COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST	**)**	
KENTUCKY POWER COOPERATIVE, INC.	**)**	
FOR A CERTIFICATE OF PUBLIC	**)**	**CASE NO.**
CONVENIENCE AND NECESSITY FOR	**)**	**2025-00311**
THE CONSTRUCTION OF A 161 kV	**)**	
TRANSMISSION LINE IN PULASKI	**)**	
COUNTY, KENTUCKY AND OTHER	**)**	
GENERALRELIEF	**)**	

RESPONSES TO STAFF'S THIRD INFORMATION REQUEST

TO EAST KENTUCKY POWER COOPERATIVE, INC.

DATED JANUARY 30, 2026

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE CONSTRUCTION OF A 161 kV TRANSMISSION LINE IN PULASKI COUNTY, KENTUCKY AND OTHER GENERAL RELIEF	))))))))	**CASE NO. 2025-00311**

VERIFICATION OF LUCAS SPENCER

COMMONWEALTH OF KENTUCKY	)
	)
COUNTY OF CLARK	)

Lucas Spencer, Senior Engineer of East Kentucky Power Cooperative, Inc., being duly sworn, states that he has supervised the preparation of his Errata Testimony and Data Requests and certain filing requirements in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

____
Lucas Spencer

The foregoing Verification was signed, acknowledged and sworn to before me this 6th day of February, 2026, by Lucas Spencer.

____

Notary Commission No. 1/18/28

Commission expiration: KYNP84425

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC APPLICATION OF EAST KENTUCKY POWER COOPERATIVE, INC. FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE CONSTRUCTION OF A 161 kV TRANSMISSION LINE IN PULASKI COUNTY, KENTUCKY AND OTHER GENERAL RELIEF	)	**CASE NO. 2025-00311**

VERIFICATION OF DARRIN ADAMS

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF CLARK)

Darrin Adams, Director of Transmission Planning & System Protection of East Kentucky Power Cooperative, Inc., being duly sworn, states that he has supervised the preparation of his Errata Testimony and Data Requests and certain filing requirements in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Darrin Adams

The foregoing Verification was signed, acknowledged and sworn to before me this 6th day of February, 2026, by Darrin Adams.

Notary Commission No. 1/18/28

Commission expiration: KYNP84425

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2025-00311
THIRD REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED JANUARY 30, 2026
REQUEST 1
RESPONSIBLE PARTY: Lucas Spencer

Request 1. Refer to EKPC's response to Commission Staff's Second Request for Information, Item 7 and Item 8. See also the Direct Testimony of Lucas Spencer Attachments EKPC Cooper Alcalde – 161kV Greenfield Transmission Routing Study, Part XI: Alternate Routes at 63.

a. Confirm that the proposed project entails the installation of a double circuit line the entire length of the proposed line route.

b. If confirmed, then reconcile the statement from the routing study, "The first 2.90 miles of Route B is a double circuit transmission circuit, while the final 1.64 miles of Route B is a single transmission circuit."[1]

c. If not confirmed, submit an updated Siting Study or explain why an updated Siting Study is unavailable.

Response 1.

a. Confirmed.

[1] See the Direct Testimony of Lucas Spencer Attachments EKPC Cooper Alcalde – 161kV Greenfield Transmission Routing Study, Part XI: Alternate Routes at 63.

b. During the routing study for the 161kV Cooper-Alcalde double-circuit transmission line, multiple route alternatives were evaluated in accordance with the EPRI-Kentucky transmission line routing methodology. Route B was selected as the preferred route based on that evaluation and was correctly identified as the best-performing alternative, this is outlined further in the corrected siting study, Attachment LS-1, Appendix A, which is attached to this response as Attachment 3-1(b).

An inconsistency has been identified in the report and testimony where the line length of 5.25 miles, which is the line length for Route C in the siting study, was inadvertently included in various areas of testimony and the application. Route B is described in the siting study as approximately 4.54 miles. This was a clerical error that unfortunately was carried forward into various places in the case record. The 5.25-mile line length is the incorrect line length for the Cooper-Alcalde project and the 5.25-mile line length does not represent the selected Route B. EKPC is providing red-lined versions of the various documents where the clerical error was made regarding the 5.25-mile length to reflect the correct 4.54 mile length as described for Route B on the siting study.

As the project advanced from the routing study to engineering design, detailed survey data in the form of LiDAR was acquired for the purposes of design. It is standard industry practice at this stage to make modest adjustments to the conceptual centerline to account for real-world terrain, constructability considerations, and input received during the public open house process. The final centerline adjustments reflect sound engineering judgement during the design process. The resulting final centerline has a designed length of approximately 4.95 miles. This alignment is shown on Attachment LS-3 to the Direct Testimony of Lucas Spencer that was filed with the

Application. Attachment LS-3 represents the engineering design with final line length in station format, with an ending station of approximately 261+50 ft, or 26,150 ft. This is seen in Attachment LS-3, page 4, which is approximately 4.95 miles. Attachment LS-3 is a more detailed design of the proposed transmission line and was developed later in the project than the siting study.

While the original routing study and testimony contained inconsistent mileage references due to the early oversight described above, the routing methodology, route selection, and final design have remained consistent throughout the project. The correct description, maps, and costs were reflected for Route B. The only incorrect information was the length of the line. The final design documents accurately reflect the proposed alignment and total length. The siting report has been updated to reflect the correct route descriptions; the application and testimony have been updated to reflect the final centerline length based on the design initially attached in Attachment LS-3.

When EKPC was developing the project and determining what landowners would need to be notified, EKPC used a corridor map. A corridor map contains a much wider area than just the parcels where the centerline crosses. Therefore, EKPC notified more landowners of the project than what was required, and all potentially impacted landowners were included. Overall, the routing study was performed with sound judgment and in conformance with industry accepted standards. Route B was appropriately selected and was scored as a double circuit transmission line for the full length of the line from EKPC Cooper-KU Alcalde and the final line length after design, as described above, is 4.95 miles.

c. EKPC has attached an updated siting report that reflects the correct route descriptions and updates some of the other information in the report to correctly reflect the scope of the routing study. Route B continues to be the best overall choice for the project.

ATTACHMENT 3-1(b)

Updated Attachment LS-1
Siting Study

EKPC Cooper - Alcalde Greenfield Transmission Line Routing Study

161 kV Transmission Line Siting

Technical Report

FEBRUARY 6, 2026

Prepared for:

Eastern Kentucky Power Cooperative
4775 Lexington Road
Winchester, KY 40392

Prepared by:

NV5 Geospatial
421 SW 6th Avenue
Suite 800
Portland, OR 97204

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Part 1: Introduction

East Kentucky Power Cooperative (EKPC) is an electric generation and transmission cooperative based in Winchester, Kentucky. EKPC owns and operates two coal-fired generation plants, twelve combustion turbines and six landfill gas plants. In addition, EKPC also has rights to 170 megawatts of hydroelectric power from the Southeastern Power Administration. EKPC is regulated by the Kentucky Public Service Commission (PSC) and is an exempt organization under Section 501(c)(12) of the Internal Revenue Code.

The transmission system consists of 2,838 miles of transmission line and 448 transmission and distribution substations. EKPC generates and transmits electricity to 16-member rural electric distribution cooperatives that, in turn, supply energy to meters serving more than 530,168 homes, farms, and businesses in the eastern two-thirds of Kentucky. EKPC has interchange power transactions with all adjacent utilities in its service area

EKPC elected to conduct a suitability study to determine the routing of a new double-circuit 161 kV transmission line between the existing Cooper substation owned by EKPC, and the existing Alcalde substation owned by Kentucky Utilities (KU) in Pulaski County, Kentucky, on the northern bank of the Cumberland River in an area southeast of the City of Somerset. The routes for the proposed transmission lines will consider many diverse factors, including existing land uses and habitats, special geographic classifications, floodplains, wetlands, existing infrastructure paralleling opportunities, impact to local human communities, and previously-confirmed cultural resources.

The first step in the methodology was the development of Macro Corridors, which defined an area for more detailed study between the substation endpoints. A 0.5 meter NAIP imagery dataset was used to provide context for the Macro Corridors. The land cover dataset utilized the latest National Land Cover Dataset from 2023 per the standard EPRI Transmission Line Siting methodology. Slope data was derived from the latest 2023 USGS 5 meter DEM available from the KyGovMaps Open Data Portal domain. Road features were compiled from the latest Kentucky Department of Transportation (KyDOT) line files. Once Macro Corridor data was compiled and prepped, the output of this analysis was used to develop a study area (referred to as the Phase 1 Study Area) of approximately 12 square miles spanning the area between the Cooper and KU Alcalde substations. Once the study area was identified, detailed dataset layers were developed for siting purposes within this study area.

Using these detailed layers, Alternate Corridors were generated. For the purpose of this study, the study area represents a larger land area between the end points of the project, and through which corridors might be logically and practically identified. "Corridors" are defined as the most suitable areas for routing a transmission line within the study area. Corridors may vary greatly depending upon the resources encountered in the study area. "Routes" describe the potential centerline path of the transmission line, whereas a "corridor" is a more general area of sufficient width to contain the eventual right-of-way (ROW).

Per the Electric Power Research Institute - Kentucky (EPRI- KY) methodology described in Part II, four corridors (Built, Natural, Engineering, and Simple Average) were produced that represent different perspectives for routing transmission facilities with respect to the datasets. The Built corridor seeks to avoid impacts to human development and historical / cultural resources. The Natural Corridor emphasizes protection of natural resources and avoiding impacts to natural plant and animal species. The Engineering Corridor maximizes co-location opportunities and avoids area in which it would be geographically difficult to construct transmission lines. Finally, the Simple Average Corridor weights all criteria equally with no extra emphasis on any perspective.

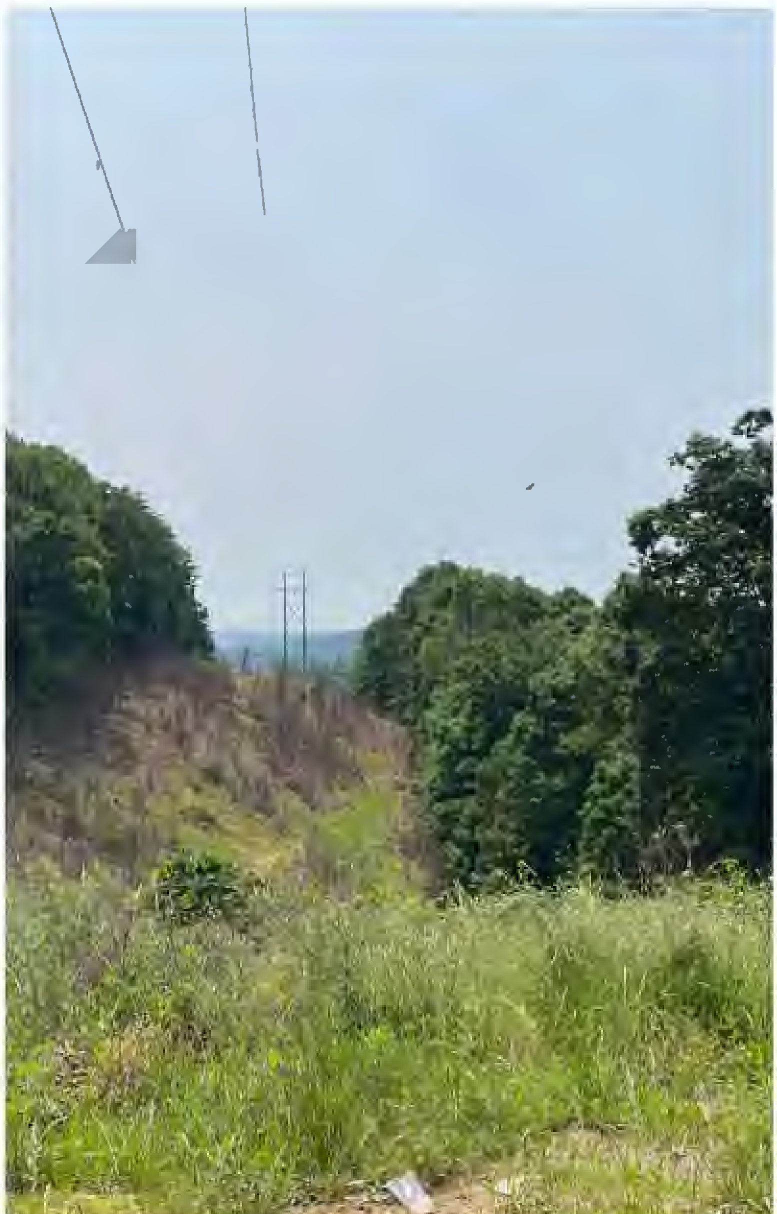
EKPC developed alternate route possibilities using the corridors identified through the above methodology. The possible alternate routes were evaluated and ranked, and analytical decisions were made based on the best practices of the EPRI-KY model and EKPC stakeholders. 7 alternate routes were developed by EKPC connecting the two substations. These routes were then scored and ranked against each other, with results found in Part XI of the report, and additional documentation of the selection process provided in Appendices A-C. The purpose of this report is to document the objective process for selecting the preferred route in this alignment between the Cooper and the KU Alcalde substations.

Part II: Project Description

NV5 utilized the standard EPRI-KY methodology to identify the preferred routes for construction of a new double-circuit 161 kV transmission line spanning the EKPC owned Cooper Substation in the south-western corner of the study area to the KU owned Alcalde substation in the north-eastern corner. The construction would include approximately 5.5 miles of new double-circuit transmission line, requiring a 150 foot wide ROW. The new 161 kV transmission line would serve identified load growth, and facilitate 745 MW of new power generation at the Cooper substation.

The project area is located in Pulaski County in the southeastern part of the state of Kentucky. Within Pulaski County, the project area is a primarily rural and forested area lying on the north bank of the Cumberland River, just southeast of the City of Somerset. The western edge of the project area has some commercial and industrial development, roughly paralleling Kentucky Route 1247 and a Norfolk Southern freight rail line. The rest of the project area is quite undeveloped and forested, with some agricultural areas adjacent to the KU Alcalde substation in the northern portion of the project area, and adjacent to the Pitman Creek in the central portion of the project area.

Figure 1: Typical land cover within the project area (NV5 field photos)



Part III: Overview of Suitability Analysis

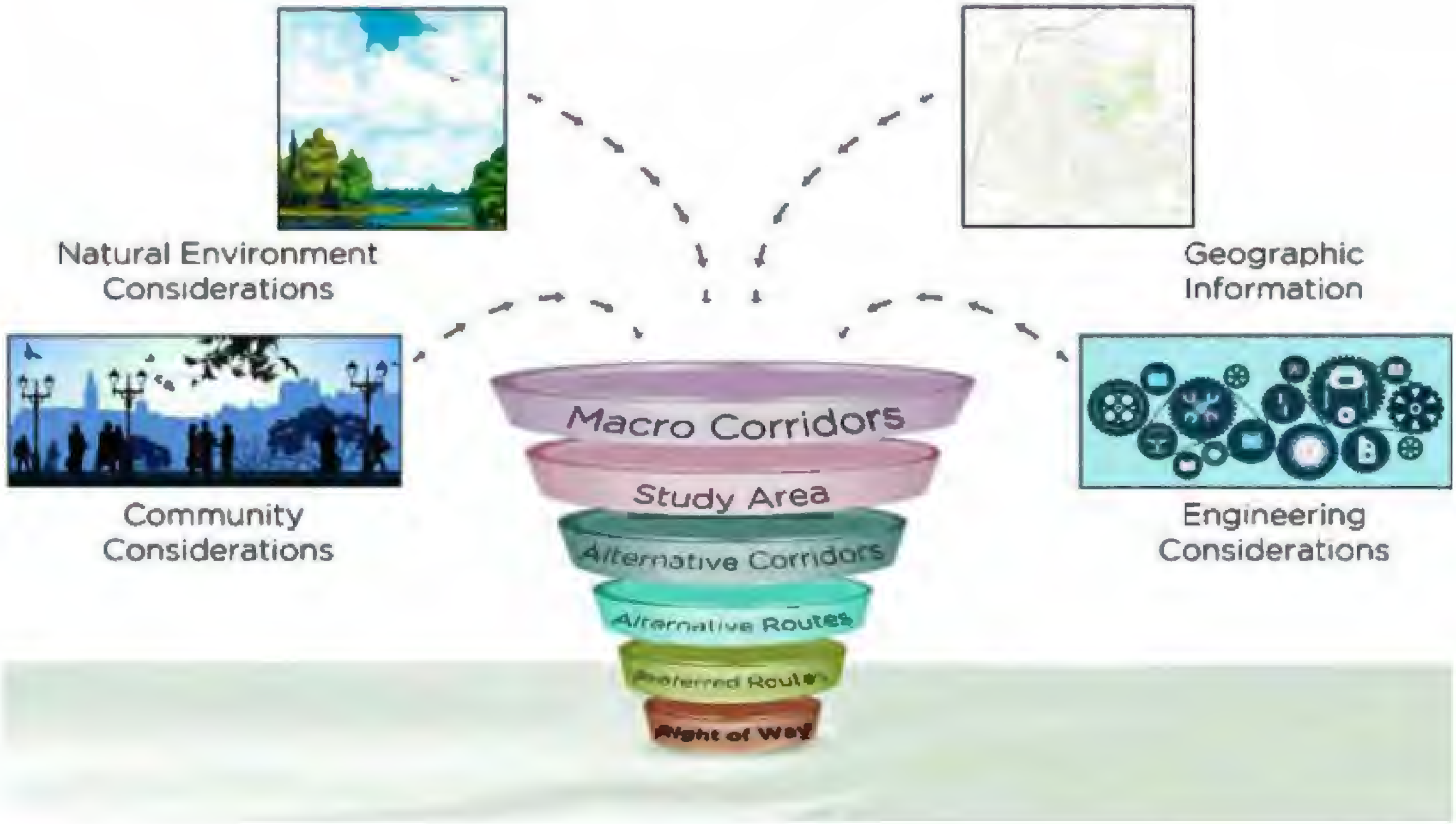
EPRI-KY Methodology

The EPRI-KY methodology is a quantitative, computer-based methodology developed by EPRI and the Commonwealth of Kentucky for use as a tool to evaluate the suitability of individual grid cells (15 feet by 15 feet) within a large area for locating transmission facilities. A study area was developed based on Macro corridor analysis of the geography between the 2 endpoints of the proposed double-circuit 161 kV transmission line. Then, using more-detailed information for the grid cells within the study area, Alternate Corridors were developed for further evaluation. Within the Alternate Corridors, Alternate Routes were developed and analyzed to determine Preferred Routes.

The EPRI-KY methodology is an objective, comprehensive and consistent approach for routing a proposed transmission line. The EPRI-KY methodology provides a structured approach to apply quantitative stakeholder input and organize a vast amount of data. Figure 3 on the following page shows a high level overview of the development of the EPRI-KY methodology.

Figure 2: Transmission line right-of-way within project area (NV5 field photo)

Figure 3: EPRI-KY Siting Methodology



The EPRI-KY Methodology approaches corridor development by considering four broad environments:

1) Built Environment: Minimizes the impact on people, places, and cultural resources

2) Natural Environment: Minimizes impacts to water resources, plants, and animals

3) Engineering Environment: Minimizes terrain restraints and construction variables

4) Simple Average of Environments: Weighs each environment equally

The Siting Model

The siting model was developed using data collected during a stakeholder workshop in February 2006 in Lexington, Kentucky. The model was developed and tested by a project team of independent experts during the workshops. Stakeholders at the workshops represented a range of interests, such as environmental interest, historic preservation, homeowners' associations, agricultural groups and government agencies, as well as personnel and representatives of utility companies. The resulting model (shown in Table 1) includes data layers, features, layer weights and suitability values that were used for siting transmission lines. More information concerning these workshops is available in the Kentucky Transmission Line Siting Methodology (published by EPRI in 2007). Some minor adjustments can be made to this model for site specific and data availability reasons.

Table 1: The EPRI Siting Model

Co-location / Engineering	
Linear Infrastructure	[illegible]
Parallel Existing Transmission Lines	[illegible]
Rebuild Existing Transmission Lines (Single)	[illegible]
Background	4.4
Parallel Interstate ROW	[illegible]
Parallel Roads ROW	[illegible]
Parallel Pipelines	[illegible]
Future DOT Plans	[illegible]
Parallel Railway ROW	6.1
Road ROW	[illegible]
Rebuild Existing Transmission Lines (Double)	[illegible]
Scenic Highways ROW	9
Slope	[illegible]
Slope 0-15%	[illegible]
Slope 15-30%	[illegible]
Slope 30-40%	[illegible]
Slope >40%	9
AVOIDANCE AREAS	
Non-Spannable Waterbodies	
Mines and Quarries (Active)	
Buildings	
Airports	
Military Facilities	
Center Pivot Irrigation	

Natural Environment	
Floodplain	[illegible]
Background	[illegible]
100 Year Floodplain	9
Streams/Wetlands	[illegible]
Background	[illegible]
Streams + 100' Regulatory Buffer	[illegible]
Rivers/Streams + 300' Regulatory Buffer	[illegible]
Wetlands + 100' Buffer	[illegible]
Outstanding State Resource Waters	[illegible]
Public Land	[illegible]
Background	[illegible]
WMA - Not State Owned	[illegible]
USFS Proclamation area	[illegible]
Other Conservation Land	[illegible]
USFS (actually owned)	[illegible]
State Owned Conservation Land	[illegible]
Land Cover	[illegible]
Developed Land	[illegible]
Agriculture	[illegible]
Forests	[illegible]
Wildlife Habitat	[illegible]
Background	[illegible]
Species of Concern Habitat	[illegible]
AVOIDANCE AREAS	
EPA Superfund Sites	
State and National Parks	
USFS Wilderness Area	
Wild/Scenic Rivers	
Wildlife Refuge	
State Nature Preserves	
Designated Critical Habitat	

Built Environment	
Proximity to Buildings	[illegible]
Background	[illegible]
900-1200	[illegible]
600-900	[illegible]
300-600	[illegible]
0-300	[illegible]
Building Density	[illegible]
0 - 0.05 Buildings/Acre	[illegible]
0.05 - 0.2 Buildings/Acre	[illegible]
0.2 - 1 Buildings/Acre	[illegible]
1 - 4 Buildings/Acre	[illegible]
> 4 Buildings/Acre	9
Proposed Development	[illegible]
Background	[illegible]
Proposed Development	[illegible]
Spannable Lakes and Ponds	[illegible]
Background	[illegible]
Spannable Lakes and Ponds	9
Land Use	[illegible]
Commercial/Industrial	[illegible]
Agriculture (crops)	[illegible]
Agriculture (other)	[illegible]
Silviculture	[illegible]
Other Uses	[illegible]
Equine Agri-Tourism	[illegible]
Residential	[illegible]

Built Environment (continued)	
Proximity to Eligible Historic and Archeological Sites	[illegible]
Background	[illegible]
900-1200	[illegible]
600-900	[illegible]
0-300	[illegible]
300-600	[illegible]
AVOIDANCE AREAS	
Listed Archaeology Sites & Dist	
Listed NRHP Districts and Buildings	
City and County Parks	
Day Care Parcels	
Cemetery Parcels	
School Parcels (K-12)	
Church Parcels	

Data layers (dark green cells): Percentages represent relative importance, or weighting, of each layer in the siting process, as determined by stakeholders.

Features (yellow cells): Numbers between one and nine represent degrees of suitability, as determined by stakeholders, with one being most suitable for locating a transmission line and nine being least suitable for locating a line.

Areas of Least Preference (pink cells): Features to avoid when siting a transmission line, if possible, as determined by stakeholders.

The Siting Model - Continued

Each stakeholder was assigned to a breakout group for one of the three environments based on their interest (Built, Natural or Engineering Environments). Guided by an independent expert from the project team, each of these groups developed a set of data layers (shown in green in Table 1) with component features (shown in yellow), as well as avoidance areas (shown as areas of least preference at the bottom of each of the environment columns). For example, one of the data layers in the Natural Environment is floodplains, which has two component features: background and 100-year floodplain.

For each component feature, the stakeholders then used consensus-building techniques to develop a relative suitability value. Numbers between one and nine were used to represent degrees of suitability, with one being most suitable for locating a transmission line and nine being least suitable for locating a line.

After assigning suitability values to features, stakeholders then weighted each data layer based on their view of its relative importance in the siting process. This was accomplished by conducting pairwise comparisons. The result was a percentage weighting for each data layer within each environment, totaling 100 percent.

Locating overhead transmission lines on or around features are difficult to evaluate using the EPRI-KY methodology due to features such as physical constraints or permitting delays. One of the first steps in implementing the EPRI-KY methodology is identifying local areas of least preference within the study area where, if possible, the project area avoids locating facilities (ie state boundary waterbodies, sensitive areas etc).

Areas that have High Suitability for an Overhead Electric Transmission Line (1, 2, 3)
These are areas that do not contain known sensitive resources or physical constraints, and therefore should be considered as suitable areas for the development of corridors.

Moderate Suitability for an Overhead Electric Transmission Line (4, 5, 6)
These are areas that contain resources or land uses that are moderately sensitive to disturbance or that present a moderate physical constraint to overhead electric transmission line construction and operation. Resource conflicts or physical constraints in these areas can generally be reduced or avoided using standard mitigation measures.

Low Suitability for an Overhead Electric Transmission Line (7, 8, 9)
These are areas that contain resources or land uses that present a potential for significant impacts that cannot be readily mitigated. Locating a transmission line in these areas would require careful siting or special design measures. It is important to note that these areas can be crossed but it is not desirable to do so if other alternatives are available.

Suitability Mapping

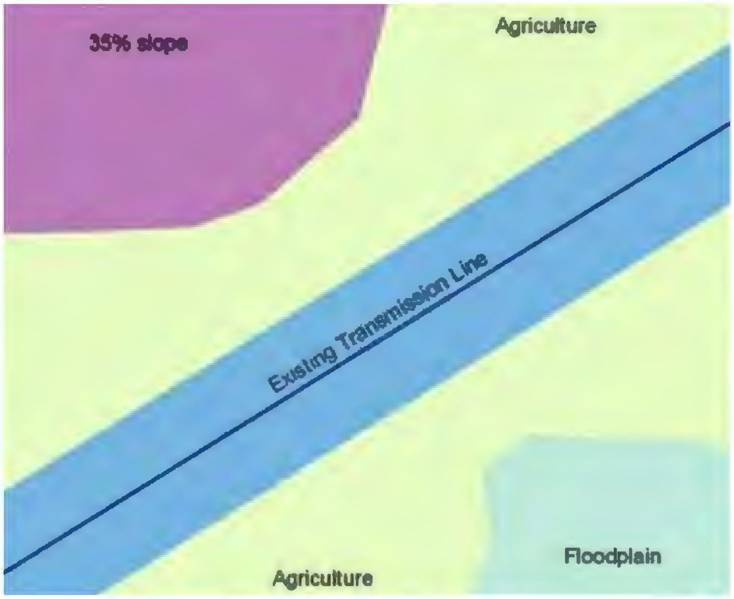
The methodology began with the proposed starting location and endpoints as the basis for creating transmission line corridors. The area in the vicinity of and between the endpoints was divided into grid cells 30 meters by 30 meters in size.

Data from aerial photography, geographic information systems (GIS), publicly available datasets and other sources were used to identify features within each grid cell. Based on these features and the values of data layer weights determined in the EPRI-KY Siting Model, a suitability value was assigned to each cell. The suitability is constrained in resolution by the input raster cell size of 30 meters.

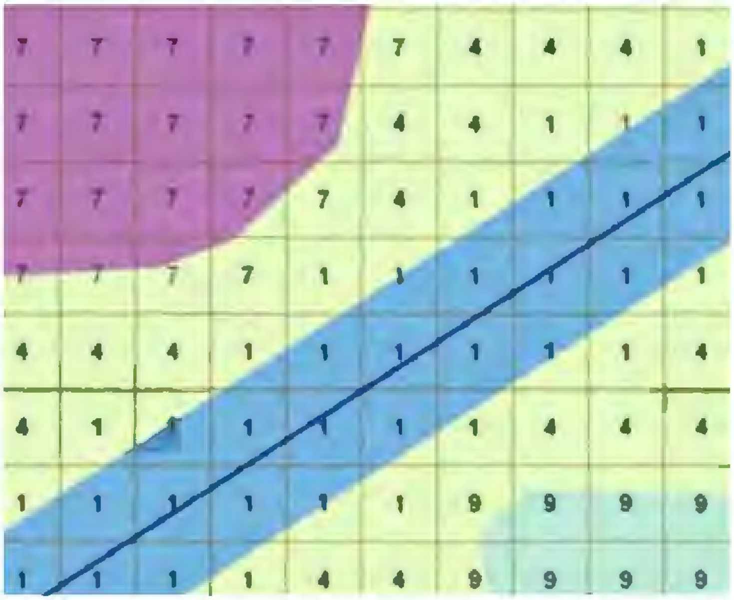
Since cells with lower suitability for locating a transmission line are assigned higher values, the methodology employs an algorithm that seeks to minimize the sum of values as it works its way from one endpoint to the other. The resulting corridor is referred to as the “optimal path”. See figures 4-6 on the following page for a more detailed description of the suitability mapping process.

Visualization of Suitability Mapping

Figure 4 Displays an example area that has four features: an existing transmission line through the center of the area, surrounded by agricultural land with an area of steep slopes to the northwest and a floodplain to the southeast



In **Figure 5,** grid cells are overlain and assigned suitability values based on the features. The suitability values used in the example do not necessarily correspond to the Siting Model. The area of the existing line is considered highly suitable. Agricultural land is moderately suitable. Steep slopes and floodplains have low suitability values.



Finally, **Figure 6** shows in green the most suitable corridor through the area for locating a transmission line. Light green areas are moderately suitable. The orange area is somewhat suitable, and the red area is highly unsuitable. The most suitable corridor from east to west in this example was the one follows an existing transmission line.

Developing Macro and Alternate Corridors

As described above, the EPRI-KY methodology analyzed land tracts, or "grid cells," within the area to develop Macro Corridors. The analysis was based on GIS information that is readily available from public sources as well as data extracted from aerial photo interpretation. The data was then used to develop the grid cells. The numbers that were applied to the grid cells were taken from the siting model. The Macro Corridors developed from the model were the most suitable five percent of possible routes within the study area.

The macro corridors present a much higher level view of the suitability process. These corridors are fairly generic, do not take in much of the project specific nuances, and solely serve as the inputs to create the Phase 1 study area. To create a more detailed view and apply the EPRI-KY model, the next step in the process is to compile vector or raster data per the model at a much finer level of precision than the macro corridors. Whereas the macro corridors have cell resolution of 98.43 ft x 98.43 ft, the cell resolution of the Alternate corridors are much more detailed at a 15 ft x 15 ft resolution.

After the Macro Corridors were developed and the Phase 1 study area was defined, data inputs for the built, natural, and environmental environments were collected and digitized by NV5. Once all data was compiled, the alternate corridor process began. In conducting analysis for alternate corridors, NV5 developed a weighting system that emphasizes each of the three environments, while also accounting for data from the other two environments. In this system, each of the target environments were weighted much more heavily (five times so), values and weights from the other environments were considered when developing Alternate Corridors generated for that respective environment. For example, when creating the Engineering Corridor, the engineering grid is given five times more weight than the built and natural grids when the three are added together. The equation would appear similar to ((Engineering Grid * 0.72) + (Built Grid * 0.14) + (Natural Grid * 0.14)) where 0.72 is five times greater than 0.14 and these three values add up to 1. More information on this process can be found in Chapter IX: Alternate Corridors

The final step in generating Alternate Corridors was to equally weigh the three environments and generate a Simple Average Alternate Corridor. The equation for the Simple Average Corridor would look similar to ((Engineering Grid * 0.333) + (Built Gird * 0.333) + (Natural Grid * 0.333)). Once corridors are created, the top five percent scores of the overall corridors are extracted to a vector format for final Alternate Route creation by the NV5 Power Delivery Team.

The composite of Alternate Corridors depicts the area in which a transmission line should minimize adverse impacts on people, environmentally sensitive areas, and cultural resources. The composite of Macro Corridors also provides a reasonable balance between co-location of the proposed line, minimization of the overall impacts, and construction and maintenance of the line in a cost-effective manner. The specific routing of a ROW within the corridor will be implemented to avoid sensitive land uses.

The EPRI-KY methodology provides assurance that the composite of Alternate Corridors minimizes adverse environmental impacts during this phase of routing activities.

