of Historic Places (NRHP) resources were identified within the 0.5-mile review area around the Peckville-Honesdale 69 kV ROW. These cultural resources include the Francis Cawley Dam (Key No. 124090), located approximately 1,350-feet northwest of the ROW in Archbald Borough, and the Honesdale Downtown Historic District (Key No. 097429), which is located approximately 575-feet east of the Project ROW in Honesdale Borough.

Requests for PHMC review of these resources were submitted October 5, 2011, under the headings of Peckville-Cherry Ridge 69 kV ROW and Honesdale-Whitney Lake 69 kV ROW, as the Project was defined at that time. PHMC indicated in its October 31, 2011 and October 26, 2011 responses, respectively, that, although historic buildings/structures/ districts/objects may be located in the Project areas, in its opinion, the activities described with this proposed construction should have no effect on such resources (PHMC 2011). No further investigations are required. If, however, PPL Electric becomes aware of any previously unidentified resources that would be affected by construction, PHMC will be contacted immediately.

F. NATURAL FEATURES

Critical to the environmental assessment of the Project area is an examination of its natural features, including physiographic regions, geologic formations, soil associations, streams, floodplains, and wetlands. These features are described in detail within the following sections. The discussion will include all features within the ROW as well as those within close proximity to the Project area. The proposed construction will not affect any unique geological, scenic, or natural areas because these areas will not be crossed.

Physiographic Regions and Bedrock Geology

The Peckville-Honesdale 69 kV ROW traverses from west to east across two physiographic provinces and associated sections: the Anthracite Valley Section of the Ridge and Valley Province; and the Glaciated Low Plateau Section of the Appalachian Plateaus Province. The

Anthracite Valley Section is characterized as a narrow to broad valley enclosed by steeply-sloped mountains. Bedrock geology found within this province consists of the Llewellyn Formation, the Pottsville Formation, and the Spechty Kopf Formation (**Figure 5**). Sandstone is the primary rock type associated with these formations, with siltstone, conglomerates, shale, and coal also found in various formations as secondary rock types. The Glaciated Low Plateau Section is characterized by the remnants of its once glaciated landscape. Glacial erosion and deposition have carved the current topography of valleys, smooth hills, and glacial deposits. Beneath the glacially influenced surficial geology, the bedrock of this province is dominated by the Catskill Formation, a Devonian Age sedimentary rock deposited when Pennsylvania was mostly covered by the Catskill Delta. The Project crosses three bedrock sections in this province area: the Duncannon Member of the Catskill Formation; the Poplar Gap and Packerton Members of the Catskill Formation; and the Long Run and Walcksville Members of the Catskill Formation. These members are all primarily sandstones with shale and siltstones present as secondary rock types (Berg 1980).

Soils

Erosion and sedimentation control plans will be developed and implemented for the Project that would minimize the displacement of soils. These plans will require prior approval from the local county conservation districts. National Pollutant Discharge Elimination System (NPDES) permits will also be acquired from the Pennsylvania Department of Environmental Protection (PADEP) as needed. Any conditions of the NPDES permit will be adhered to as part of the construction process. As such impacts to local soil resources are anticipated to be minimal.

According to the *Soil Survey of Lackawanna and Wyoming Counties, Pennsylvania* (USDA 1982), two primary soil associations are found within the Lackawanna County portion of the Peckville-Honesdale 69 kV Project area. Lackawanna County soil associations in order of entry from west to east include:

- Rock Outcrop-Arnot-Dystrochrepts: soils on mountaintops and mountainsides.
- Wellsboro-Morris-Oquaga: deep soils on uplands.

The Rock Outcrop-Arnot-Dystrochrepts Association is found as a wide band encompassing Moosic Mountain from the western slope in Archbald Borough to the eastern slope in Jefferson Township, Lackawanna County. The Wellsboro-Morris-Oquaga Association is a narrow strip of level land located along the Lackawanna and Wayne County border.

According to the *Soil Survey of Wayne County, Pennsylvania* (USDA 1985), four primary soil associations are found within the Wayne County portion of the Peckville-Honesdale 69 kV Project area. Wayne County Soil Associations in order of entry from west to east include:

- Morris-Wellsboro: deep soils on plateau areas formed from reddish glacial till.
- Holly-Basher-Wyoming: deep soils on floodplains formed in alluvial and glacial outwash.
- Mardin-Volusia-Lordstown: deep soils on plateaus and hills formed in grayish and brownish glacial till.
- Oquaga-Wellsboro-Arnot: shallow to deep soils on plateau areas formed in reddish glacial till.

The Morris-Wellsboro association is encountered as a narrow band at the base of Moosic Mountain in western South Canaan Township, Wayne County, as well as a broader area traversed north of the Varden Tap Pole. The Holly-Basher-Wyoming association is an extensive soil group contained within the floodplain area of Middle Creek, along which the Project follows east from South Canaan Township into Cherry Ridge Township. This soil association is also contained within the floodplain area of the Lackawaxen River, which is encountered in Texas Township and Honesdale Borough near the Project's eastern terminus. The Mardin-Volusia-Lordstown association consists of a small upland area in South Canaan Township where the Project exists outside of the Middle Creek floodplain area. In the uplands between the stream valleys in Cherry Ridge and Texas Townships, the Project area passes through the Oquaga-Wellsboro-Arnot association (**Figure 6**).

Surface Water Resources

Streams spanned by the existing Peckville-Honesdale 69 kV ROW will be crossed in their current locations. Reconstruction activities will be conducted using a state approved erosion and

sedimentation control plan to minimize the effects of stormwater runoff. No permanent impacts to local stream networks are anticipated.

The extreme western portion of the Project area falls within the Lackawanna River Watershed, which is part of the larger Susquehanna River Basin. The remaining portion of the Project area is within the Lackawaxen River Watershed, which is part of the Delaware River Basin. The Peckville-Honesdale 69 kV line crosses over fourteen waterways as it runs from the Archbald Tap Pole in the west to the Honesdale Substation termination point in the east. Two of these streams are named streams and twelve streams are unnamed tributaries of the named streams. All fourteen of these streams have been classified by Pennsylvania Department of Environmental Protection (PADEP) under Title 25 Chapter 93 as Cold Water Fisheries (CWF), and also as containing habitat for Migratory Fishes (MF). Twelve of the fourteen streams are also classified by PADEP as High Quality (HQ) waters, which is an antidegradation special protection classification for surface waters having quality which exceeds levels necessary to support propagation of fish, shellfish, and wildlife (PADEP 2011) (Figure 7).

According to the Pennsylvania Fish and Boat Commission (PFBC) website, the Lackawanna River is considered a Class A Wild Trout Stream (PFBC 2011a). These streams support a population of wild (natural reproduction) trout of sufficient size and abundance to support long-term sport fishery. Although not crossed by the Peckville-Honesdale 69 kV ROW, the Lackawanna River is included in this discussion because the Archbald Tap Pole and western portions of the transmission line system are located in the watershed area. The Lackawanna River is classified by PADEP as a High Quality-Cold Water Fishery (HQ-CWF). The PFBC has also identified the Lackawaxen River as an Approved Trout Stocking Stream (PFBC 2011b). Although the Lackawaxen River is not crossed by the Project, it is included in this discussion because the Honesdale Substation and eastern portions of transmission line system are located in the watershed area. The Lackawaxen River is classified by PADEP as a High Quality Trout Stocked Fishery (HQ-TSF).

A summary of all streams found within the Project area and their PADEP designated classifications are located in **Table 4**. Definitions for each of these classifications include:

- CWF - *Cold Water Fishes*—Maintenance or propagation, or both, of fish species including the family Salmonidae and additional flora and fauna which are indigenous to a cold water habitat.
- HQ - *High Quality Waters*—Designation indicates that surface waters have quality which exceeds the level necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water as determined by §93.4b(a).
- MF - *Migratory Fishes*—Passage, maintenance and propagation of anadromous and catadromous fishes and other fishes which move to or from flowing waters to complete their life cycle in other waters.
- TSF - *Trout Stocked Fishes*—Maintenance of stocked trout from February 15 to July 31 and maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat.

TABLE 4: PADEP Designated Surface Water Classifications

Name	Designated Use
Lackawanna River*	HQ-CWF, MF
Laurel Run	CWF, MF
Unnamed Tributary to Laurel Run	CWF, MF
Middle Creek (spanned 3X)	HQ-CWF, MF
Unnamed Tributaries to Middle Creek (9 different streams)	HQ-CWF, MF
Lackawaxen River*	HQ-TSF, MF

* These surface waters are not crossed but the Project is located within their watershed area.

Wetlands

Based on review of the U.S. Fish and Wildlife Service’s (USFWS) National Wetland Inventory (NWI), the Peckville-Honesdale 69 kV ROW also crosses several wetland systems as it progresses from west to east (USFWS 2011a). Only one wetland system, a palustrine unconsolidated bottom (PUB) pond, is noted in Lackawanna County, and approximately twenty-one wetland systems are found within Wayne County. Most of these wetlands are palustrine scrub/shrub (PSS) wetlands located along stream corridors, with the largest areas around Middle Creek in the Varden area. Palustrine emergent (PEM) and palustrine forested (PFO) wetland systems are found interspersed along these stream corridors, as well. Several scattered small ponds can also be found, many of which may be man-made (**Figure 7**).

The NWI provides a general overview of the potential wetlands that may be located within an area. For federal and state permitting purposes, wetlands and waterways within the Project area will be required to be delineated according to regulatory standards, surveyed, and illustrated on development plans. PPL Electric will have these wetland studies conducted and use the information to minimize wetland impacts where feasible. PPL Electric will also obtain all permits necessary from PADEP and the United States Corps of Engineers and will comply with all of the terms and conditions placed on those permits.

100-year Floodplains

100-year floodplain extents in the Project area and surrounding landscape were obtained and examined. The extents within Lackawanna County were provided by FEMA (FEMA 2011), whereas the extents in Wayne County were adapted by PADEP from the FEMA 100-year floodplains and issued through the Pennsylvania Spatial Data Access (PASDA) database (PADEP 1996). The Peckville-Honesdale 69 kV ROW does not cross any FEMA 100-year floodplains in Lackawanna County. In Wayne County, the ROW crosses the 100-year floodplain associated with Middle Creek three times, as well as the floodplains associated with three different tributaries. The distances for these spans generally range between 100 to 650-feet, except for the crossing of Middle Creek in the Varden area, which is approximately 1,300-feet wide (**Figure 7**). The northern end of the ROW, at Honesdale Substation, is just south of the extent of the Lackawaxen River floodplain, thus minimizing potential impact to the resource. Placement of structures in the floodplains of these streams will be avoided to the extent practical. If areas of floodplain impacts cannot be avoided, further coordination with FEMA and PADEP would be required.

Vegetation

Vegetative cover in the western section of the Project area has been influenced by the dense commercial and industrial development within the Lackawanna River valley. Most of the natural vegetative cover in the valley has been removed as part of the coal mining industry. Many of

these areas are currently being converted back to a naturalized state through various strip mine reclamation projects.

Vegetative cover on the Moosic Mountain varies from dense mixed hardwood forest to open sections of heath barren located at the higher elevations. Dominant trees in this northern hardwood forest include oak (*Quercus* spp.), maple (*Acer* spp.), birch (*Betula* spp.), and hickory (*Carya* spp.). Scattered pockets of conifers, specifically eastern white pine (*Pinus strobus*) and eastern hemlock (*Tsuga canadensis*), are located throughout these forests. Heath barrens are predominantly low shrub areas consisting of black huckleberry (*Gaylussacia baccata*), blueberry (*Vaccinium* spp.), and sheep laurel (*Kalmia angustifolia*) with a thin forest component dominated by pitch pine (*Pinus strobus*) and few hardwood trees (Fike 1999).

Extensive sections of hardwood forest are also encountered east of the Moosic Mountain, but these areas are generally intermixed with agriculturally influenced land uses. Several sections of the Project area traverse fields of row crops, which include corn, soybean, and hay, or over dairy or horse farms noted in the area. As reported by the *Wayne County Agricultural Land Use/Land Cover Study*, however, many of these prime agricultural lands are being reclaimed by forest cover due to pressures in the national dairy market that are resulting in the reduced need for dairy farms (WCPC 2002). Some of these old agricultural lands are now open fields and brush areas composed of goldenrod (*Solidago* spp.), bush honeysuckle (*Lonicera* spp.), and multiflora rose (*Rosa multiflora*). The Project area is also located within the forested riparian area of the Middle Creek floodplain, which it parallels for a considerable distance. Forested riparian corridors consist of tree species that include silver maple (*Acer saccharinum*), black willow (*Salix nigra*), and American elm (*Ulmus americana*).

Limited vegetation management may be required for the Peckville-Honesdale 138/69 kV Rebuild Project. Only minimal vegetation removal is anticipated because the Project is being completed entirely within existing PPL Electric ROW, which is currently cleared of trees for safety and maintenance reasons. In areas where vegetation management is required, PPL Electric will apply its "Specifications for Initial Clearing and Control of Vegetation On or

Adjacent to Electric Line Right-of-Way Through Use of Herbicides, Mechanical and Hand-Clearing Techniques” to mitigate any impacts.

G. THREATENED AND ENDANGERED SPECIES

Review of the threatened and endangered species that may be encountered within and along the Peckville-Honesdale 69 kV ROW includes evaluation of the natural areas identified in the Project area, as well as the Project related responses provided by federal and state agencies that have protective jurisdiction over the surrounding animals, plants, and ecological communities.