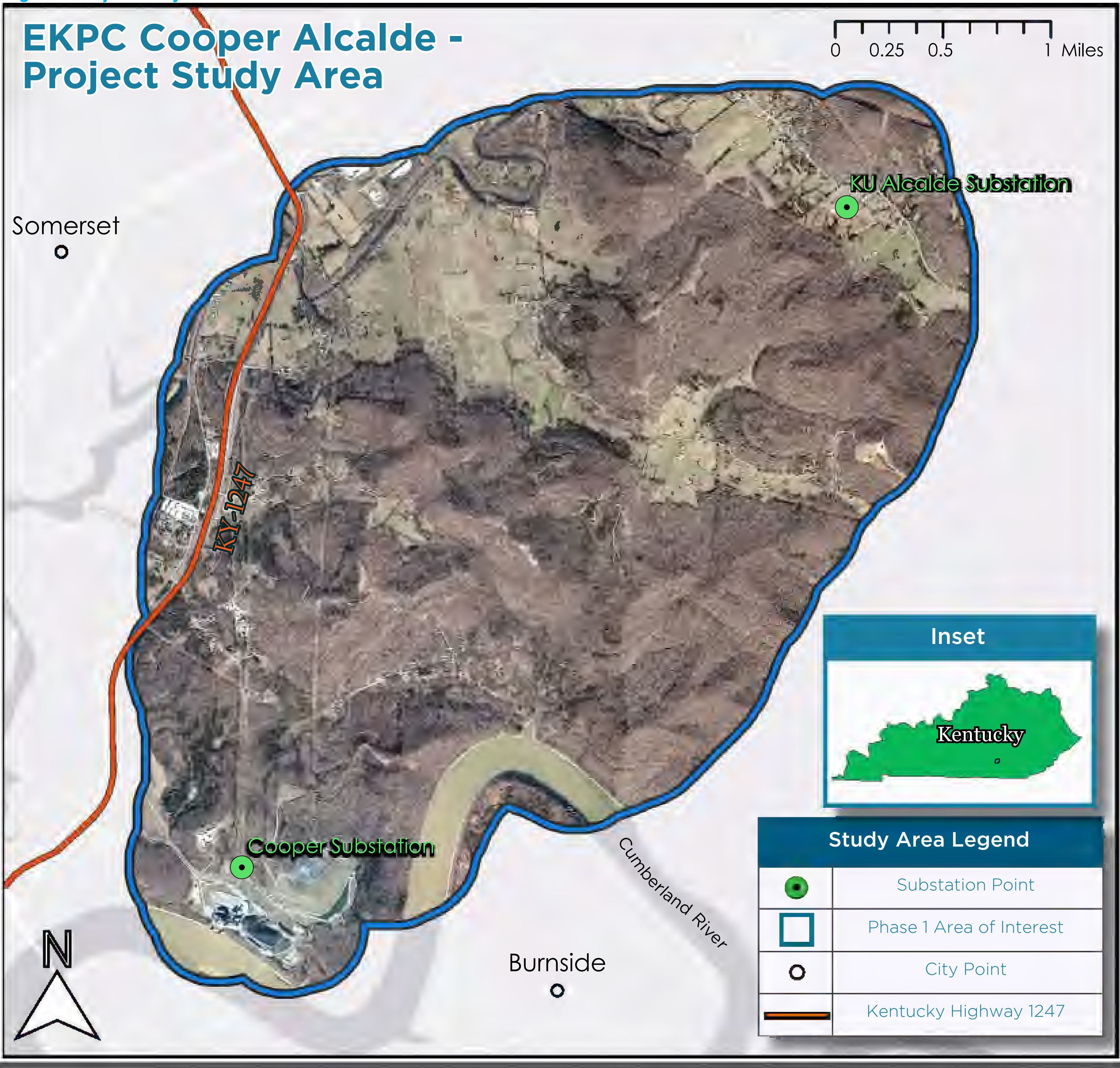
The following sections of this report provide information about the Phase 1 study area, features that were found within the study area in the built, natural and engineering environments, the Suitability Rasters and Alternate Corridors, the Alternate Routes, and the selection of Preferred Routes for construction of the proposed 161 kV transmission line.

Part IV: Study Area Description

Project Study Area Description

This project area is located in Pulaski County, Kentucky; adjacent to the cities of Somerset and Burnside, and bordering the Cumberland River, in the southeastern part of the state. There are 2 existing substations that a newly constructed double-circuit 161 kV transmission line will connect to: the EKPC owned Cooper substation, located directly adjacent to the John Sherman Cooper coal-fired plant in the south-western corner of the project area, and the Kentucky Utilities (KU) owned Alcalde substation, located in the north-eastern corner of the project area. The project area spans roughly 12 square miles, and the two substations are approximately 5 miles apart. This project area is primarily rural and heavily forested, with some commercial and industrial development adjacent to Kentucky Highway 1247 (KY-1247) and some agricultural land adjacent to Pittman Creek in the north-central part of the project area. See the image below for a map showing the two substations and the project area, with additional geographic context. See the following page for images of the two substations obtained by the NV5 Field Survey Team.

Figure 7: Project Study Area



Substation Start and Finish Detail

Figure 8: Cooper substation (NV5 Field Photo)

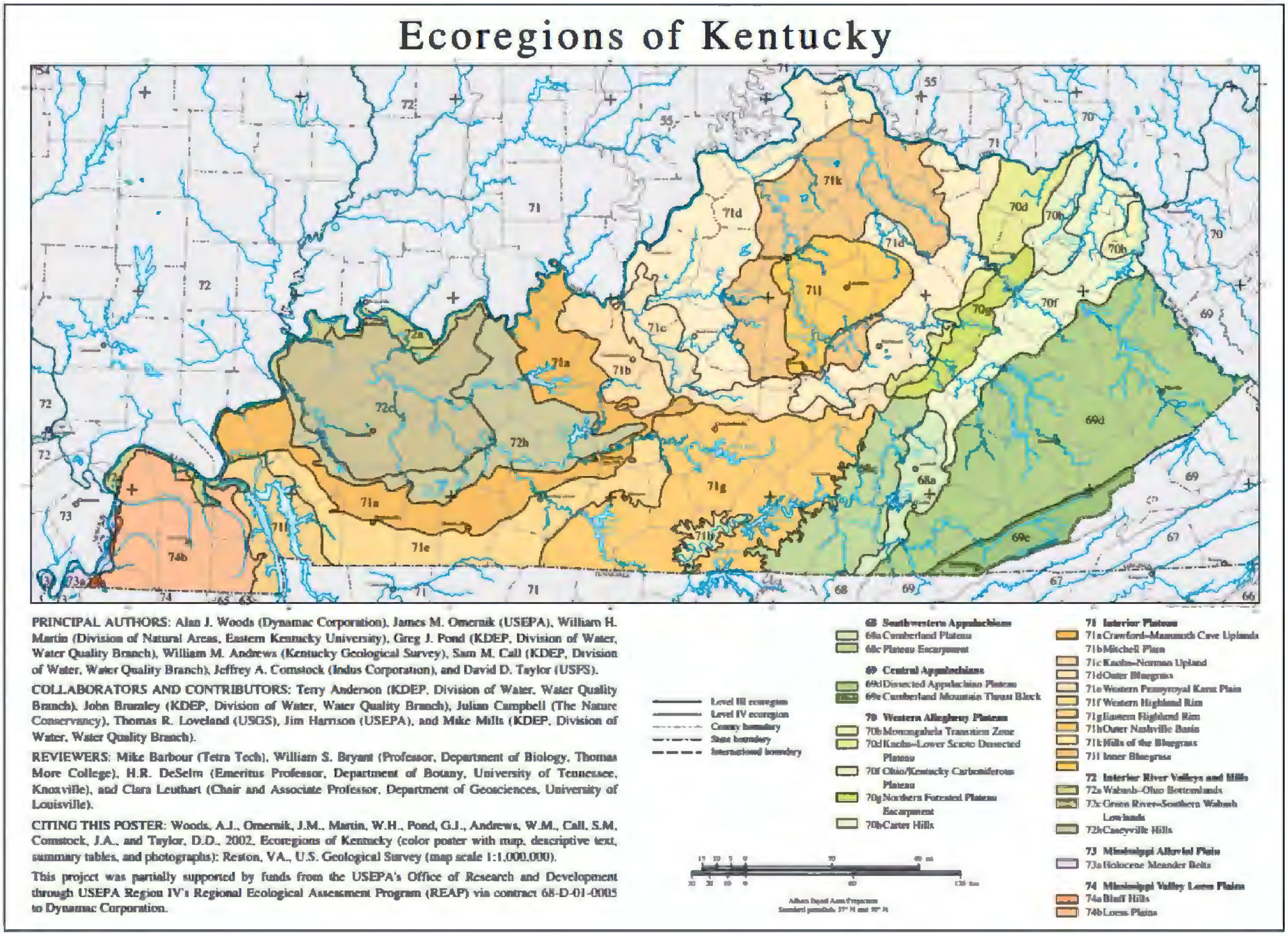
Figure 9: KU Alcalde Substation (NV5 Field Photo)

Study Area Characteristics

Ecological Region

The project area is split between the EPA defined Eastern Highland Rim subregion of the Interior Plateau ecoregion in the western part of the project area, and the EPA defined Plateau Escarpment subregion of the Southwestern Appalachians ecoregion in the eastern part of the project area. See the image below for a representation of all ecoregions in Kentucky. See the following page for a zoomed in look at the ecoregions in the project area, as well as a more comprehensive definition of the land cover in them.

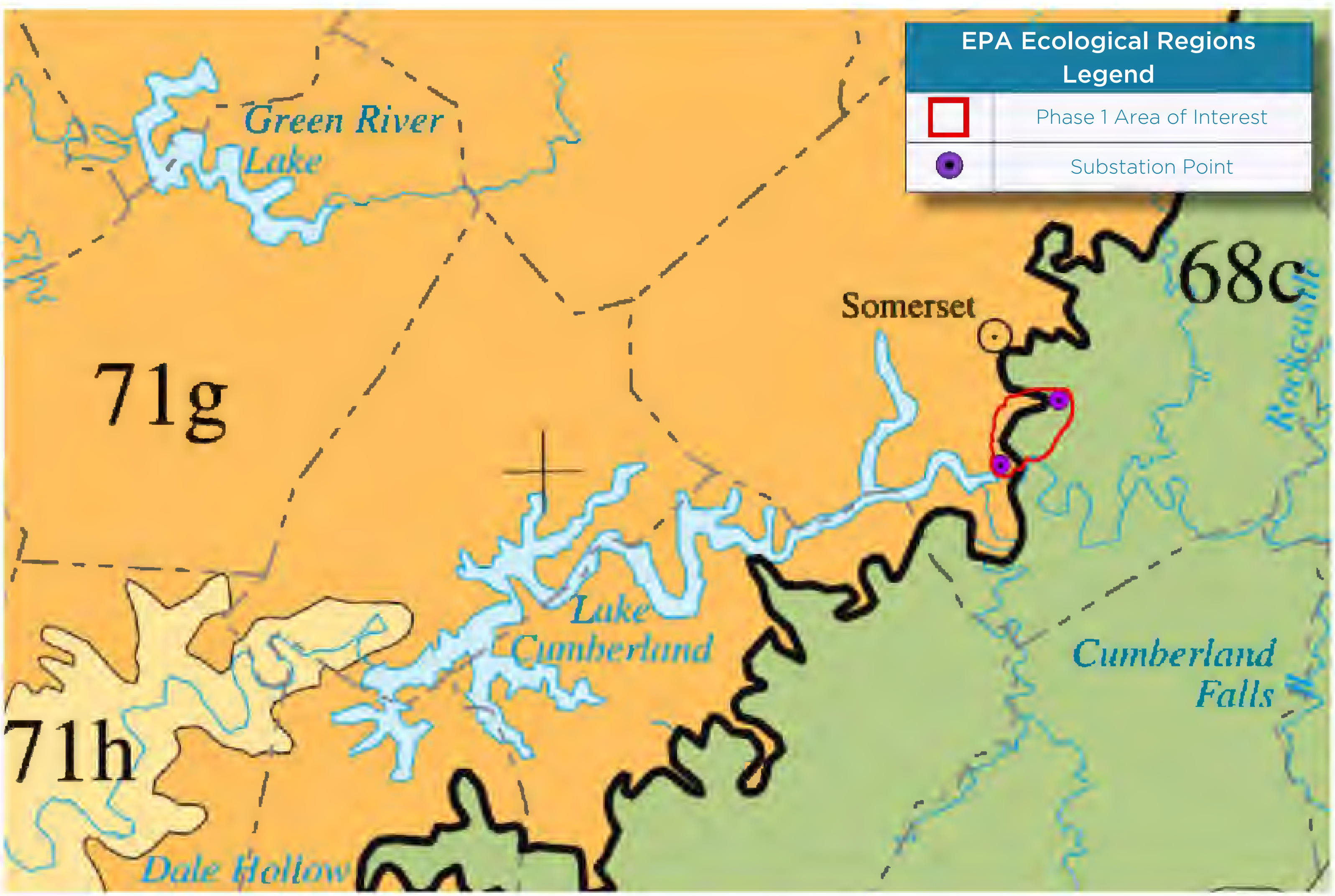
Figure 10: Kentucky EPA Ecological Regions



Ecological Region Inset

This project is split between the Interior Plateau and the Southwestern Appalachians ecoregions in Kentucky. The Interior Plateau ecoregion is described as "extensive plains" and are "interrupted in places by dissected uplands, knobs, and a few deeply incised master streams." The Southwestern Appalachians are defined as "low mountains, hills, and intervening valleys". Within these regions, the western third of the project area lies in Eastern Highland Rim subregion (71g), which is defined as "a diverse ecoregion with undulating hills, plains, and karst" with "steep bluffs, springs, cascades, and wide bottomlands" adjacent to the Cumberland River. The eastern two-thirds of the project area are in the Plateau Escarpment subregion (68c) which contains "narrow ridges, cliffs, and gorges" and is "rugged, dissected, and forested" with "higher than average stream gradients".

Figure 11: Kentucky EPA Ecological Regions Inset



Socioeconomics

The state of Kentucky grew in population from 4,339,367 in 2010 to 4,505,836 in 2020, a 3.8% increase. The project area is located entirely in Pulaski County. Pulaski County is the 14th largest county by population in the state of Kentucky, and saw its population increase by 3% from 2010 to 2020, increasing from 63,195 to 65,104 residents. Pulaski County also comprises the Somerset Micropolitian Statistical Area, with the City of Somerset containing a population of 11,924 residents. Per data from the 2023 American Community Survey 5-Year Estimates, Pulaski County has a median household income of $50,943.

Figure 12: Typical Land Cover within Project Area (NV5 Field Photo)

Transportation

There is one major highway in the project area: Kentucky Route 1247 (KY-1247), which runs through the western edge of the area adjacent to the City of Somerset. KY-1247 connects to US Highway 27 due south, intersecting just north of the Cumberland River, and connects to central Somerset in the north, ultimately running towards Kentucky Route 80. Railroad tracks owned by Norfolk Southern also run roughly parallel to KY-1247 on the western edge of the project area, running north to Louisville, and south to the Tennessee border. There are no other major transportation features in the project area outside of 1-2 lane local roads.

Water Resources

The major water feature in the project area is the Cumberland River, which flows through the southern portion of the project area. Both substation locations are on the north bank of the Cumberland River, but there is a very small portion of the project area located on the south bank of the river. The Cumberland River is a major river than runs approximately 688 miles through parts of Kentucky and Tennessee. Pittman Creek, which is a significantly smaller river than the Cumberland River, also runs through the northern portion of the project area, where there are more agricultural and rural residential features. Other water resource features include a small wetlands area in the south western portion of the project area, and numerous smaller unnamed creeks and rivers flowing through forested and agricultural areas.

Figure 13: Typical Land Cover within Project Area (NV5 Field Photo)

Part V: Engineering Environment

Engineering Data Layer Weights

Table 2 shows the Engineering Environment sub-model of the EPRI siting model. The sub-model incorporates those features whose presence or absence should be considered from the perspective of constructing a transmission line

Table 2: Engineering Data Layer Weights

Co-Location/Engineering	
Linear Infrastructure	**86.2%**
Parallel Existing Transmission Lines	1
Rebuild Existing Transmission Lines (Good)	2.2
Background	4.4
Parallel Interstates ROW	4.7
Parallel Roads ROW	5.4
Parallel Pipelines	5.6
Future DOT Plans	5.6
Parallel Railway ROW	6.1
Road ROW	7.2
Rebuild Existing Transmission Lines (Bad)	8.6
Scenic Highways ROW	9
Slope	**13.8%**
Slope 0-15%	1
Slope 15-30%	4
Slope 30-40%	6.7
Slope >40%	9
Avoidance Areas	
Non-Spannable Waterbodies	
Mines and Quarries (Active)	
Buildings	
Airports	
Military Facilities	
Center Pivot Irrigation	

Engineering Data Layer Weights (Project-Adjusted Values)

Not all features are present within every study area. Each model and sub-model must be adjusted based on the contents of the study area for a particular project. When a feature or layer is absent, the weights are adjusted accordingly and evenly across the remaining features or layers. The Engineering Environment data layers and their relative weights for the EKPC Cooper Alcalde 161 kV Greenfield project are summarized in Table 3 below. Items highlighted in gray are not present in the study area unless otherwise discussed below. See the following page for a detailed description of all data inputs present in the project area considered and weighted in the engineering perspective analysis. See figures 14-22 for further description and visualization of these data inputs in the project area.

Table 3: Engineering Data Layer Weights (Project Adjusted Values)

Co-Location/Engineering	
Linear Infrastructure	**86.2%**
Parallel Existing Transmission Lines	1
~~Rebuild Existing Transmission Lines (Good)~~	
Background	4.6
Parallel Interstates ROW	4.9
Parallel Roads ROW	5.6
~~Parallel Pipelines~~	
~~Future DOT Plans~~	
Parallel Railway ROW	6.4
Road ROW	7.5
Rebuild Existing Transmission Lines (Bad)	9
~~Scenic Highways ROW~~	
Slope	**13.8%**
Slope 0-15%	1
Slope 15-30%	4
Slope 30-40%	6.7
Slope >40%	9
Avoidance Areas	
Non-Spannable Waterbodies	
Mines and Quarries (Active)	
Buildings	
Airports	
Military Facili~~ties~~	
Center Pivot Irrigation	

Engineering Perspective Features

Feature	Description
Parallel Existing Transmission Lines	An area that is a buffer of half the distance to the existing right-of-way of transmission lines within the project area. For this study, Eastern Kentucky Power Cooperative (EKPC) and Kentucky Utilities (KU) lines were used for paralleling with a 150 buffer on each side of the existing ROW
Rebuild Existing Transmission Lines (Good)	"Good" rebuild opportunities are those existing transmission lines and easements that are suitable for reconstruction as double-circuited. There are no such opportunities in the project area.
Background	Any area within the project area that is not listed as a specific engineering feature.
Parallel Interstates	Kentucky Highway 1247 (KY-1247) runs throughout the project area, paralleling features are based on line files from the Kentucky Department of Transportation (KyDOT).
Parallel Roads ROW	Numerous opportunities exist within the project area for paralleling road features. Features were created based on KyDOT line files.
Parallel Pipelines	None present in the study area.
Future DOT Plans	None present in the study area.
Parallel Railroad ROW	There is one railroad feature in the project area owned by Norfolk and Southern. Paralleling features were based off of line files from KyDOT.
Road ROW	Numerous road features are present within the project area.
Rebuild Transmission Lines (Bad)	All other transmission lines in the project area, aside from 2.6 miles of one selected EKPC owned 161 kV transmission line, were considered to be rebuild-bad.
Scenic Highway ROW	None present in the study area.

Avoidances

Feature	Description
Non-Spannable Water Bodies	None present in the study area
Mines and Quarries	None present in the study area
Buildings	Numerous residential, commercial, industrial, and agricultural buildings were found within the study area, as well as some religious structures.
Airports	None present in the study area.
Military Facilities	None present in the project area.
Center Pivot Irrigation	None present in the project area.

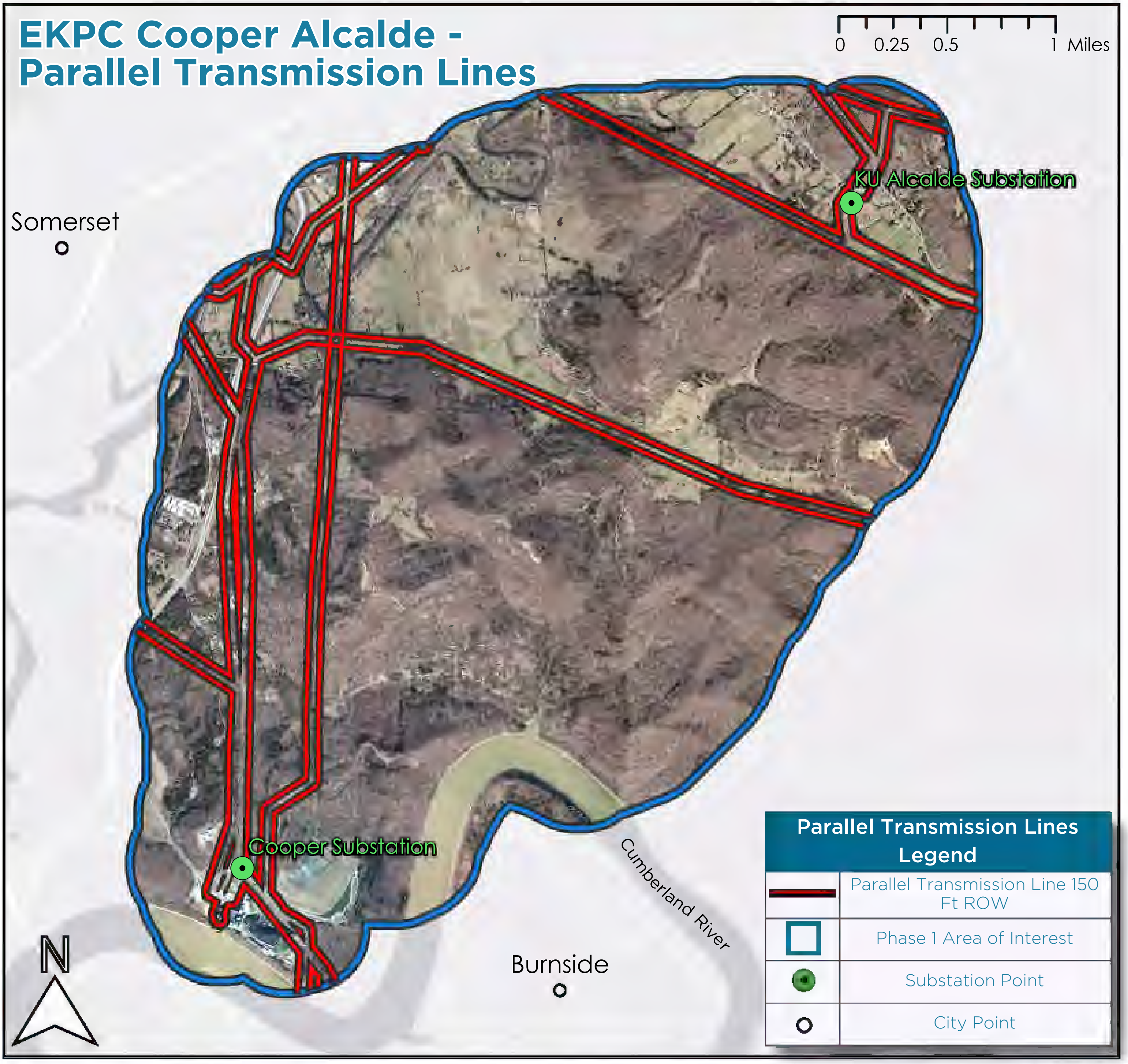
Client-Specified Avoidances

Feature	Description
Landfill	97 acre EKPC owned landfill located directly northeast of the Cooper substation.
Microwave Towers	2 features located due north of EKPC landfill.

High Suitability - Parallel Existing Transmission Lines

Opportunities for co-location that parallel existing transmission lines are the most desirable location for routing new transmission lines. NV5 worked with EKPC to determine that a 150 foot buffer on either side of existing transmission corridors would be sufficient for the newly constructed 161 kV transmission line. Figure 14 shows all suitable locations for paralleling existing transmission infrastructure, owned by EKPC and KU, in the project area at a 150 foot inner buffer. All areas of the project area have been included in this analysis, with most paralleling opportunities existing due north from the Cooper substation, or running due east, but with no direct connection to the KU Alcalde substation.

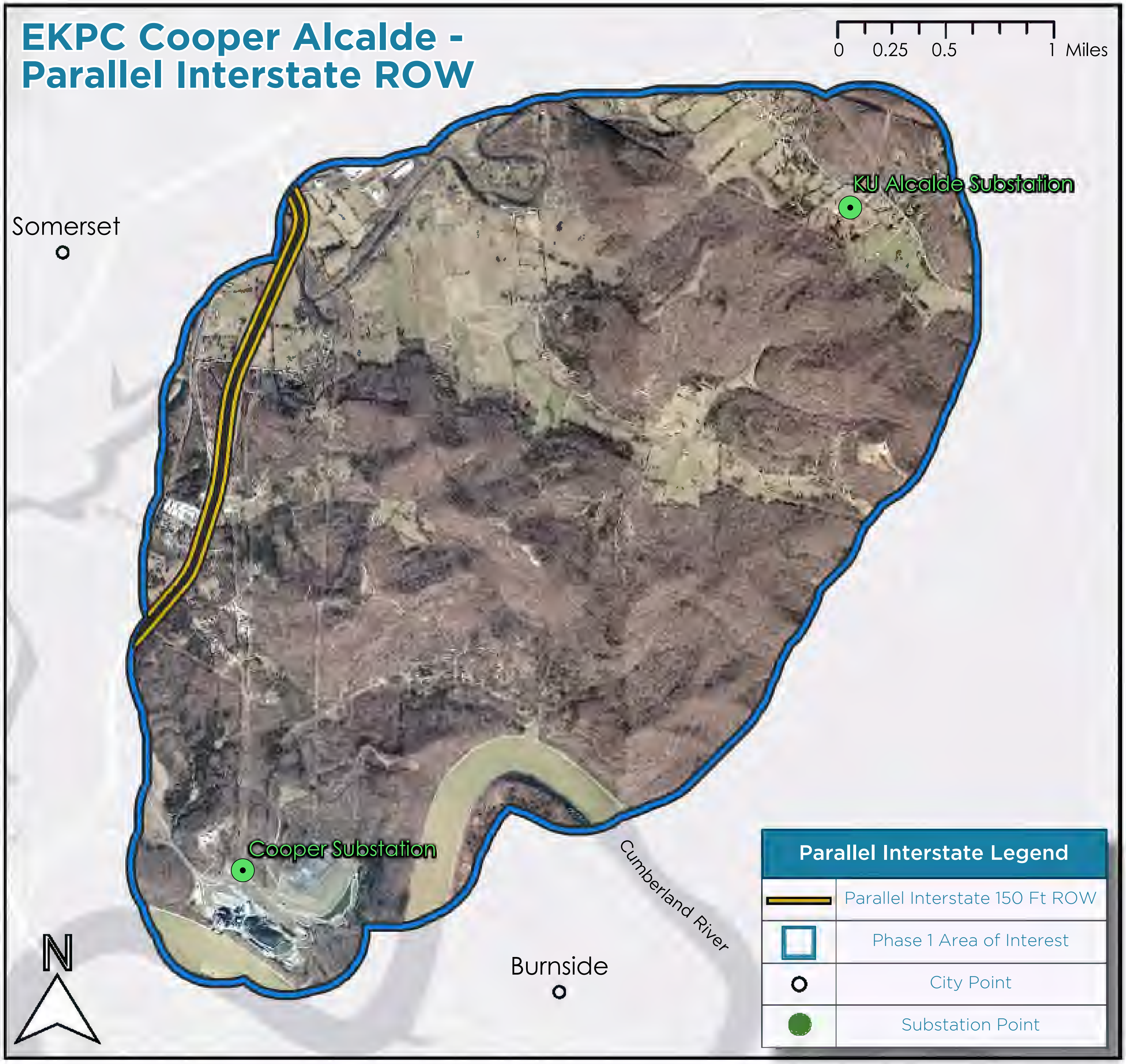
Figure 14: Parallel Transmission Lines



Moderate Suitability - Parallel Interstate Right-of-Ways

Opportunities for co-location that parallel existing interstate-esque highways are moderately suitable locations for routing new transmission lines. NV5 worked with EKPC to determine that a 150 foot buffer on either side of each interstate feature would be sufficient to potentially site the newly constructed transmission lines. Figure 15 shows the suitable interstate paralleling opportunities within the study area, which is Kentucky Highway 1247 (KY-1247) in the western edge of the area, buffered approximately 50 feet from the centerline to account for maximum width

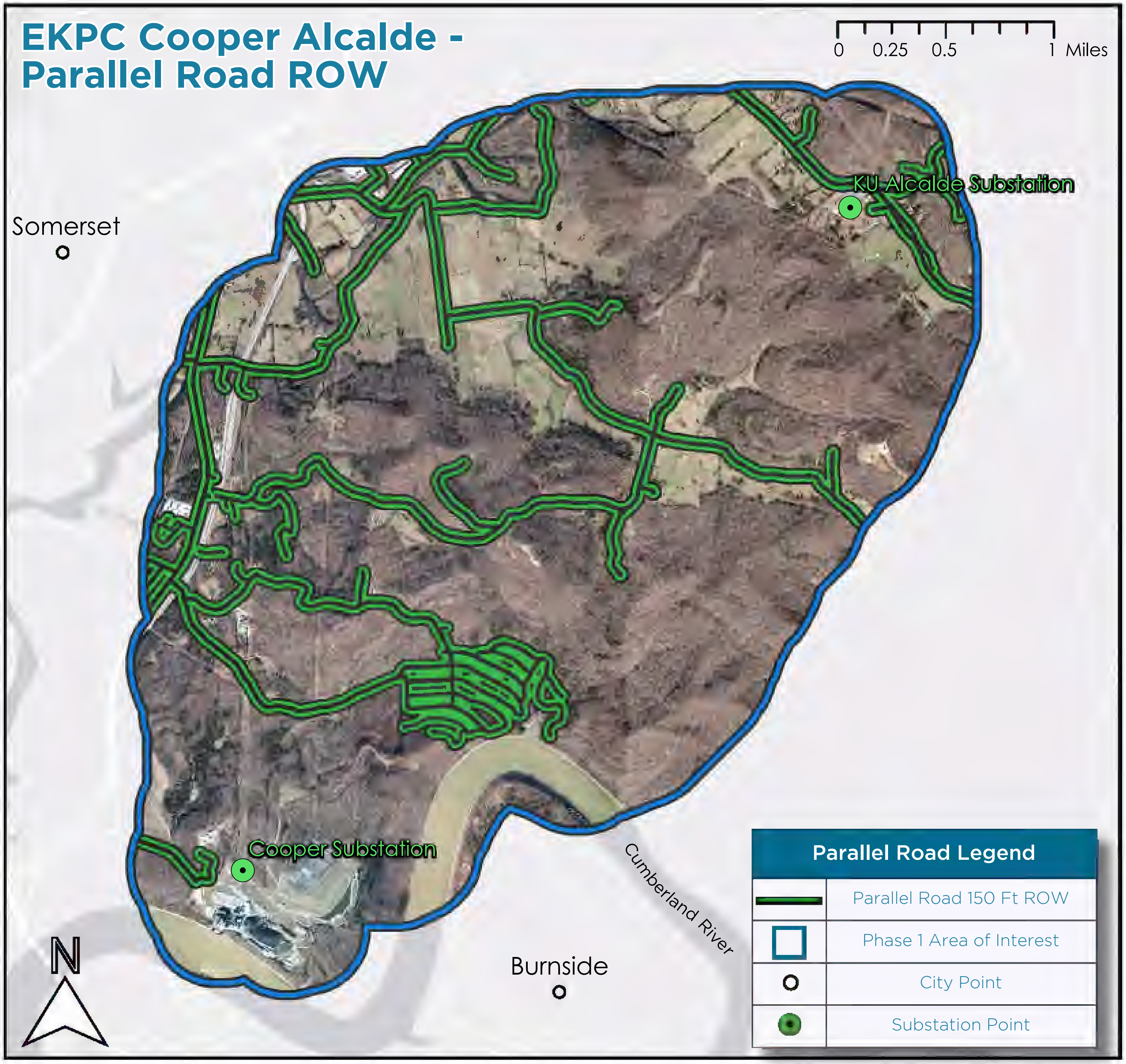
Figure 15: Parallel Interstate ROW



Moderate Suitability - Parallel Road Right-of-Ways

Paralleling road right of way (approximately 150 foot buffer outside the 25 foot road right of way) are given moderate suitability in the engineering perspective analysis. Within the study area, there are many roads that provided paralleling opportunities, with the highest concentration in the more developed western edge of the project area, and in a rural residential area just north of the Cumberland River. Figure 16 shows suitable road ROW paralleling opportunities within the study area. The road right-of-way data used in this analysis was created from centerline files from the Kentucky Department of Transportation.