Natural Areas Inventory

The Nature Conservancy’s *Lackawanna County Natural Areas Inventory* identified one site within the Peckville-Honesdale 69 kV ROW, and one site within close proximity to the ROW (TNC 2003) (Figure 7). The Moosic Mountain Barrens Natural Area, a 6,000-acre ridge-top barren complex that stretches north to south along the upper elevations of Moosic Mountain, is bisected by the Project area in Jefferson Township. Several unique natural plant communities, including Heath Barrens and Ridgetop Dwarf-Tree Forest, are located within the complex. As noted, the heath barrens consist of large expanses of low growth shrubs composed primarily of ericaceous species which include lowbush blueberry (*Vaccinium angustifolium*), huckleberry, and sheep laurel. Ridgetop Dwarf-Tree Forest areas are dominated by low-growing trees that consists primarily of scrub oak (*Quercus ilicifolia*), as well as pitch pine, chestnut oak (*Quercus prinus*), and black gum (*Nyssa sylvatica*). Reconstruction of the Peckville-Honesdale 138/69 kV line is not anticipated to affect this natural community because the existing ROW is currently cleared for maintenance and safety reasons.

The second site, located in Archbald Borough, approximately 2,500-feet northwest of the Peckville-Honesdale 69 kV ROW, is identified as the AD 431 Mine – Riverdrift Natural Area. This area is located along the Lackawanna River and is the former site of a historic mine that has been reclaimed. Two animal species of concern, which are listed as SA528 and SA529 and presumed to be bald eagles (*Haliaeetus leucocephalus*) and ospreys (*Pandion haliaetus*),

respectively, have been identified within this area. Both species are listed as threatened in the Commonwealth and are also protected by the USFWS under the Migratory Bird Treaty Act (MBTA), which was implemented for the protection of all migratory birds, most of which are common species, but many of which are listed as threatened or endangered. Bald eagles are further protected under the Bald and Golden Eagle Protection Act, which prohibits killing, selling, or otherwise harming eagles, their nests, or their eggs. Transmission line construction activities should be able to avoid this natural area, so no direct impact is expected; however, if either of these birds are noted using the existing transmission structures for nesting, then further USFWS coordination would be required.

A review of The Nature Conservancy's *Wayne County Natural Areas Inventory* identified one site within close proximity to the Peckville-Honesdale 69 kV ROW (TNC 1991). This site, the Clemo Pond Natural Area, is located in Cherry Ridge Township, approximately 1,000-feet southeast of the Project area. Clemo Pond is a natural lake identified as a good example of an Acidic Glacial Lake Natural Community. Restrictions on logging and development are recommended to maintain the lake's pristine water quality. Two plant species of concern, listed as SP523 and SP524, are noted to be contained within Clemo Pond. Project related construction activities should be able to avoid this area, so no direct impact is expected.

Pennsylvania Natural Diversity Inventory Review

A Large Project Review of the Pennsylvania Natural Diversity Inventory (PNDI) database was conducted for the Project area (includes portions of PNDI #21543 – submitted as Peckville-Cherry Ridge and PNDI #21542 – submitted as Whitney Lake-Honesdale). The Pennsylvania Fish and Boat Commission (PFBC) noted that the timber rattlesnake (*Crotalus horridus*), a candidate species of concern in Pennsylvania, is known to inhabit areas around the western third of the Project area (Moosic Mountain, Lackawanna County). PFBC concluded that the proposed Project would not have any direct adverse impacts on the timber rattlesnake, but also noted the importance of alerting workers to the potential presence of rattlesnakes and advising them that rattlesnakes are a protected species and should not be harmed. If any timber rattlesnakes are

observed in the Project area, the PFBC office recommends that they be contacted (PFBC 2011c/d).

The USFWS noted that the proposed Project is located within the habitat area of the federally endangered Indiana bat (*Myotis sodalists*). Based on review of the Project activities, which involve the replacement of an existing transmission line system with taller monopoles and increased voltage but no additional ROW width, USFWS concluded that no adverse effects are likely to the species or its habitat. UFSWS, however, further notes that avian species protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act may use the Project area for wintering, migrating, or breeding activities. Electrocutions from power lines are of particular concern, and USFWS recommends that the proposed Project be evaluated in light of the *National Bald Eagle Management Guidelines* to determine whether eagles might be disturbed as a direct result of the Project. USFWS, in conjunction with the Avian Power Line Interaction Committee (APLIC), provides guidelines for power lines to minimize impacts from existing facilities and in the construction of new utility and energy systems and associated infrastructure (USFWS 2011b/c).

The Pennsylvania Game Commission (PGC) indicated that the Project is located within the vicinity of habitat suitable for the eastern small-footed bat (*Myotis leibii*), a state-threatened species of concern. PGC noted that this species of bat prefers rocky habitat for roosting sites and has requested that a survey be conducted in portions of the Project area located within Lackawanna County where there appears to be suitable habitat. Additionally, PGC notes that portions of the alignment are located on or adjacent to State Game Lands #300 and requests that the Northeast Regional Office be contacted to discuss potential impacts to the State Game Lands and to determine if any mitigation efforts are required (PGC 2011a/b). PPL Electric will coordinate the required bat habitat survey and any conflict with this species of concern will be resolved prior to starting construction in areas of potential impact.

The PNDI review also further indicated the potential presence of eight plant species of concern identified by the Pennsylvania Department of Conservation and Natural Resources (PADCNR).

The PADCNR requires that a qualified botanist conduct a botanical survey of the Project area for each plant species (PADCNR 2011a/b). The species and their habitats are listed in Table 5.

In addition to evaluating the presence of the plant species listed in Table 5, PADCNR suggests that a conservation measure be made during the survey to identify and avoid the larval host and adult food plants of specific moth and butterfly species. Eleven moth and butterfly species are identified, with most noted as inhabiting the extensive barrens area on top of the Moosic Mountain; other species are noted as inhabiting swamps, open marshes, and bogs. Host and adult food plants for the barrens associated species include blueberries (*Vaccinium* spp.), small oaks (*Quercus* spp.), and cherry (*Prunus* spp.); for the other species, the primary plants involve woolgrass (*Scirpus cyperinus*), buttonbush (*Cephalanthus occidentalis*), and various sedges (*Carex* spp.). Several species were specifically noted as being identified along the transmission line ROW.

TABLE 5: PADCNR Plant Species of Concern

Species	Scientific Name	Status	Habitat	Indicator Status*	Flowering Season
Small Beggar-ticks	<i>Bidens discoidea</i>	Currently Unlisted	Swamps, vernal pools, and swampy ground	FACW	August - October
Collin's Sedge	<i>Carex collinsii</i>	Currently PA Endangered, Proposed PA Threatened	Sphagnum bogs and swampy woods	OBL	Fruiting in Summer
Slender Wheatgrass	<i>Elymus trachycaulus</i>	Currently Unlisted	Open woods, barrens, and banks	FACU	June - July
Marsh Bedstraw	<i>Galium trifidum</i>	Currently Unlisted	Moist woods, thickets, and swales	FACW+	June
White Fringed-orchid	<i>Platanthera blephariglottis</i>	Currently Unlisted	Sphagnum bogs and swamps	OBL	June - August
Tuckerman's Pondweed	<i>Potamogeton confervoides</i>	PA Threatened	Glacial lakes and boggy ponds	OBL	July
Red Currant	<i>Ribes triste</i>	PA Threatened	Wet, rocky woods, swamps, and cliffs	OBL	June - July
Mountain Starwort	<i>Stellaria borealis</i>	Currently Unlisted	Springy wooded slopes, sphagnous swamps and streams	FACW	May - August

*Indicator status based on Cowardin classification system for wetlands: OBL = Obligate, FACW = Facultative Wet, and FACU = Facultative Upland.

PADCNR also lists two natural communities of concern that should be delineated if encountered during the botanical survey. These two communities, the low heath shrubland and scrub oak

shrubland, correspond with the Heath Barrens and Ridgetop Dwarf-Tree Forest Communities classified by Fike (1999) and used by The Nature Conservancy to describe the plant communities in their natural area inventories. As noted, these communities are commonly found on the thin, acidic soils of rocky ridgetops and are composed of low-growth shrubs, such as blueberry (*Vaccinium* spp.), huckleberry (*Gaylussacia* spp.), and sheep laurel (*Kalmia angustifolia*), as well as low-growth trees, such as pitch pine, scrub oak, and black gum.

Additionally, PADCNr noted that portions of the Peckville-Honesdale 69 kV Line would cross through Lackawanna State Forest land, which is managed by PADCNr's Bureau of Forestry. The Bureau of Forestry maintains a *State Forest Resource Management Plan* that sets forth guidelines for the ecologically-sound management of state forest lands and resources including protection of wetlands, wildlife, native wild plants, and invasive species management. Further coordination with the Bureau of Forestry will be necessary, as they may require additional surveys. PADCNr indicated that they are requiring a 200-foot wide survey area on either side of the center line for the portion of the Project that falls on state forest lands. These botanical studies and agency coordination efforts will be conducted as required. PPL Electric will resolve any conflict with these species of concern prior to starting construction in areas of potential impact.

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Legend

- Substations
- Tap Poles
- Peckville - Honesdale 138/69 kV line rebuild



Key Map
Not to Scale





NAD 1983 StatePlane Pennsylvania North
FIPS 3701
Projection: Lambert Conformal Conic
Linear Unit: US Foot

USGS 100K Topographic Quadrangles-
Honesdale (1988) & Scranton (1986)
PPL Electric Utilities' Data



1 inch = 8,000 feet

**Figure 1
Location Map
Peckville - Honesdale
138/69 kV Line Rebuild**

Archbald Borough, and Jefferson Township; Lackawanna County,
South Canaan Township, Cherry Ridge Township, Texas
Township & Honesdale Borough; Wayne County, Pennsylvania

Prepared By: MAL	Checked By: BAB
Job: 19998855.600	Date: January 2012

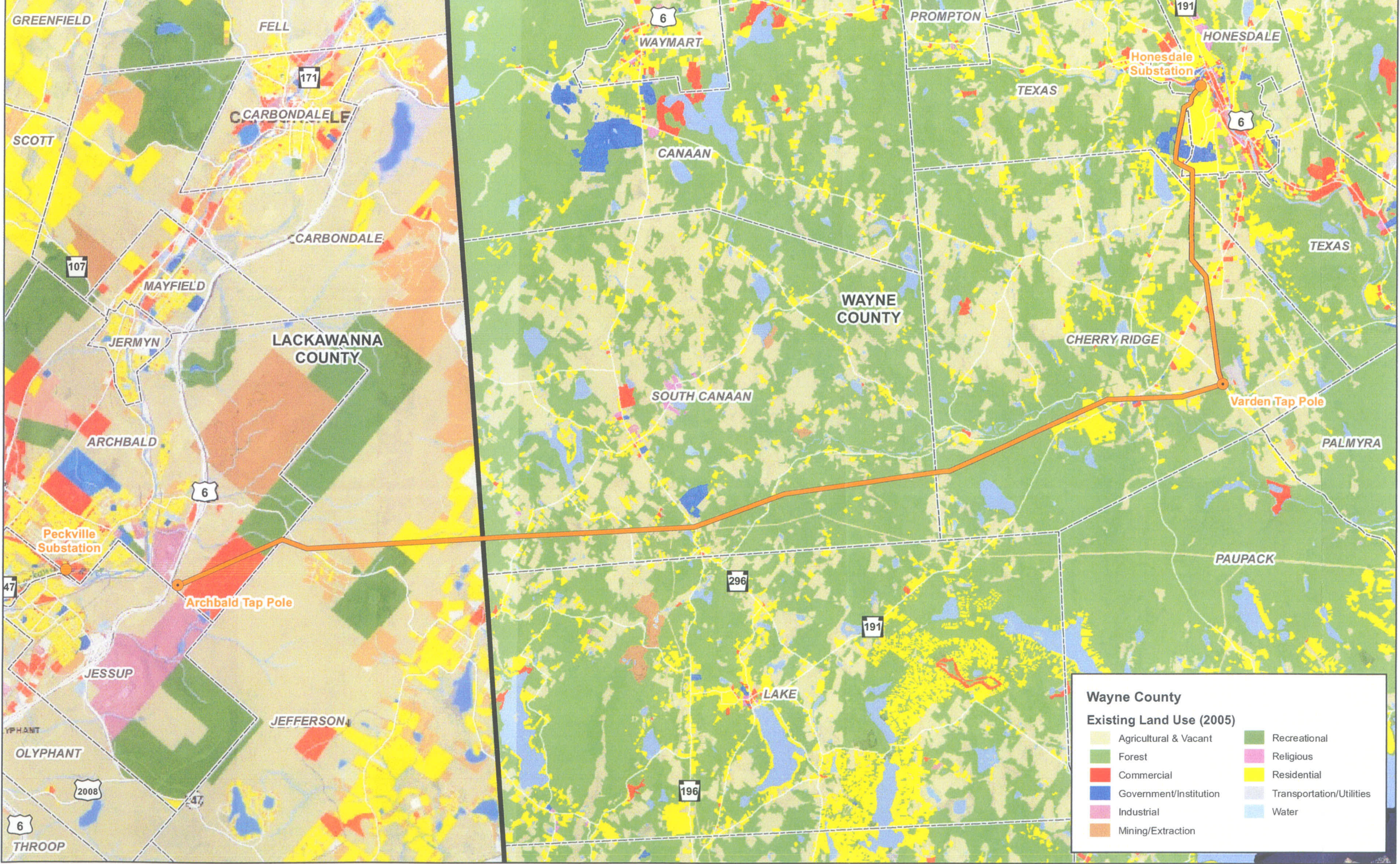
Lackawanna County

Existing Land Use (2007)

Residential Single Family Detached	Institutional - Schools	Golf Course
Residential Single Family Attached	Institutional - Public	Recreational
Residential Multi-Family	Office	Agricultural and Vacant
Residential Mobile Home	Hotel	Quarry/Mine
Industrial	Mixed Use	Landfill
Institutional - Private	Retail	Vacant
	Transportation and Utilities	