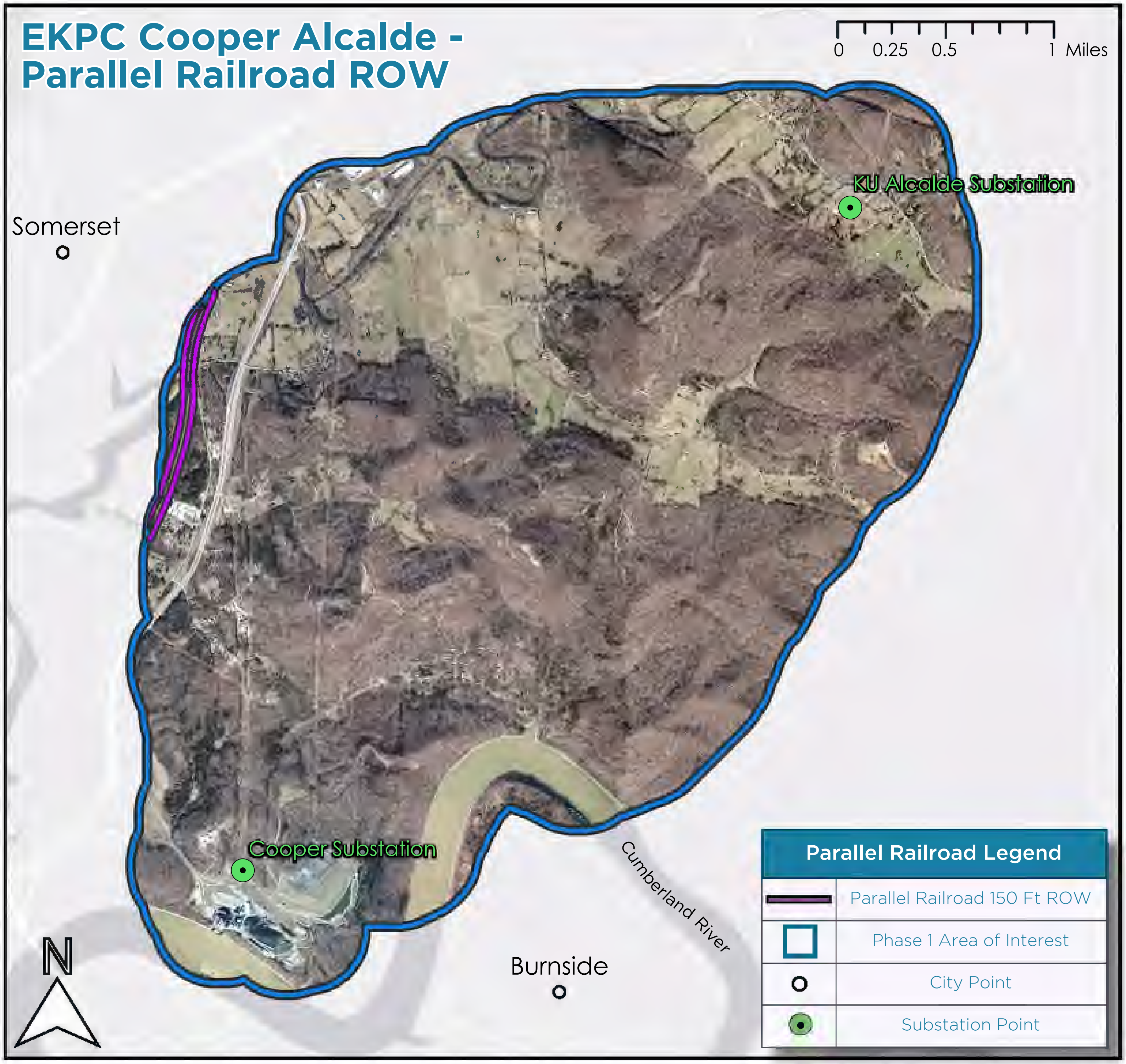
Figure 16: Parallel Road ROW



Moderate Suitability - Parallel Railroad ROW

Paralleling existing railroad lines are moderately suitable locations to build new transmission infrastructure. Similar to interstate and pipeline features, a 150 foot buffer on both sides of the 100 foot railroad right of way was used. There is one parallel railroad opportunity in the study area: a Norfolk & Southern line that runs in the more developed western edge of the project area, adjacent to KY-1247. See figure 17 for a figure of the parallel railroad right of way locations in the project area

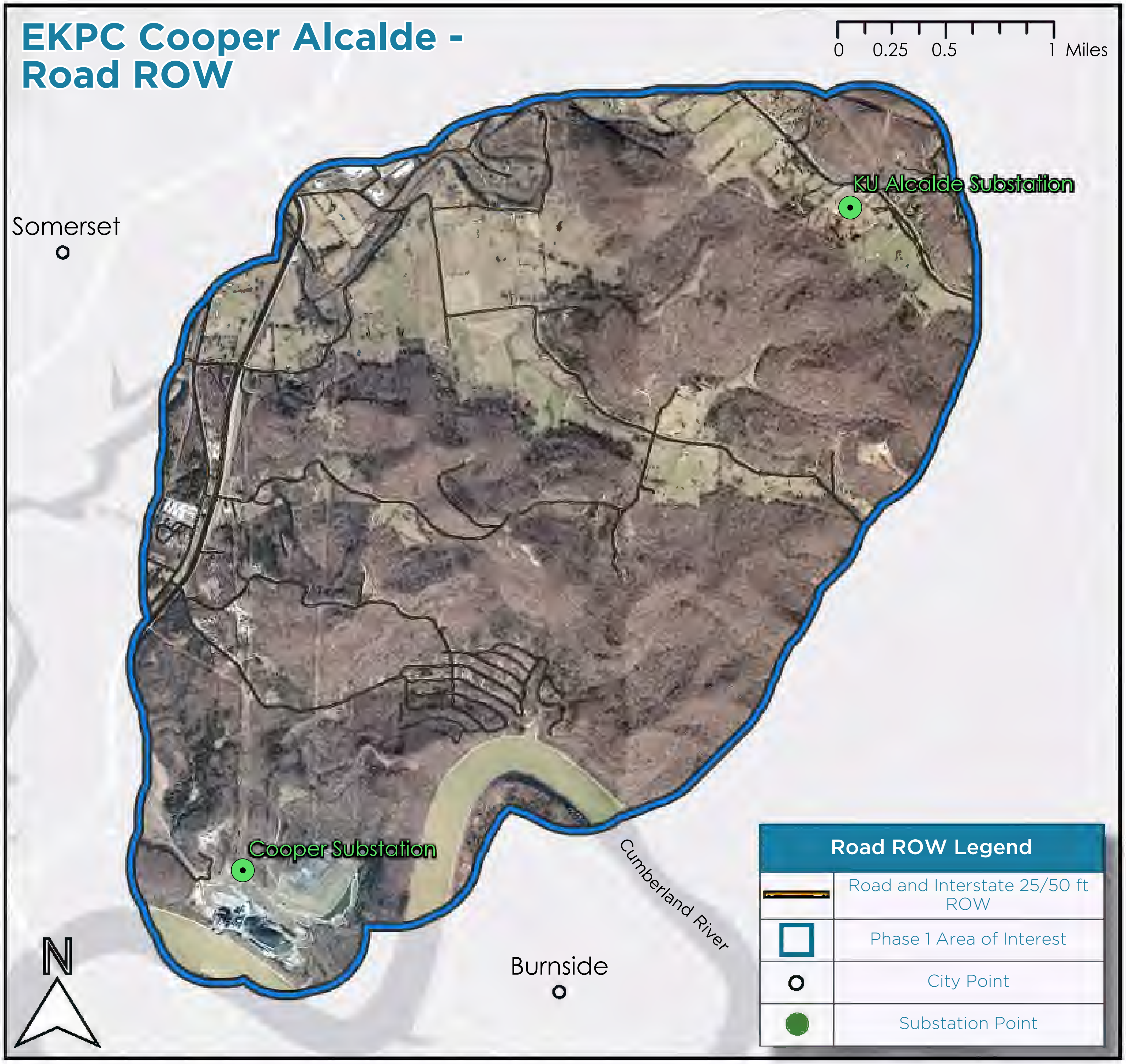
Figure 17: Parallel Railroad ROW



Lower Suitability: Road Right-of-Ways

Road ROWs are given a lower suitability in the engineering perspective analysis. The ROW feature is either the 50 foot right-of-way feature of Kentucky Highway 1247, or the 25 foot right-of-way feature for all other roads in the project area, and is also derived from the Kentucky Department of Transportation dataset. Though it is often necessary to cross over existing road ROWs, the centerline of a transmission line should not travel directly down the center of an existing roadway. Figure 18 highlights all road ROW shapes in the project area.

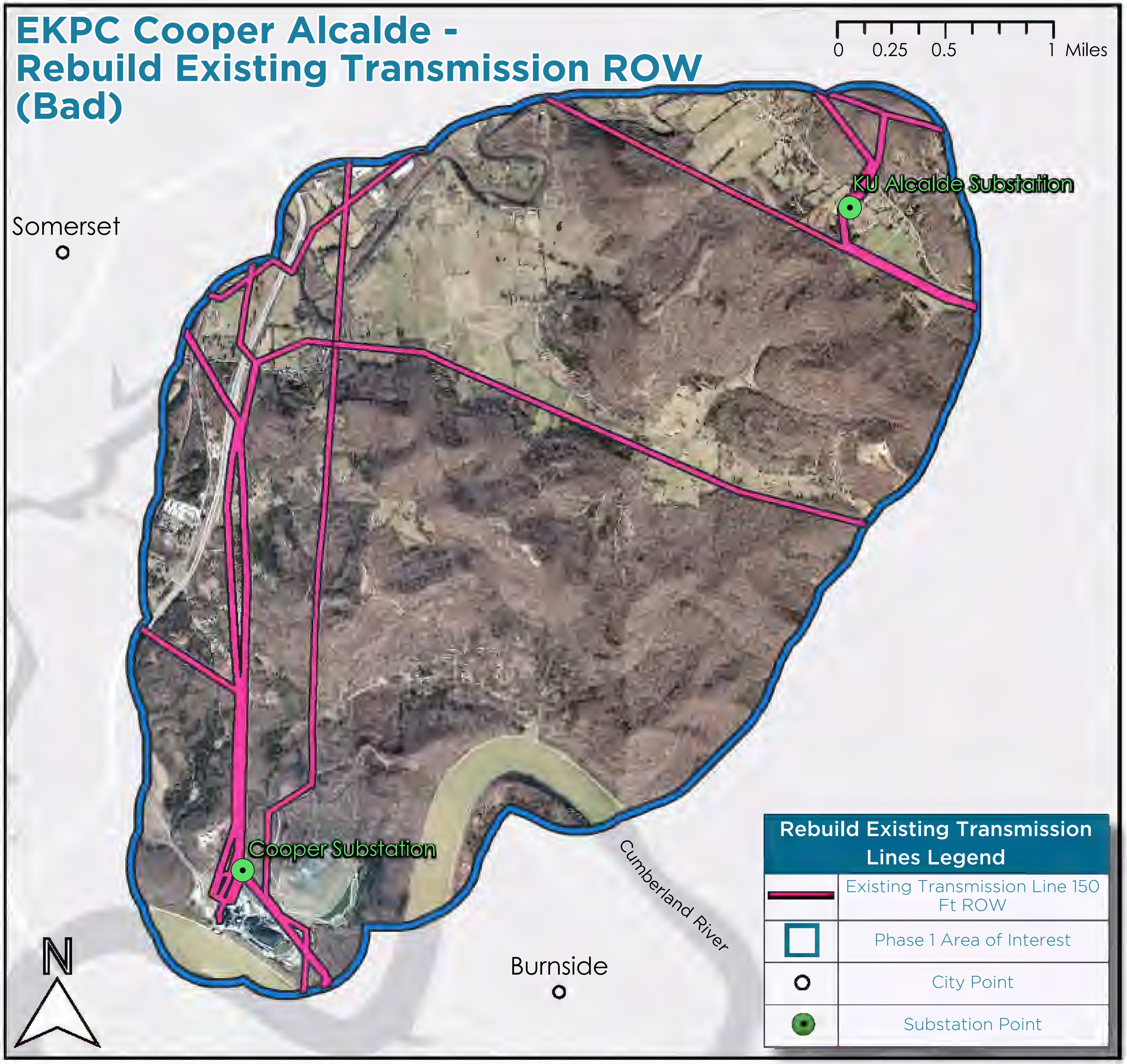
Figure 18: Road ROW



Lower Suitability: Rebuild (Bad) Existing Transmission Lines

The EPRI Model distinguishes between "good" and "bad" rebuild opportunities present in existing transmission lines. "Bad" rebuild opportunities represent transmission line easements with existing infrastructure that have been determined to be unsuitable to rebuild as a double-circuited transmission line. For this project, EKPC determined all existing transmission lines in the project area would be considered "bad" rebuild opportunities. The existing utility ROWs are modeled as constraints with a 150 foot buffer around the existing transmission centerline. NV5 verified all transmission line features within the study area through a combination of aerial photography interpretation and field visits.

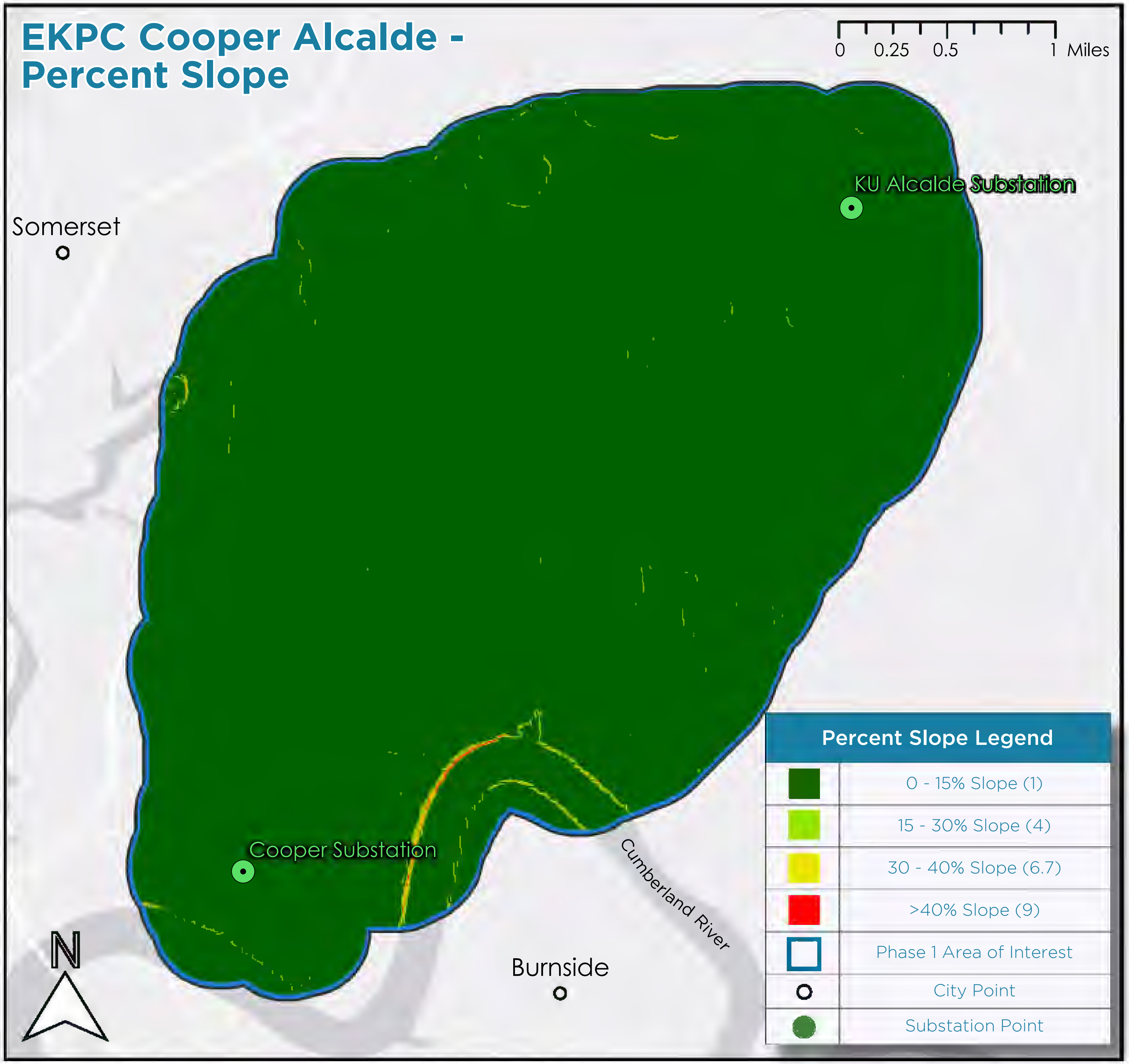
Figure 19: Rebuild Existing Transmission ROW



Slope

The slope of the terrain can play a significant role in routing and constructing a transmission line. Using Digital Elevation Model (DEM) data for the state or Kentucky, percent slope was extracted and used in the model at the extent of the project area. Figure 20 details the locations and percentages of slopes found within the study area. Based on its location split between the Eastern Highland Rim and Plateau Escarpment EPA subregions, the topology of the project area features a large amount of gently sloped hills and knobs, in primarily heavily forested land cover. Although the project area is primarily not flat, much of the hills in the project area have a gradient of less than 15% slope, and thus, are treated in a similar manner to flat land in the EPRI methodology. The are isolated areas of moderate slope in scattered amongst the hills, with an area of moderate to high slope on the northern bank of the Cumberland River. Slope breakdowns are set by the EPRI model at 0-15%, 15-30%, 30-40%, and greater than 40%.

Figure 20: Percent Slope

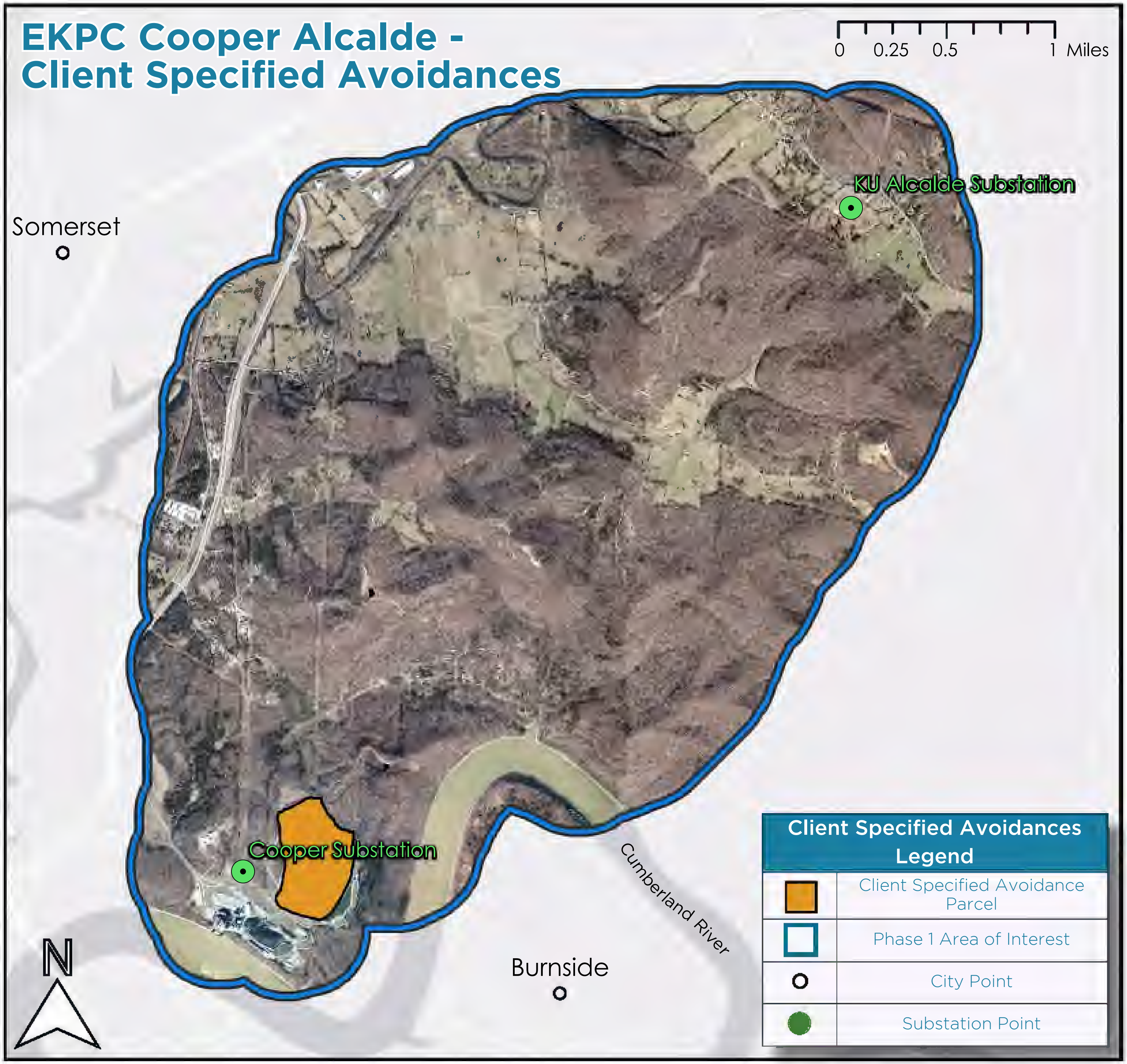


Avoidance Areas

Client Specified Avoidances

EKPC specified several avoidance features that did not broadly fit into any of the existing EPRI defined categories that should be considered as part of this analysis. The first avoidance feature is a large EKPC owned landfill in the south-western corner of the project area, lying directly to the north-east of the Cooper Substation. This landfill is approximately 97 acres, as was determined by EKPC as an area that would be a significant impediment for new transmission line construction. The second avoidance features in this section are two microwave towers, both located due north of the EKPC owned landfill on small parcels of land with a high vertical footprint. These features were specified as avoidances by EKPC due to potential challenges in navigating their tall height and enclosed land footprint for constructing new transmission lines.

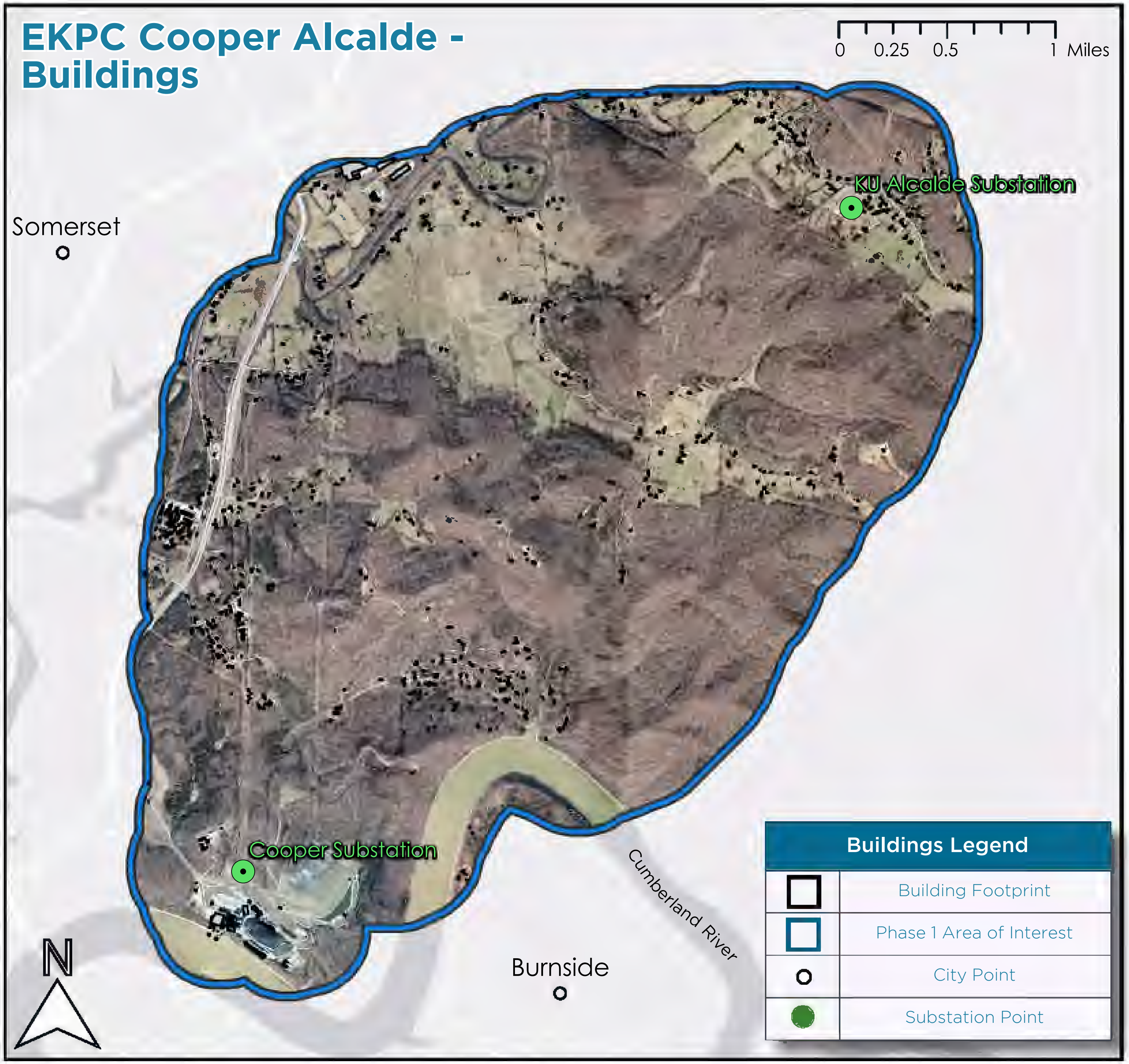
Figure 21: Client Specified Avoidances



Buildings

Approximately 4,065 buildings were identified in the project area, utilizing an initial combination of satellite imagery and data from Microsoft. Utilizing this data, NV5 cross referenced the latest satellite imagery to draw accurate footprints of all 1,028 buildings in the study area. After each building footprint was accurately redrawn, NV5 field survey crews verified all designated buildings in the study area, while identifying 23 new buildings that were not present in existing satellite imagery or data download from Microsoft. Each building footprint was then designated as an avoidance area for new transmission line construction.

Figure 22: Buildings



Part VI: Natural Environment

Natural Environment Data Layer Weights

Table 4 shows the Natural Environment sub-model of the EPRI siting model. The sub-model incorporates those features whose presence or absence should be considered from the perspective of protecting the natural environment when constructing a transmission line.

Table 4: Natural Environment Data Layer Weights

Natural Environment	
Floodplain	**4.6%**
Background	1
100 Year Floodplain	9
Streams/Wetlands	**29.2%**
Background	1
Streams < 5cfs + Regulatory Buffer	6.2
Rivers/Streams > 5 cfs + Regulatory Buffer	7.1
Wetlands + 30' Buffer	8.7
Outstanding State Resource Waters	9
Public Lands	**17.7%**
Background	1
WMA - Not State Owned	5.1
USFS (proclamation area)	6.2
Other Conservation Land	7.8
USFS (actually owned)	9
State Owned Conservation Land	9
Land Cover	**19.8%**
Developed Land	1
Agriculture	4.6
Forests	9
Wildlife Habitat	**28.7%**
Background	1
Species of Concern Habitat	9
Avoidance Areas	
EPA Superfund Sites	
State and National Parks	
USFS Wilderness Area	
Wild/Scenic Rivers	
Wildlife Refuge	
State Nature Preserves	
Designated Critical Habitat	

Natural Environment Data Layer Weights (Project Adjusted Values)

Not all features are present within every study area. Each model and sub-model must be adjusted based on the contents of the study area for a particular project. When a feature or layer is absent, the weights are adjusted accordingly and evenly across the remaining features or layers. The Natural Environment data layers and their relative weights for the EKPC Cooper Alcalde 161 kV Greenfield project are summarized in Table 5 below. Items highlighted in gray are not present in the study area unless otherwise discussed below. See the following page for a detailed description of all data inputs present in the project area considered and weighted in the natural perspective analysis. See figures 23-26 for further description and visualization of these data inputs in the project area.

Table 5: Natural Environment Data Layer Weights (Project Adjusted Values)

Natural Environment	
Floodplain	**8.6%**
Background	1
100 Year Floodplain	9
Streams/Wetlands	**54.5%**
Background	1
Streams < 5cfs + Regulatory Buffer	6.4
Rivers/Streams > 5 cfs + Regulatory Buffer	7.3
Wetlands + 30' Buffer	9
~~Outstanding State Resource Waters~~	
~~**Public Lands**~~	
~~Background~~	
~~WMA - Not State Owned~~	
~~USFS (proclamation area)~~	
~~Other Conservation Land~~	
~~USFS (actually owned)~~	
~~State Owned Conservation Land~~	
Land Cover	**36.9%**
Developed Land	1
Agriculture	4.6
Forests	9
~~**Wildlife Habitat**~~	
~~Background~~	
~~Species of Concern Habitat~~	
Avoidance Areas	
~~EPA Superfund Sites~~	
~~State and National Parks~~	
~~USFS Wilderness Area~~	
~~Wild/Scenic Rivers~~	
~~Wildlife Refuge~~	
~~State Nature Preserves~~	
~~Designated Critical Habitat~~	

Natural Perspective Features

Feature	Description
100 Year Floodplain	The Federal Emergency Management Agency (FEMA) designated a 100-year floodplain based on projected climate data and terrain type. Approximately 359 acres of the study area is designated as floodplain, about 5% of the total area.
Streams/Rivers CFS + Regulatory Buffer	USGS National Map geospatial products delineate flow-line features that have quantified cubic feet per second within their home watershed. These features were parsed out to create two distinct features for all designated streams and rivers in the project area.
Wetlands + 30' Buffer	US Fish and Wildlife Service inventory of wetland features within the project area. There are approximately 26 acres of the study area designated as wetlands, less than 1% of the total project area.
Outstanding State Resource Waters	There are no listings of State Resource Waters within the project area.
WMA- Not State Owned	The Kentucky Department of Fish and Wildlife Resources designates Wildlife Management Areas not owned by the state, but potentially operated by the state. None exist within the project area
USFS (Proclamation Areas)	The United States Forest Service (USFS) sets aside and reserves land for the public domain by executive order or proclamation, None exist within the project area.
Other Conservation Land	Other conservation land could be designated and owned by entities connected with the Kentucky Natural Areas Program, and the Kentucky Land Trusts Coalition. None exist within the project area.
USFS (Actually Owned)	USFS lands directly owned by the agency. None exist within the project area
State Owned Conservation Land	State Owned Conservation Land could be Wildlife Management Areas owned and operated by the Kentucky Department of Fish and Wildlife, or land purchased by the Kentucky State Conservation Fund designated as Kentucky Heritage Land. None exist within the project area.
Land Use	Developed land, agriculture, and forests are all present in the project area.
Species of Concern Habitat	Species of concern habitat can be accessed via BLM Areas of Critical Environmental Concern, maintained by the US Department of the Interior. None exist within the project area.

Avoidances

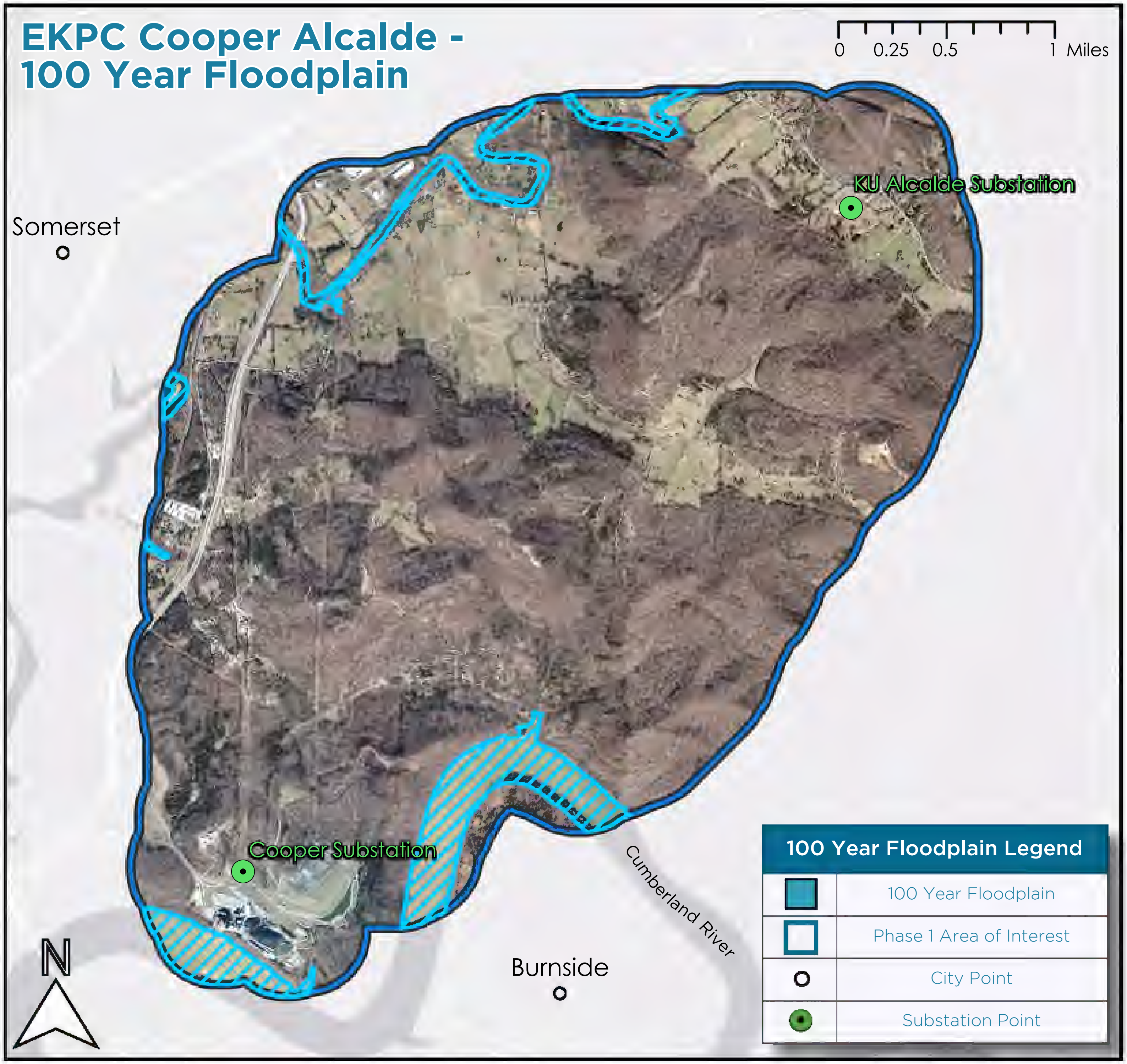
Feature	Description
EPA Superfund Site	No EPA Superfund Sites exist in the project area
State & National Parks	No State & National Parks exist in the project area.
USFS Wilderness Area	No Wilderness areas exist in the project area.
Wild/Scenic Rivers	No Wild/Scenic Rivers in the project area
Wildlife Refuge	No nationally designated wildlife refuge in the project area
State Nature Preserves	No state designated nature preserves in the project area
Designated Critical Habitat	No designated habitat for critical or endangered species in the project area.

Floodplain

Lower Suitability: 100 Year Floodplain

Floodplains are considered lower desirability to build transmission infrastructure. The EPRI model utilizes the FEMA 100 Year Flood Plain Zones using the National Flood Hazard Map. Figure 23 shows 359 acres of floodplains primarily concentrated around larger river and stream features including the Cumberland River in the southern part of the project area, and Pittman Creek in the northern part of the project area.