Legend

- Substations
- Tap Poles
- Peckville - Honesdale 138/69 kV line rebuild
- Municipalities
- Counties



Key Map
Not to Scale

NAD 1983 StatePlane Pennsylvania North
FIPS 3701
Projection: Lambert Conformal Conic
Linear Unit: US Foot

PA Map 2008 Imagery Lackawanna & Wayne Counties)
Wayne County Planning Commission Land Use
Luzerne/Lackawanna County Open Space Plan (2007),
Lackawanna Planning Commission & Luzerne County
PPL Electric Utilities' Data

0 4,000 8,000 16,000
Feet

1 inch = 8,000 feet

Wayne County

Existing Land Use (2005)

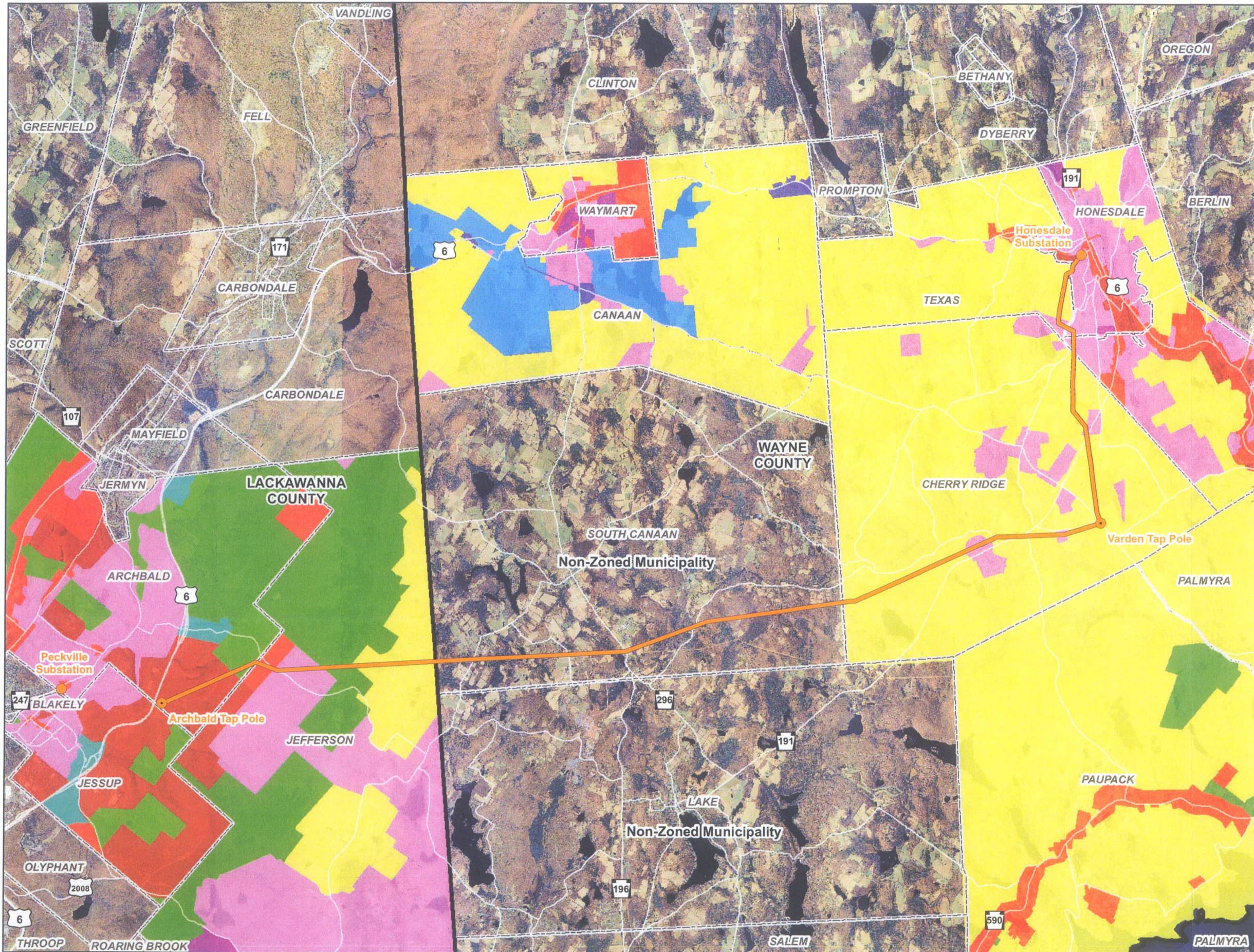
Agricultural & Vacant	Recreational
Forest	Religious
Commercial	Residential
Government/Institution	Transportation/Utilities
Industrial	Water
Mining/Extraction	

Figure 2
Existing Land Use
Peckville - Honesdale
138/69 kV Line Rebuild

Archbald Borough, and Jefferson Township; Lackawanna County,
South Canaan Township, Cherry Ridge Township, Texas
Township & Honesdale Borough; Wayne County, Pennsylvania

Prepared By: MAL	Checked By: BAB
Job: 19998855.600	Date: January 2012

Path: S:\Projects\IMS\PPL\POCONO\Projects\LOn Report\PPL Peck - Hones Figure 02 - Existing Land Use.mxd



Legend

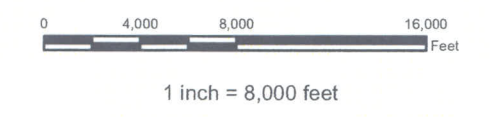
- Substations
 - Tap Poles
 - Peckville - Honesdale 138/69 kV line rebuild
 - Municipalities
 - Counties
-
- Zoning**
- General Commercial
 - Industrial
 - Residential
 - High Density Residential
 - Public & Recreation
 - Neighborhood Development
 - Interchange Activity Center
 - Rural Residential
 - Special Purpose
 - Conservation District



Key Map
Not to Scale

NAD 1983 StatePlane Pennsylvania North
FIPS 3701
Projection: Lambert Conformal Conic
Linear Unit: US Foot

PA Map 2008 Imagery (Lackawanna & Wayne Counties)
Zoning data provided by Wayne County Planning Commission (WCPC)
PPL Electric Utilities' Data

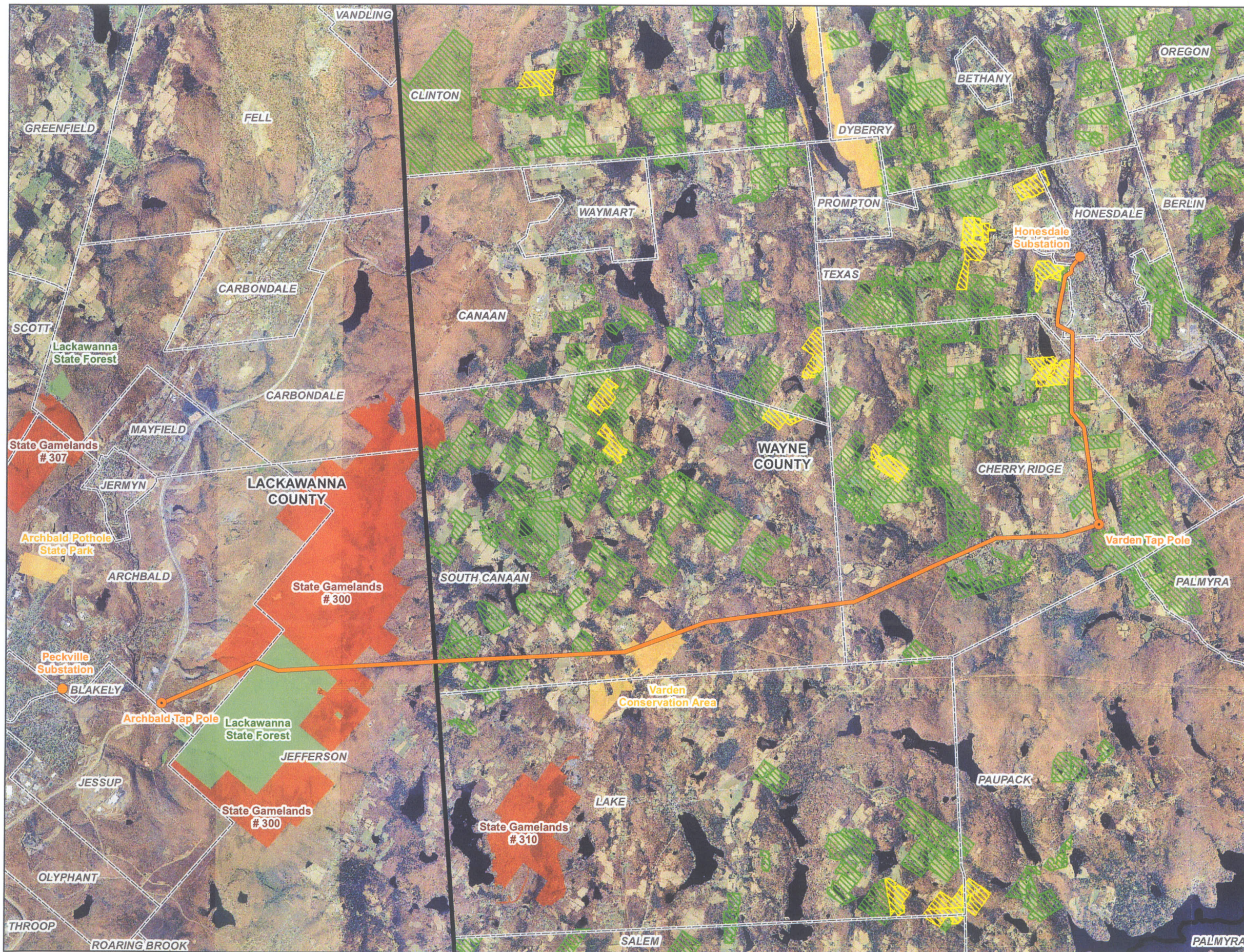


**Figure 3
Zoning
Peckville - Honesdale
138/69 kV Line Rebuild**

Archbald Borough, and Jefferson Township; Lackawanna County, South Canaan Township, Cherry Ridge Township, Texas Township & Honesdale Borough; Wayne County, Pennsylvania

Prepared By: MAL	Checked By: BAB
Job: 19998855.600	Date: January 2012

Path: S:\Projects\IMSP\PLPOCONO\Projects\LO Report\PLP Peck - Hones Figure 03 - Zoning.mxd



Legend

- Substations
- Tap Poles
- Peckville - Honesdale 138/69 kV line rebuild
- ▨ Agricultural Security Areas
- ▨ Agricultural Easements
- State Parks
- State Forest Lands
- State Gamelands
- Municipalities
- Counties

Key Map
Not to Scale

NAD 1983 StatePlane Pennsylvania North
FIPS 3701
Projection: Lambert Conformal Conic
Linear Unit: US Foot

PA Map 2008 Imagery
(Lackawanna & Wayne Counties)
Agricultural data provided by Wayne County
Planning Commission (WCPC), PGC State
Gamelands, DCNR State Parks & Forest Lands,
PPL Electric Utilities' Data

0 4,000 8,000 16,000 Feet

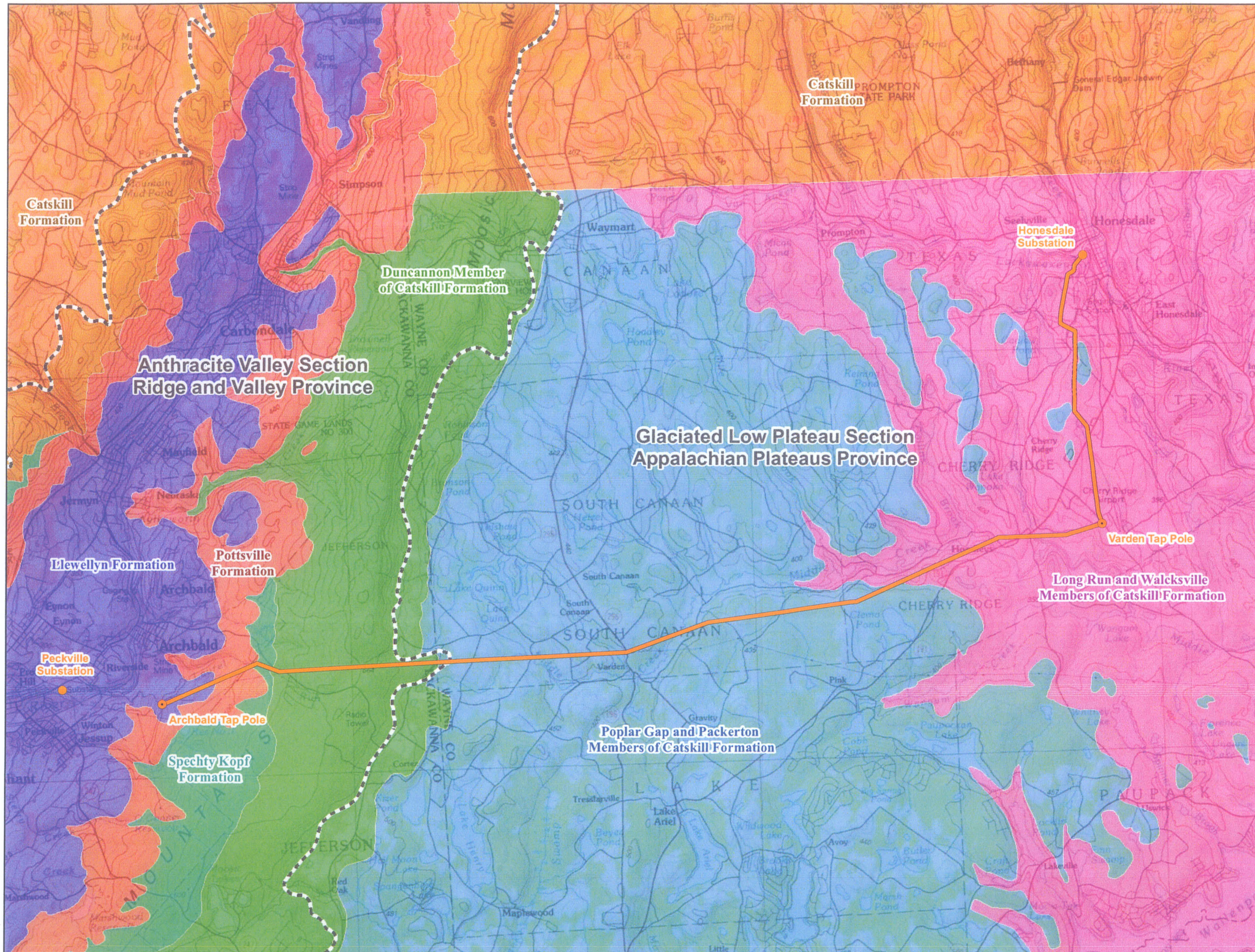
1 inch = 8,000 feet

ppl **URS**
PPL Electric Utilities

Figure 4
Agricultural Resources & State Lands
Peckville - Honesdale
138/69 kV Line Rebuild

Archbald Borough, and Jefferson Township; Lackawanna County,
South Canaan Township, Cherry Ridge Township, Texas
Township & Honesdale Borough; Wayne County, Pennsylvania

Prepared By: MAL	Checked By: BAB
Job: 19998855.600	Date: January 2012



Legend

- Substations
- Tap Poles
- Peckville - Honesdale 138/69 kV line rebuild
- ⋮ Physiographic Provinces

Bedrock Geology

- Catskill Formation
- Duncannon Member (Catskill Fm)
- Llewellyn Formation
- Long Run and Walckville Members (Catskill Fm)
- Poplar Gap and Packerton Members (Catskill Fm)
- Pottsville Formation
- Spechty Kopf Formation



Key Map
Not to Scale
 NAD 1983 StatePlane Pennsylvania North
 FIPS 3701
 Projection: Lambert Conformal Conic
 Linear Unit: US Foot

USGS 100K Topographic Quadrangles-
 Honesdale (1988) & Scranton (1986)
 (Lackawanna & Wayne Counties)
 Bedrock Geology (2001) and Physiographic
 Provinces (1995) provided by the Pennsylvania
 Bureau of Topographic and Geologic Survey
 PPL Electric Utilities' Data

0 4,000 8,000 16,000
 Feet

1 inch = 8,000 feet

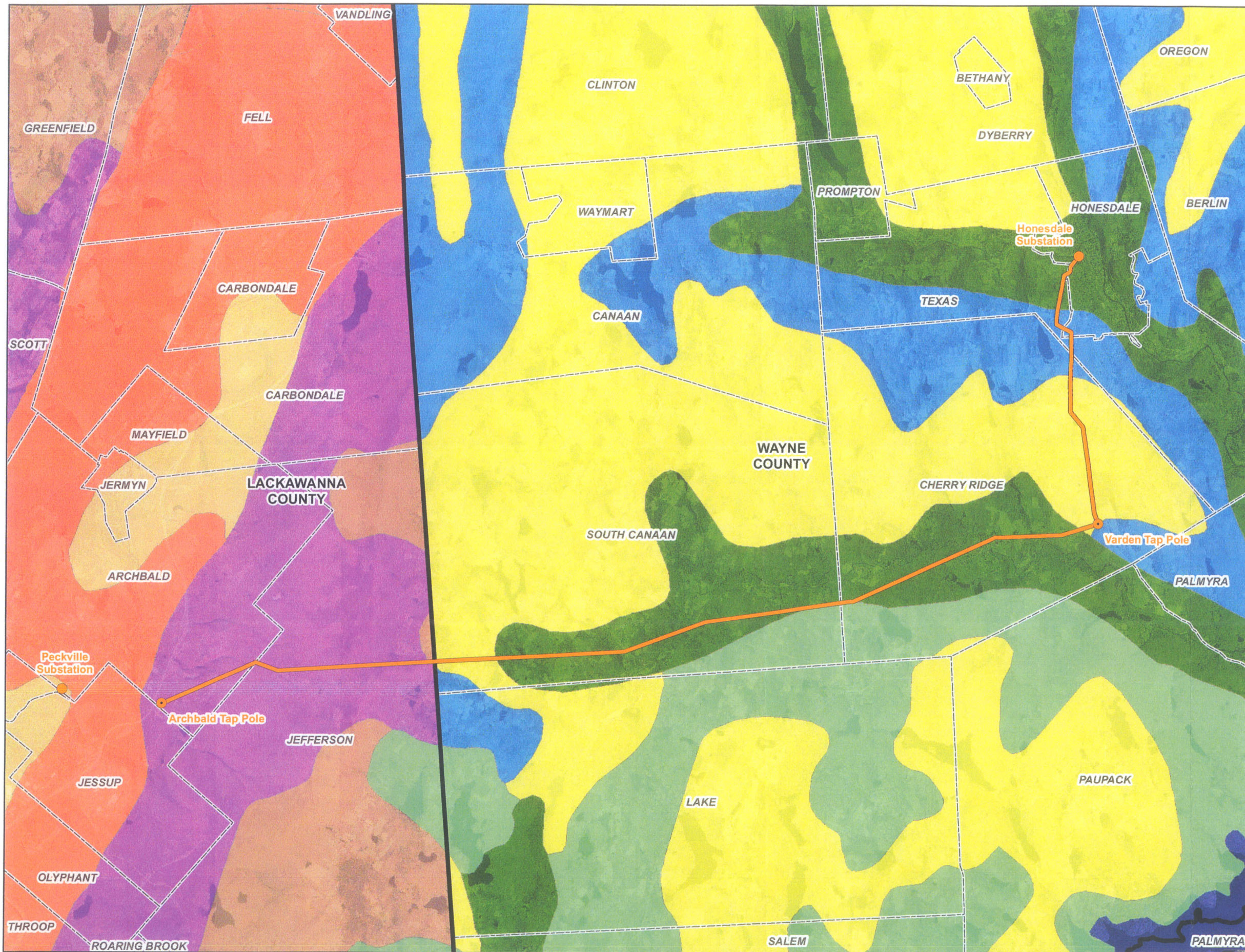


Figure 5
Bedrock Geology &
Physiographic Provinces
Peckville - Honesdale
138/69 kV Line Rebuild

Archbald Borough, and Jefferson Township; Lackawanna County,
 South Canaan Township, Cherry Ridge Township, Texas
 Township & Honesdale Borough; Wayne County, Pennsylvania

Prepared By: MAL	Checked By: BAB
Job: 19998855.600	Date: January 2012

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Legend

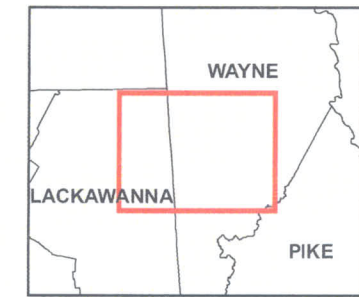
- Substations
- Tap Poles
- Peckville - Honesdale 138/69 kV line rebuild

Lackawanna County Soil Associations

- Wellsboro - Morris - Oquaga
- Mardin - Lordstown - Volusia
- Rock outcrop - Arnot - Dystrochrepts
- Udorthents - Mine dumps
- Urban land

Wayne County Soil Associations

- Oquaga - Wellsboro - Arnot
- Morris - Wellsboro
- Mardin - Volusia - Lordstown
- Holly - Basher - Wyoming
- Water
- Municipalities
- Counties



Key Map
Not to Scale

NAD 1983 StatePlane Pennsylvania North
FIPS 3701
Projection: Lambert Conformal Conic
Linear Unit: US Foot

PA Map 2008 Imagery
(Lackawanna & Wayne Counties)
Soil Association data provided by the USDA (2006)
PPL Electric Utilities' Data



1 inch = 8,000 feet



Figure 6
Soil Associations
Peckville - Honesdale
138/69 kV Line Rebuild

Archbald Borough, and Jefferson Township; Lackawanna County,
South Canaan Township, Cherry Ridge Township, Texas
Township & Honesdale Borough; Wayne County, Pennsylvania

Prepared By: MAL	Checked By: BAB
Job: 19998855.600	Date: January 2012

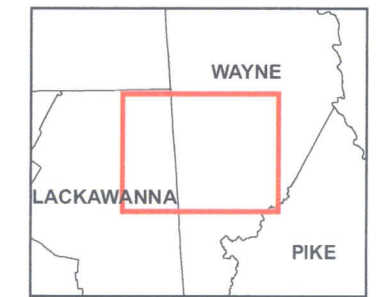
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Legend

- Substations
- Tap Poles
- Peckville - Honesdale 138/69 kV line rebuild
- CWF(COLD WATER FISHES)
- HQ-CWF(HIGH QUALITY-COLD WATER FISHES)
- HQ-TSF(HIGH QUALITY-TROUT STOCKING)
- WWF(WARM WATER FISHES)
- ▨ Wetlands
- ▨ 100-yr Floodplain
- Natural Areas
- Municipalities
- Counties

Streams - Designated Use



Key Map
Not to Scale

NAD 1983 StatePlane Pennsylvania North
FIPS 3701
Projection: Lambert Conformal Conic
Linear Unit: US Foot



PA Map 2008 Imagery (Lackawanna & Wayne Counties)
Designated Use Stream data provided by Penn State Institutes of the Environment
USFWS NWI Wetlands, FEMA 100-yr Floodplain
Natural Area data provided by the Pennsylvania Natural Heritage Program
PPL Electric Utilities' Data



1 inch = 8,000 feet



Figure 7
Natural Resources
Peckville - Honesdale
138/69 kV Line Rebuild

Archbald Borough, and Jefferson Township; Lackawanna County, South Canaan Township, Cherry Ridge Township, Texas Township & Honesdale Borough; Wayne County, Pennsylvania

Prepared By: MAL	Checked By: BAB
Job: 19998855.600	Date: January 2012

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Attachment 4

ATTACHMENT "4"

PPL DESIGN CRITERIA AND SAFETY PRACTICES

The National Electrical Safety Code (NESC) is a set of rules to safeguard people during the installation, operation, and maintenance of electric power lines. The NESC contains the basic provisions considered necessary for the safety of employees and the public. Although it is not intended as a design specification, its provisions establish minimum design requirements. PPL Electric has developed design specifications and safety rules that meet or surpass all provisions specified by the NESC.

Engineering Design Criteria and Parameters

The NESC includes loading requirements and clearances for the design, construction, and operation of power lines. The "loads" on conductors and supporting structures are the mechanical forces that develop from the weight of the conductors, the weight of ice on the conductors, plus wind pressure on the conductors and supporting structures. Loading requirements are the loads on the conductors and structures that are anticipated assuming certain ice and wind conditions. Loading requirements always contain "safety factors" to allow for unknown or unanticipated contingencies. The clearances and loading requirements contained in the NESC were developed to ensure public safety and welfare.

PPL Electric transmission line design standards meet or surpass the NESC standards. For example, the relative order of grades of construction for conductors and supporting structures is B, C, and N; Grade B being the highest. According to the NESC standards, construction Grades B, C, or N may be used for transmission lines (except at crossings of railroad tracks and limited access highways where Grade B construction is specified). However, PPL Electric designs all of its transmission lines for Grade B construction. The use of Grade B design and construction specifies such things as larger-minimum crossarm dimensions, larger-minimum conductor size, and increased safety factors.

Another example is the design parameters utilized to account for ice and wind loadings on the overhead ground wire (OHGW) and power conductors. The NESC standard ice and wind design magnitudes for the PPL Electric territory are 0.5 inch thickness of radial ice combined with four pounds per square foot horizontal wind pressure (equivalent to 40-mile per hour wind velocity). The conductor sags and tensions used in line designs are the result of various ice and wind combinations, depending on the elevation at the line location and line design voltage. The conductor sags and tensions used in the design of all PPL Electric transmission lines are at least 0.5-inch ice combined with eight pounds wind pressure (equivalent to 57 miles per hour wind velocity). This means that PPL Electric lines are designed to operate safely and reliably during inclement weather even more severe than assumed by the NESC. In addition, PPL Electric transmission lines are designed with more clearance to the ground than required by the NESC. The tables below compare PPL Electric and NESC ground clearances for lines of various voltages.

138 kV

<u>Surface Underneath Conductors</u>	<u>Vertical Clearance to Ground</u>	
	<u>NESC Standard</u>	<u>PPL Electric Design</u>
Roads, streets, alleys	21 Ft.	30 Ft.
Other land traversed by vehicles (such as cultivated field, forest, etc.)	21 Ft.	30 Ft.
Spaces accessible to pedestrians only	17 Ft.	30 Ft.
Railroad tracks	31 Ft.	35 Ft.

230 kV

<u>Surface Underneath Conductors</u>	<u>Vertical Clearance to Ground</u>	
	<u>NESC Standard</u>	<u>PPL Electric Design</u>
Roads, streets, alleys	23 Ft.	32 Ft.
Other land traversed by vehicles (such as cultivated field, forest, etc.)	23 Ft.	32 Ft.
Spaces accessible to pedestrians only	19 Ft.	32 Ft.
Railroad tracks	31 Ft.	36 Ft.

500 kV

<u>Surface Underneath Conductors</u>	<u>Vertical Clearance to Ground</u>	
	<u>NESC Standard</u>	<u>PPL Electric Design</u>
Roads, streets, alleys	28 Ft.	53 Ft.
Other land traversed by vehicles (such as cultivated field, forest, etc.)	28 Ft.	53 Ft.
Spaces accessible to pedestrians only	24 Ft.	53 Ft.
Railroad tracks	38 Ft.	53 Ft.