Figure 23: 100 Year Floodplain

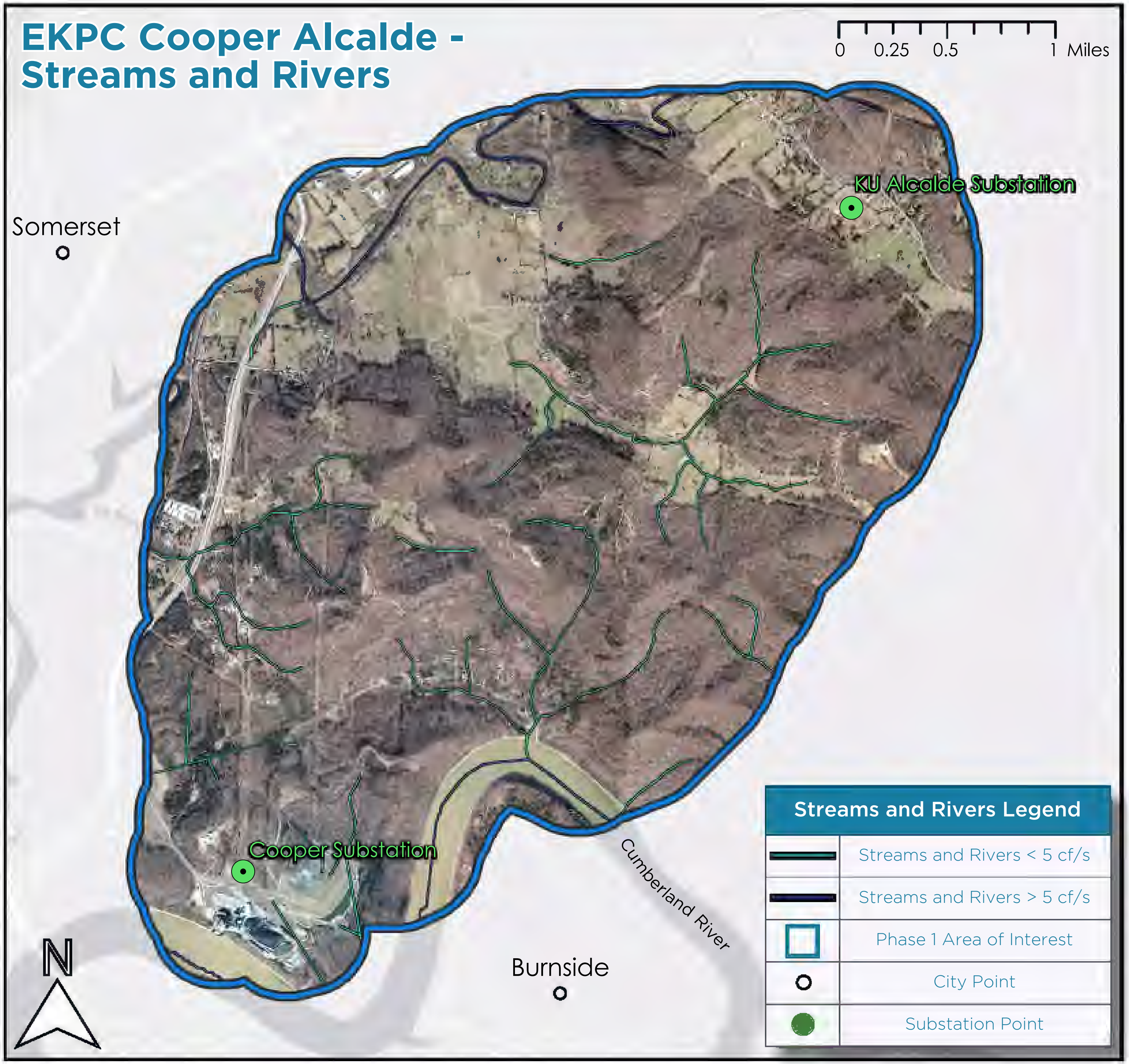


Streams and Wetlands

Moderate to Low Suitability: Streams & Rivers

There are two categories of streams and rivers analyzed for this project: those with a flow greater than five cubic feet per second (cf/s) and those whose flow is less than five cf/s. It is moderately suitable to cross a stream with a flow that is less than five cf/s and low suitability to cross a stream with a flow greater than five cf/s. Figure 24 illustrates all stream and rivers in the project area. There are many lower cf/s streams and rivers distributed throughout the project area, mostly flowing through heavily forested and moderately hilly terrain. There are two high cf/s streams in the project area, Pittman Creek in the northern part of the project area flowing roughly west to east, and the large Cumberland River in the souther part of the project area also flowing roughly west to east.

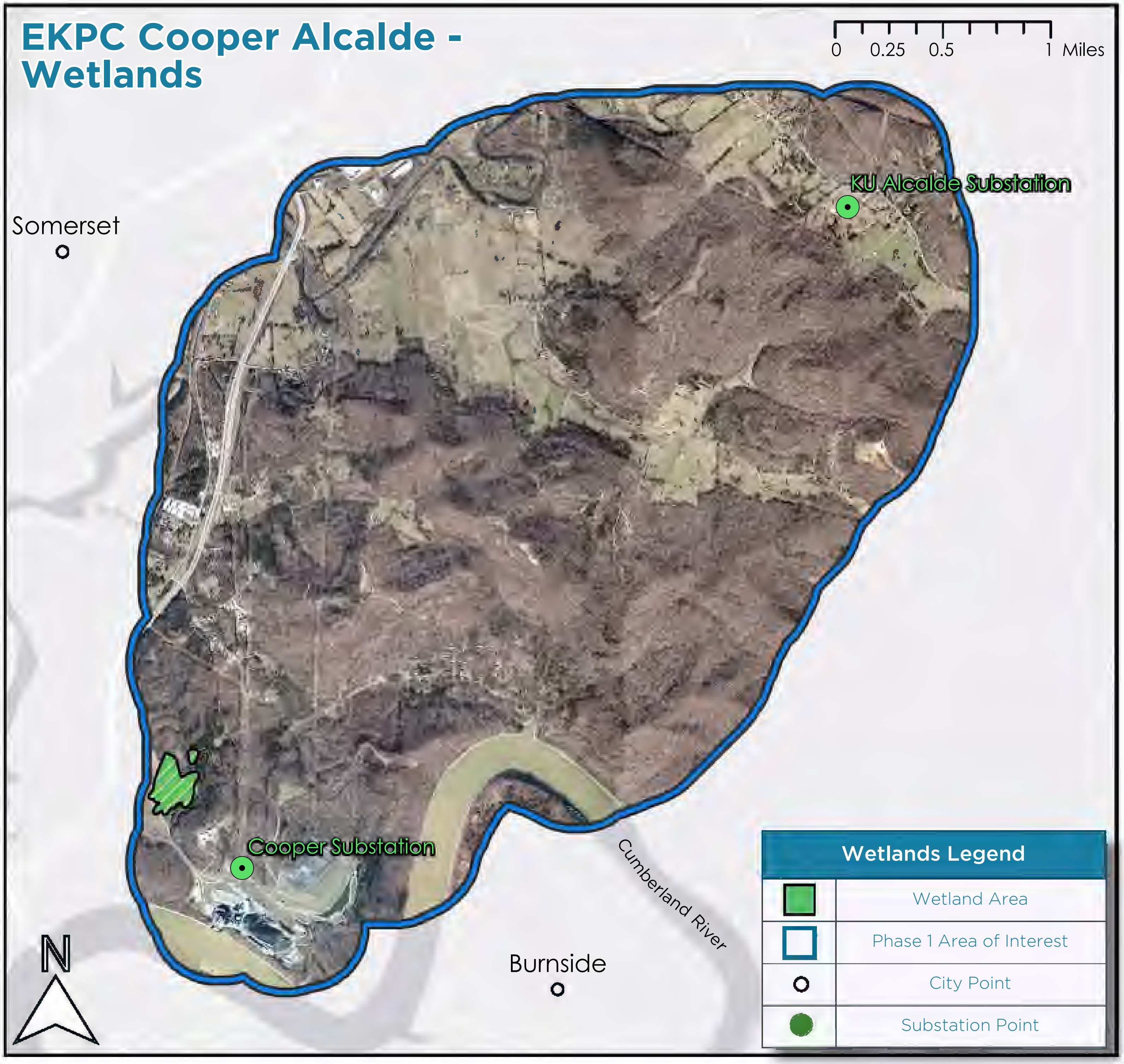
Figure 24: Streams and Rivers



Low Suitability: Wetlands

Wetlands have a low suitability for locating and constructing transmission lines in the Natural perspective. There is one moderately sized wetland in the southern part of the project area, lying due west of the Cooper substation, and totaling approximately 26 acres. Per EPRI methodology lakes, ponds, and riverine areas are not attributed as wetlands, only areas designated as “true wetlands”. The source of information on wetlands is the U.S. Fish and Wildlife Service’s National Wetland Inventory dataset.

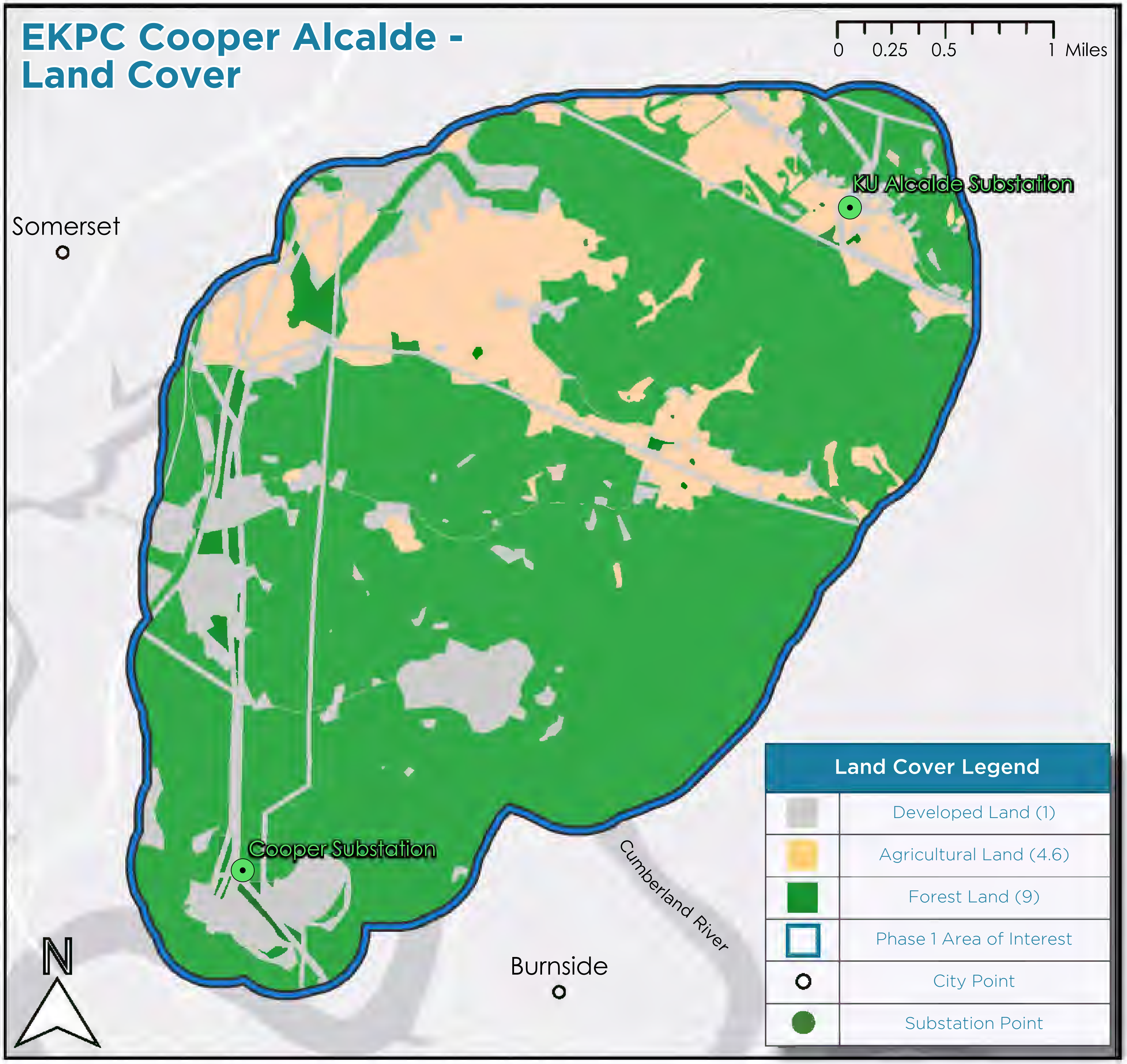
Figure 25: Wetlands



Land Cover

The natural perspective analysis finds developed land to be the most suitable for transmission line siting, shown in figure 32 in gray, and concentrated mainly in the western edge of the project area adjacent to the City of Somerset, with some additional rural residential areas and electric utility corridors falling under this designation scattered around the project area. Open and agricultural lands have moderate suitability for transmission line siting, shown in figure 26 in light yellow, and are concentrated in two area in the northern part of the project area, adjacent to the KU Alcalde Substation and Pittman Creek. Naturally forested lands have the lowest suitability for transmission line siting, and are shown in figure 26 in green. This is the largest category of land cover in the project area, and is found in almost all areas, but is more heavily concentrated in the eastern two thirds of the project area lying in the EPA defined Southwestern Appalachians ecoregion. The land cover layer was created by NV5 through interpretation of the most recently available aerial imagery.

Figure 26: Land Cover



Part VII: Built Environment

Built Environment Data Layer Weights

Table 6 is the Built Environment sub-model of the EPRI siting model. The sub-model incorporates those features whose presence or absence should be considered from the perspective of protecting the natural environment when constructing a transmission line.

Table 6: Built Environment Data Layer Weights

Built Environment			
Proximity to Buildings (Ft)	**16.8%**	**Proximity to Eligible Historic and Archaeological Sites (Ft)**	**31.0%**
Background	1	Background	1
900-1200	3.4	900 - 1200	4.6
600-900	5.7	600 - 900	7.9
300-600	8	0 -300	8.6
0-300	9	300 - 600	9
Building Density	**8.4%**		
0 - 0.05 Buildings/Acre	1		
0.05 - 0.2 Buildings/Acre	3		
0.2 - 1 Buildings/Acre	5.6		
1 -4 Buildings/Acre	8.5		
>4 Buildings/Acre	9		
Proposed Development	**3.9%**		
Background	1		
Proposed Development	9		
Spannable Lakes and Ponds	**4.0%**		
Background	1		
Spannable Lakes and Ponds	9		
Land Use	**35.9%**		
Commercial/Industrial	1		
Agriculture (Crops)	3.5		
Agriculture (Other Livestock)	4.6		
Silviculture	6		
Other (Forest)	6.7		
Equine Agri - Tourism	8		
Residential	9		
Avoidance Areas			
Listed Archaeology Sites & Districts			
Listed NRHP Districts and Buildings			
City and County Parks			
Day Care Parcels			
Cemetery Parcels			
School Parcels			
Church Parcels			

Built Environment Data Layer Weights (Project Adjusted Values)

Not all features are present within every study area. Each model and sub-model must be adjusted based on the contents of the study area for a particular project. When a feature or layer is absent, the weights are adjusted accordingly and evenly across the remaining features or layers. The Built Environment data layers and their relative weights for the EKPC Cooper Alcalde 161 kV Greenfield project are summarized in Table 7 below. Items highlighted in gray are not present in the study area unless otherwise discussed below. See the following page for a detailed description of all data inputs present in the project area considered and weighted in the built perspective analysis. See figures 27-33 for further description and visualization of these data inputs in the project area.

Table 7: Built Environment Data Layer Weights (Project Adjusted Values)

Built Environment			
Proximity to Buildings (Ft)	**17.5%**	**Proximity to Eligible Historic and Archaeological Sites (Ft)**	**32.3%**
Background	1	Background	1
900-1200	3.4	900 - 1200	4.6
600-900	5.7	600 - 900	7.9
300-600	8	0 -300	8.6
0-300	9	300 - 600	9
Building Density	**8.7%**		
0 - 0.05 Buildings/Acre	1		
0.05 - 0.2 Buildings/Acre	3		
0.2 - 1 Buildings/Acre	5.6		
1 -4 Buildings/Acre	8.5		
>4 Buildings/Acre	9		
Proposed Development			
~~Background~~			
~~Proposed Development~~			
Spannable Lakes and Ponds	**4.2%**		
Background	1		
Spannable Lakes and Ponds	9		
Land Use	**37.4%**		
Commercial/Industrial	1		
Agriculture (Crops)	3.5		
Agriculture (Other Livestock)	4.6		
~~Silviculture~~			
Other (Forest)	6.7		
~~Equine Agri - Tourism~~			
Residential	9		

Avoidance Areas
Listed Archaeology Sites & Districts
Listed NRHP Districts ~~and Buildings~~
City and County Parks
Day Care Parcels
Cemetery Parcels
School Parcels
Church Parcels

Built Perspective Features

Feature	Description
Proximity to Buildings	Building footprints were delineated by NV5 from aerial photography, with progressive 300 foot buffers applied to them to create the proximity feature. See figure 27 for further details.
Building Density	Each building was given a centroid point and point densities were created within the project area encompassing all buildings. See figure 28 for further details
Proposed Development	None in the study area.
Spannable Lakes and Ponds	There are numerous open water features including all of the Cumberland River in the project area that are small enough to allow 2,700 feet of clearance for new 161 kV transmission lines to cross.
Land Use	There are seven unique categories of land classification in the built perspective analysis. Within the project area, five of them are present: Commercial/Industrial, Agriculture (Crops), Agriculture (Other Livestock), Other (Forest), and Residential.
Proximity to Eligible Archaeological and Historical Sites	Approximately 12 unique archaeological or historical sites were identified in the project area, curated from information in the Kentucky Office of State Archaeology and digitized by NV5.

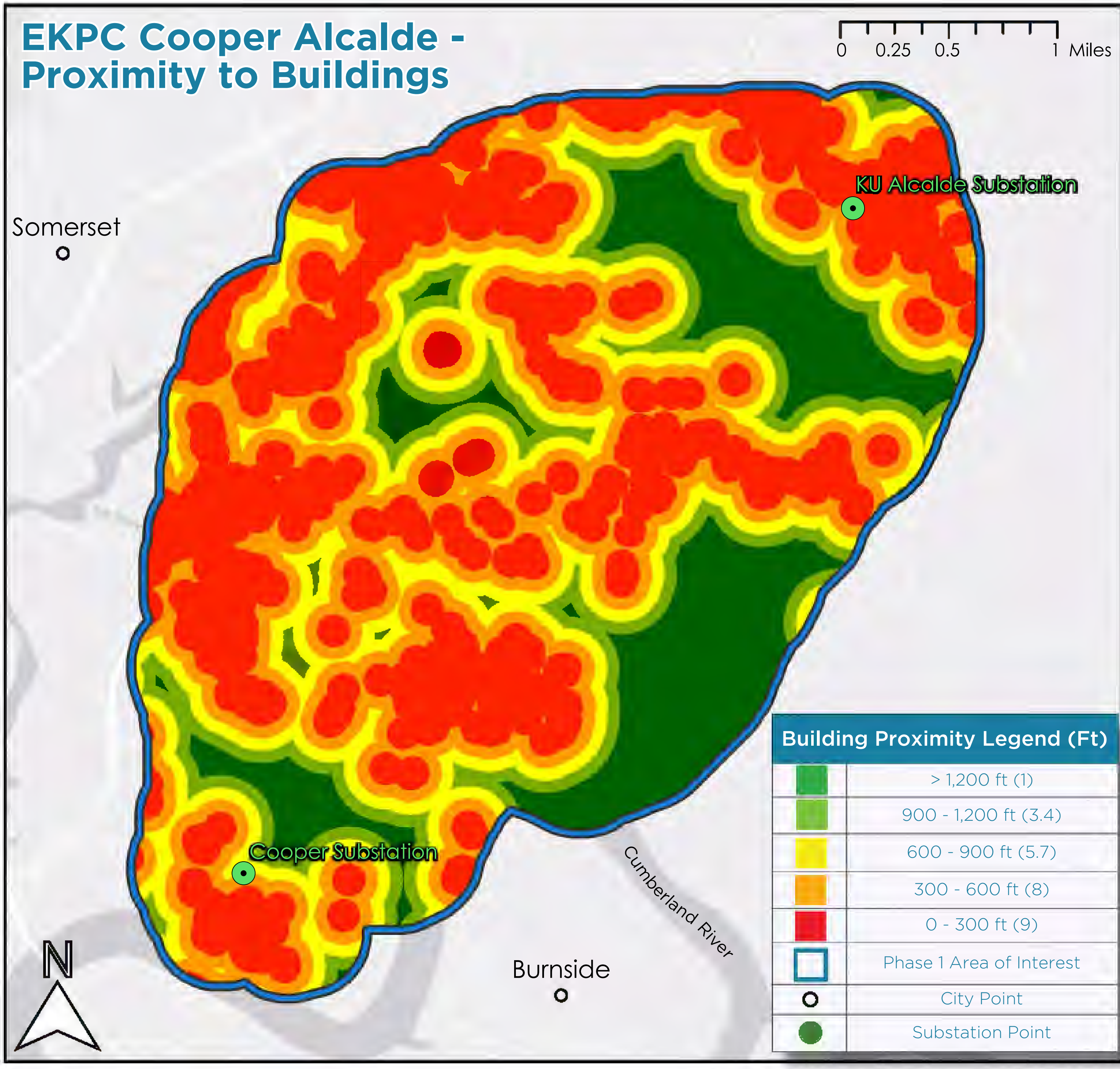
Avoidances

Feature	Description
Listed Archaeology Sites and Districts	None in the study area.
Listed National Register of Districts and	None in the study area.
City and County Parks	None in the study area.
Day Care Parcels	None in the study area.
Cemetery Parcels	Data from Pulaski County parcels and Google Maps indicated 4 parcels designated as cemeteries, while NV5 field verification found 2 additional parcels. Some of these cemeteries were also included in church parcels, as the cemetery plot was part of a larger church property.
School Parcels	None in the study area.
Church Parcels	Data from Pulaski County parcels and Google Maps indicated 6 parcels designated as churches in the project area.

Proximity to Buildings

In the built perspective analysis, it is more suitable to locate a transmission line away from buildings. The model has five categories to rank the proximity to buildings layer for suitability at 300 feet increments. The background category consists of all land that is further than 1,200 feet from any building. Building proximity was determined by buffering a distance of half the distance to the ROW (50 feet) from building footprints, and then applying the 50 feet incremental buffer zones. These zones are shown in the figure below, with forested land in the eastern part of the project area having lower proximity to buildings, and developed or agricultural areas in the western edge of the project area and adjacent to the KU Alcalde and Cooper substations having a higher proximity to buildings

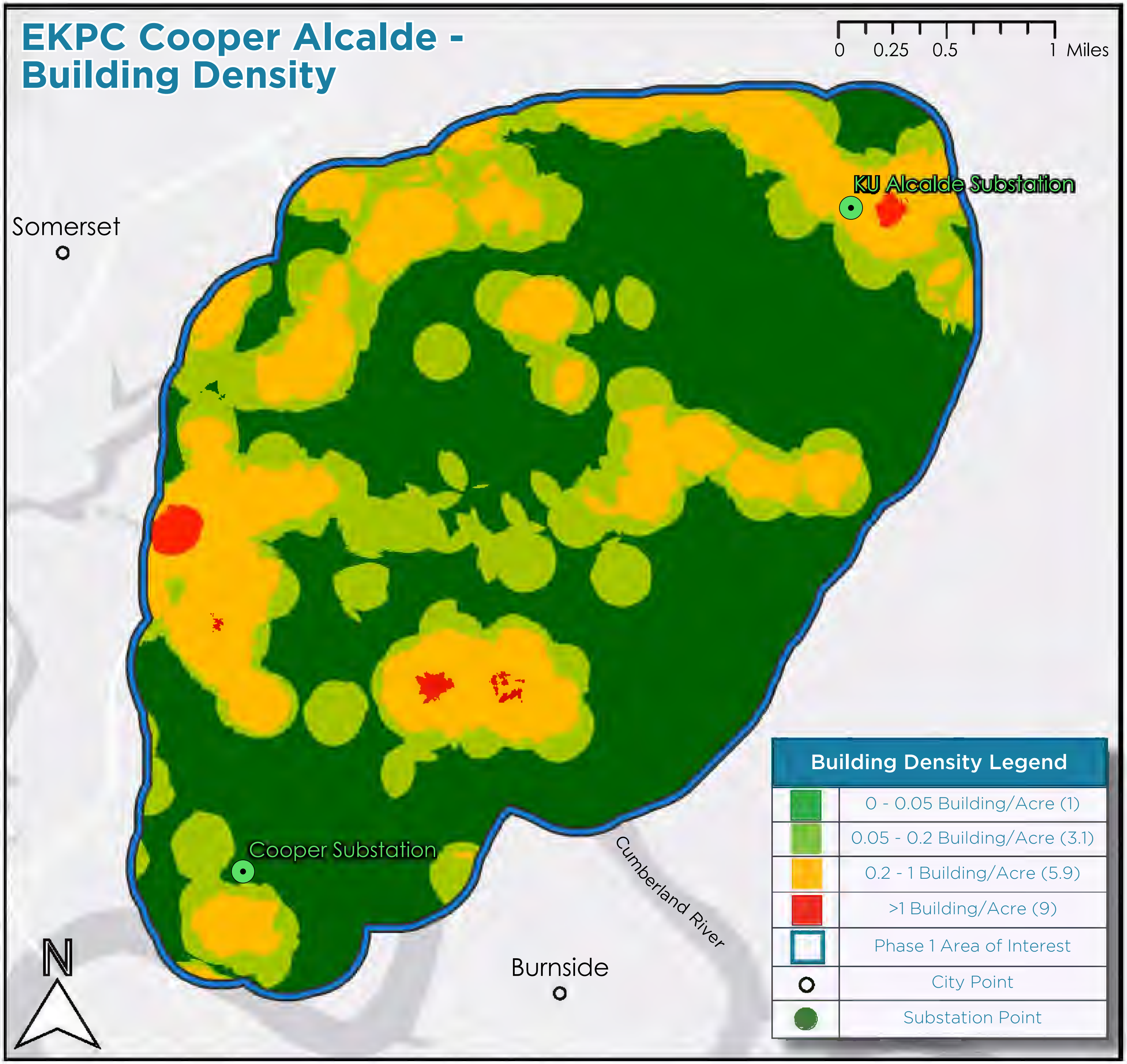
Figure 27: Proximity to Buildings



Building Density

Areas of lower building density are considered more suitable to locate a transmission line within the built perspective analysis. Utilizing the EPRI model, the EKPC Cooper Alcalde 161 kV Greenfield analysis contains four categories of building density, outlined below in the legend and figure 28. Areas of higher building density are located in more developed areas near the western edge of the project area and adjacent to the KU Alcalde substation, but also in a rural residential area lying just north of the Cumberland River. Agricultural and forested areas in found all over the project area contain moderate to low building density respectively. Building centroid information was derived by NV5 from analysis of the same building centroids and footprints in the building proximity layer. From this data, density was computed in ArcGIS to arrive at the model building/acre count seen in the legend below.

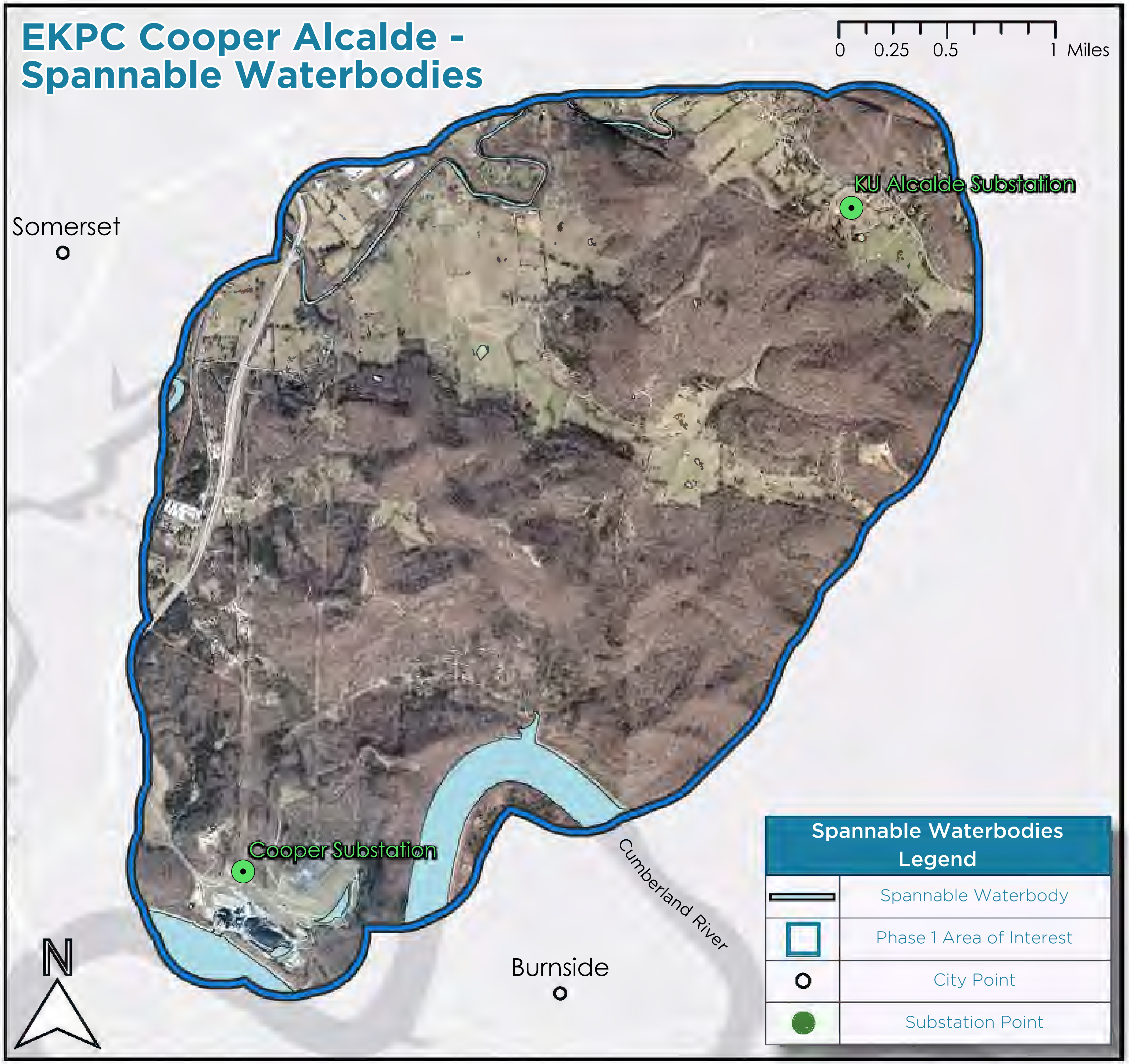
Figure 28: Building Density



Spannable Waterbodies

Open waters, such as lakes, ponds, and rivers, are considered less suitable for transmission line siting. There are large amounts of all types of these features in the project area, all of which allow the maximum 2,700 ft needed for new 161 kV transmission lines to safely cross, but still present challenges to the routing process. Figure 29 shows the location of these waterbodies, the largest of which is the Cumberland River in the southern part of the project area, as well as the much smaller Pittman Creek, some scattered ponds serving agricultural areas, and several ash pond thats are parts of the EKPC owned John Sherman Cooper generation station..

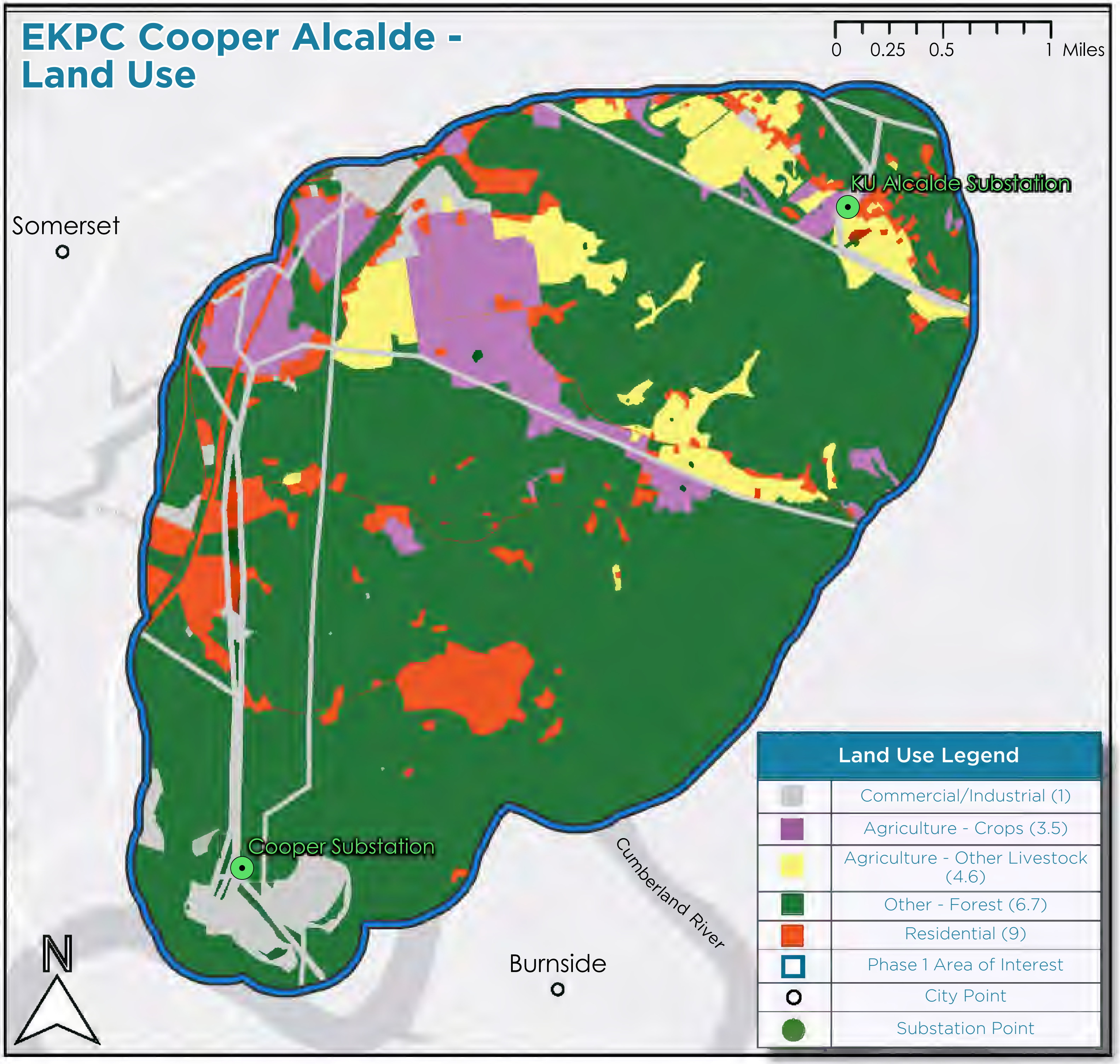
Figure 29: Spannable Waterbodies



Land Use

The built perspective analysis seeks to minimize disturbance of current human development and activities. With these guidelines in mind, the EPRI model considers commercial or industrial land to be the most suitable for transmission line siting, whereas residential lands are least suitable. Agricultural crop land has slightly high suitability, whereas agricultural livestock lands have moderate suitability, and forested lands have lower suitability. Figure 30 shows the locations of these land use patterns in the study areas, with color classification shown in the legend. Land use data was extracted from the latest aerial imagery by NV5.