A relay protection system is used to protect the public safety and welfare, as well as equipment and the transmission system. Relay protection is installed for all transmission lines to automatically deenergize the line in the unlikely event that the line or supporting structure fails and the line contacts the ground.

Periodic Maintenance Program on All Transmission Lines

To ensure continued public safety and integrity of service, a periodic maintenance and inspection program is implemented for every transmission line. The program is administered through the use of helicopter patrols, with supplemental foot and structure climbing patrols. A number of helicopter patrols are performed on all lines annually. The two-man helicopter crew flies parallel, to the left, and above the line so that the observer can look for signs of line damage or deterioration and observe clearances between vegetation and conductors. The observations are included in a report that is forwarded to the appropriate department for corrective action.

Foot and structure climbing patrol programs for a transmission line begin approximately three to five years after the line is energized, unless a helicopter patrol reports a need for earlier action. The frequency of foot patrols varies from once every year to once every several years depending on line type and age.

An assigned foot patroller checks right-of-way conditions, including access roads, bridges, pole washouts, tower footers, vegetation height and clearance to conductors, pole and tower deterioration and, with the use of binoculars, insulators, and condition of hardware. Identified problems are included in a report that is forwarded to the appropriate department for corrective action.

A scheduled line outage is required to perform an overhead patrol because of "hands-on" inspection of hardware. Overhead patrols are conducted on a schedule determined by line age, operating record, and observed general condition. The necessary repairs are also done during the inspection outage.

Personnel Safety Rules

The following are a few of the PPL Electric safety rules that demonstrate the Company's concern for employee safety:

- Work procedures have been developed to allow work to be performed on energized facilities in a safe manner. When lines or apparatus are removed from service to be worked on, the Energy Control Process system is applied. This system provides that a red tag must be physically placed on the control handle of the de-energized equipment. The red tag may be removed only after proper authorization to energize the equipment. Various other tags are used for limited operations and informational purposes. Employees will not apply or remove a tag or change the status of tagged equipment unless authorized.
- Temporary safety grounds are used on de-energized facilities for employee safety during maintenance, construction, or reconstruction work. Safety grounds are wires connecting the de-energized facility to an electrical ground. If the facility should be energized, the safety grounds will divert the current directly to ground and reduce the likelihood of personal injury. The conductor size and attachment clamps of temporary safety grounds must be capable of conducting anticipated fault currents. Rubber gloves, rubber sleeves, and additional rubber protective equipment are used as required when applying or removing temporary safety grounds to or from the lines or apparatus to be grounded. An approved nonconductive working stick of sufficient length to allow workers to maintain the following required minimum clearances is used to test that the line has been de-energized and to apply temporary safety grounds:

<u>Voltage-kV</u>	<u>Minimum Clearance</u>
138	3'-7"
230	5'-3"
500	11'-3"

Before applying grounds, a test is done to confirm that the line is de-energized. The voltage test device is checked before and after use to assure reliability. When ground pins are used to establish proper ground points, they are driven to a depth of not less than four feet as near vertical as possible.

- Poles or structures are inspected and examined for structural integrity before climbing. If there is any reason to believe that a pole is unsafe, it is stabilized before work is performed. Appropriate safety gear in the form of body belts, safety straps, hard hats, gloves, etc., is worn by linemen during line work activity.

Attachment

5



**MAGNETIC
FIELD
MANAGEMENT
PPL Electric Utilities
Corporation**

Attachment 5

DECEMBER 2004

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INTRODUCTION

At PPL Electric Utilities Corp. (PPL EU), magnetic field management means investigating and implementing methods at low or no cost to reduce magnetic fields in new or rebuilt transmission and distribution lines. This document explains PPL EU's Magnetic Field Management Program, which is part of PPL EU's larger Electric and Magnetic Fields (EMF) policy.

PPL EU's View

Some people are worried that electric and magnetic fields are harming their health. Others think the scientific research does not show a problem at all, and still others believe there's just too much scientific uncertainty to draw any conclusions.

Here's what we do know now. Various panels of scientists that have reviewed the EMF research generally have drawn two main conclusions. First, the large body of evidence does not demonstrate that EMF are harmful. Second, additional research is recommended to explore questions raised in some studies.

Given these conclusions, PPL EU is taking a reasoned approach in responding to the EMF issue. PPL EU's approach to the EMF issue consists of five elements:

- Providing EMF information to customers and employees
- Providing magnetic field measurements
- Establishing and implementing a magnetic field management program to reduce magnetic fields in new or rebuilt facilities when it can be done at no, or low, cost
- Integrating EMF in the public involvement process that PPL EU undertakes in the siting of transmission lines
- Have supported additional research

EMF Are All Around Us

Electric and magnetic fields occur in nature and in all living things. The earth, for instance, has a magnetic field, which makes the needle on a compass point north.

Electric fields and magnetic fields of a different type also surround every wire that carries electricity. In everyday life, these EMF arise from several basic sources, including power lines, electrical appliances, home and building wiring, other utility lines and cables, and currents flowing on water pipes. Though they often occur together, EMF are made up of two separate components:

Electric Fields

Electric fields are produced by the voltage—or electrical pressure—on a wire. The higher the voltage, the higher the electric field. As long as a wire is energized—has voltage present—an electric field is present (see Figure 1). In other words, an appliance, or an electric power line, doesn't actually have to be turned on to create an electric field. It just has to be plugged in. Electric fields diminish with distance and can be blocked or partially shielded by objects such as trees and houses.

Magnetic Fields

Magnetic fields are created by the current or flow of electricity through a wire. Generally speaking, the higher the current, the higher the magnetic field. Because they only occur when current is flowing, magnetic fields are present only when the power is turned on (see Figure 1). Magnetic fields also diminish with distance, but—unlike electric fields—are not blocked by common objects. In recent years, public and scientific interest has turned toward the magnetic field component of EMF because of some scientific studies regarding these fields.

Figure 1

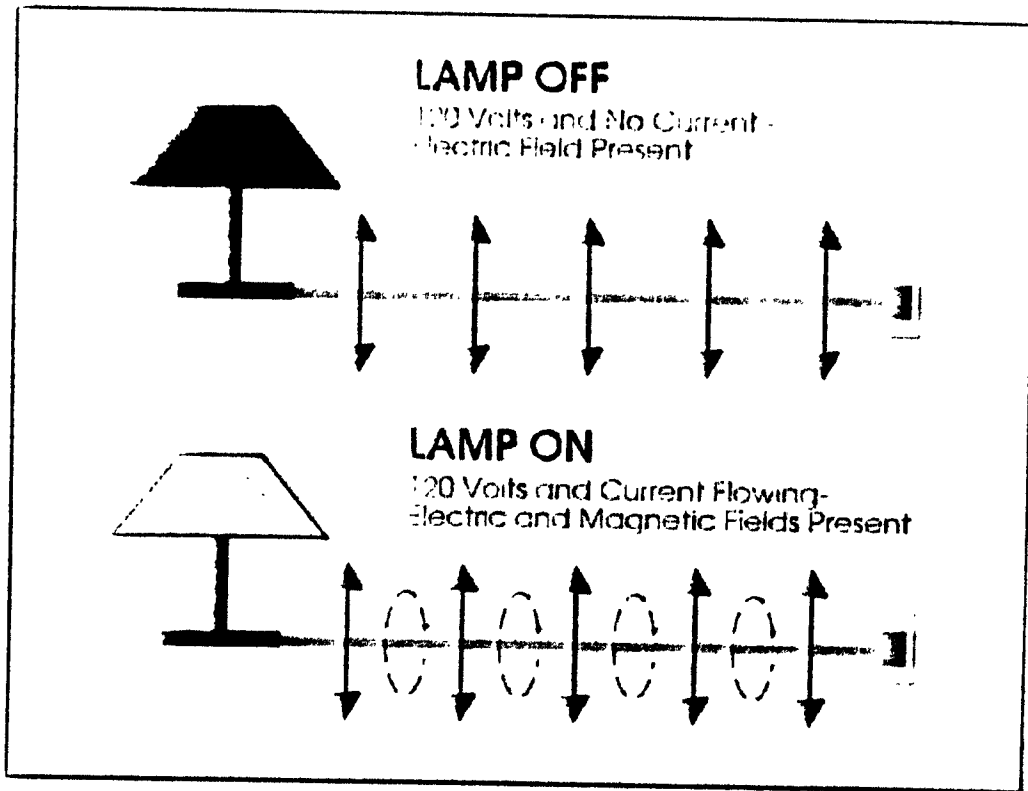


Figure 2









Magnetic field strengths decrease with distance <small>Magnetic fields are measured in milligauss</small>		Source: "EMF in Your Environment" U.S. Environmental Protection Agency 1992		
		At 6 inches	At 1 foot	At 2 feet
Clothes dryer		2 to 10	* to 3	*
Microwave oven		100 to 300	1 to 200	1 to 30
Toaster		5 to 20	* to 7	*
Power drill		100 to 200	20 to 40	3 to 6
Can opener		500 to 1500	40 to 300	3 to 30
Mixer		30 to 600	5 to 100	* to 10
Hair dryer		1 to 700	* to 70	* to 10
Color television		Data not available	* to 20	* to 8

FIGURE 2 * The magnetic field measurement at this distance from the operating appliance could not be distinguished from background measurements taken before the appliance had been turned on.

Measuring Magnetic Fields

Magnetic fields usually are measured in a unit called a milligauss. Magnetic field levels found in the living areas of homes typically range from less than 1 milligauss to about 4 milligauss according to the U.S. Environmental Protection Agency. They can be higher in some cases. The levels next to appliances can exceed 1,000 milligauss (1 gauss). Figures 2 and 3 show how the strength of the field falls off as you move away from the source, just as the heat of a campfire grows weaker as you walk away from it. For overhead power lines, the strength of the magnetic fields is dependent upon a number of factors that will be explained later. Those factors produce a magnetic field that drops off rapidly as you move away from the power line.

Figure 3

Sample Magnetic Field Levels in Milligauss				
Type of Overhead Power Line	Distance from the line			
	Under the line	50 ft.	100 ft.	200 ft.
220 kV and 500 kV	5-400	5-250	1-75	0.5-20
69 kV and 138 kV	3-80	0.5-2.5	0.1-10	0.1-3
12 kV and below	0.4-20	0.1-1	-	-

The magnetic field values provided in this table represent a general range of values associated with the types of overhead power lines listed and are provided for illustration. There will be circumstances in which there will be magnetic field levels above or below the range of values provided due to variations in such factors as height of the wires, current flow and so on.

DEVELOPMENT OF PPL EU's MAGNETIC FIELD MANAGEMENT PROGRAM

One element of our response to EMF concerns expressed by some of our customers is PPL EU's Magnetic Field Management Program. The program was initiated in March 1991 because PPL EU believes it makes good sense, as a matter of policy, to respond to the concerns expressed by some of our customers and to reduce magnetic fields in new and rebuilt facilities where it can be done with either no-cost or low-cost design changes.

This document updates the original program which has been revised several times since 1991. These guidelines were developed by PPL EU's EMF Working Group.

VARIABLES THAT AFFECT MAGNETIC FIELDS

Magnetic fields from transmission and distribution lines are a function of a number of design variables. The following parameters affect the magnetic field levels produced by transmission and distribution lines:

- Current
- Height of conductors above ground
- Configuration of conductors
- Distance from the line

EFFECT OF PHASE CURRENT ON MAGNETIC FIELDS

At power frequencies (i.e., 60 hertz), the magnetic field level is a function of the current or flow of electricity through a wire. Keeping all other parameters the same, the magnetic field is proportional to the current. Hence, if the current increases by 25 percent, the resulting magnetic field level will increase by 25 percent.

The overall load current on any line varies with the demand for power. It's usually highest during daytime hours and lowest at night. There also are weekly, monthly, seasonal and yearly variations.

The difference in the currents between each phase in a multiphase line also can affect the magnetic field. This difference is called phase unbalance. For a constant load, a statistical analysis of this phase unbalance can be made to determine its effect on the magnetic field. Close to the line, there is very little effect. However, the phase unbalance slows the rate at which the magnetic field decreases with distance from the line.

EFFECT OF CONDUCTOR CONFIGURATION ON MAGNETIC FIELDS

In the transmission and distribution of power, utilities like PPL EU presently use both three-phase and single-phase lines. Each phase on a three-phase power line has either a single conductor or a bundle of two or more conductors. In a three-phase system, the ground-level magnetic field is a result of the fields produced by the currents in each of the phases. Placing the three phases as close together as possible (compaction) creates some field cancellation, and the ground-level magnetic field is reduced. However, appropriate phase separation is required for the reliable operation of the line. In addition, the arrangement of the phases can create some; field cancellation and reduction of the ground-level magnetic field.

EFFECT OF DISTANCE FROM THE MAGNETIC FIELD SOURCE

Magnetic field strength diminishes with the vertical and lateral distances from the magnetic field source. Increasing the height of the conductors above ground is useful for magnetic field reduction at ground level, but may result in increased structure costs and increased aesthetic impact of the structures. Another possible method of increasing the distance to the magnetic field source is to increase the right-of-way requirements. By keeping buildings off increased rights of way, thereby requiring the public to live and work further away from lines, exposure to magnetic fields produced by the lines can be reduced. Increases in right of way are not always practical and may increase costs significantly, however.

SUMMARY OF PPL EU's MAGNETIC FIELD MANAGEMENT PROGRAM

Under its Magnetic Field Management Program, PPL EU has changed the way it builds and rebuilds some of its transmission and distribution lines. These design changes reduce magnetic field levels (assuming balanced circuit loadings and phase currents) by up to 69 percent in most of the company's new transmission lines. These guidelines now are being applied to new and reconstructed transmission facilities, based on this program.

The distribution component of the program focuses on 12 kV lines, the company's standard distribution voltage. It concentrates on the three-phase, primary 12 kV lines, since these are the most heavily loaded facilities and often are located in densely populated areas. The guidelines in this program are being applied to these three-phase, primary 12 kV lines.

A maximum 3-5 percent change in estimated cost was used as the limit for the guidelines since this value is consistent with low cost, is within estimating accuracy and is likely to have little impact on overall line costs.

The magnetic field calculations used in this document for the design of PPL EU's overall magnetic field management plan assume balanced load conditions among the phases and a fixed level of current, not necessarily representative of specific transmission or distribution lines. These levels were calculated using the Electric Power Research Institute's ENVIRO computer program. Under actual operating conditions, the magnetic field levels that result may vary due to such things as actual load per circuit, overall current on each phase conductor and the electrical configuration and operation of each line.

MAGNETIC FIELD MANAGEMENT PROGRAM GUIDELINES

The guidelines for magnetic field management are noted below, with discussion points for each.

OVERHEAD LINES

NEW OR REBUILT TRANSMISSION LINES

- 1. Balance transmission circuit loads and phase currents as much as possible.**
 - PPL EU should continue to make every effort to balance loadings between the two circuits of a double circuit line when planning new or rebuilt facilities to maximize the effects of reverse phasing.
 - PPL EU should continue the practice of balancing single-phase loads across the three phases of the distribution system. (Unbalanced phase currents on the distribution system are reflected through to the transmission system.)
 - Unbalanced phase currents result in higher magnetic fields that do not drop off as quickly with distance as do the fields resulting from balanced phase currents.
 - For a 5 percent phase current unbalance, the magnetic field 50 feet from the centerline of a single circuit 138 kV line could be more than twice the value than if the same line had balanced phase circuits.
 - Balanced phase currents on each three-phase distribution circuit also reduce magnetic fields from the distribution circuits themselves. In addition, they reduce magnetic fields on the transmission system from which the distribution system circuits are supplied and connected through substations.
 - Apart from magnetic field considerations, balanced phase currents on each three-phase distribution circuit also reduce line losses and improve the system voltage.

2. **Continue with the present practice of using long-span construction as the PPL EU 138/69 kV standard**
 - Structure designs for short-span and long-span construction are illustrated on Charts I and II, respectively.
 - Short-span design does not significantly reduce magnetic fields when compared to long-span design even though it is more compact than long-span design. Comparison of the magnetic field values from Chart III indicates essentially the same values. Therefore, short-span design should not be used solely to reduce magnetic fields.
 - PPL EU will continue to use long-span construction for 138/69 kV double-circuit lines and for single-circuit/future-double-circuit lines.
 - For single-circuit/future-double-circuit lines, PPL EU will continue to install two conductors on the top positions and one in the middle position as shown in Chart IV.
 - This arrangement minimizes magnetic fields as shown in Chart V by placing the three initial conductors higher on the structure, which increases the ground clearances, and by placing the conductors in a triangular configuration.
3. **Compact design structures are not a low-cost alternative and should be used for magnetic field reduction only in special applications.**

Chart VI illustrates the compact design structure.

 - The compact design increases the initial installation costs by 79 percent when compared to the long-span design but reduces the magnetic field from 9 mG to 3 mG (about 67 percent) at the edge of the 100-foot-wide right of way as shown on Chart III.
4. **Reverse phase new or rebuilt double-circuit transmission lines for all voltage levels.**
 - Reverse phasing was adopted by PPL EU in March 1991 for double-circuit 138/69 kV transmission lines and in April 1992 for all other double circuit transmission lines. Reverse phasing is shown in Chart VII. Reverse phasing will reduce the magnetic fields when the current flow on both circuits is in the same

direction. Calculated values contained here are based on balanced and equal phase currents on both circuits.

- Reverse phasing reduces the magnetic field of a double circuit 138 kV single pole transmission line from 29 mG to 9 mG (about 69 percent) at the edge of the 100-foot-wide right of way as shown on Chart III.
- Reverse phasing reduces the magnetic field of a double circuit 230 kV single pole transmission line from 49 mG to 16 mG (about 67 percent) at the edge of the 150-foot-wide right of way as shown on Chart VIII.
- Reverse phasing reduces the magnetic field of a double-circuit 500 kV single pole transmission line from 37 mG to 21 mG (about 43 percent) at the edge of the 200-foot-wide right of way as shown on Chart IX.
- When new or rebuilt double-circuit lines require tapping existing double-circuit lines, PPL EU will review the existing lines to determine if reverse phasing can be provided at low cost.
- Computer modeling is required to develop the optimum phasing and overall conductor arrangements for lines added to, or rebuilt in, multiple-line corridors.
 - Merely adding a reverse-phase double-circuit line to an existing transmission line corridor or reverse phasing a rebuilt line in the multiple-line corridor will not necessarily produce lower magnetic field levels at the edge of the corridor right of way.
 - The corridor must be computer modeled with all the lines, existing phase conductor locations and currents. Then, magnetic field calculations must be made varying the phase arrangements of the new or reconstructed line to determine the appropriate phasing arrangement.
 - Current flow direction on a line also must be considered. For example, a reverse-phased line should have the current flowing in the same direction on both circuits. If the current flow is in the opposite direction for one circuit, reverse phasing will not produce the lowest magnetic field and another phase arrangement that produces lower fields may need to be utilized.

5. Increase the minimum ground clearance for all new transmission lines.

138/69 kV Transmission Lines

- Increasing the minimum line design ground clearance from 25 feet to 30 feet may add up to about 5 percent to the installed cost of a new double-circuit single pole 138/69 kV line. For a given project, such cost may be substantially less, however. In fact, PPL EU frequently uses higher-than-minimum ground clearances due to such features as road crossings, line crossings and site-specific terrain. With long-span reverse-phase design, the magnetic field is reduced from 9 mG to 7 mG (about 22 percent) at the edge of a 100-foot-wide right of way as shown in Chart X.
 - In the actual design of transmission lines to include higher minimum ground clearances, there may be limited segments (such as highway crossings, severe slopes and transmission line crossing locations) where National Electrical Safety Code (NESC) minimum ground clearances may need to be used. The NESC minimum ground clearances are less than the increased ground clearance discussed previously.

230 kV Transmission Lines

- Increasing the minimum line design ground clearances from 27 feet to 32 feet may add up to about 5 percent to the cost of a single-circuit single-pole line (current standard). For a given project, such cost may be substantially less, however. In fact, PPL EU frequently uses higher-than-minimum ground clearances due to such features as road crossings, line crossings and site-specific terrain. By increasing the clearances, the magnetic field is reduced from 30 mG to 28 mG (about 7 percent) at the edge of a 150-foot-wide right of way.
- Increasing clearances from 27 feet to 32 feet could theoretically add up to about 2.8 percent to the cost of a double-circuit single-pole line (current standard) and reduce the magnetic field of a reverse-phase line from 16 mG to 15 mG (about 6 percent) at the edge of a 150-foot-wide right of way. Chart XI is a summary of this data.
- Studies are required for each new 230 kV line to determine optimum structure types, ground clearances, configurations and designs to reduce field levels. Such

studies could include analysis of reduction measures such as additional minimum ground clearances, increasing conductor tensions, using reduced phase spacing (a "Delta" configuration on a single-circuit line), installing the second circuit initially, and/or adding a second set of conductors that are reverse phased and operated in parallel with the first set (bundled/split phase).

500 kV Transmission Lines

- Increasing ground clearances from 33 feet to 53 feet may add up to about 4.5 percent to the cost of a single-circuit "H-frame" line (current standard). For a given project, such cost may be substantially less, however. In fact, PPL EU frequently uses higher-than-minimum ground clearances due to such features as road crossings, line crossings and site-specific terrain. By increasing the clearances, the magnetic field is reduced from 42 mG to 35 mG (about 17 percent) at the edge of a 200-foot-wide right of way.
- Increasing ground clearances from 33 feet to 53 feet could theoretically add up to 2.8 percent to the cost of a double-circuit "H-frame" line (current standard) and reduces the magnetic field of a reverse-phase line from 21 mG to 16 mG (about 24 percent) at the edge of a 200-foot-wide right of way. Chart XII is a summary of this data.
- Studies are required for each new 500 kV line to determine optimum structure types, ground clearances, configurations and designs to reduce field levels. Such studies could include analysis of reduction measures such as additional minimum ground clearances, increasing conductor tensions, using reduced-phase spacing (a "Delta" configuration on a single circuit line), installing the second circuit initially, and/or adding a second set of conductors that are reverse phased and operated in parallel with the first set (bundled/split phase).

RECONDUCTORING OR ADDING ADDITIONAL CIRCUITS TO EXISTING TRANSMISSION LINES

When reconductoring or adding additional circuits to existing transmission lines, PPL EU will evaluate low-cost or no-cost options for magnetic field management on a case-by-case basis.

When reconductoring existing transmission lines or adding additional circuits, low-cost alternatives may not exist; however, the following steps will be taken:

- For a single-circuit line, the use of a Delta arrangement or other modifications on the existing structure, with reduced-phase spacing, will be evaluated.
- For double-circuit lines, application of reverse phasing may reduce the magnetic field under the line and within the right of way and will be evaluated.
- For single- and double-circuit lines, evaluate using higher conductor tensions that can increase the minimum line design ground clearance.

DISTRIBUTION LINES

At the 12 kV distribution level, new main three-phase lines will continue to be constructed with five feet of additional ground clearance.

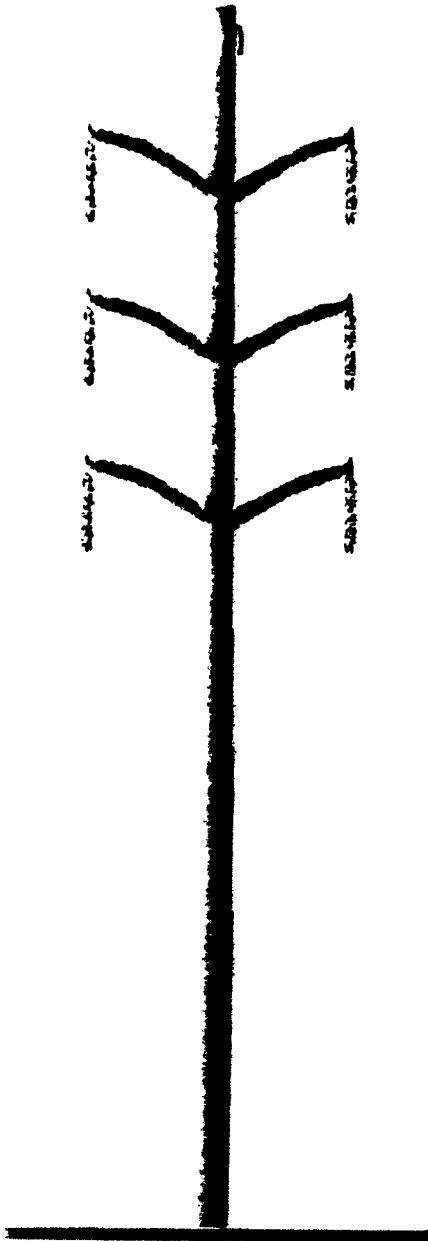
- Main lines are the most heavily loaded sections of a distribution line and therefore have the highest magnetic fields associated with them.
- Increasing the ground clearance by five feet reduces the magnetic field under the line from 14 mG to 11 mG using the standard eight-foot crossarm design. These values are based on increasing pole heights from 45 feet to 50 feet and a typical operating current of 300 amps per phase.
- Chart XIII is a summary of this data. Increasing ground clearance by five feet could theoretically add about 5 percent to the cost of a typical distribution line.

UNDERGROUND TRANSMISSION LINES

Underground transmission lines are required due to environmental or land use factors or restrictions on available clearances, PPL EU will evaluate options for magnetic field management techniques on a case-by-case basis.

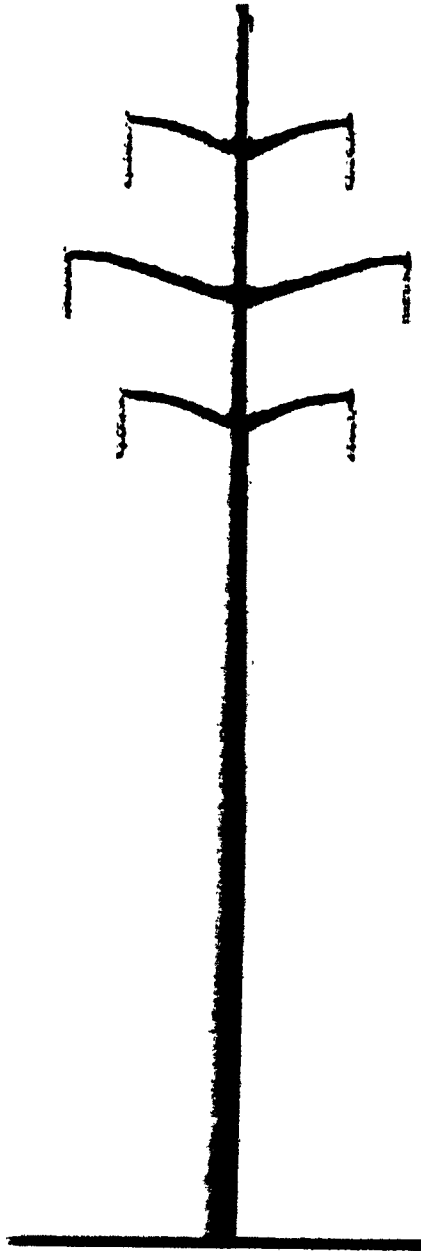
- The phase arrangement that produces the lowest field will be determined.
- The depth of burial of the line will be determined considering the cost of excavation and the location of other buried utilities in the area.
- The use of steel pipe ferromagnetic shielding that reduces magnetic fields will be evaluated.