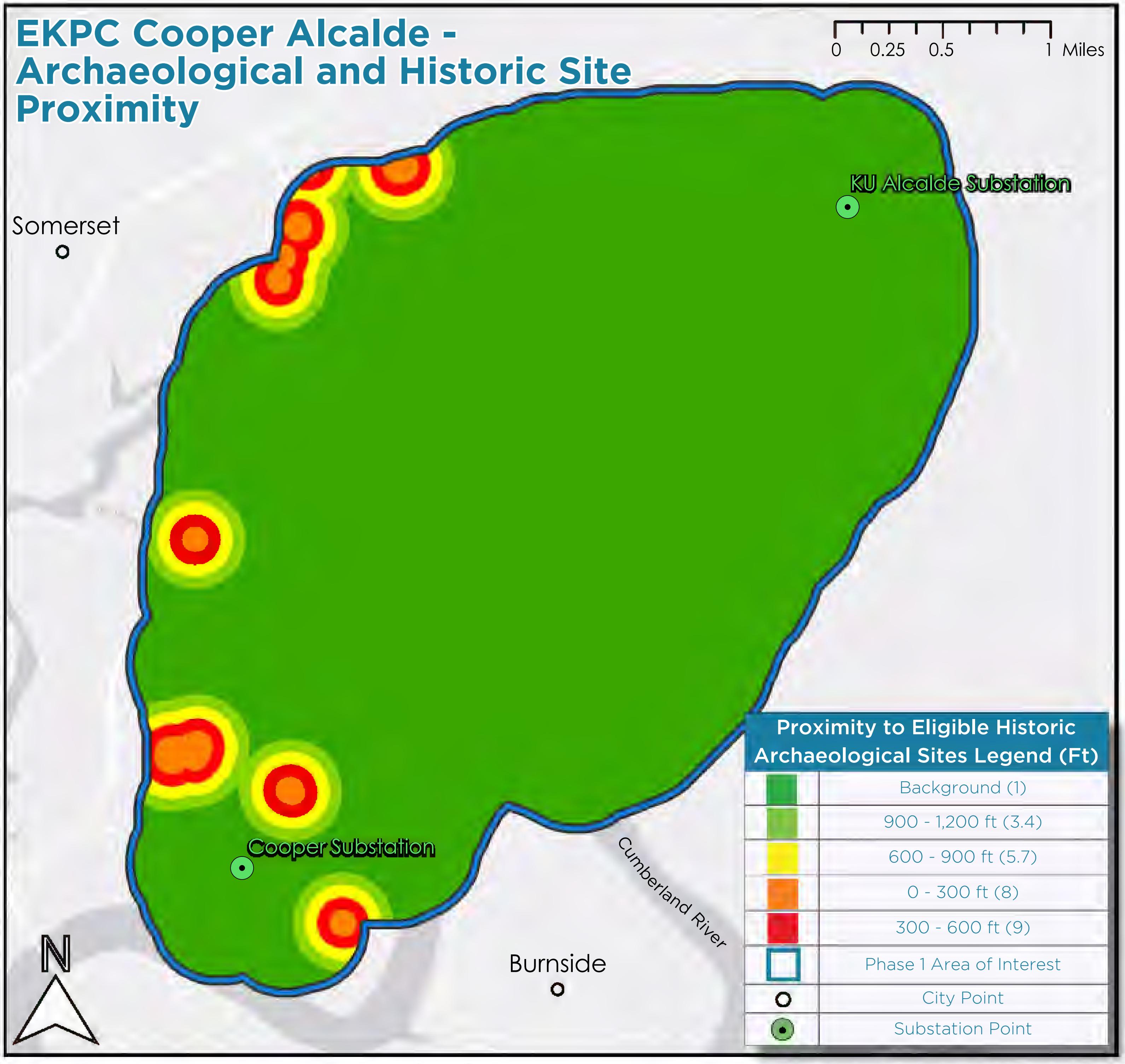
Figure 30: Land Use



Proximity to Eligible Historic and Archaeological Sites

Utilizing data curated from the Kentucky Office of State Archaeology and digitized by NV5, there were approximately 12 unique archaeological or historical sites identified in the project area. In the EPRI model, lands closer to these sites are considered lower suitability, with the lowest suitability areas being areas within 300-600 feet rather than 0-300 feet, due to potential for future yields within this inner buffer. See figure 31 for locations of these sites, primarily concentrated in the western edge of the project area, adjacent to the City of Somerset.

Figure 31: Archaeological and Historic Site Proximity

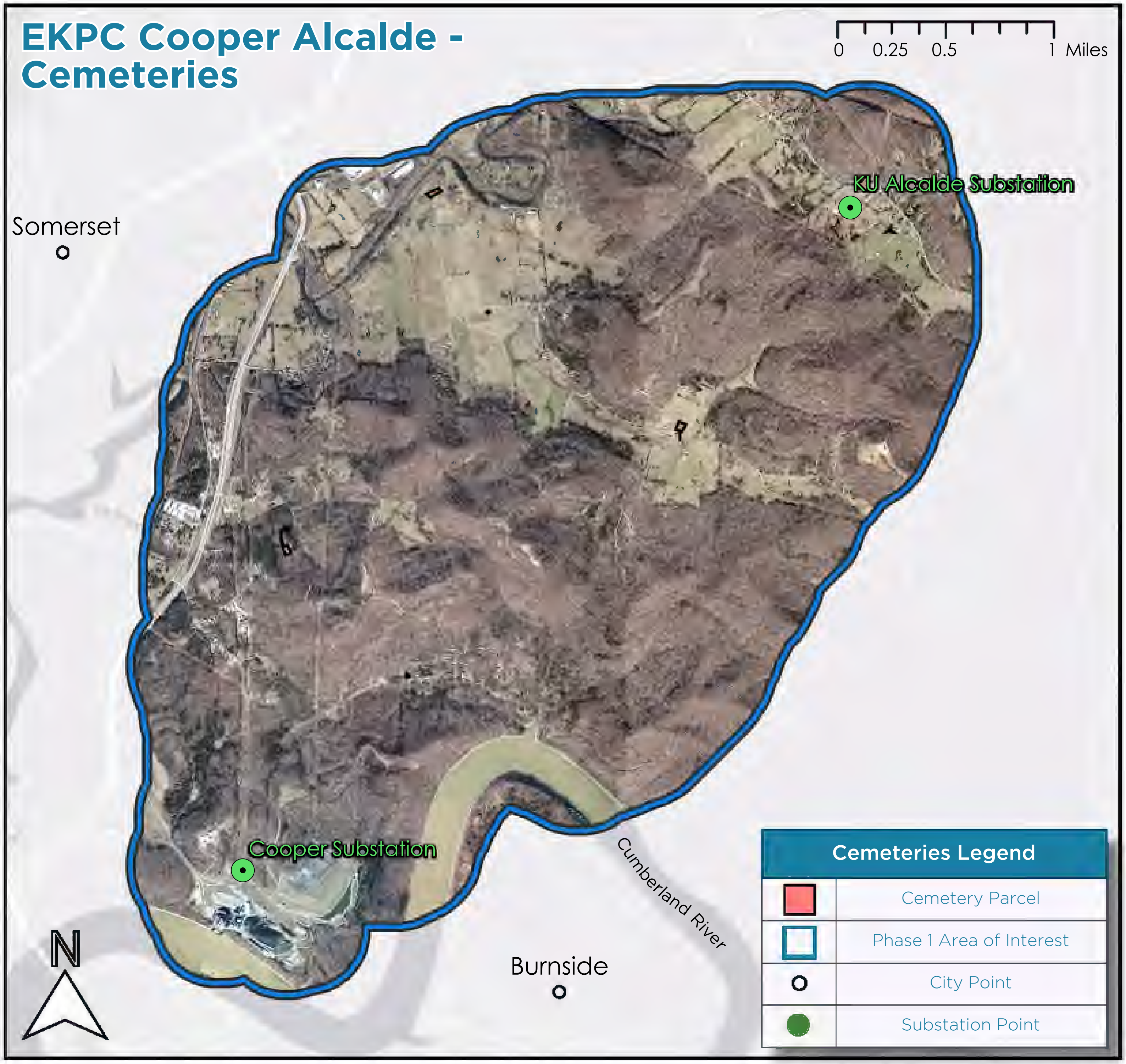


Avoidance Areas

Cemeteries

Data from Google Maps and Pulaski County parcel records shows approximately 4 parcels in the project area designated as cemeteries. In addition, NV5 field verification found 2 additional cemetery locations in the project area that were not present in parcel data or apparent in satellite imagery or Google Maps records. Figure 32 shows the location of all cemeteries in the project area, which are considered avoidance areas.

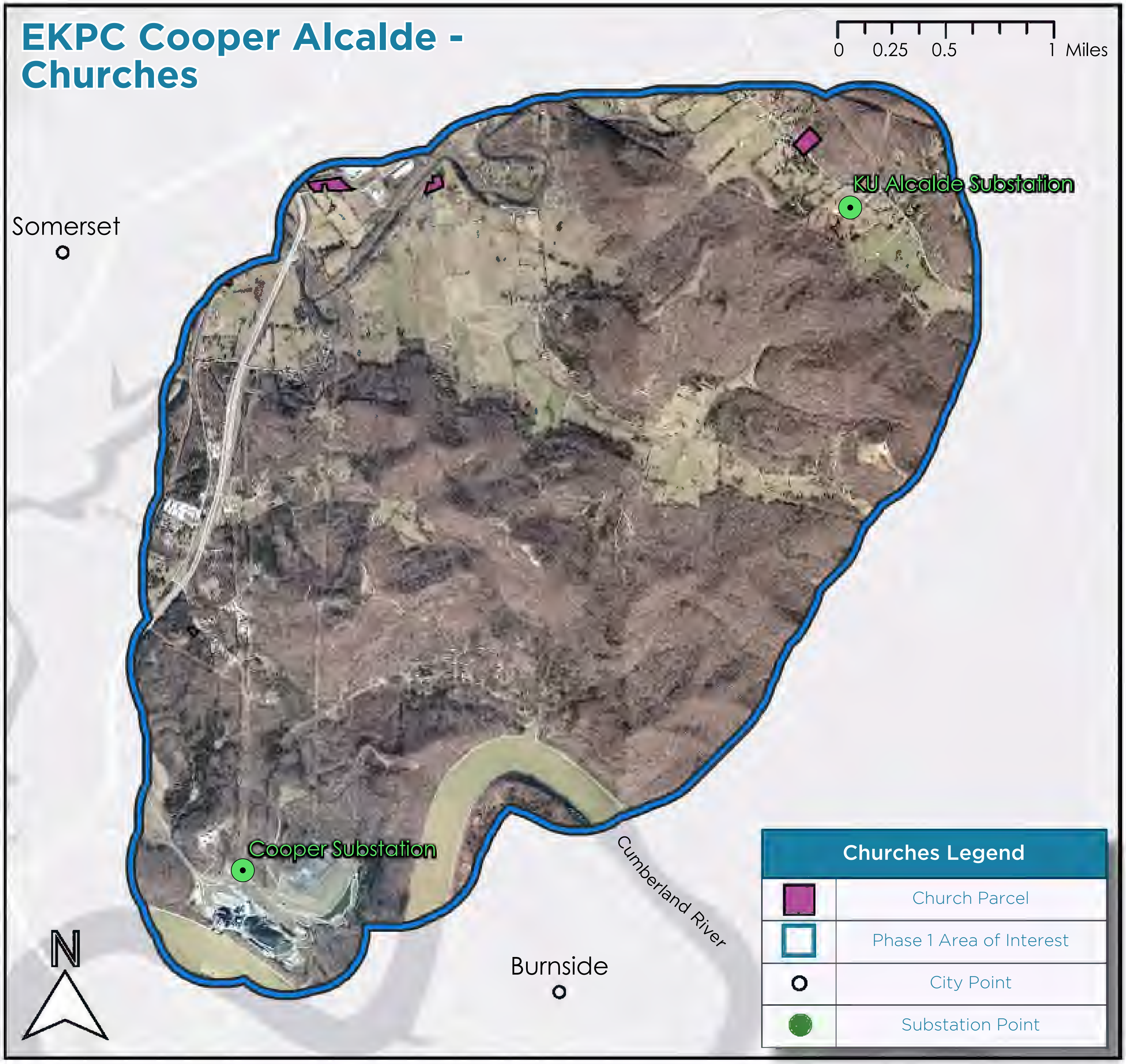
Figure 32: Cemeteries



Churches

Data from Google Maps and Pulaski County parcel records shows approximately 6 parcels in the project area designated as churches. Figure 33 shows the location of all churches in the project area, which are considered avoidance areas, and are concentrated in the northern and western portions of the project area.

Figure 33: Churches



Part VIII: Field Survey

NV5 Field Survey Overview

After all inputs for the analysis for the engineering, natural, and built perspectives for the EPRI model were identified and digitized by NV5 in the Phase 1 Study Area, the NV5 field survey went out and verified all relevant features. The primary goal of the NV5 field team was to verify all 1,028 building footprints in this study area. In identifying each of these buildings, they found approximately 23 new buildings and 2 new cemeteries that were not present in the 2023 satellite imagery digitized by NV5. In addition to verifying locations of building footprints in the project area, the field team verified the location of existing transmission rights-of-way, cemeteries, and churches. The field team also took detailed photographs of the EKPC Cooper and the KU Alcalde substations in the project area. Imagery from the NV5 field survey team is shown across this report showing these previously mentioned features, as well as typical land cover in the project area. See the image below for a detailed look at the Google Earth .KMZ file used by the field survey team to confirm existence of these features.

Figure 34: Google Earth KMZ used by NV5 Field Survey team

Part IX: Suitability Surfaces

Suitability Surfaces Overview

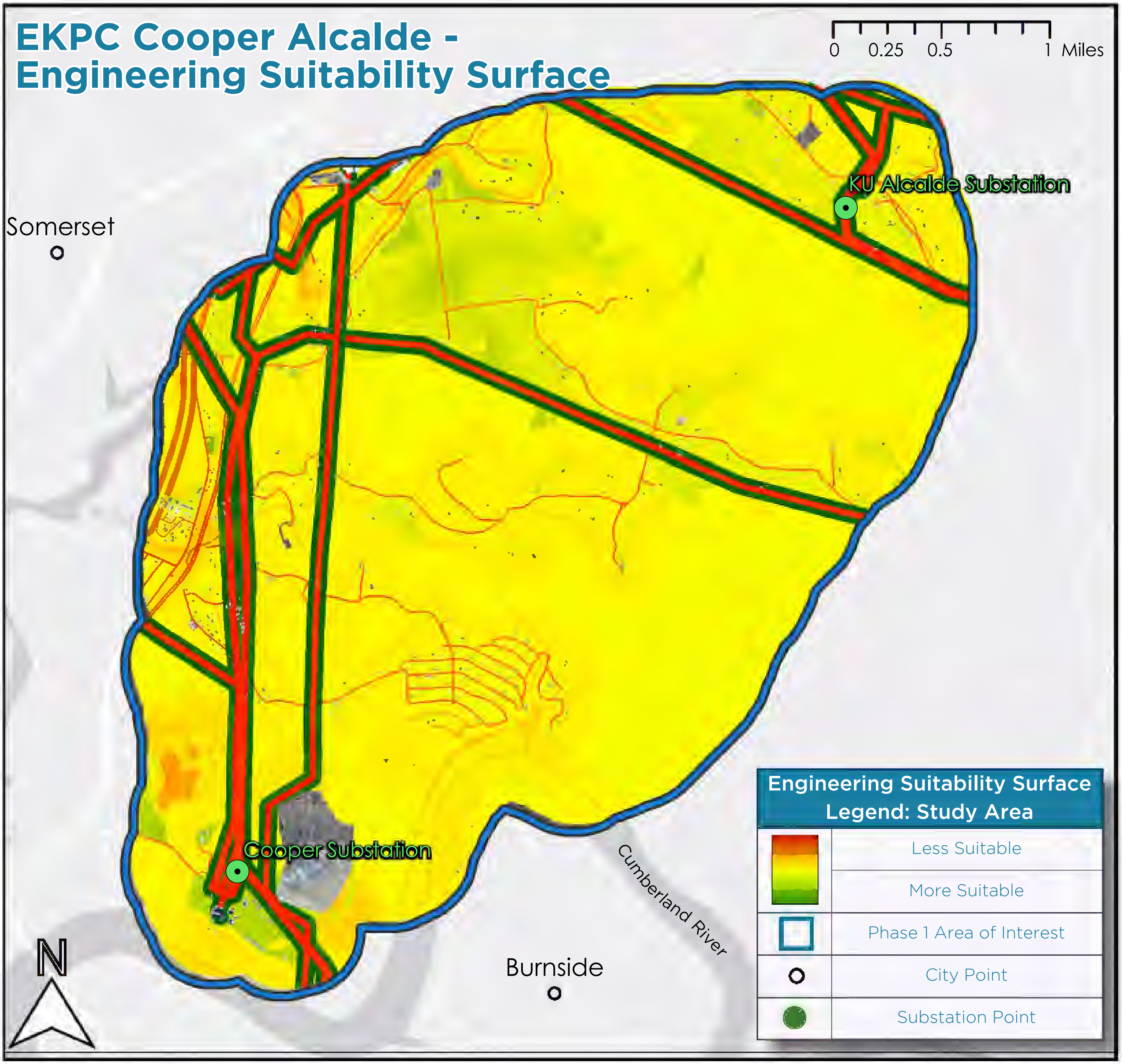
Suitability Surfaces were created by combining the three sub-model perspectives (Engineering, Natural, and Built) described in the preceding sections. Each Suitability Surface represents a weighted combination of the three sub-model perspectives. Four scenarios were created by distributing the weight of each environment with five times the emphasis for each perspective. The Simple model distributes the weight of each perspective equally. For each of these 4 environments, a suitability surface model was made for the entire project area. The Suitability Surfaces are shown in figures 36-39, with avoidance areas omitted from the analysis. The optimal path perspective weighted algorithm was then applied to each surface to develop the four Alternate Corridors with the top five percent extracted and displayed in the next chapter, informing the creation of alternate routes by EKPC for the Cooper to Alcalde alignment.

Figure 35: Church in Project Area (NV5 Field Photo)

Engineering Suitability Surface: Phase 1 Study Area

For the engineering suitability surface analysis, data layers from the engineering perspective analysis are given five times (72%) the emphasis of the built perspective (14%) and natural perspective (14%) groups, as shown in figure 36. This raster shows more suitable features for transmission line siting represented in green shades, moderately suitable land features represented in yellow shades, and less suitable land features represented in red shades, while all avoidance features are clipped out of the raster.

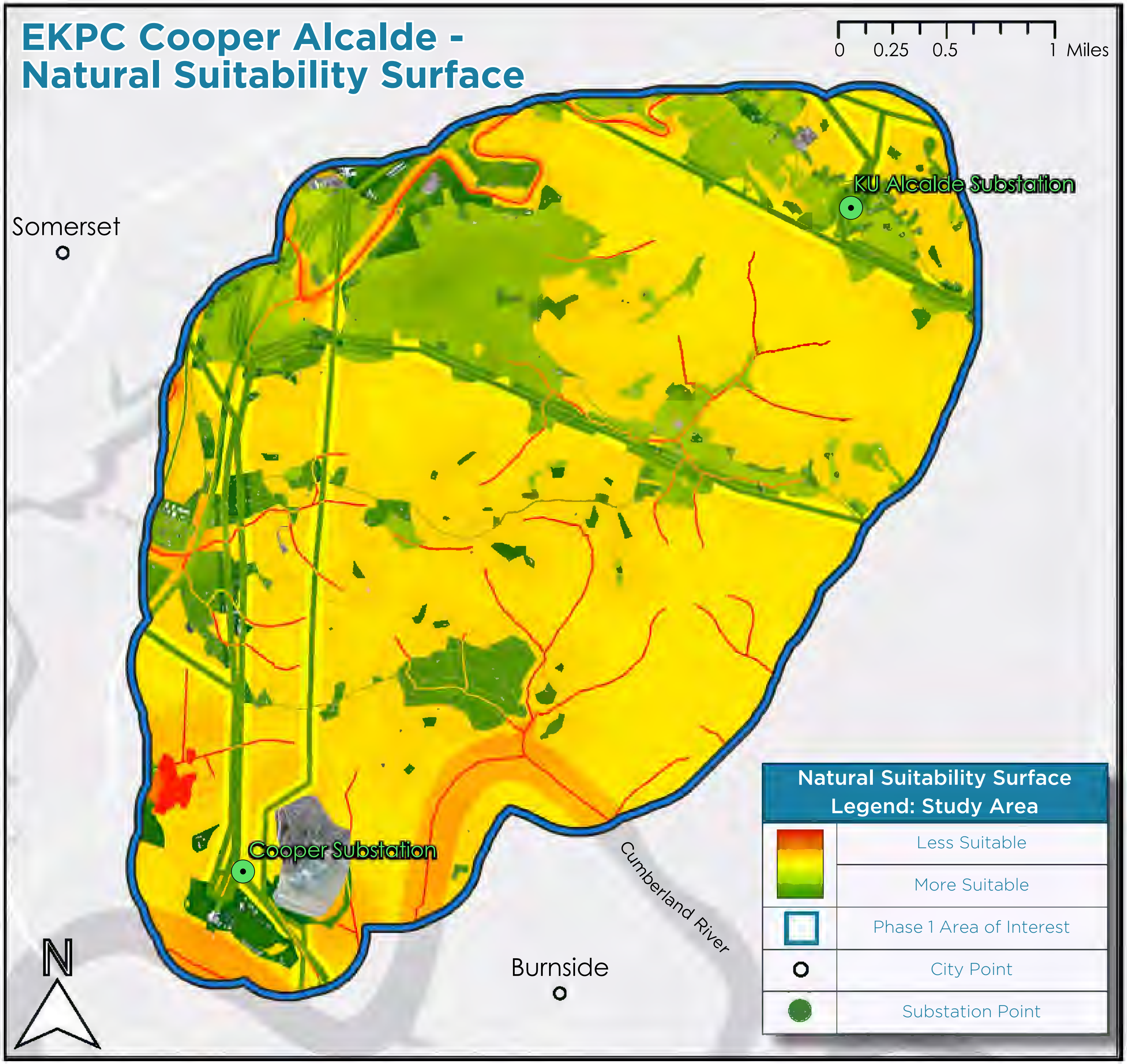
Figure 36: Engineering Suitability Surface



Natural Suitability Surface: Phase 1 Study Area

For the natural suitability surface analysis, data layers from the natural perspective analysis are given five times (72%) the emphasis of the built perspective (14%) and natural perspective (14%) groups, as shown in figure 37. This raster shows more suitable features for transmission line siting represented in green shades, moderately suitable land features represented in yellow shades, and less suitable land features represented in red shades, while all avoidance features are clipped out of the raster.

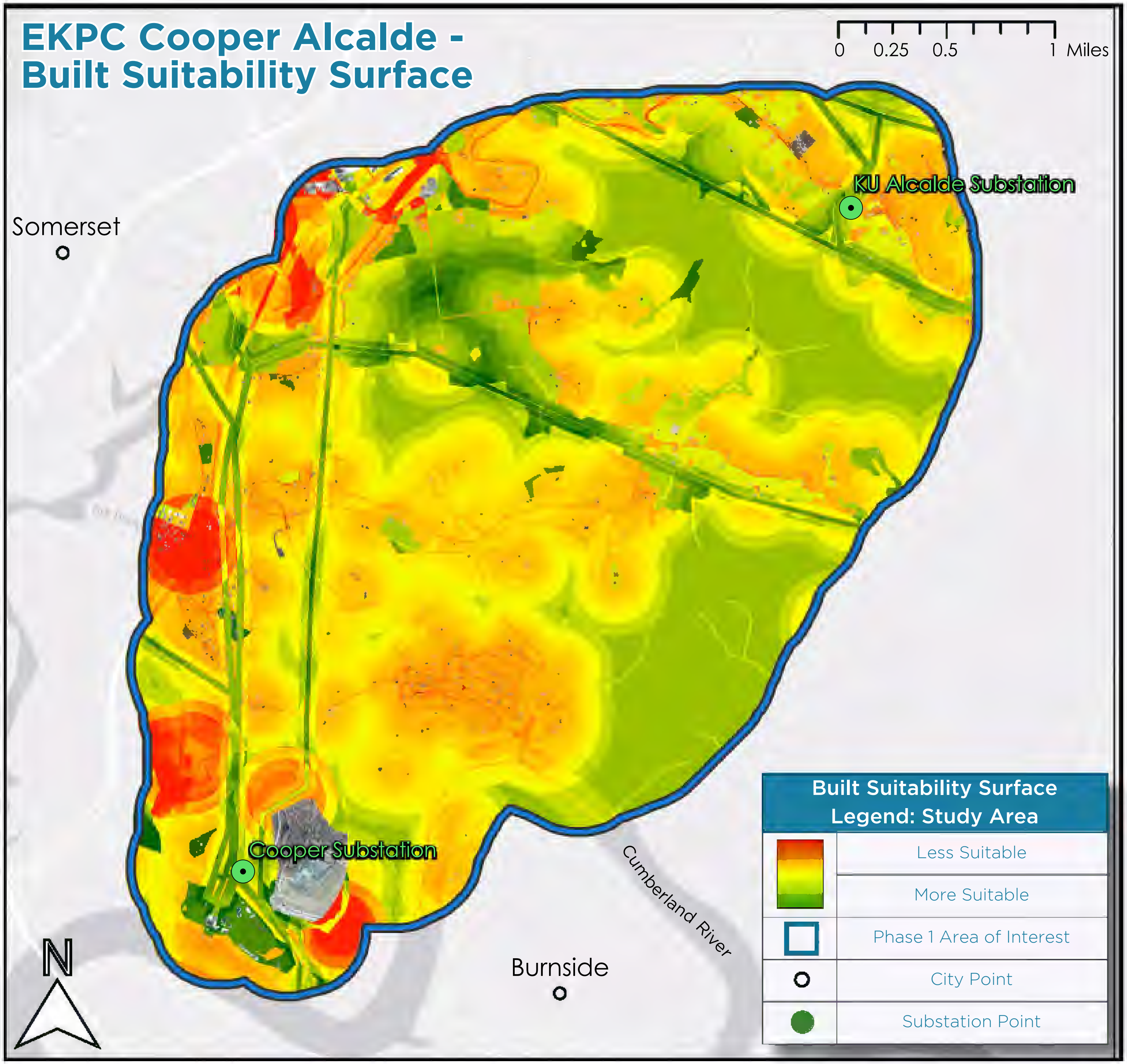
Figure 37: Natural Suitability Surface



Built Suitability Surface: Phase 1 Study Area

For the built suitability surface analysis, data layers from the built perspective analysis are given five times (72%) the emphasis of the engineering perspective (14%) and natural perspective (14%) groups, as shown in figure 38. This raster shows more suitable features for transmission line siting represented in green shades, moderately suitable land features represented in yellow shades, and less suitable land features represented in red shades, while all avoidance features are clipped out of the raster.

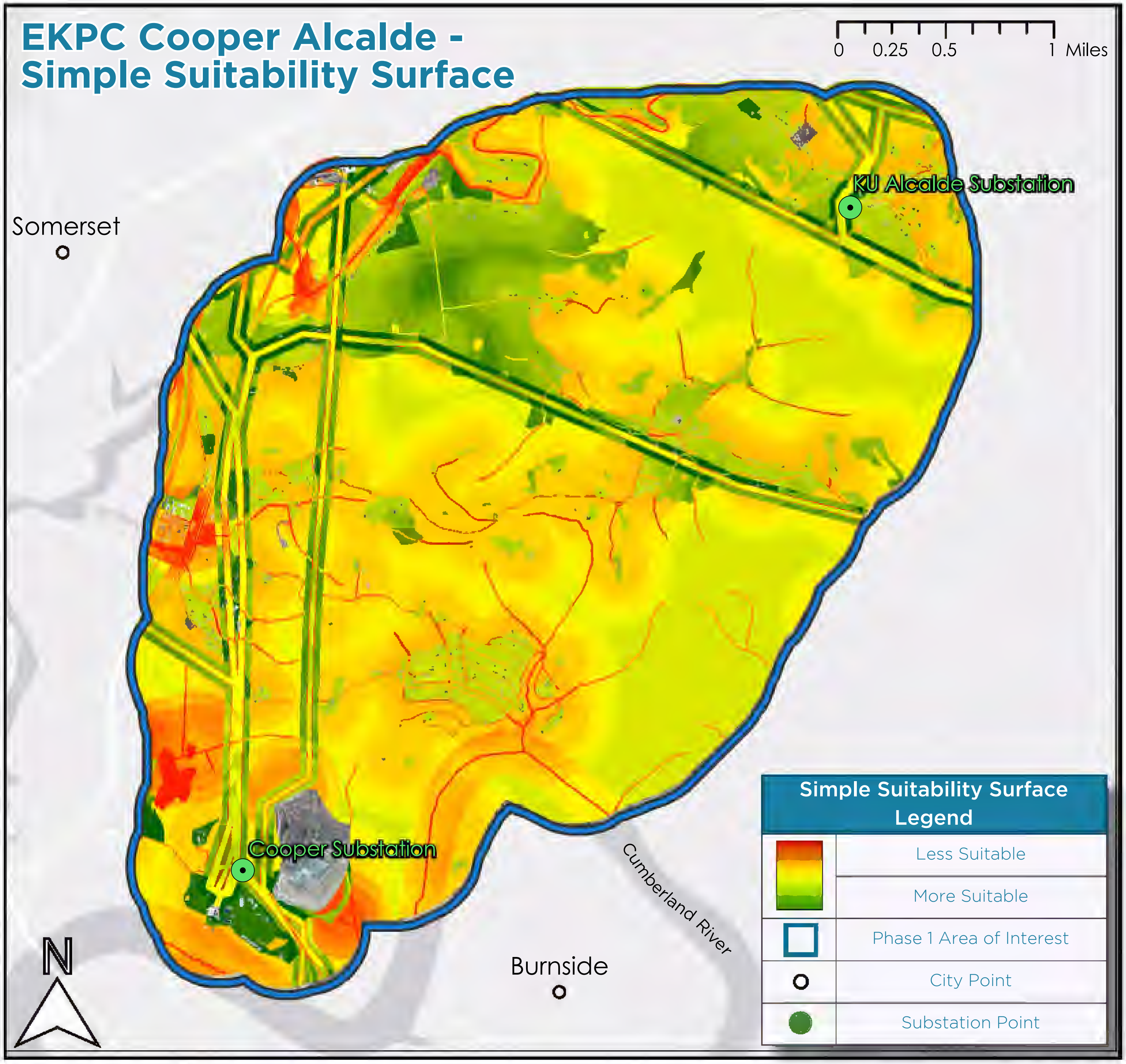
Figure 38: Built Suitability Surface



Simple Suitability Surface: Phase 1 Study Area

For the simple suitability analysis, data layers from the engineering perspective (33.3%), built perspective (33.3%), and natural perspective (33.3%) are given equal weighting. This raster shows more suitable features for transmission line siting represented in green shades, moderately suitable land features represented in yellow shades, and less suitable land features represented in red shades, while all avoidance features are clipped out of the raster.

Figure 39: Simple Suitability Surface



Part X: Alternate Corridor Generation

Alternate Corridor Generation Overview

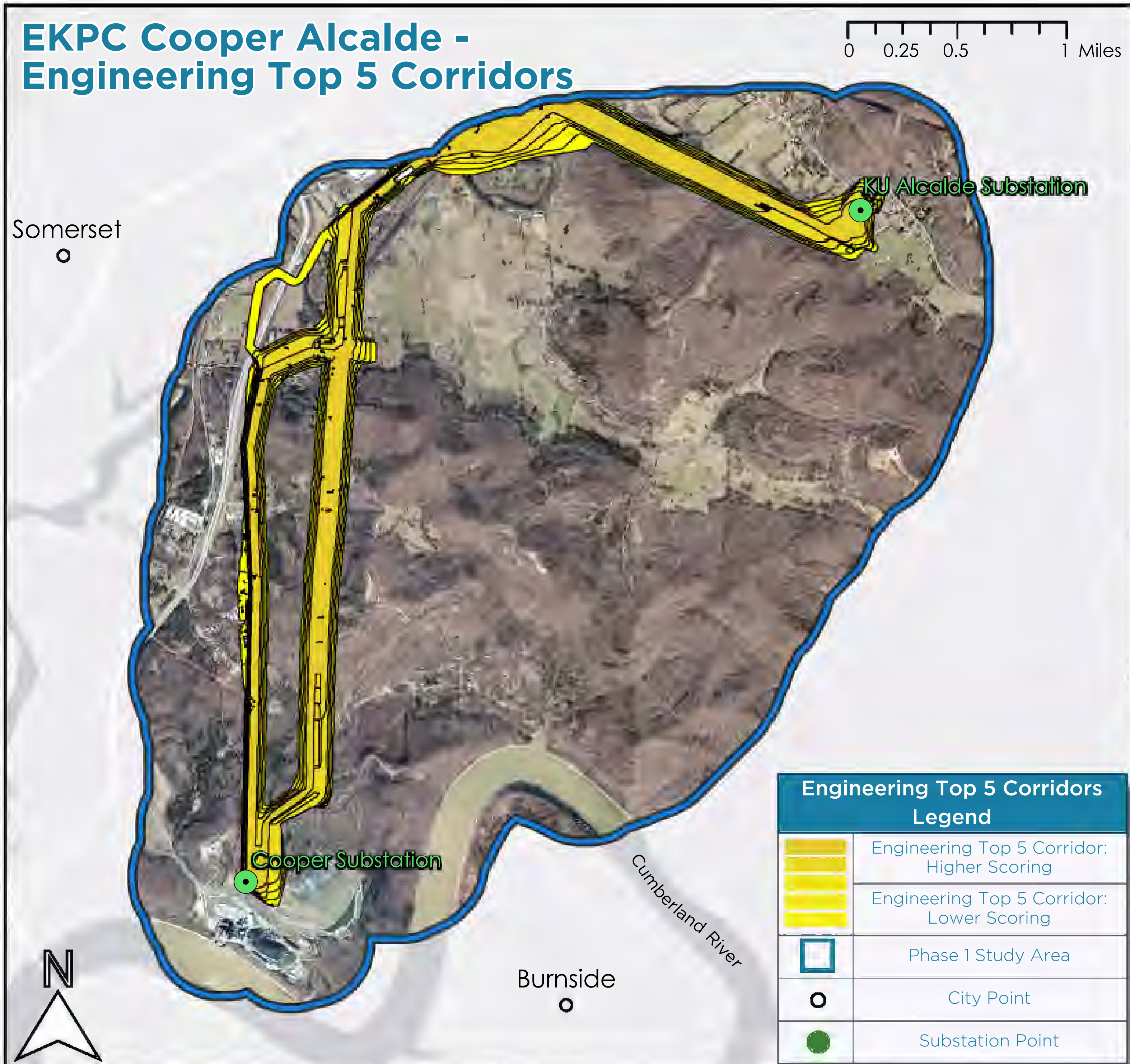
Each Suitability Surface was used in the next phase of the analysis, with alignments to and from each substation in the project area. This phase is called Alternate Corridor Analysis and involves the creation of "least cost paths." The least cost paths algorithm is used to find the cost of every possible path (corridor) between the two substation start and end points. A corridor is any continuous string of grid cells, 15 feet by 15 feet in size, connecting the first substation site end point to a second substation site end point. The cost is the accrual of values of those cumulative grid cells, and the value of each cell varies depending on the features that the cell represents by virtue of their weighted suitability environment. Lower summed values indicate relatively suitable corridors, whereas higher summed values indicate relatively unsuitable corridors. The Alternate Corridor for each perspective (Engineering, Built, Natural, and Simple Average) is the total area representing the top five percent (lowest values) of all potential corridors. The composite corridor product was then sent to EKPC for the creation of 7 alternate routes connecting the EKPC Cooper and KU Alcalde substations.