Short-Span Construction



- **More compact design**
- **Should not be used solely to reduce magnetic fields**
- **Typical conductor data:**
 - 1 3/8" HS steel overhead ground wire - 7.3 feet sag
 - 6-556.5 KCMIL 24/7 ACSR power conductors - (PARAKEET) 10.0 feet sag
 - Average span - 400 feet

Long-Span Construction Remains PPL EU 138 kV Standard



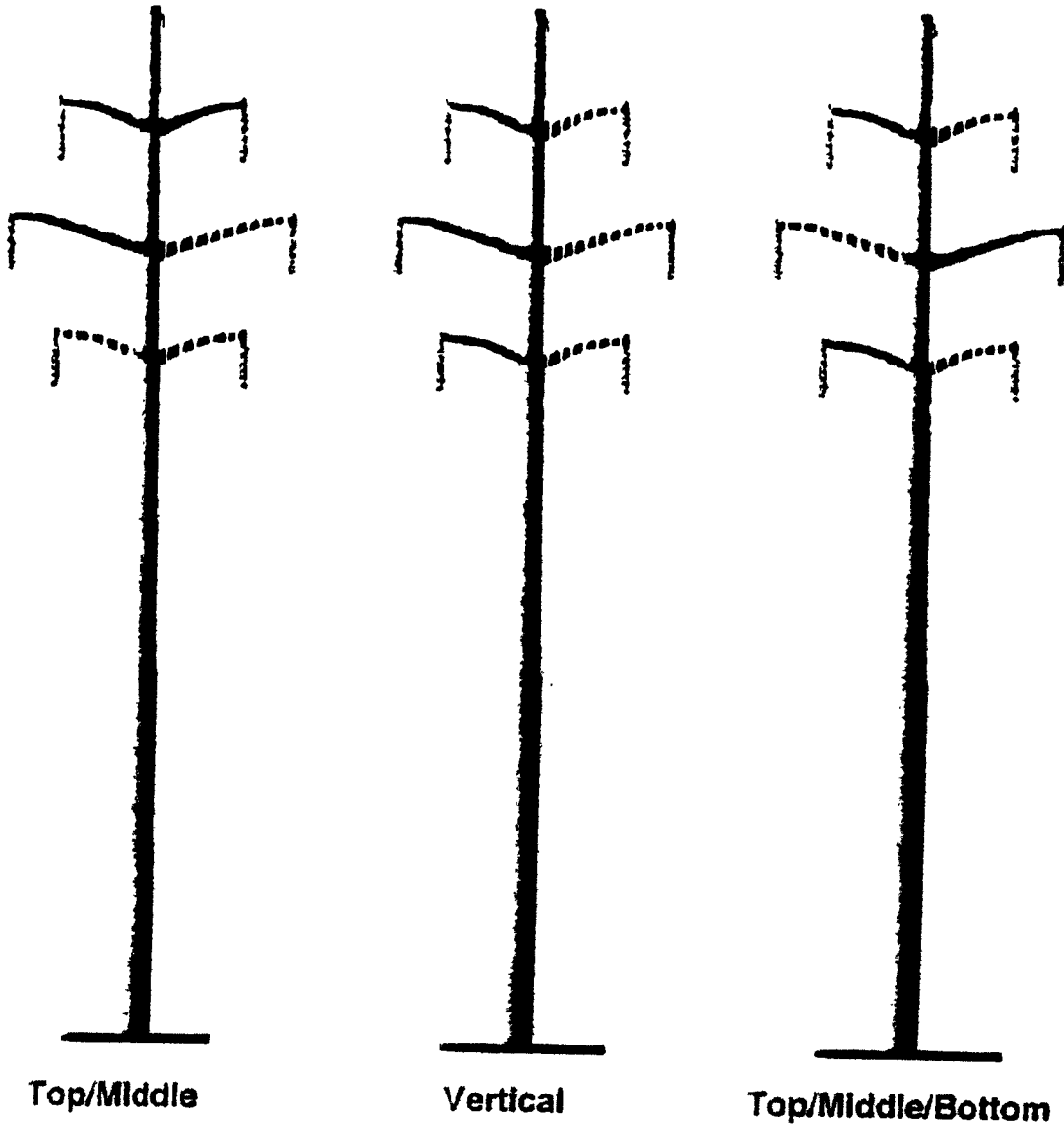
- **Lower cost alternative**
- **Reduces magnetic fields due to higher structures**
- **Typical conductor data:**
 - 1 3/8" HS steel overhead ground wire - 17.3 feet sag
 - 6-556.5 KCMIL 24/7 ACSR power conductors - (PARAKEET) 23.0 feet sag
 - Average span - 600 feet

**138/69 kV REVERSE-PHASE TRANSMISSION LINES
CALCULATED MAGNETIC FIELDS AT 400 AMPERES**

TYPE CONSTRUCTION	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
SHORT SPAN (CHART I)	30
SHORT SPAN (REVERSE PHASE)	8
LONG SPAN (CHART II)	29
LONG SPAN (REVERSE PHASE)	9
COMPACT (CHART VI)	14
COMPACT (REVERSE PHASE)	3

The edge of right of way is 50 feet from the line centerline.
The 400 ampere phase current is balanced between phases.
Calculations are based on a minimum ground clearance of 25 feet.
LONG SPAN, SHORT SPAN and COMPACT are double-circuit lines.

Typical Single-Circuit Structure Designs



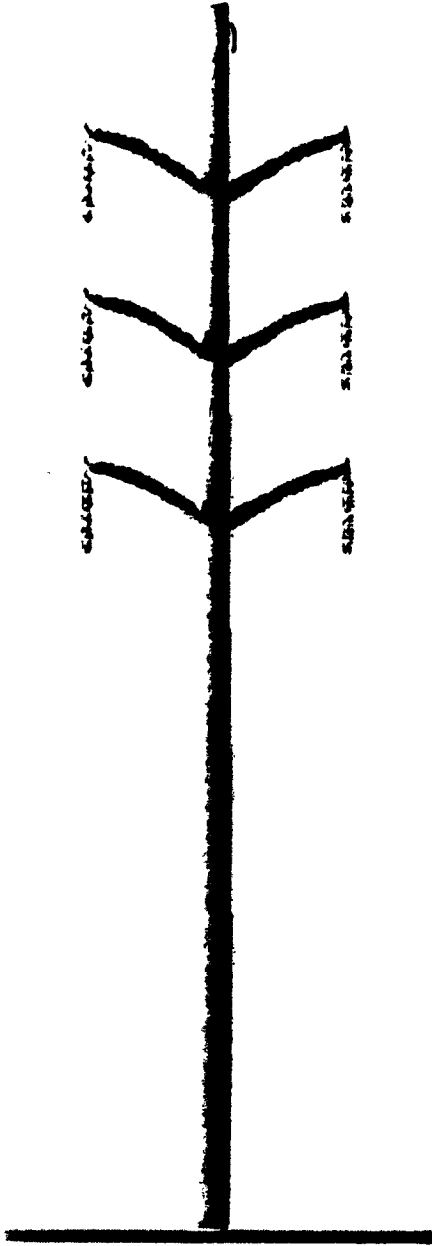
—— initial single circuit
- - - - future second circuit

**138/69 kV SINGLE CIRCUIT TRANSMISSION LINES
CALCULATED MAGNETIC FIELDS AT 400 AMPERES**

TYPE CONSTRUCTION	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
TOP/MIDDLE/BOTTOM	20
VERTICAL	17
TOP/MIDDLE	12

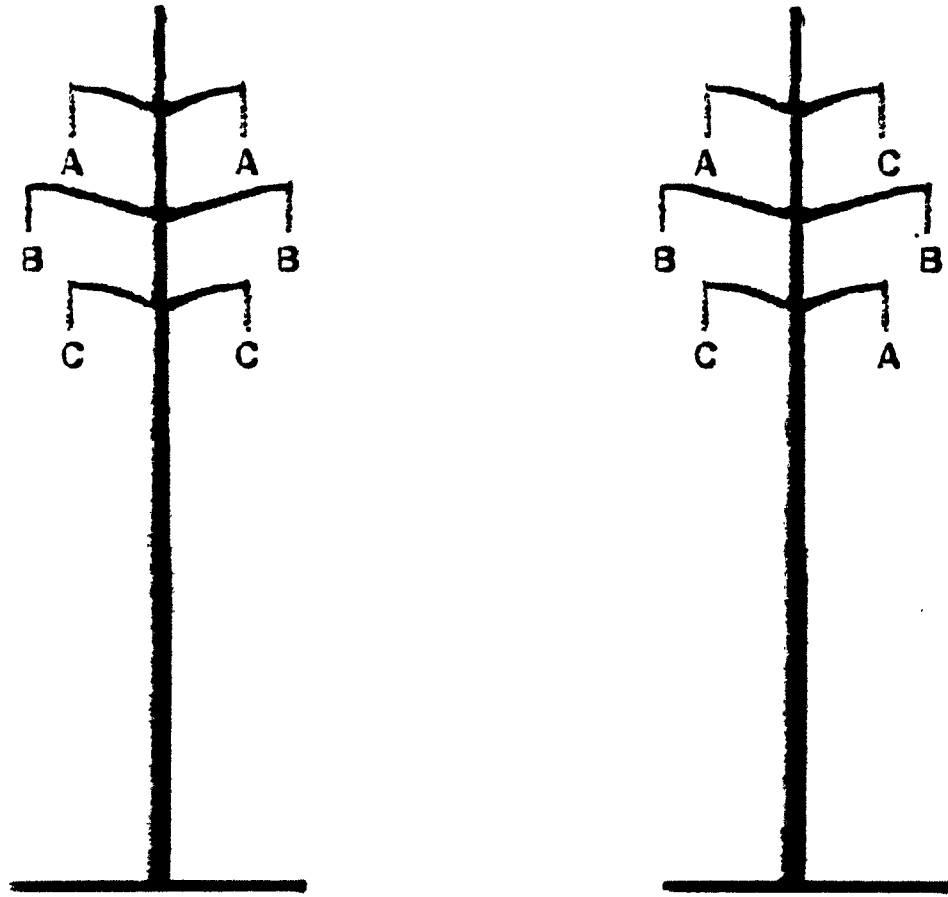
The edge of right of way is 50 feet from the line centerline.
The 400 ampere phase current is balanced between phases.
Calculations are based on a minimum ground clearance of 25 feet.

Compact Design Structure



- **Minimize magnetic fields due to compact design**
- **Not a low-cost alternative**
- **Typical conductor data:**
 - 1 3/8" HS steel overhead ground wire - 9.0 feet sag
 - 6-556.5 KCMIL 24/7 ACSR power conductors - (PARAKEET) 9.0 feet sag
 - Average span - 300 feet

Reverse Phasing of Double-Circuit Transmission Lines



From: → → → → To:

Reverse phasing also can be one of the following phase arrangements:

A	B		B	A		B	C		C	A		C	B
C	C	or	C	C	or	A	A	or	B	B	or	A	A
B	A		A	B		C	B		A	C		B	C

**230 kV REVERSE-PHASE TRANSMISSION LINES
CALCULATED MAGNETIC FIELDS AT 800 AMPERES**

TYPE CONSTRUCTION	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
DOUBLE CIRCUIT POLE	49
DOUBLE CIRCUIT POLE (REVERSE-PHASE)	16

The edge of right of way is 75 feet from the line centerline.
The 800 ampere phase current is balanced between phases.
Calculations are based on a minimum ground clearance of 27 feet.

**500 kV REVERSE-PHASE TRANSMISSION LINES
CALCULATED MAGNETIC FIELDS AT 1100 AMPERES**

TYPE CONSTRUCTION	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
DOUBLE CIRCUIT POLE	37
DOUBLE CIRCUIT POLE (REVERSE PHASE)	21

The edge of right of way is 100 feet from the line centerline.
The 1,100 ampere phase current is balanced between phases.
Calculations are based on a minimum ground clearance of 33 feet.

**INCREASED 138/69 kV MINIMUM GROUND CLEARANCE
CALCULATED MAGNETIC FIELDS AT 400 AMPERES**

TYPE CONSTRUCTION	MINIMUM GROUND CLEARANCE FEET	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
SINGLE CIRCUIT TOP/MIDDLE	25	12
SINGLE CIRCUIT TOP/MIDDLE	30	10
LONG SPAN	25	29
LONG SPAN	30	26
LONG SPAN (REVERSE PHASE)	25	9
LONG SPAN (REVERSE PHASE)	30	7

The edge of right of way is 50 feet from the line centerline.
The 400 ampere phase current is balanced between phases.

**INCREASED 230 kV MINIMUM GROUND CLEARANCE
CALCULATED MAGNETIC FIELDS AT 800 AMPERES**

TYPE CONSTRUCTION	MINIMUM GROUND CLEARANCE FEET	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
SINGLE CIRCUIT TOP/MIDDLE	27	30
SINGLE CIRCUIT TOP/MIDDLE	32	28
DOUBLE CIRCUIT POLE	27	49
DOUBLE CIRCUIT POLE	32	46
DOUBLE CIRCUIT POLE (REVERSE PHASE)	27	16
DOUBLE CIRCUIT POLE (REVERSE PHASE)	32	15

The edge of right of way is 75 feet from the line centerline.
The 800 ampere phase current is balanced between phases.