Figure 40: Cemetery in Project Area (NV5 Field Photo)

Engineering Environment Alternate Corridor: All Substations

Top 5 corridors to and from the EKPC Cooper and the KU Alcalde substation in the project area were generated and then aggregated from the engineering perspective raster covering the entire Phase 1 Study Area. These top 5 corridors are visualized in a way to differentiate the highest rated of the top 5 corridors in a darker shade, with each of the 4 lower rated corridors in a progressively lighter shade. The engineering perspective analysis portion of the siting model is heavily weighted toward co-location with existing transmission line infrastructure. NV5 received and confirmed the existence of all transmission lines within the study area, with EKPC and KU owned lines providing the best opportunity for paralleling. After determining area of co-location, these areas paralleling existing transmission corridors are most desirable, followed by background and paralleling interstate highways, with areas in the right of way of existing transmission lines as the least desirable. Due to the grade of most hills and knobs in the project area being under 15%, slope topography did not play a major role in determining the top 5 engineering corridors.

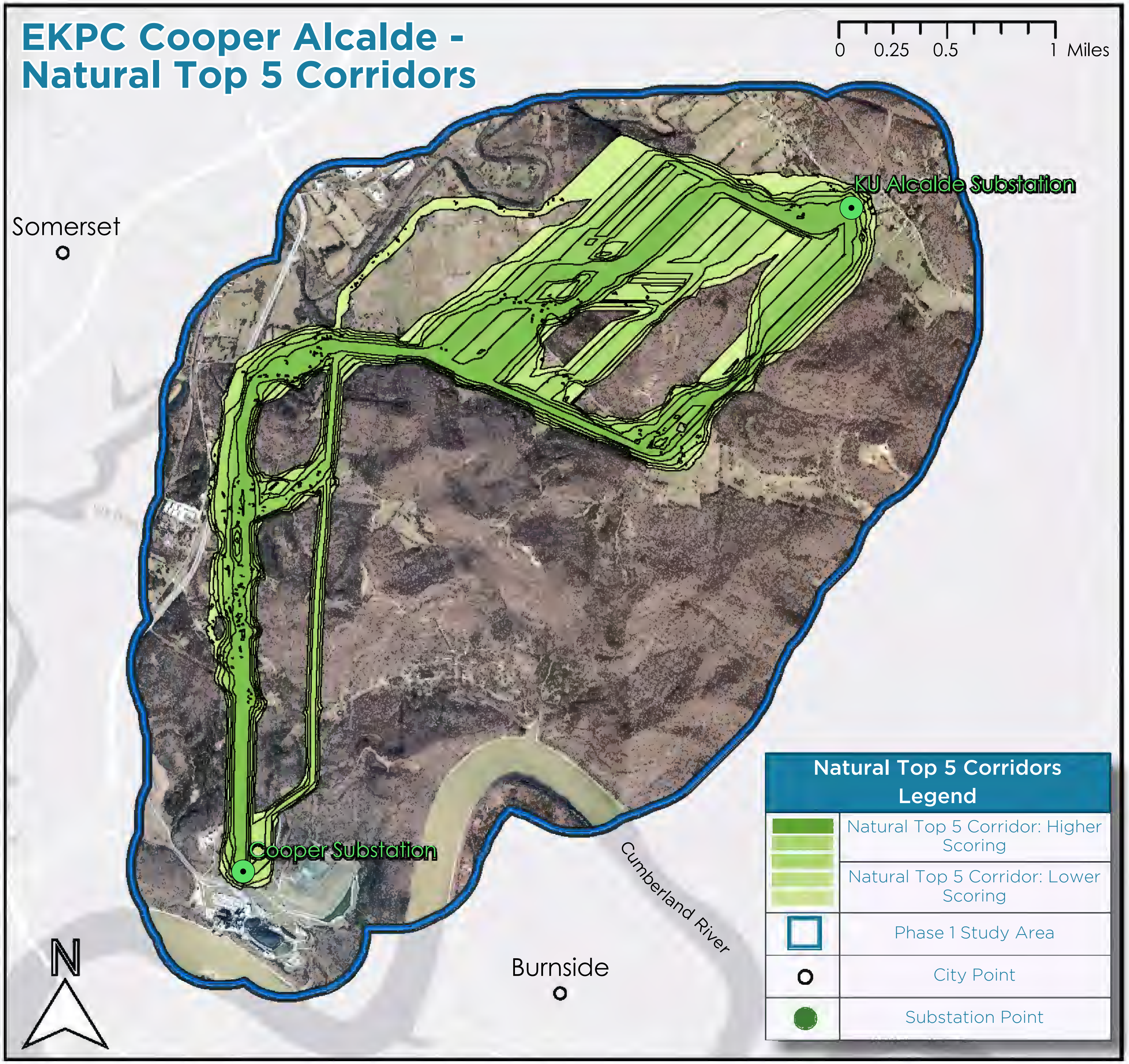
Figure 41: Engineering Top 5 Corridors: All substations



Natural Environment Alternate Corridor: All Substations

Top 5 corridors to and from the EKPC Cooper and the KU Alcalde substation in the project area were generated and then aggregated from the natural perspective raster covering the entire Phase 1 Study Area. These top 5 corridors are visualized in a way to differentiate the highest rated of the top 5 corridors in a darker shade, with each of the 4 lower rated corridors in a progressively lighter shade. The natural perspective analysis portion of the line siting model seeks to protect the natural environment, favoring siting new transmission lines on developed land, and looking to avoid siting on wetlands, streams, rivers, forested land, and FEMA floodplains, Due to the large amount of forested land cover in the project area, the top 5 corridors from the natural perspective favors agricultural and developed areas.

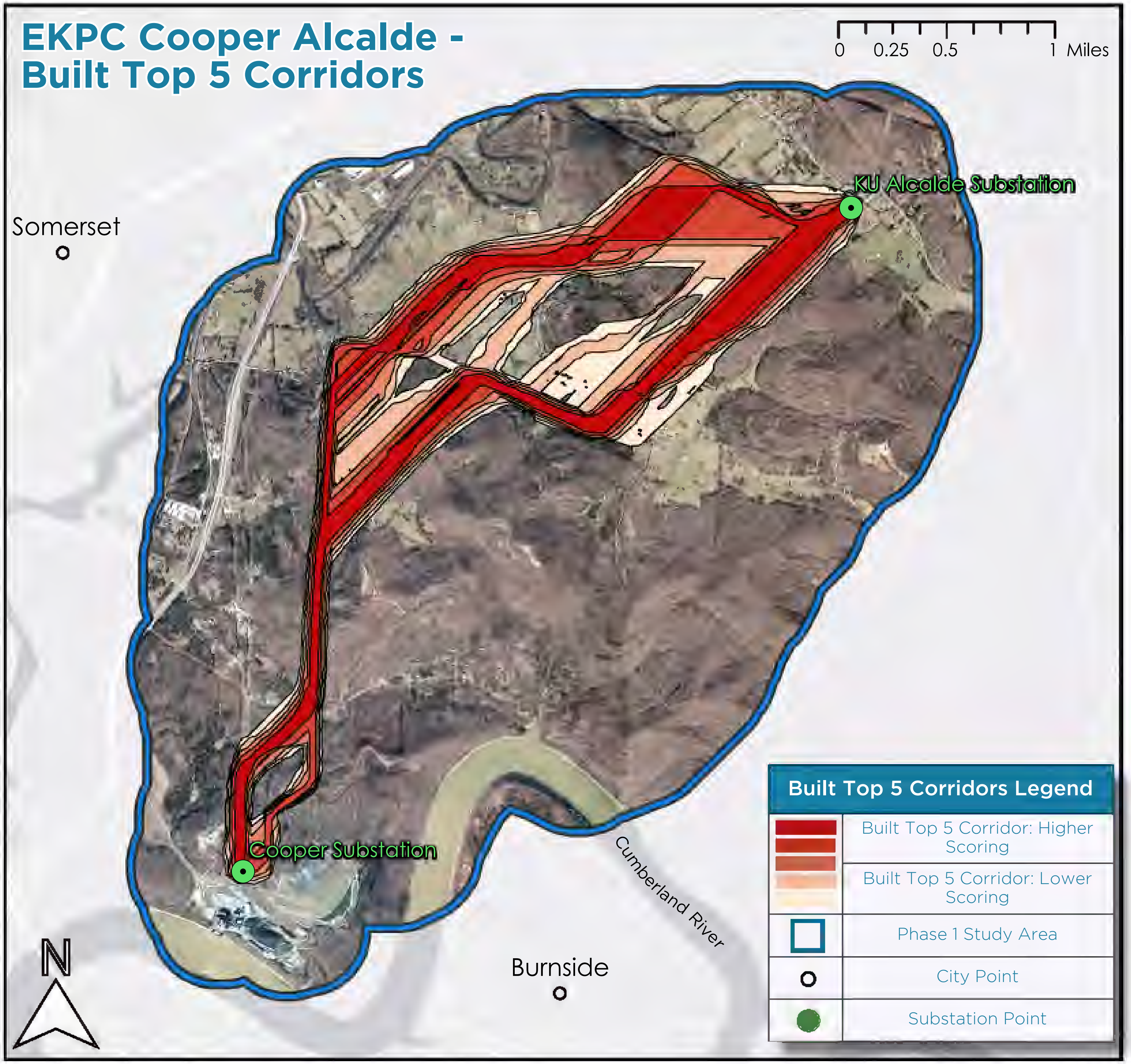
Figure 42: Natural Top 5 Corridors: All substations



Built Environment Alternate Corridor: All Substations

Top 5 corridors to and from the EKPC Cooper and the KU Alcalde substation in the project area were generated and then aggregated from the built perspective raster covering the entire Phase 1 Study Area. These top 5 corridors are visualized in a way to differentiate the highest rated of the top 5 corridors in a darker shade, with each of the 4 lower rated corridors in a progressively lighter shade. The built perspective analysis portion of the line siting model seeks out developed land that isn't in close proximity to existing buildings and lie as far away from possible from historic and archaeological sites. The built perspective also weights farmland as moderately suitable, forested land as less suitable, and residential land and the least suitable for transmission line siting.

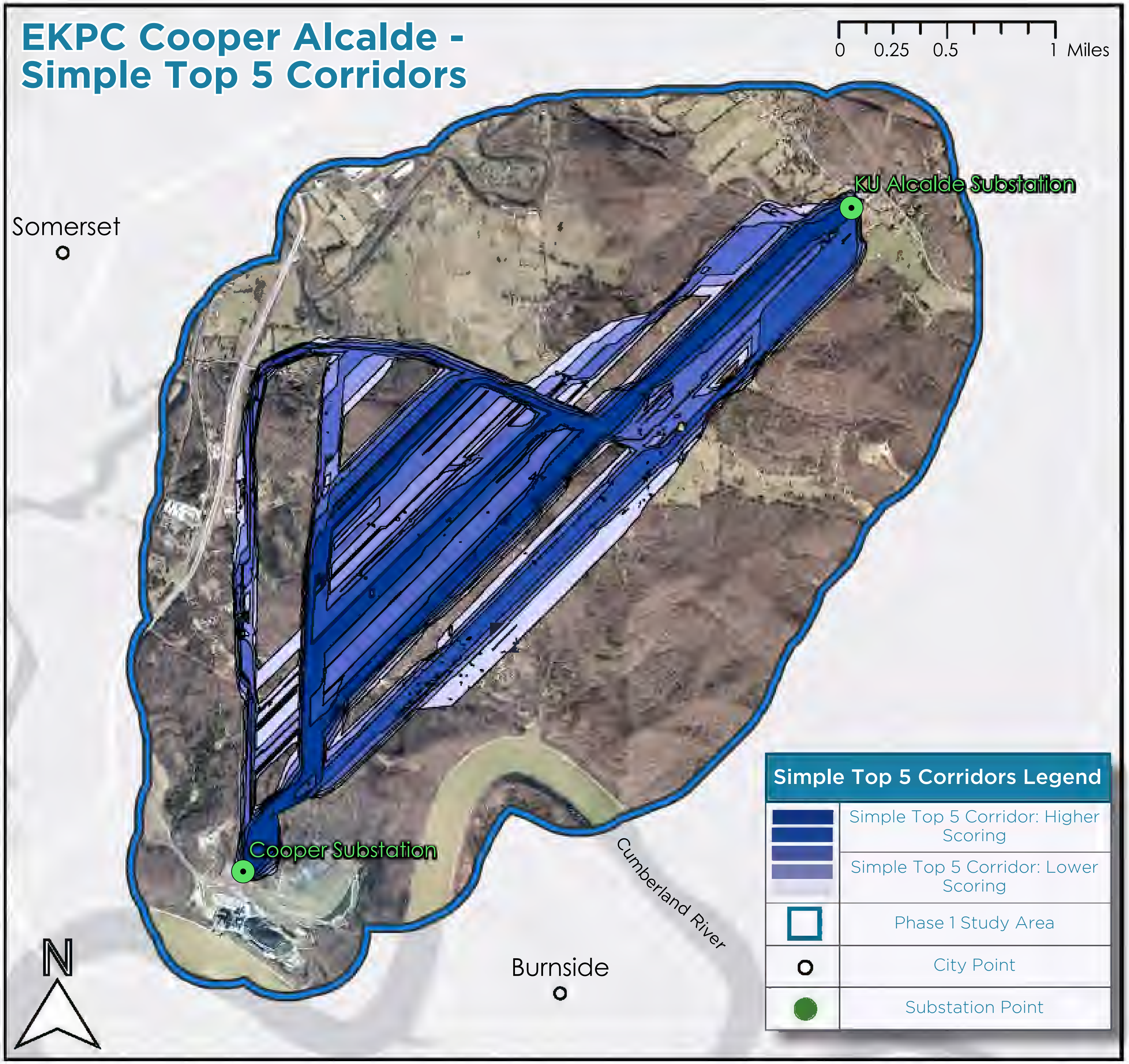
Figure 43: Built Top 5 Corridors: All substations



Simple Environment Alternate Corridor: All Substations

Top 5 corridors to and from the EKPC Cooper and the KU Alcalde substation in the project area were generated and then aggregated from the built perspective raster covering the entire Phase 1 Study Area. These top 5 corridors are visualized in a way to differentiate the highest rated of the top 5 corridors in a darker shade, with each of the 4 lower rated corridors in a progressively lighter shade. The simple average corridor analysis resembles elements of the corridors generated from the 3 perspectives, since each features contributes to the corridor equally. The greatest variation between the simple corridors and corridors from all other perspectives is optimizing the balance maximizing engineering opportunities (looking to parallel existing transmission lines), avoiding natural features (streams, floodplains, wetlands, forested areas), and maximizing available space in the built environment (seeking non-residential developed land away from existing buildings). This consolidated output closely resembles the corridors generated in the natural and built perspective analyses, seeking to cut through the center of the project area after running due north from the Cooper substation, and not looking to parallel existing transmission lines north of Pittman Creek.

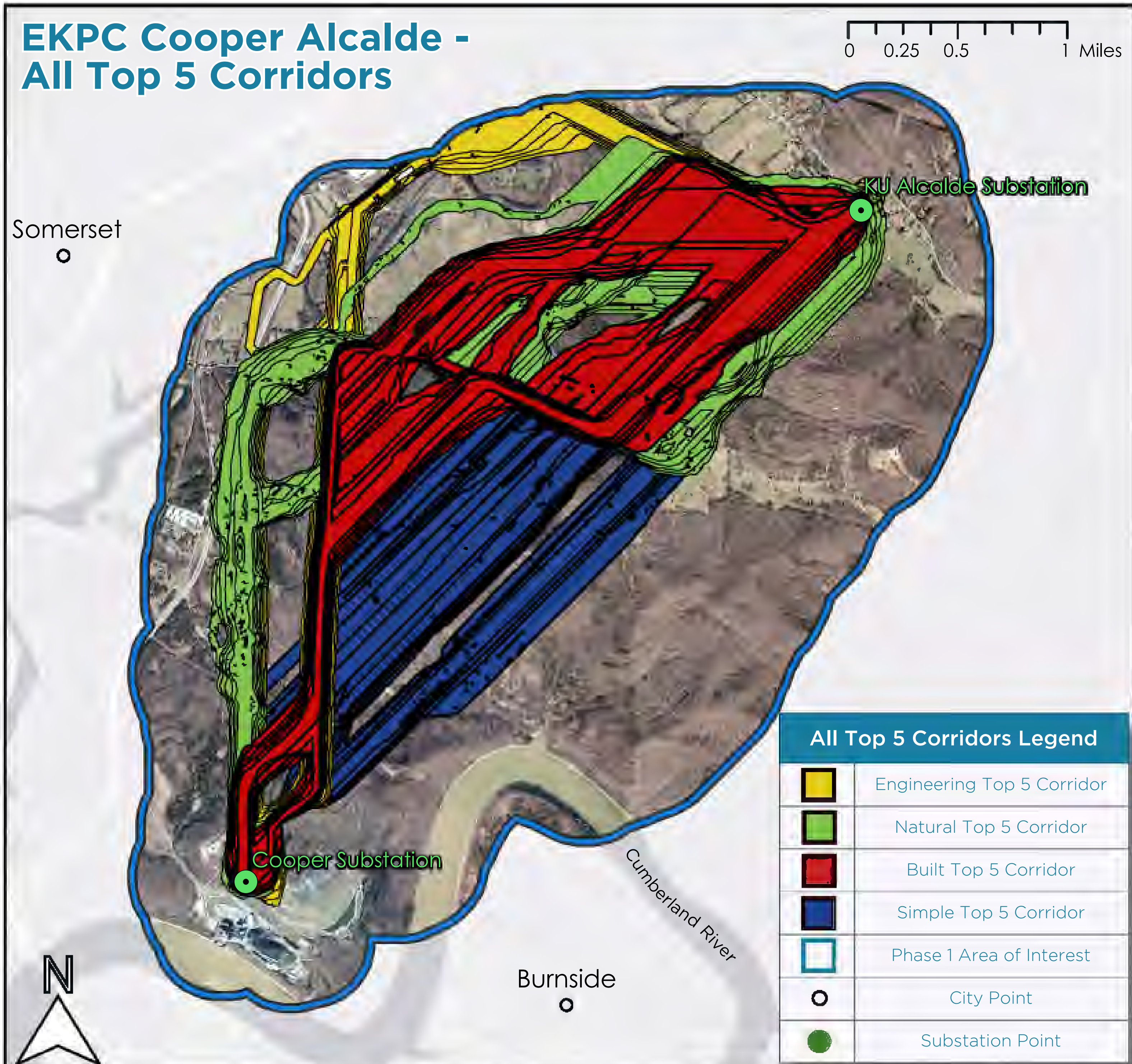
Figure 44: Simple Top 5 Corridors: All substations



All Top 5% Corridors: All Substations

When comparing the engineering, natural, and built perspective generated corridors, it is useful to overlay them with each other to ensure the model accurately captures each perspectives features. Ideal locations for siting from an engineering perspective include paralleling existing transmission infrastructure, and low angle sloped terrain. Ideal locations for siting from a natural perspective avoid floodplains, wetlands, forested lands, and prefer developed land. Ideal locations for siting from a built perspective seek to avoid residential areas archaeological sites, and areas of high building density, while seeking out commercial or industrial developed lands. The simple corridor provides a balance of these 3 perspectives. See figure 45 below for a visualization of these 4 corridors overlaid in the same image, with the engineering top 5 corridor favoring a more northern route than the other three perspectives, and the simple perspective favoring the southern-most sets of routes.

Figure 45: All Top 5 Corridors: All substations



Part XI: Alternate Routes

Alternate Route Inputs

After reviewing and analyzing the Alternate and Composite Corridors, EKPC developed 7 centerline routes connecting the EKPC Cooper and KU Alcalde substations. Within the context of this study, these potential centerline routes are referred to as Alternate Routes. These alternate routes were then scored using the EPRI KY Scoring Methodology. Once routes are scored, perspective weights are applied for final route scores. Similar to the Alternate Corridors, each perspective is given five times the weight of the other two perspective, with a final simple equal weight applied as well. EKPC suggested methodology and inputs that deviate from the standard EPRI KY Scoring methodology are documented in Appendices B and C of this report, as an internal EKPC memo, and email discussion between NV5 and EKPC.

All 7 routes followed the EPRI standards for all being unique and not back tracking in direction between towers while connecting substation to substation. These routes are visualized both individually and together on the next 8 pages of this report. The inputs to complete route scoring fall into two categories, EKPC provided or NV5 provided:

EKPC provided inputs: Proposed ROW width, selected avoidance features, substation locations, centerline route geometry project costs of construction and clearing, single vs. double circuit locations.

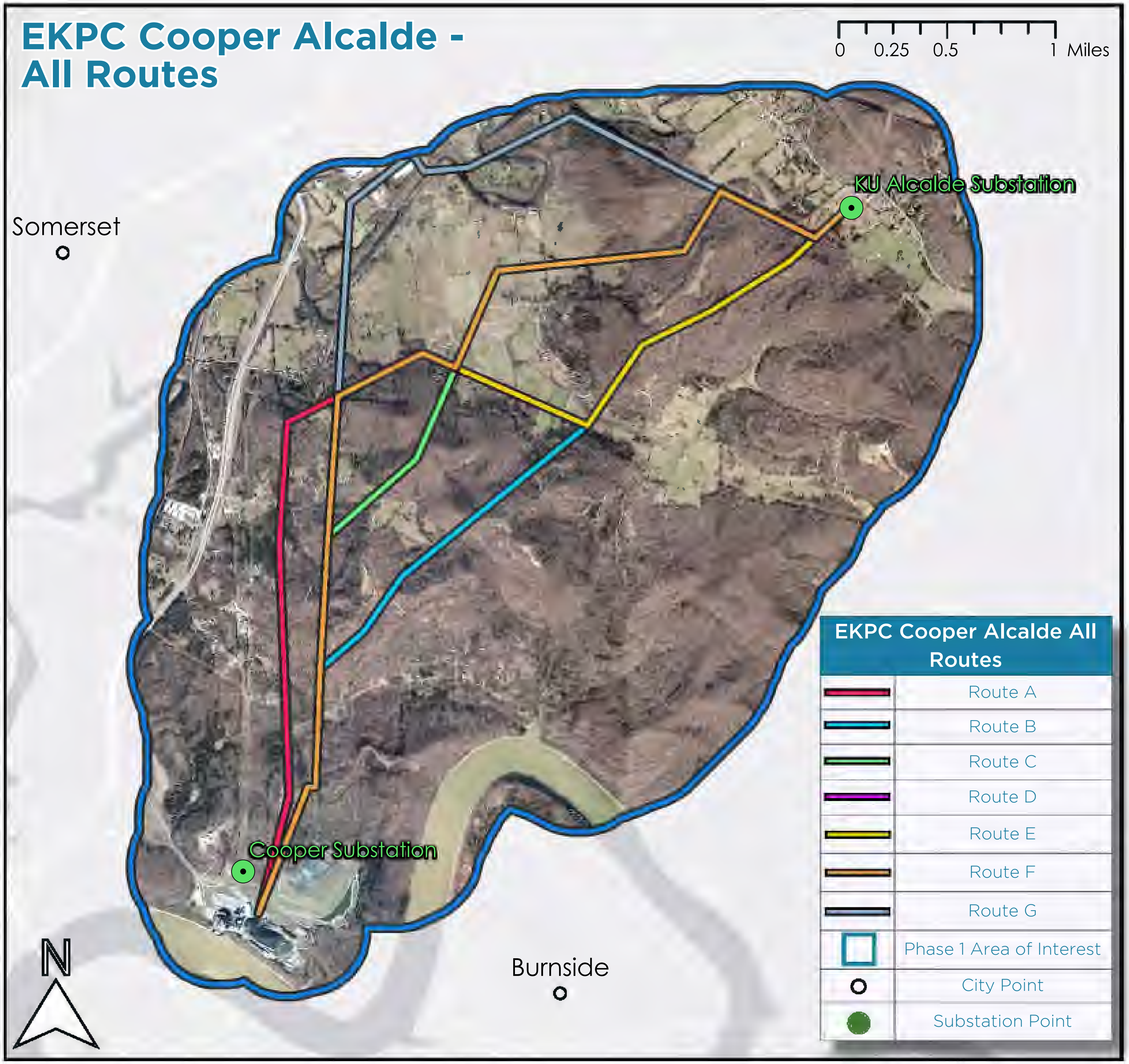
NV5 provided inputs: Buildings, land cover, stream crossing, wetlands, floodplains, line length, location of relevant utilities, parcel data, inflection point location of potential structures, the scoring matrix

Figure 46: Church in Project Area (NV5 Field Photo)

All Alternate Routes for Scoring

Figure 47 shows all 7 of the alternate routes drawn for the newly constructed double-circuit 161 kV transmission line running from the EKPC owned Cooper substation to the KU owned Alcalde substation. All 7 of these routes track due north from the Cooper substation, with some turning northeast earlier than others. Routes A-F are generally routed in the same geographic area towards the center of the project area to connect with the KU Alcalde substation to the northeast, while route G seeks to parallel additional EKPC owned transmission lines on the northern and western edges of the project area before connecting to the KU Alcalde substation to the east. Certain segments of these 7 alternate routes are shared by other alternate routes, but all alternate routes contain a geographically unique centerline from the other 7 routes. See figures 48-54 for more detailed descriptions of the geographic features of these 7 routes.

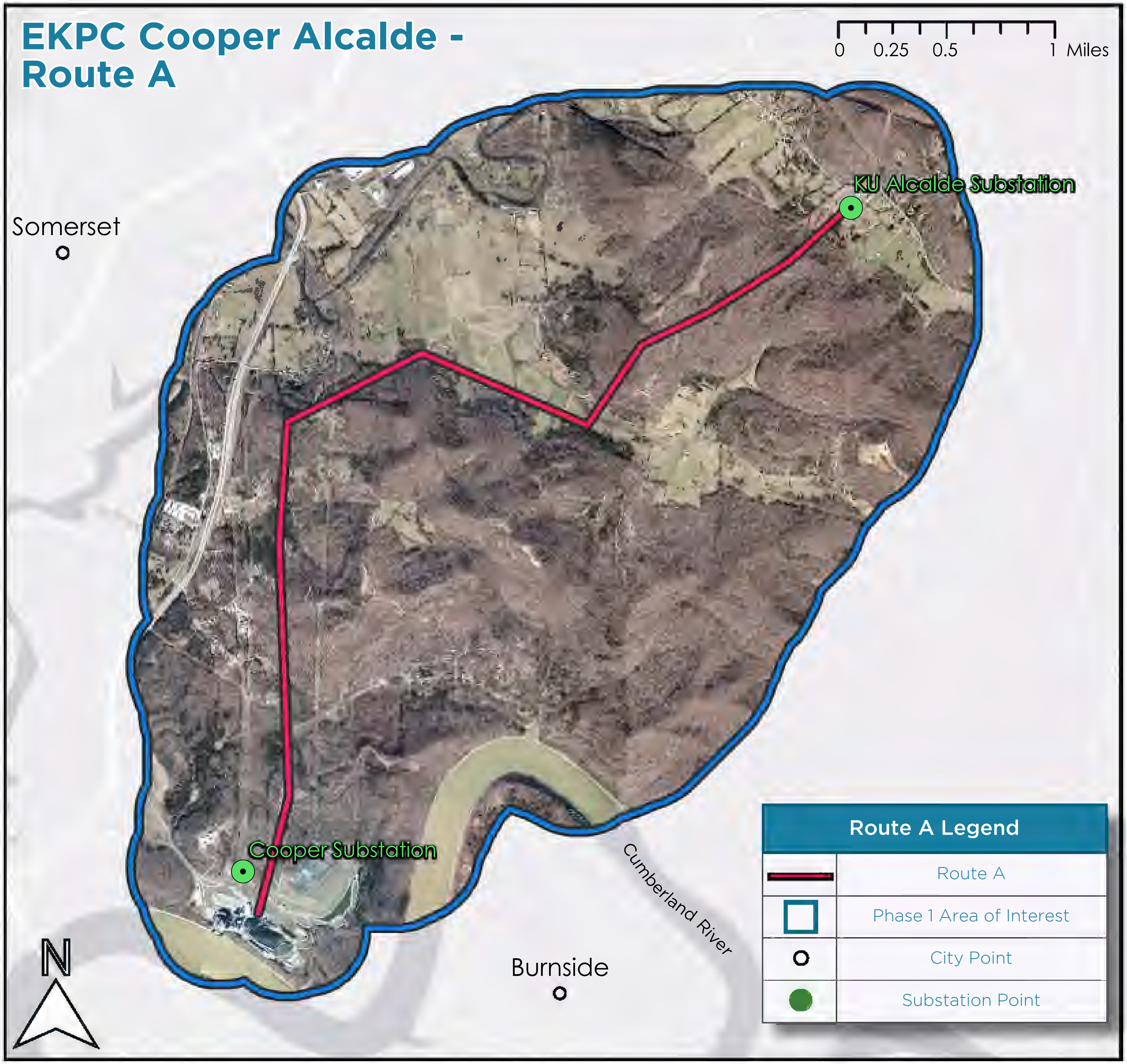
Figure 47: All Alternate Routes for Scoring



Route A

Route A runs due north of the Cooper substation for 2.3 miles, before turning due east to cut through some forested land for approximately 0.69 miles, then parallels an EKPC owned transmission line for 0.83 miles. After paralleling this transmission line, Route A then tracks northeast through primarily forested land to connect to the KU Alcalde substation. Overall, this alignment spans 5.48 miles, with 74.9 acres of forest needing to be cleared, 7 streams or rivers needing to be crossed, and 0 residences needing to be relocated within a 150 ft buffer. **Route A is a 5.48 mile double-circuit transmission line.**

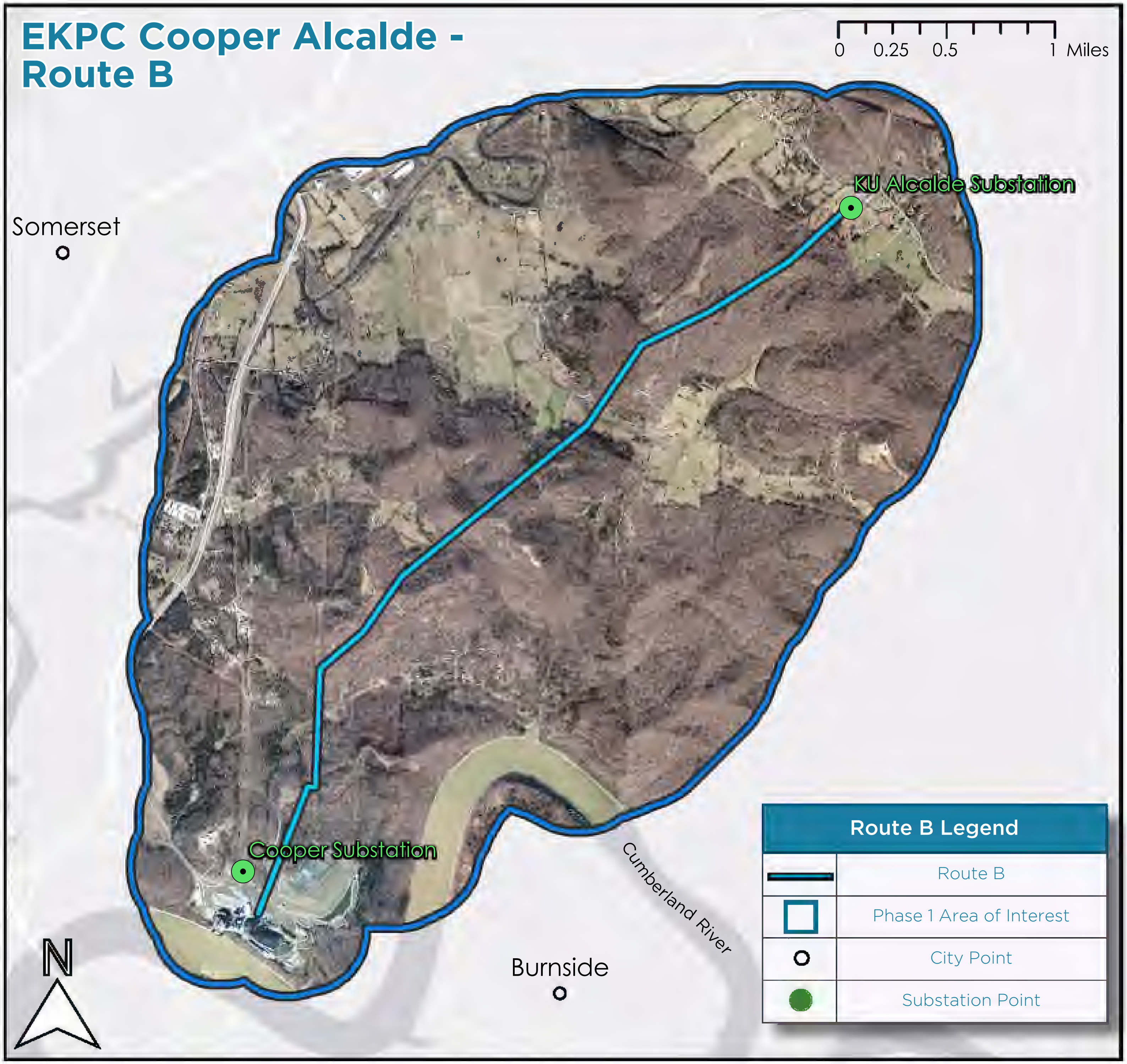
Figure 48: Route A



Route B

Route B runs due north of the Cooper substation for 1.2 miles, before tracking north-east for 1.67 miles through primarily forested land before intersecting with an EKPC owned transmission line. Route B does not seek to parallel this transmission, instead crossing it and tracking northeast for the remainder of the alignment, primarily through forested land Overall, this alignment spans 4.54 miles, with 71.6 acres of forest needing to be cleared, 4 streams or rivers needing to be crossed, and 0 residences needing to be relocated within a 150 ft buffer. **Route B is a 4.54 mile double-circuit transmission line.**

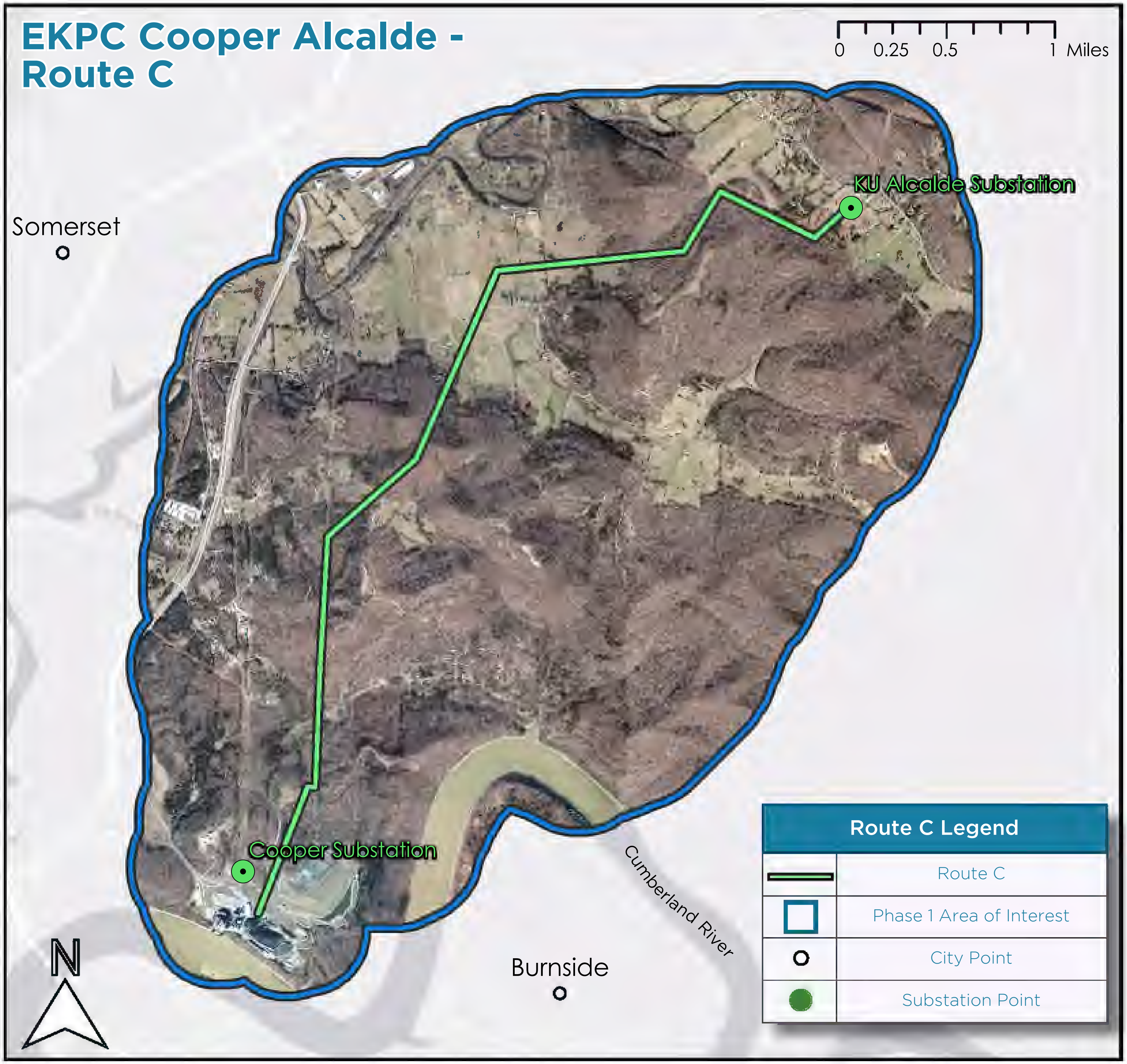
Figure 49: Route B



Route C

Route C runs due north of the Cooper substation for 1.5 miles, roughly paralleling an existing EKPC transmission line, before tracking north-east for 1.01 miles through primarily forested land before intersecting with an EKPC owned transmission line. Route C does not seek parallel this transmission line, instead crossing it and tracking north-northeast for the remainder of the alignment, through a combination of agricultural and forested land. Overall, this alignment spans 5.25 miles, with 66.6 acres of forest needing to be cleared, 7 streams or rivers needing to be crossed, and 0 residences needing to be relocated within a 150 ft buffer. **Route C is a 5.25 mile double-circuit transmission line.**

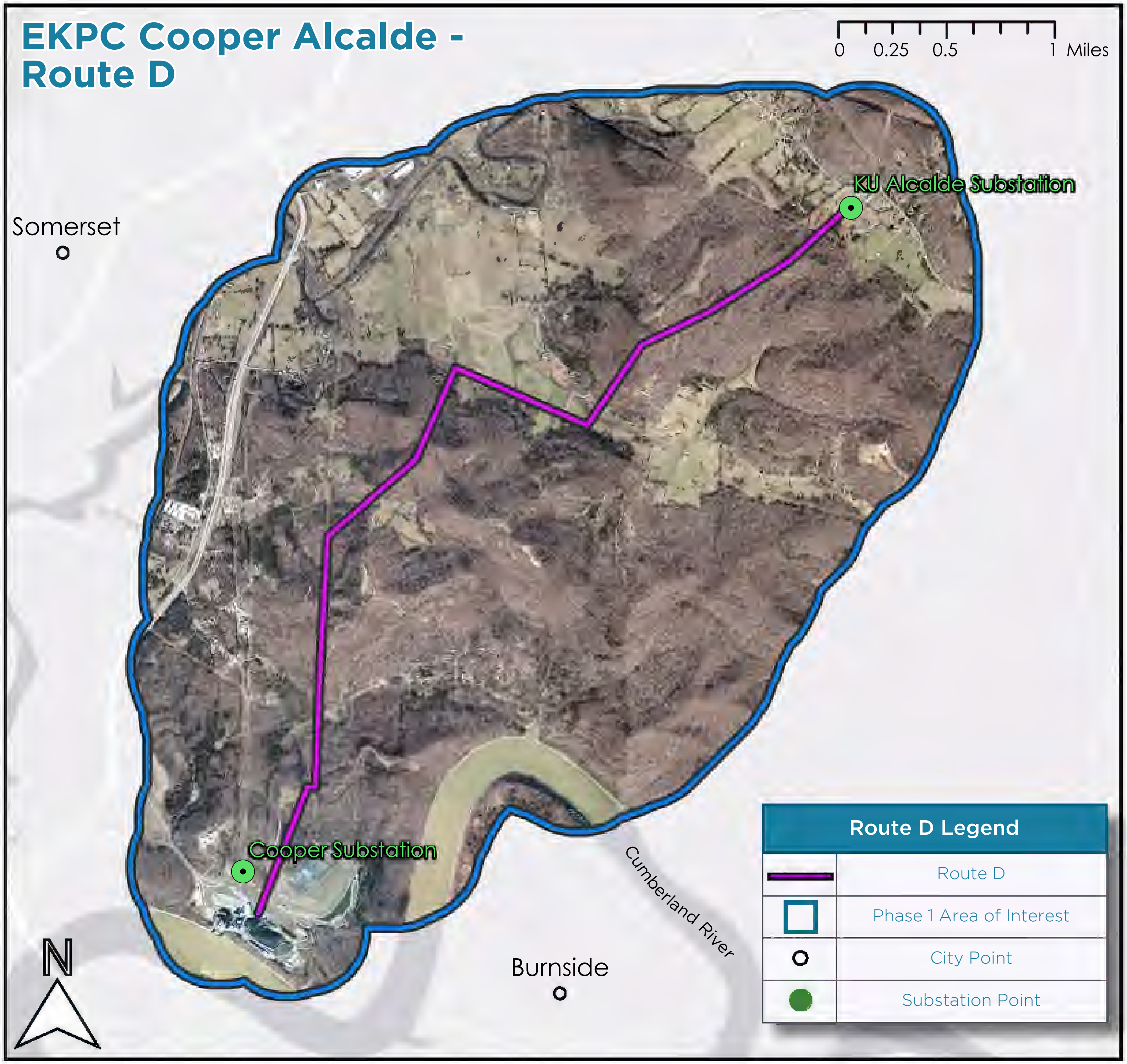
Figure 50: Route C



Route D

Route D runs due north of the Cooper substation for 1.5 miles, roughly paralleling an existing EKPC transmission line, before tracking north-east for 1.01 miles through primarily forested land before intersecting with an EKPC transmission line. At this intersection, Route D then runs east and parallels this line for roughly 0.70 miles, before tracking north-east through primarily forested land to connect with the KU Alcalde substation. Overall, this alignment spans 5.15 miles, with 71.8 acres of forest needing to be cleared, 6 streams or rivers needing to be crossed, and 0 residences needing to be relocated within a 150 ft buffer. **Route D is a 5.15 mile double-circuit transmission line.**

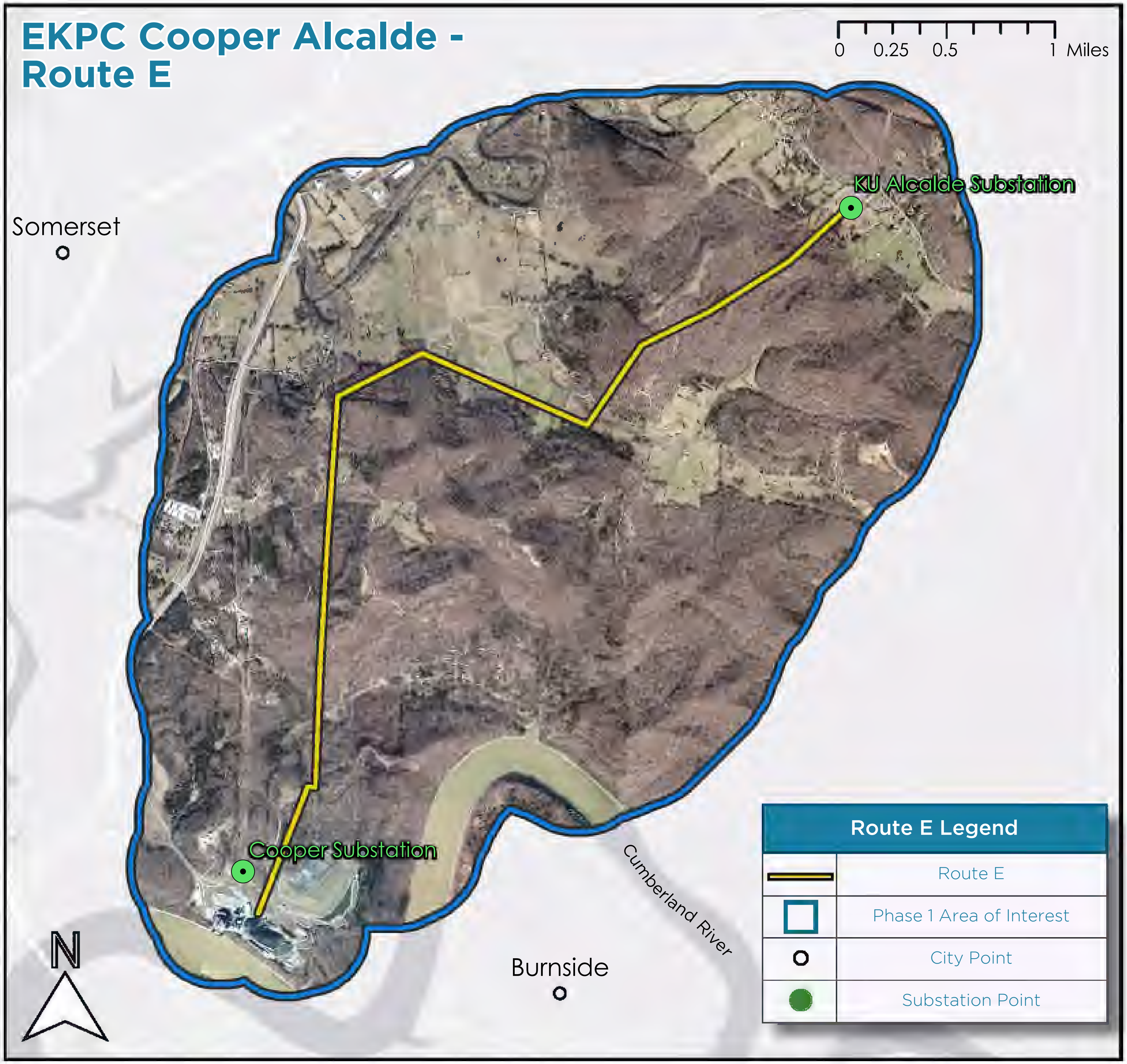
Figure 51: Route D



Route E

Route E runs due north of the Cooper substation for 2.5 miles, roughly paralleling an existing EKPC transmission line, before tracking north-east for 0.42 through primarily forested land before intersecting with an EKPC owned transmission line. At this intersection, Route E then runs east paralleling this transmission line for roughly 0.87 miles, before tracking north-east through primarily forested land to connect with the KU Alcalde substation. Overall, this alignment spans 5.40 miles, with 73.1 acres of forest needing to be cleared, 7 streams or rivers needing to be crossed, and 1 residence needing to be relocated within a 150 ft buffer. **Route E is a 5.40 mile double-circuit transmission line.**

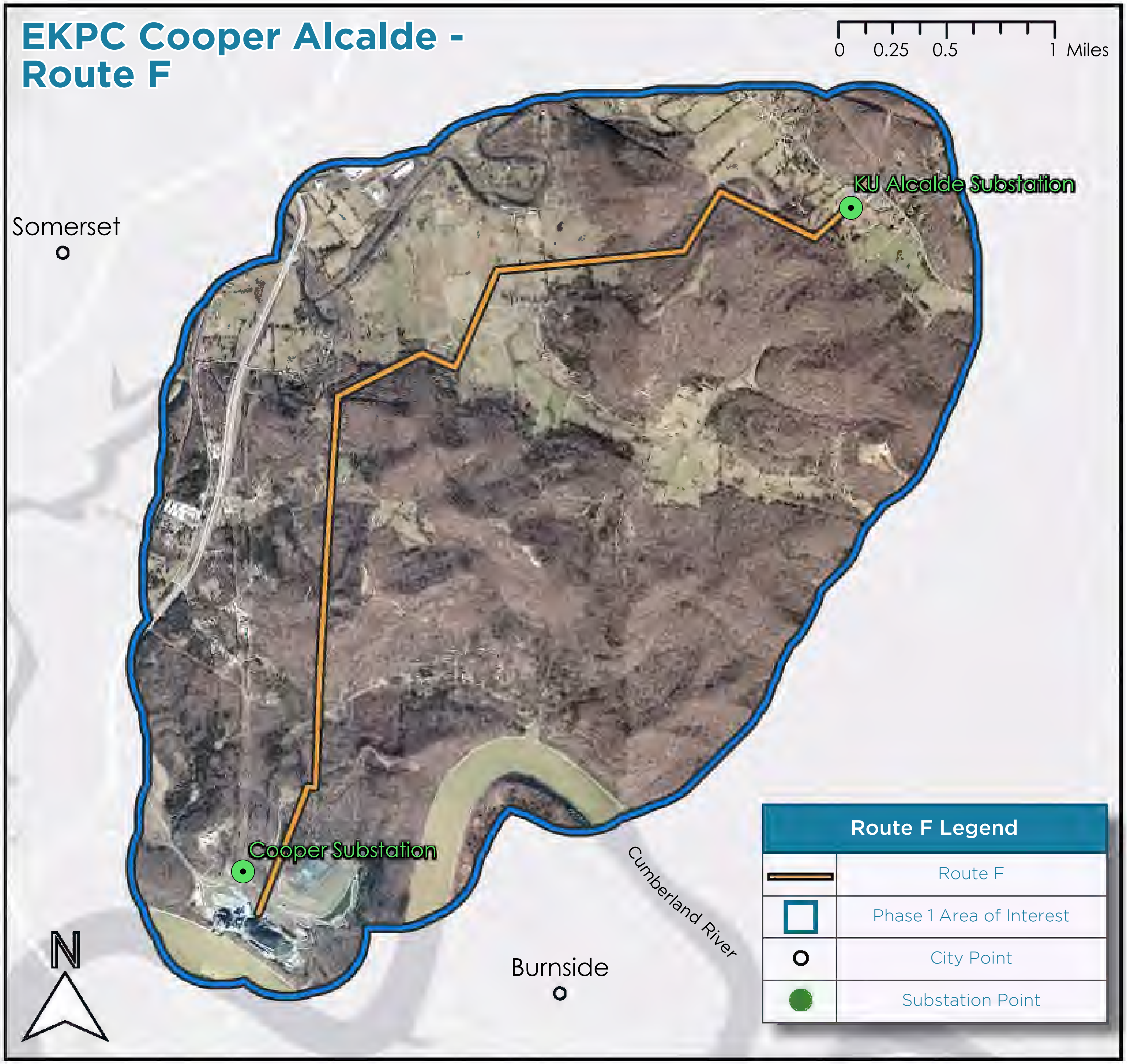
Figure 52: Route E



Route F

Route F runs due north of the Cooper substation for 2.5 miles, roughly paralleling an existing EKPC transmission line, before tracking north-east for 0.42 through primarily forested land before intersecting with an EKPC owned transmission line. At this intersection, Route E then runs east paralleling this transmission line for roughly 0.21 miles, before tracking east and slightly north through a combination of agricultural and forested to connect with the KU Alcalde substation. Overall, this alignment spans 5.50 miles, with 67.88 acres of forest needing to be cleared, 8 streams or rivers needing to be crossed, and 1 residence needing to be relocated within a 150 ft buffer. **Route F is a 5.50 mile double-circuit transmission line.**

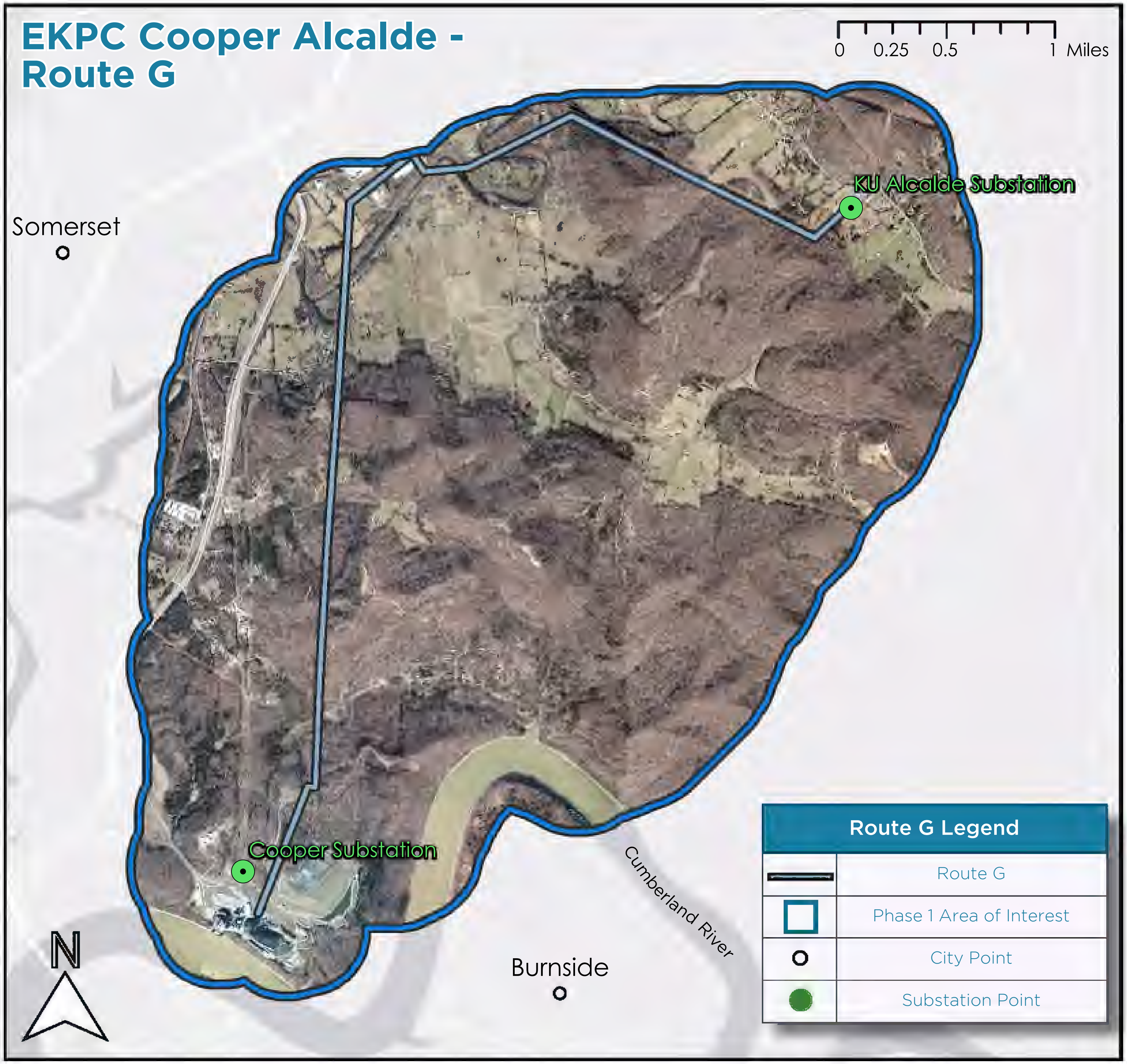
Figure 53: Route F



Route G

Route G runs due north of the Cooper substation for 2.72 miles, roughly paralleling an existing EKPC transmission line, before intersecting with a 161 kV EKPC owned transmission line. At this intersection, Route G parallels this EKPC line running due east for an additional 0.66 miles, then proceeds to run due north-east for an additional 0.37 miles, paralleling an additional EKPC transmission line in the western edge of the project area. After paralleling this line, Route G crosses Pittman Creek in three different areas, then runs through a combination of agricultural and forested land to connect with the KU Alcalde substation to the east. Overall, this alignment spans 6.10 miles, with 78.38 acres of forest needing to be cleared, 8 streams or rivers needing to be crossed, and 1 residence needing to be relocated within a 150 ft buffer. **Route G is a 6.10 mile double-circuit transmission line.**

Figure 54: Route G



Alternate Route Evaluation

Statistics were collected for all 7 Alternate Routes, and subsequently divided into three categories that are similar to the Alternate Corridor perspectives of the Built, Natural, and Engineering layers. These statistics were then normalized and assigned weights based on standardized EPRI weights. Also similar to the Alternate Corridor model, those features or layers not found within the project study area were removed from consideration, and their weight distributed proportionally among the remaining feature layers. The raw statistics for each of the 7 routes are shown below in Table 10. Grayed out cells represent features that are present in the standard model but not present within the project AOI. Appendices B and C of this report documents an internal EKPC decision to decide to eliminate potentially rebuilding a segment of existing EKPC owned transmission line as a scoring metric. As a result of this decision, all values for all alternate routes for the Rebuild Existing Utility metric are 0.These raw statistic features for this project are as follows:

Engineering Perspective:
Length of route centerline in miles
Number of parcels that intersect within the proposed 150’ corridors
Total project cost

Natural Perspective:
GIS calculated acres of forested land cover that intersect within the proposed 150’ corridors
Count of stream/river crossings within the proposed 150’ corridors
GIS calculated acres of floodplain land cover that intersect within the proposed 150’ corridors

Built Perspective:
Count of relocated residences within proposed 150’ corridors
Count of residences within 300’ of proposed 150’ corridors
Count of undesirable parcels (schools, daycares, churches, cemeteries, parks) that intersect the proposed 150’ corridors

The Total Project Cost layer is meant to provide an approximate value for the construction of the project. The generalized cost calculations were assessed by combining several cost related factors. Construction costs were estimated on a per mile basis based on potential double circuit locations of the new transmission line, estimated to cost $1,400,000 per mile based on data from EKPC. Structures were also estimated at each inflection point of all alternate routes. For structures, EKPC provided cost estimates of $350,000 for double circuit transmission lines. In addition, EKPC provided a forest clearing cost of $10,500 per acre of forested land. Other land costs are associated with acquiring easement/ property for the transmission line and were not input into this model. These numbers were provided by EKPC to NV5 in an internal discussion documented in Appendix C. Note that cost data serves as an estimate for EKPC and is not intended to reflect final costs of building the new transmission lines.

The sum of all these values, as they apply to each route, constitutes the “Total Project Cost” component of this phase of the route selection process

Alternate Route Evaluation

Table 10: Alternate Route Evaluation

Data	Raw Stats for Routes						
	Route A	Route B	Route C	Route D	Route E	Route F	Route G
Built							
Relocated Residences (within 150' Corridor)	0	0	0	0	1	1	1
Proximity to Residences (300' buffer)	12	5	5	3	8	9	19
Proposed Development (within 150' Corridor)	0	0	0	0	0	0	0
Proximity to Commercial Buildings (300')	0	0	1	1	1	1	7
Proximity to Industrial Buildings (300')	0	0	0	0	0	0	0
School, Daycare, Church, Cemetery, Park Parcels (within 150' Corridor)	1	0	0	0	0	0	0
NRHP Listed/Eligible Structures or Districts (1500' from edge of ROW)	0	0	0	0	0	0	0
Natural							
Natural Forests (Acres)	74.85	71.64	66.58	71.82	73.09	67.88	78.38
Stream/River Crossings	7	4	7	6	7	8	8
Wetland Areas (Acres)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Floodplain Areas (Acres)	0.00	0.00	0.00	0.00	0.00	0.00	4.45
Engineering							
Length (Miles)	5.48	4.54	5.25	5.15	5.40	5.50	6.10
Miles of Rebuild with Existing Utility	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miles of Co-location with Existing Transmission Line or other major utilities	1.40	0.97	2.07	2.25	3.10	2.92	4.70
Miles of Co-location with Roads	0.46	0.31	0.25	0.24	0.25	0.26	0.88
Number of Parcels	39	26	23	25	26	24	41
Construction Cost Double Circuit	$7,672,000.00	$6,356,000.00	$7,350,000.00	$7,210,000.00	$7,560,000.00	$7,700,000.00	$8,540,000.00
Clearing *$10,500 per Acre*	$785,925.00	$752,220.00	$699,090.00	$754,110.00	$767,445.00	$712,740.00	$822,990.00
Structure Cost Double Circuit *$350,000*	$3,500,000.00	$3,850,000.00	$4,200,000.00	$4,550,000.00	$4,550,000.00	$4,550,000.00	$5,250,000.00
Total Project Costs	**$11,957,925.00**	**$10,958,220.00**	**$12,249,090.00**	**$12,514,110.00**	**$12,877,445.00**	**$12,962,740.00**	**$14,612,990.00**
Construction Cost per Mile Double Circuit	$1,400,000.00	$1,400,000.00	$1,400,000.00	$1,400,000.00	$1,400,000.00	$1,400,000.00	$1,400,000.00
Double Circuit PI Count	10	11	12	13	13	13	15
Double Circuit Mileage	5.48	4.54	5.25	5.15	5.40	5.50	6.10

Alternate Route Criteria and Weights (Model Values)

Table 11: Alternate Route Criteria and Weights (Model Values)

Weights	
Built	
Relocated Residences (within 150' Corridor)	44.3%
Weighted	
Proximity to Residences (300' buffer)	13.1%
Weighted	
Proposed Development (within 150' Corridor)	5.4%
Weighted	
Proximity to Commercial Buildings (300')	3.6%
Weighted	
Proximity to Industrial Buildings (300')	1.8%
Weighted	
School, Daycare, Church, Cemetery, Park Parcels (within 150' Corridor)	16.3%
Weighted	
NRHP Listed/Eligible Structures or Districts (1500' from edge of ROW)	15.5%
Weighted	
TOTAL	100.0%
WEIGHTED TOTAL	
Natural	
Natural Forests (Acres)	9.3%
Weighted	
Stream/River Crossings	38.0%
Weighted	
Wetland Areas (Acres)	40.3%
Weighted	
Floodplain Areas (Acres)	12.4%
Weighted	
TOTAL	100.0%
WEIGHTED TOTAL	
Engineering	
Miles of Rebuild with Existing Utility	65.6%
Weighted	
% Co-location with Existing Transmission Line or other major utilities	19.2%
Weighted	
% Co-location with Existing Roads	7.8%
Weighted	
Total Project Costs	7.4%
Weighted	
TOTAL	100.0%

Alternate Route Criteria and Weights (Project Values)

Table 12: Alternate Route Criteria and Weights (Project Values)

Weights	
Built	
Relocated Residences (within 150' Corridor)	57.3%
Weighted	
Proximity to Residences (300' buffer)	17.0%
Weighted	
Proposed Development (within 150' Corridor)	0.0%
Weighted	
Proximity to Commercial Buildings (300')	4.7%
Weighted	
Proximity to Industrial Buildings (300')	0.0%
Weighted	
School, Daycare, Church, Cemetery, Park Parcels (within 150' Corridor)	21.1%
Weighted	
NRHP Listed/Eligible Structures or Districts (1500' from edge of ROW)	0.0%
Weighted	
TOTAL	100.0%
WEIGHTED TOTAL	
Natural	
Natural Forests (Acres)	15.6%
Weighted	
Stream/River Crossings	63.7%
Weighted	
Wetland Areas (Acres)	0.0%
Weighted	
Floodplain Areas (Acres)	20.8%
Weighted	
TOTAL	100.0%
WEIGHTED TOTAL	
Engineering	
Miles of Rebuild with Existing Utility	0.0%
Weighted	
% Co-location with Existing Transmission Line or other major utilities	55.8%
Weighted	
Miles of Co-location with Existing Roads	22.7%
Weighted	
Total Project Costs	21.5%
Weighted	
TOTAL	100.0%

Raw Statistics and Normalized Statistics

The next step of the analysis is to normalize the raw statistics for the 7 alternate routes. Tables 13 shows raw and normalized statistics for each of these alternate routes. The statistics were normalized (light blue cells), on a scale from zero to one, in order to provide a method of comparison between each of the layers. The values associated with Miles of Co-location with Existing Transmission Line and Miles of Co-location with Roads were inverted since a higher value in this category is seen as desirable.

Figure 55: Church in Project Area (NV5 Field Photo)

Raw Statistics and Normalized Statistics

Table 13: Statistics Table

Data	Raw Stats for Routes						
	Route A	Route B	Route C	Route D	Route E	Route F	Route G
Built							
Relocated Residences (within 150' Corridor)	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Normalized	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Proximity to Residences (within 150' Corridor)	12.00	5.00	5.00	3.00	8.00	9.00	19.00
Normalized	0.56	0.13	0.13	0.00	0.31	0.38	1.00
Proposed Development	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized	-	-	-	-	-	-	-
Proximity to Commercial Buildings (300')	0.00	0.00	1.00	1.00	1.00	1.00	7.00
Normalized	0.00	0.00	0.14	0.14	0.14	0.14	1.00
Proximity to Industrial Buildings (300')	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized	-	-	-	-	-	-	-
School, Daycare, Church, Cemetery, Park Parcels (within 150' Corridor)	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized	1.00	0.00	0.00	0.00	0.00	0.00	0.00
NRHP Listed/Eligible Structures or Districts (1500' from edge of ROW)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized	-	-	-	-	-	-	-
Natural							
Natural Forests (Acres)	74.85	71.64	66.58	71.82	73.09	67.88	78.38
Normalized	0.70	0.43	0.00	0.44	0.55	0.11	1.00
Stream/River Crossings	7.00	4.00	7.00	6.00	7.00	8.00	8.00
Normalized	0.75	0.00	0.75	0.50	0.75	1.00	1.00
Wetland Areas (Acres)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized	-	-	-	-	-	-	-
Floodplain Areas (Acres)	0.00	0.00	0.00	0.00	0.00	0.00	4.45
Normalized	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Engineering							
Length (Miles)	5.48	4.54	5.25	5.15	5.40	5.50	6.10
Normalized	0.60	0.00	0.46	0.39	0.55	0.62	1.00
Miles of Rebuild with Existing Utility	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized	-	-	-	-	-	-	-
Miles of Co-location with Existing Transmission Line or other utilities	1.40	0.97	2.07	2.25	3.10	2.92	4.70
Normalized	0.12	0.00	0.29	0.34	0.57	0.52	1.00
Inverted	0.88	1.00	0.71	0.66	0.43	0.48	0.00
Miles of Co-location with Roads	0.46	0.31	0.25	0.24	0.25	0.26	0.88
Normalized	0.34	0.11	0.02	0.00	0.02	0.03	1.00
Inverted	0.66	0.89	0.98	1.00	0.98	0.97	0.00
Number of Parcels	39.00	26.00	23.00	25.00	26.00	24.00	41.00
Normalized	0.89	0.17	0.00	0.11	0.17	0.06	1.00
Total Project Costs	$11,957,925	$10,958,220	$12,249,090	$12,514,110	$12,877,445	$12,962,740	$14,612,990
Normalized	0.27	0.00	0.35	0.43	0.53	0.55	1.00
SUM of Unweighted Totals	**6.32**	**2.61**	**3.52**	**3.67**	**5.41**	**5.29**	**9.00**
RANK	**6**	**1**	**2**	**3**	**5**	**4**	**7**

Weighted Ranks

Tables 14-17 illustrate the Alternate Route evaluations utilizing data inputs from the Engineering Environment, Natural Environment, Built Environment, and Simple Average, categorized into three sets of tables for each environment with unique weights. The figures show each environment and their weighted values. Like the Alternate Corridors, each perspective has a five times emphasis, or 72%, on the features within that environment. The remaining environments have a weight of 14% each. The Simple Average perspective has an equal amount of weight assigned to each perspective (33.3%). The alternate routes are also ranked in order of their suitability for all three previously mentioned categories, with the lower values being the most preferable. Each of the routes is ranked according to its values with respect to the individual environment being emphasized.