**INCREASED 500 kV MINIMUM GROUND CLEARANCE
CALCULATED MAGNETIC FIELDS AT 1,100 AMPERES**

TYPE CONSTRUCTION	MINIMUM GROUND CLEARANCE FEET	MAGNETIC FIELD IN MILLIGAUSS AT THE EDGE OF THE RIGHT OF WAY
SINGLE CIRCUIT "H" STRUCTURE	33	42
SINGLE CIRCUIT "H" STRUCTURE	53	35
DOUBLE CIRCUIT POLE	33	37
DOUBLE CIRCUIT POLE	53	31
DOUBLE CIRCUIT POLE (REVERSE PHASE)	33	21
DOUBLE CIRCUIT POLE (REVERSE PHASE)	53	16

The edge of right of way is 100 feet from the line centerline.
The 1,100 ampere phase current is balanced between phases.

**12 KV DISTRIBUTION LINES
CALCULATED MAGNETIC FIELDS AT 300 AMPERES**

TYPE CONSTRUCTION	POLE HEIGHT FEET	MAGNETIC FIELD IN MILLIGAUSS*	
		AT CENTERLINE	AT 30 FEET FROM CENTERLINE
STANDARD CROSSARM	45	14	7
STANDARD CROSSARM	50	11	6

* Field level under the line at mid-span based on 300 amps, balanced loading, one meter above ground level.

Attachment 6

ATTACHMENT "6"

LIST OF OWNERS OF PROPERTY WITHIN THE AFFECTED RIGHT-OF-WAY

R W & S K Rowe &
Germaine M Cole
2213 Owego Tpke
Honesdale, PA 18431

Allison Bluhm
118 Linden Ln
Honesdale, PA 18431-9631

Andrew T & Margaret Wargo
1350 Cortez Rd
Lake Ariel, PA 18436-4549

Ann Kinsman
518 Main St
Honesdale, PA 18431

Anthony J Jr & Delani L Sambuca
422 Middle Creek Rd
Honesdale, PA 18431-7623

Bernard Jr & Claire Harvey
103 Terrace Hts
Honesdale, PA 18431-1211

Betty R Bunting
379 School House Rd
Honesdale, PA 18431-2301

Brian J & Tamara L Hodorawis
91 Shuman Rd
Honesdale, PA 18431-2412

Bruce Jennings Hartshorn
687 Old Gravity Rd
Lake Ariel, PA 18436-4572

Canaan Bible Chapel Inc
30 Hemlock Rd
Lake Ariel, PA 18436-4559

Charles H. & Wanda M. Jurgensen
PO Box 189
Honesdale, PA 18431-0189

Charles P Jr & Linda L Dennis
728 Grove St
Honesdale, PA 18431-1000

Chaudhari Family Limited
Partnership
C/O Marguerite T Kranick
279 Faller Rd
Lake Ariel, PA 18436-4314

Cherry Hill Mobile Home Court Inc
6 Cherry Hill Rd
Honesdale, PA 18431-7647

Cherry Ridge Corp
C/O John R Simpson
PO Box 285
Dalton, PA 18414-0285

Chester Rickard Jr
323 Spinner Rd
Honesdale, PA 18431-7635

Christine M Clark
110 Linden Ln
Honesdale, PA 18431-9631

Chuck Coccodrilli
96 Mountain Rd
Jefferson Twp, PA 18436-3832

Cinde J Grossman
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Clayton & Pamela Dirkson
284 Theobald Rd
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Commonwealth of PA DCNR
400 Market St 7th Floor
Harrisburg, PA 17105

**PPL ELECTRIC UTILITIES CORPORATION
ATTACHMENT 6 – PROPERTY OWNERS**

Daniel M. & Renee E. Woik
192 Schuman Rd
Honesdale, PA 18431

Curt Coccodrilli
Chuck Coccodrilli
96 Mountain Rd
Lake Ariel, PA 18436

Dale & Susan Zielinski
126 Moosic Gap Rd
Jefferson Twp, PA 18436

David & Rosemarie Smith
860 Poole Ave
Hazlet, NJ 07730-2044

David & Linda Yatsonsky
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David & Robin Kohut
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Don Doney
Kevin Doney
Shawn Doney
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David Murphy
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Earl Jr & Colleen Smith
8 Nursery Dr
Lake Ariel, PA 18436

Douglas W Dorsett
75 Livingston St Apt #PH
Brooklyn, NY 11201

Dwight Lintner
August Lintner
306 Sunrise Ave
Honesdale, PA 18431-1032

Enger Aviation Inc
30 Bomber Ln
Honesdale, PA 18431-9713

Edith A. Pfirmman
Barbara A. Mcnamara
RR 5 Box 5723
Lake Ariel, PA 18436

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Firmstone Oil Co
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Sandra Ann Kowalczyk
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Schweinsburg Trustees
Mrs William Schweinsburg
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Honesdale, PA 18431-1314

George J. & Grace M. Chesek
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Irvington, NJ 07111-3704

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Geraldine A & Joseph Jr Spinosa
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Joseph J Mang
Mary L Gilson
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James J Mang
Joseph J Mang
Mary Lisa Gilson
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Janet N Lienert
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Jeffrey Sr & Linda J. Shuman
13 Krols Ln
Honesdale, PA 18431-2415

Jennifer Rodriguez &
Jason Warring
169 Old State Road
Honesdale, PA 18431-2327

Jirina Mandic
1507 Ramapo Brae Ln
Mahwah, NJ 07430-1026

Joanne B Haggerty
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**PPL ELECTRIC UTILITIES CORPORATION
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**John D Seeley
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**John J & Wendy H Czar
22 Czar Ln
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**John Paul Lefevre
4 Theobald Rd
Lake Ariel, PA 18436-4054**

**John S & Mary Kathleen Lewis
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**Joseph F & Margaret M De Rosa
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Honesdale, PA 18431-2413**

**Joseph O & Jacqueline R Yarnes
301 Tannery Rd
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Geraldine Ann Rose Spinosa
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**Joyce A Baber
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**Karen M Corrigan
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**Karen V & Joseph David
Novobilski
19 Hidden Pond Est
Honesdale, PA 18431-7617**

**Ladislau Tolcser Jr
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Honesdale, PA 18431-7624**

**Laura May Evarts
48 Seeley Rd
Lake Ariel, PA 18436-4577**

**Lawrence Stasick
1937 Owego Tpke
Honesdale, PA 18431-2325**

**Linda Ann Kelly
654 Tannery Rd
Lake Ariel, PA 18436-4583**

**Louis J Sylvester Jr
PO Box 485
Lake Ariel, PA 18436-0485**

**Louis Spencer Houck
PO Box 72
Waverly, PA 18471-0072**

**Margaret Loscig
232 Moran St
Honesdale, PA 18431-1338**

**Mathew R Povse & Sandra Ward
2585 Lake Ariel Hwy
Honesdale, PA 18431-7613**

**Maurice Dennis & Miles
Havenstrite
2627 Lake Ariel Hwy
Honesdale, PA 18431-7611**

**Michael P & Emily Moran
1086 Archbald Mt Rd
Archbald, PA 18403**

**Michael T & Catherine Tallman
162 Lakeside Dr
Honesdale, PA 18431-1232**

**Nancy M Shaffer
113 Shaffer Rd
Lake Ariel, PA 18436-4579**

**Paul A & Colleen M Deliman
21 Reed Rd
Lake Ariel, PA 18436-4573**

**PPL ELECTRIC UTILITIES CORPORATION
ATTACHMENT 6 – PROPERTY OWNERS**

**Paul J & Elizabeth Douglas
267 Forest St
Honesdale, PA 18431-4202**

**Penna Game Commission
2001 Elmerton Ave
Harrisburg, PA 17110-9797**

**Peter J & Susan M Romer
537 Wychwood Rd
Westfield, NJ 07090-2352**

**Peter Surach
1238 Cortez Rd
PO Box 73
South Canaan, PA 18459-0073**

**PPL Electric Utilities Corporation
2 N 9th St
Allentown, PA 18101**

**Ralph & Shirley Westgate
2880 Lake Ariel Hwy
Honesdale, PA 18431-2417**

**Regina Scott & John P Scanlon
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Honesdale, PA 18431-7613**

**Richard Coccodrilli Jr
1180 Mckelvey Ln
Blue Bell, PA 19422-1833**

**Richard E & Deborah R Masee
143 Mid Valley Rd
Lake Ariel, PA 18436-4563**

**Richard M Donovan
PMB #3823
4212 East Los Angeles Ave
Simi Valley, CA 93063-3308**

**Robert A Jr & Sabrina L Loscig
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Honesdale, PA 18431-1338**

**Roger Dirlam
85 Riley Rose Ln
Honesdale, PA 18431-3253**

**Ronald & Lula Heater
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Honesdale, PA 18431-0706**

**Ronald R & Mary Ann Amorine
1355 Cortez Rd
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**Rudolph & Maria Saporito
PO Box 434
Lake Ariel, PA 18436-0434**

**Rudolph Jr & Karen Desio
Marissa Desio
10 Redwood Ave
Staten Island, NY 10308-1859**

**Rudolph S & Anne P Houck
67 Hillside Ave
Mount Kisco, NY 10549-1328**

**Sally A Dixon
8421 Willow Forge Rd
Springfield, VA 22152-1725**

**Slibco
PO Box 431
222 Mulberry St
Scranton, PA 18501**

**Stafursky Properties Ltd
502 N Main St
Archbald, PA 18403**

**Surhan Aksura
22 Roeder Lane
Honesdale, PA 18431**

**PPL ELECTRIC UTILITIES CORPORATION
ATTACHMENT 6 – PROPERTY OWNERS**

Tammy A. Wasman & Joan C.
Derrick
809 Terrace St
Honesdale, PA 18431-1209

Terry E & Thomas Chmil
527 Forest Ln
Archbald, PA 18403

The Anthony & Betty Vaccaro
Qualified Personal Residence Trust
225 Aspinwall St
Staten Island, NY 10307-2101

Thomas C Jr & Linda S Tallman
29 Stourbridge Ln
Honesdale, PA 18431

Thomas E & Joyce A Daschke
82 Shaffer Rd
Lake Ariel, PA 18436-4578

Thomas J & Nancy J Robinson
301 Spinner Rd
Honesdale, PA 18431-7635

Thomas Tigue
103 Prospect St
Hawley, PA 18428-1115

Virginia Motsko
2853 Lake Ariel Hwy
Honesdale, PA 18431-7608

Wartko Est
C/O Coccodrilli Curt
96 Mountain Rd
Jefferson Twp, PA 18436

Wayne Highlands School Dist
474 Grove St
Honesdale, PA 18431-1047

William Alan & Cathleen Marie
Lienert
3171 Lake Ariel Hwy
Honesdale, PA 18431-7604

William J & Catherine M Kelly
168 Lakeside Dr
Honesdale, PA 18431-1232

William M & Catherine J
Vansickle
333 Faller Rd
Lake Ariel, PA 18436-4455

William R Reck &
Jennifer Amorine-Reck
190 N Barnes Rd
Moscow, PA 18444

William S & Madlynne L Jasicob
115 Linden Ln
Honesdale, PA 18431-9660

Attachment

7

ATTACHMENT "7"

**LIST OF INVOLVED GOVERNMENTAL AGENCIES, MUNICIPALITIES
AND OTHER PUBLIC ENTITIES**

Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, Second Floor
400 North Street
Harrisburg, Pennsylvania 17120-0053
Attn: Mr. Douglas C. McLearn, Chief

Honorable Barry Schoch, P.E., Secretary
Pennsylvania Department of Transportation
C/O Office of Chief Counsel
Commonwealth Keystone Building
400 North Street, 9th Floor
Harrisburg, PA 17120
Attn: Andrew Gordon

Department of Environmental Protection
P.O. Box 2063
Market Street State Office Building
Harrisburg, Pennsylvania 17105-2063
Attn: Office of Field Operations

Lackawanna County Planning Commission
Mr. Steve Pitoniak
507 Linden Street, 5th Floor
Scranton, PA 18503

Lackawanna County Board of Commissioners
Lackawanna County Administration Building
200 Adams Avenue, 6th Floor
Scranton, PA 18503

Wayne County Board of Commissioners
Mr. Brian W. Smith – Chairperson
925 Court Street
Honesdale, Pennsylvania 18431

Wayne County Planning Commission
Mr. Edward J. Coar – Director
925 Court Street
Honesdale, Pennsylvania 18431

**Archbald Borough Manager
Mr. Steven C. Vincenti
400 Church Street
Archbald, Pennsylvania 18403**

**Archbald Borough Planning Commission
Mr. Karl Pfiennenberger – Chairperson
400 Church Street
Archbald, Pennsylvania 18403**

**Cherry Ridge Township
Mr. John W. Rickard Jr. - Chairperson
269 Spinner Road
Honesdale, Pennsylvania, 18431**

**Cherry Ridge Township Planning Commission
Mr. Lenny Tasselmeyer – Member
269 Spinner Road
Honesdale, Pennsylvania, 18431**

**Honesdale Borough Council
Mr. Robert Jennings - Chairperson
958 Main Street
Honesdale, Pennsylvania 18431**

**Honesdale Borough Planning Commission
Mr. George Korb – Chairperson
958 Main Street
Honesdale, Pennsylvania 18431**

**Jefferson Township
Mr. Lester Butler Jr. - Chairperson
487 Cortez Road
Jefferson Township, Pennsylvania 18436**

**Jefferson Township Planning Commission
Mr. William Nicolias - Chairperson
487 Cortez Road
Jefferson Township, Pennsylvania 18436**

**South Canaan Township
Mr. Frank Lamberton – Supervisor
46 Quinn Lake Road
Waymart, Pennsylvania 18472**

**Texas Township
Mr. John McDonald – Chairperson
506 Willow Avenue
Honesdale, Pennsylvania 18431**

**Texas Township Planning Commission
Mr. Robert Roe – Chairperson
506 Willow Avenue
Honesdale, Pennsylvania 18431**