Figure 56: New Building found in Project Area (NV5 Field Photo)

Emphasis on Engineering Environment

Table 14: Emphasis on Engineering Evaluation

Data	Weights	Route A	Route B	Route C	Route D	Route E	Route F	Route G
		Raw Stats for Routes						
Built	**14%**							
Relocated Residences (within 150' Corridor)	57.3%	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Normalized		0.00	0.00	0.00	0.00	0.57	0.57	0.57
Proximity to Residences (300' buffer)	17.0%	0.56	0.13	0.13	0.00	0.31	0.38	1.00
Normalized		0.10	0.02	0.02	0.00	0.05	0.06	0.17
Proposed Development (within 150' Corridor)	0.0%							
Normalized								
Proximity to Commercial Buildings (300')	4.7%	0.00	0.00	0.14	0.14	0.14	0.14	1.00
Normalized		0.00	0.00	0.01	0.01	0.01	0.01	0.05
Proximity to Industrial Buildings (300')	0.0%							
Normalized								
School, Daycare, Church, Cemetery, Park Parcels (within 150' Corridor)	21.1%	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized		0.21	0.00	0.00	0.00	0.00	0.00	0.00
NRHP Listed/Eligible Structures or Districts (1500' from edge of ROW)	0.0%							
Normalized								
TOTAL	100.0%	0.31	0.02	0.03	0.01	0.63	0.64	0.79
WEIGHTED TOTAL		0.043	0.003	0.004	0.001	0.089	0.090	0.110
Natural	**14%**							
Natural Forests (Acres)	15.6%	0.70	0.43	0.00	0.44	0.55	0.11	1.00
Normalized		0.11	0.07	0.00	0.07	0.09	0.02	0.16
Stream/River Crossings	63.7%	0.75	0.00	0.75	0.50	0.75	1.00	1.00
Normalized		0.48	0.00	0.48	0.32	0.48	0.64	0.64
Wetland Areas (Acres)	0.0%							
Normalized								
Floodplain Areas (Acres)	20.8%	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Normalized		0.00	0.00	0.00	0.00	0.00	0.00	0.21
TOTAL	100.0%	0.59	0.07	0.48	0.39	0.56	0.65	1.00
WEIGHTED TOTAL		0.082	0.009	0.067	0.054	0.079	0.092	0.140
Engineering	**72%**							
Miles of Rebuild with Existing Utility	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miles of Co-location with Existing Transmission Line or other utilities	55.8%	0.88	1.00	0.71	0.66	0.43	0.48	0.00
Normalized		0.49	0.56	0.39	0.37	0.24	0.27	0.00
Miles of Co-location with Roads	22.7%	0.66	0.89	0.98	1.00	0.98	0.97	0.00
Normalized		0.15	0.20	0.22	0.23	0.22	0.22	0.00
Total Project Costs	21.5%	0.27	0.00	0.35	0.43	0.53	0.55	1.00
Normalized		0.06	0.00	0.08	0.09	0.11	0.12	0.22
TOTAL	100.0%	0.70	0.76	0.69	0.68	0.58	0.60	0.22
WEIGHTED TOTAL		0.505	0.547	0.499	0.493	0.414	0.435	0.155
SUM of Weighted Totals		**0.630**	**0.560**	**0.569**	**0.548**	**0.582**	**0.616**	**0.405**
RANK		**7**	**3**	**4**	**2**	**5**	**6**	**1**

Emphasis on Natural Environment

Table 15: Emphasis on Natural Evaluation

Data	Weights	Route A	Route B	Route C	Route D	Route E	Route F	Route G
Built	**14%**							
Relocated Residences (within 150' Corridor)	57.3%	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Normalized		0.00	0.00	0.00	0.00	0.57	0.57	0.57
Proximity to Residences (300' buffer)	17.0%	0.56	0.13	0.13	0.00	0.31	0.38	1.00
Normalized		0.10	0.02	0.02	0.00	0.05	0.06	0.17
Proposed Development (within 150' Corridor)	0.0%							
Normalized								
Proximity to Commercial Buildings (300')	4.7%	0.00	0.00	0.14	0.14	0.14	0.14	1.00
Normalized		0.00	0.00	0.01	0.01	0.01	0.01	0.05
Proximity to Industrial Buildings (300')	0.0%							
Normalized								
School, Daycare, Church, Cemetery, Park Parcels (within 150' Corridor)	21.1%	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized		0.21	0.00	0.00	0.00	0.00	0.00	0.00
NRHP Listed/Eligible Structures or Districts (1500' from edge of ROW)	0.0%							
Normalized								
TOTAL	100.0%	0.31	0.02	0.03	0.01	0.63	0.64	0.79
WEIGHTED TOTAL		0.043	0.003	0.004	0.001	0.089	0.090	0.110
Natural	**72%**							
Natural Forests (Acres)	15.6%	0.70	0.43	0.00	0.44	0.55	0.11	1.00
Normalized		0.11	0.07	0.00	0.07	0.09	0.02	0.16
Stream/River Crossings	63.7%	0.75	0.00	0.75	0.50	0.75	1.00	1.00
Normalized		0.48	0.00	0.48	0.32	0.48	0.64	0.64
Wetland Areas (Acres)	0.0%							
Normalized								
Floodplain Areas (Acres)	20.8%	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Normalized		0.00	0.00	0.00	0.00	0.00	0.00	0.21
TOTAL	100.0%	0.59	0.07	0.48	0.39	0.56	0.65	1.00
WEIGHTED TOTAL		0.422	0.048	0.344	0.279	0.406	0.471	0.720
Engineering	**14%**							
Miles of Rebuild with Existing Utility	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miles of Co-location with Existing Transmission Line or other utilities	55.8%	0.88	1.00	0.71	0.66	0.43	0.48	0.00
Normalized		0.49	0.56	0.39	0.37	0.24	0.27	0.00
Miles of Co-location with Roads	22.7%	0.66	0.89	0.98	1.00	0.98	0.97	0.00
Normalized		0.15	0.20	0.22	0.23	0.22	0.22	0.00
Total Project Costs	21.5%	0.27	0.00	0.35	0.43	0.53	0.55	1.00
Normalized		0.06	0.00	0.08	0.09	0.11	0.12	0.22
TOTAL	100.0%	0.70	0.76	0.69	0.68	0.58	0.60	0.22
WEIGHTED TOTAL		0.098	0.106	0.097	0.096	0.081	0.085	0.030
SUM of Weighted Totals		**0.563**	**0.157**	**0.445**	**0.376**	**0.575**	**0.645**	**0.861**
RANK		**4**	**1**	**3**	**2**	**5**	**6**	**7**

Emphasis on Built Environment

Table 16: Emphasis on Built Evaluation

Data		Raw Stats for Routes						
	Weights	Route A	Route B	Route C	Route D	Route E	Route F	Route G
Built	**72%**							
Relocated Residences (within 150' Corridor)	57.3%	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Normalized		0.00	0.00	0.00	0.00	0.57	0.57	0.57
Proximity to Residences (300' buffer)	17.0%	0.56	0.13	0.13	0.00	0.31	0.38	1.00
Normalized		0.10	0.02	0.02	0.00	0.05	0.06	0.17
Proposed Development (within 150' Corridor)	0.0%							
Normalized								
Proximity to Commercial Buildings (300')	4.7%	0.00	0.00	0.14	0.14	0.14	0.14	1.00
Normalized		0.00	0.00	0.01	0.01	0.01	0.01	0.05
Proximity to Industrial Buildings (300')	0.0%							
Normalized								
School, Daycare, Church, Cemetery, Park Parcels (within 150' Corridor)	21.1%	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized		0.21	0.00	0.00	0.00	0.00	0.00	0.00
NRHP Listed/Eligible Structures or Districts (1500' from edge of ROW)	0.0%							
Normalized								
TOTAL	100.0%	0.31	0.02	0.03	0.01	0.63	0.64	0.79
WEIGHTED TOTAL		0.220	0.015	0.020	0.005	0.456	0.463	0.568
Natural	**14%**							
Natural Forests (Acres)	15.6%	0.70	0.43	0.00	0.44	0.55	0.11	1.00
Normalized		0.11	0.07	0.00	0.07	0.09	0.02	0.16
Stream/River Crossings	63.7%	0.75	0.00	0.75	0.50	0.75	1.00	1.00
Normalized		0.48	0.00	0.48	0.32	0.48	0.64	0.64
Wetland Areas (Acres)	0.0%							
Normalized								
Floodplain Areas (Acres)	20.8%	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Normalized		0.00	0.00	0.00	0.00	0.00	0.00	0.21
TOTAL	100.0%	0.59	0.07	0.48	0.39	0.56	0.65	1.00
WEIGHTED TOTAL		0.082	0.009	0.067	0.054	0.079	0.092	0.140
Engineering	**14%**							
Miles of Rebuild with Existing Utility	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miles of Co-location with Existing Transmission Line or other utilities	55.8%	0.88	1.00	0.71	0.66	0.43	0.48	0.00
Normalized		0.49	0.56	0.39	0.37	0.24	0.27	0.00
Miles of Co-location with Roads	22.7%	0.66	0.89	0.98	1.00	0.98	0.97	0.00
Normalized		0.15	0.20	0.22	0.23	0.22	0.22	0.00
Total Project Costs	21.5%	0.27	0.00	0.35	0.43	0.53	0.55	1.00
Normalized		0.06	0.00	0.08	0.09	0.11	0.12	0.22
TOTAL	100.0%	0.70	0.76	0.69	0.68	0.58	0.60	0.22
WEIGHTED TOTAL		0.098	0.106	0.097	0.096	0.081	0.085	0.030
SUM of Weighted Totals		**0.401**	**0.131**	**0.184**	**0.155**	**0.615**	**0.639**	**0.738**
RANK		**4**	**1**	**3**	**2**	**5**	**6**	**7**

Equal Consideration of Categories (Simple Average)

Table 17: Equal Emphasis Evaluation

Data		Raw Stats for Routes						
	Weights	Route A	Route B	Route C	Route D	Route E	Route F	Route G
Built	**33%**							
Relocated Residences (within 150' Corridor)	57.3%	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Normalized		0.00	0.00	0.00	0.00	0.57	0.57	0.57
Proximity to Residences (300' buffer)	17.0%	0.56	0.13	0.13	0.00	0.31	0.38	1.00
Normalized		0.10	0.02	0.02	0.00	0.05	0.06	0.17
Proposed Development (within 150' Corridor)	0.0%							
Normalized								
Proximity to Commercial Buildings (300')	4.7%	0.00	0.00	0.14	0.14	0.14	0.14	1.00
Normalized		0.00	0.00	0.01	0.01	0.01	0.01	0.05
Proximity to Industrial Buildings (300')	0.0%							
Normalized								
School, Daycare, Church, Cemetery, Park Parcels (within 150' Corridor)	21.1%	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized		0.21	0.00	0.00	0.00	0.00	0.00	0.00
NRHP Listed/Eligible Structures or Districts (1500' from edge of ROW)	0.0%							
Normalized								
TOTAL	100.0%	0.31	0.02	0.03	0.01	0.63	0.64	0.79
WEIGHTED TOTAL		0.102	0.007	0.009	0.002	0.211	0.214	0.263
Natural	**33%**							
Natural Forests (Acres)	15.6%	0.70	0.43	0.00	0.44	0.55	0.11	1.00
Normalized		0.11	0.07	0.00	0.07	0.09	0.02	0.16
Stream/River Crossings	63.7%	0.75	0.00	0.75	0.50	0.75	1.00	1.00
Normalized		0.48	0.00	0.48	0.32	0.48	0.64	0.64
Wetland Areas (Acres)	0.0%							
Normalized								
Floodplain Areas (Acres)	20.8%	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Normalized		0.00	0.00	0.00	0.00	0.00	0.00	0.21
TOTAL	100.0%	0.59	0.07	0.48	0.39	0.56	0.65	1.00
WEIGHTED TOTAL		0.195	0.022	0.159	0.129	0.188	0.218	0.333
Engineering	**33%**							
Miles of Rebuild with Existing Utility	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Normalized		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Miles of Co-location with Existing Transmission Line or other utilities	55.8%	0.88	1.00	0.71	0.66	0.43	0.48	0.00
Normalized		0.49	0.56	0.39	0.37	0.24	0.27	0.00
Miles of Co-location with Roads	22.7%	0.66	0.89	0.98	1.00	0.98	0.97	0.00
Normalized		0.15	0.20	0.22	0.23	0.22	0.22	0.00
Total Project Costs	21.5%	0.27	0.00	0.35	0.43	0.53	0.55	1.00
Normalized		0.06	0.00	0.08	0.09	0.11	0.12	0.22
TOTAL	100.0%	0.70	0.76	0.69	0.68	0.58	0.60	0.22
WEIGHTED TOTAL		0.234	0.253	0.231	0.228	0.192	0.201	0.072
SUM of Weighted Totals		**0.531**	**0.282**	**0.399**	**0.359**	**0.590**	**0.633**	**0.667**
RANK		**4**	**1**	**3**	**2**	**5**	**6**	**7**

Overall Scores of Each Route

Scores	Route A	Route B	Route C	Route D	Route E	Route F	Route G
Engineering	0.630	0.560	0.569	0.548	0.582	0.616	0.405
Natural	0.563	0.157	0.445	0.376	0.575	0.643	0.861
Built	0.401	0.131	0.184	0.155	0.615	0.639	0.738
Simple	0.531	0.282	0.399	0.359	0.590	0.633	0.667
Rank	**Route A**	**Route B**	**Route C**	**Route D**	**Route E**	**Route F**	**Route G**
Engineering	7	3	4	2	5	6	1
Natural	4	1	3	2	5	6	7
Built	4	1	3	2	5	6	7
Simple	4	1	3	2	5	6	7

Table 18: Overall Scores of Each Route

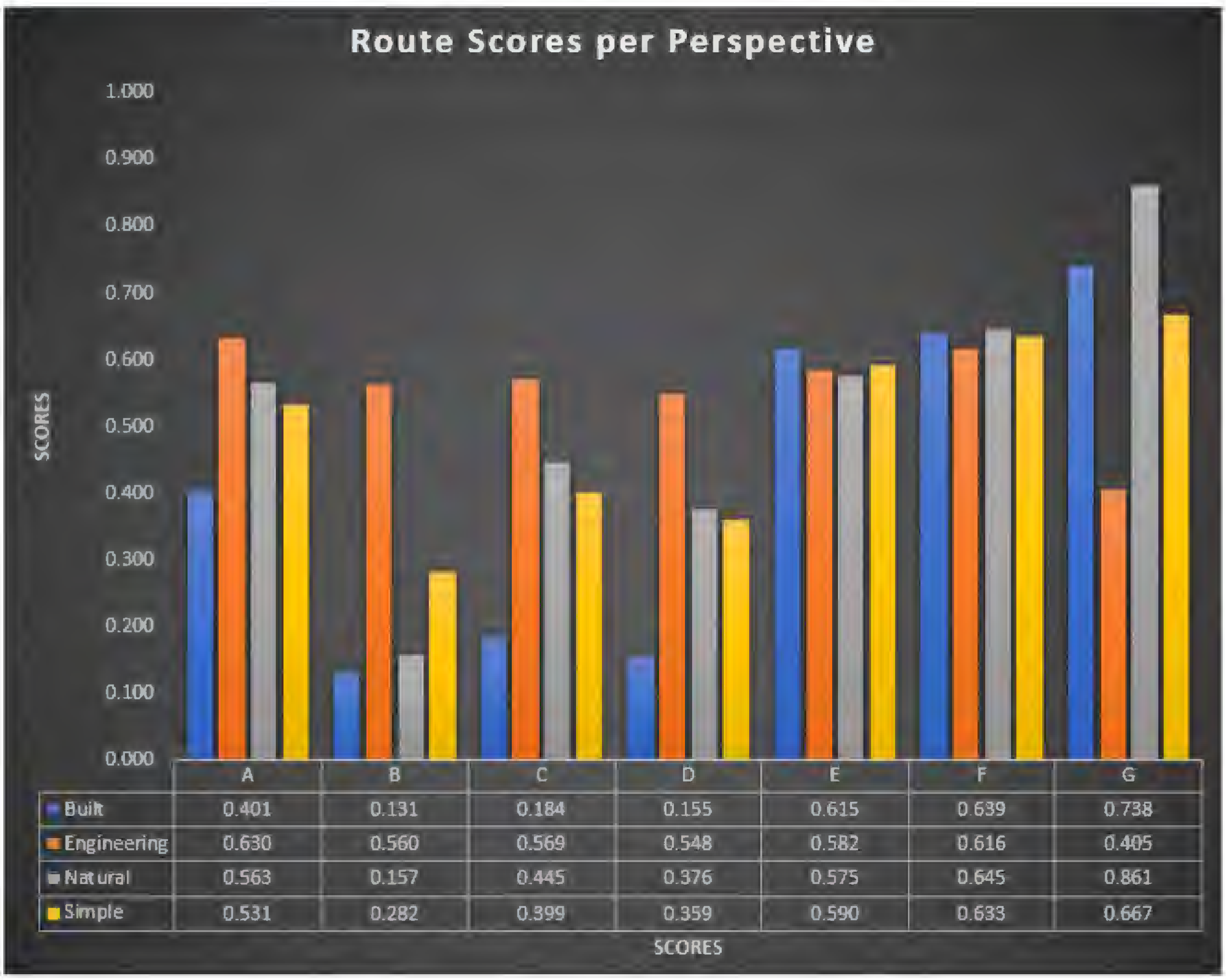
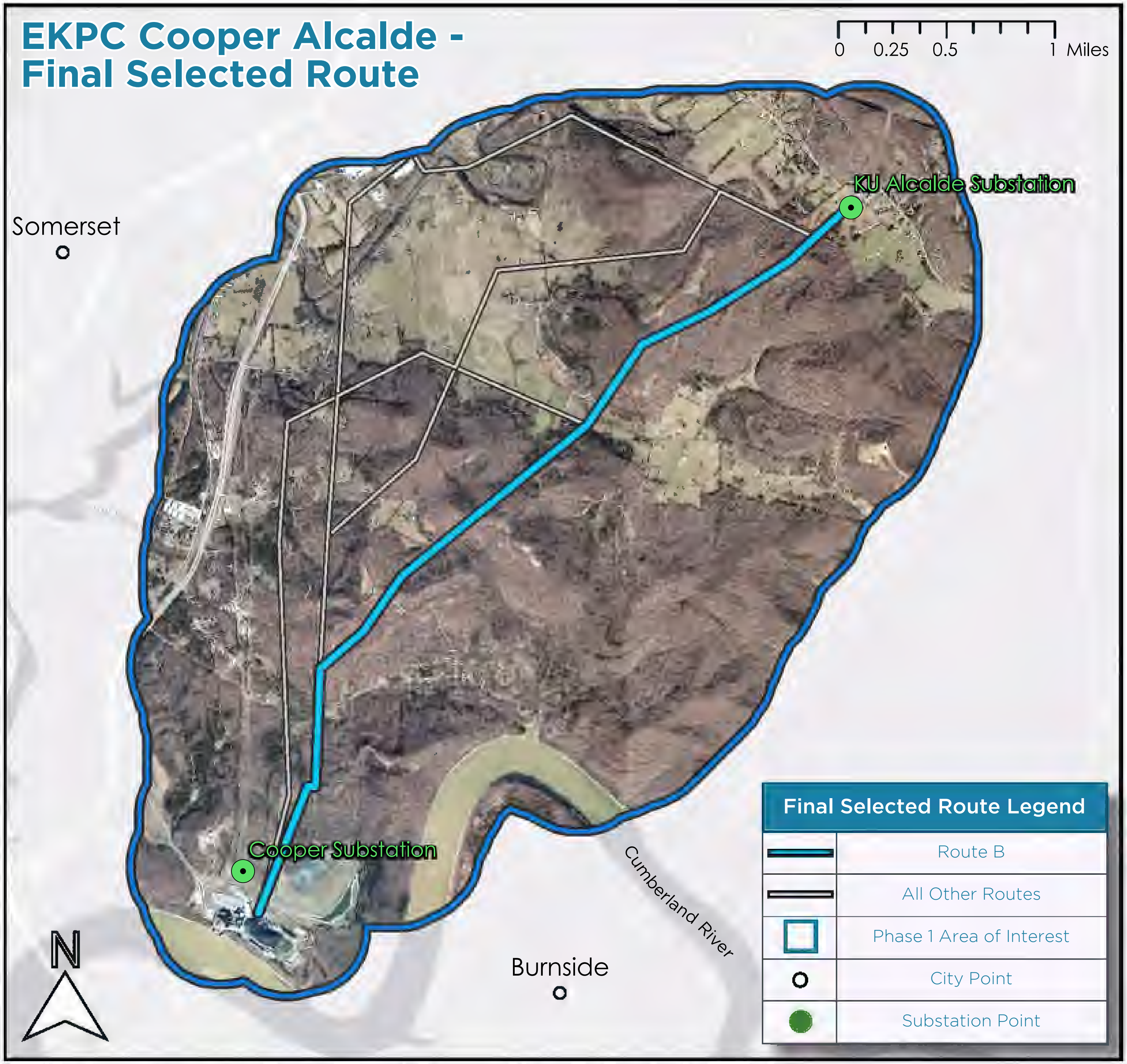


Table 19: Route Scores per Perspective Bar Graph

Route Selection

On June 27th, 2025, EKPC met and determined that the routing study conducted by NV5 has objectively selected the Route B as the best route for the new double-circuit 161 kV transmission line from the EKPC owned Cooper substation to the KU owned Alcalde substation, given that it is the overall best scoring route, and is the best scoring route in the built, natural, and simple environments of the EPRI model. Due to this conclusion, EKPC decided that expert judgment was not needed to justify the selection of Route B. See the internal EKPC memo in Appendix A for more detail on the selection of Route B. See the images below for a visualization of Route B in the project study area, overlaid with all other potential routes.



Appendix A: EKPC Route Selection Memo

Memo to File:

Cooper Station – KU Alcalde 161kV Greenfield Routing
NV5 Siting Report Update
02/03/2026

Authored/Approved by: Lucas Spencer

- Please refer to Appendix C. An update to the "Memo to File: Rebuild Weighting Discussion", dated 10/09/2025 was required due to corrections made to NV5's routing study. This memo will replace the original Appendix A. The original Appendix A has been retained in the report to preserve the historical narrative of this siting study and has been added to Appendix C.

- On 06/09/2025, EKPC met to determine what the potential expert judgment scoring criteria and weightings would be if we needed to utilize expert judgement.

- On 06/27/2025, after seeing the scoring sheets, EKPC's team of experts agreed that the routing study has objectively selected the best route as Route B given that it's the best scoring route in the Built/Natural and Simple Environments.

- Although Route G was the best scoring route in the engineering environment, Route G was the poorest scoring route in all other environments. Route B ranked 3rd in the Engineering Environment with a score of 0.560, which is very comparable to the 2nd best scoring route (Route D). The change in route scoring resulted from cost corrections across all routes that removed the single-circuit component from the scoring methodology. This adjustment caused Route B to rise to the 3rd best scoring route within the Engineering Environment and caused Route C to fall to 4th.

- Consistent with the correspondence contained in Appendix C, EKPC relayed to NV5 the potential scope change to a double circuit transmission line and NV5 made appropriate weighting adjustments that included the corrections made to the siting study addressing route descriptions referencing single-circuit transmission line construction. All references were revised to reflect the required double-circuit construction of the Cooper-Alcalde transmission line. Corrections made within the Engineering perspective improved the scoring of selected Route B, making it the 3rd best scoring route in the Engineering Environment. Route B remained clearly the highest-scoring route within the Natural, Built, and Simple environments. These results further support Route B as the best and most appropriate route for the proposed double-circuit transmission line.

Appendix B: EKPC Rebuild Weighting Memo

Memo to File:

Cooper Station – KU Alcalde 161kV Greenfield Routing
Rebuild Weighting Discussion
10/09/2025

Attendees:
Lucas Spencer
Ronnie Terrill
Corey Kirkpatrick
Josh Young
Patrick Bischoff
Wes Cline

- On 06/27/2025, EKPC requested NV5 to run scoring summaries for an adjustment in features eligible for co-location. There was a scope shift needed to construct this line as double circuit from EKPC Cooper to KU Alcalde, this need was driven by a transmission planning need.

- This modification meant that some of the features originally identified for co-location were no longer eligible for it. If we collocated with any existing transmission lines it would cause need for triple circuit structures, which EKPC avoids for new construction because of the inherent reliability risk.

Appendix C: EKPC and NV5 Rebuild Weighting Discussion

Memo to File:

Cooper Station – KU Alcalde 161kV Greenfield Routing
Rebuild Weighting Discussion
10/09/2025

Attendees:
Lucas Spencer
Ronnie Terrill
Corey Kirkpatrick
Josh Young
Patrick Bischoff
Wes Cline

- On 06/09/2025, EKPC met to determine what the potential expert judgment scoring criteria's and weightings would be if we needed to utilize expert judgement.

- After seeing the scoring sheets, EKPC's team of experts agreed that the routing study has objectively selected the best route as Route B given that it's the best scoring route in the Built/Natural and Simple Environments.

- Although Route G was the best scoring route in the engineering environment, Route G was the poorest scoring route in all other environments. Route B scored 4th best in the Engineering environment with a score of 0.560, which is very similar to the 2nd and 3rd best scoring routes (Route C & Route D respectively).

Appendix C: EKPC and NV5 Rebuild Weighting Discussion

Outlook

Re: Cooper - Alcalde Project Schedule

From Lucas Spencer <Lucas.Spencer@ekpc.coop>
Date Fri 6/27/2025 1:22 PM
To Edelina Harmon <Edelina.Harmon@nv5.com>
Cc Patrick Bischoff <Patrick.Bischoff@ekpc.coop>; Wes Cline <wes.cline@ekpc.coop>; Phin Hanson <Phin.Hanson@nv5.com>; Michael DuCharme <Michael.DuCharme@nv5.com>; Priscilla Montalto <Priscilla.Montalto@nv5.com>

Thank you.

I'll be in touch on the memo next week.

Thanks,
Lucas Spencer, PE
Senior Engineer, Project Management
East Kentucky Power Cooperative
Office: (859) 745-9383
Mobile: (859) 771-5394

On Jun 27, 2025, at 2:12 PM, Edelina Harmon <Edelina.Harmon@nv5.com> wrote:

CAUTION: This email originated from outside of EKPC. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Lucas,

Yes, not a problem. We have attached a Version 5 of the scoring sheet, where 'Miles of rebuild with existing utility' is set to 0 for all routes, and the 'Miles of colocation with existing utility' is updated to include the EKPC east to west line as favorable for colocation.

The ranks did change, largely due to the omission of rebuild with existing utility, which was weighted as highly favorable. This caused the weights to be redistributed, putting colocation with existing utility as highly favorable.

Let us know if you have any questions or would like to explore further scenarios.

Thank you,

Edelina Harmon | Technical Specialist | NV5<https://www.quantumspatial.com/>

421 SW 6th Ave, Suite 800 | Portland, OR 97204

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From: Lucas Spencer <Lucas.Spencer@ekpc.coop>
Sent: Friday, June 27, 2025 8:56 AM
To: Edelina Harmon <Edelina.Harmon@nv5.com>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop>; Wes Cline <wes.cline@ekpc.coop>
Subject: Re: Cooper - Alcalde Project Schedule

Edelina,

Can you do me a favor and rerun some of the route scoring with looking at EKPC's East to West line as a parallel and not a rebuild (good) and let me know if the scores change any because of that? I don't want it to be considered as a rebuild bad, I just want it to be seen as favorable for parallel/co-location.

There is a potential for a scope change on this project for EKPC's need, and I want to see if this will change the routes appreciably.

Can you forward, CC others as needed from NV5 please?

Thanks,
Lucas Spencer, PE
Senior Engineer, Project Management
East Kentucky Power Cooperative
Office: (859) 745-9383
Mobile: (859) 771-5394

On Jun 20, 2025, at 12:19 PM, Edelina Harmon <Edelina.Harmon@nv5.com> wrote:

CAUTION: This email originated from outside of EKPC. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Lucas,

That sounds good, we will be on the lookout for the memo.

Thank you!

Get Outlook for iOS<https://aka.ms/o0ukef>

From: Lucas Spencer <Lucas.Spencer@ekpc.coop>
Sent: Thursday, June 19, 2025 3:16:07 PM
To: Edelina Harmon <Edelina.Harmon@nv5.com>; Phin Hanson <Phin.Hanson@nv5.com>; Priscilla Montalto <Priscilla.Montalto@nv5.com>; Michael DuCharme <Michael.DuCharme@nv5.com>

Appendix C: EKPC and NV5 Rebuild Weighting Discussion

Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop>; Ronnie Terrill <ronnie.terrill@ekpc.coop>; Corey Kirkpatrick <corey.kirkpatrick@ekpc.coop>; Jake Dawn <jake.dawn@ekpc.coop>; Chris Carpenter <Chris.Carpenter@ekpc.coop>; Butch McCoy <butch.mccoy@ekpc.coop>; Josh Young <josh.young@ekpc.coop>; Wes Cline <wes.cline@ekpc.coop>; Mitchell Mosher <mitchell.mosher@ekpc.coop>
Subject: RE: Cooper - Alcalde Project Schedule

Thanks Edelina,

I will have a memo over to you by Thursday of next week regarding expert judgement. EKPC's position is that route D is the best route as the methodology has suggested. The expert judgement will consist of a memo articulating EKPC's stance that the routing methodology has adequately scored the routes, and as such there is no need to utilize the added expert judgement criteria.

I will want this memo captured as an appendix to the routing study as well.

Thanks,

Lucas

From: Edelina Harmon <Edelina.Harmon@nv5.com>
Sent: Thursday, June 19, 2025 3:52 PM
To: Lucas Spencer <Lucas.Spencer@ekpc.coop>; Phin Hanson <Phin.Hanson@nv5.com>; Priscilla Montalto <Priscilla.Montalto@nv5.com>; Michael DuCharme <Michael.DuCharme@nv5.com>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop>; Ronnie Terrill <ronnie.terrill@ekpc.coop>; Corey Kirkpatrick <corey.kirkpatrick@ekpc.coop>; Jake Dawn <jake.dawn@ekpc.coop>; Chris Carpenter <Chris.Carpenter@ekpc.coop>; Butch McCoy <butch.mccoy@ekpc.coop>; Josh Young <josh.young@ekpc.coop>; Wes Cline <wes.cline@ekpc.coop>
Subject: Re: Cooper - Alcalde Project Schedule

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Hi Lucas,

Thank you for bringing this to our attention. It appears that the forest value discrepancy on Route B came from a copy error on that version of the sheet when we switched from square to linear miles. Our apologies on this oversight. We have updated the sheet with the value of acres of forest within each ROW, using $10,500 as the multiplier. It looks like this did not change the top 3 ranked routes. It did switch the rank of routes #4 and #5, and routes #6 and #7 remained the same.

Please see the attached "EKPC_Cooper_KU_Alcalde_RouteScoring_v4.xlsx" and let us know if you have any other questions.

Thank you,

Edelina Harmon | Technical Specialist | NV5<https://www.quantumspatial.com/>

421 SW 6th Ave, Suite 800 | Portland, OR 97204

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From: Lucas Spencer <Lucas.Spencer@ekpc.coop>
Sent: Thursday, June 19, 2025 11:07 AM
To: Edelina Harmon <Edelina.Harmon@nv5.com>; Phin Hanson <Phin.Hanson@nv5.com>; Priscilla Montalto <Priscilla.Montalto@nv5.com>; Michael DuCharme <Michael.DuCharme@nv5.com>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop>; Ronnie Terrill <ronnie.terrill@ekpc.coop>; Corey Kirkpatrick <corey.kirkpatrick@ekpc.coop>; Jake Dawn <jake.dawn@ekpc.coop>; Chris Carpenter <Chris.Carpenter@ekpc.coop>; Butch McCoy <butch.mccoy@ekpc.coop>; Josh Young <josh.young@ekpc.coop>; Wes Cline <wes.cline@ekpc.coop>
Subject: RE: Cooper - Alcalde Project Schedule

Edelina,

We met to discuss the scoring internally today and had a couple of questions. In the snip below, we're having a hard time understanding the disparity between Routes B and the other routes for the natural forested land cover. While I could believe that it's the lowest, it feels like its skewed in a way that doesn't make sense by looking at the routes. Qualitatively, the land cover looks very very similar for all of the routes.

Also, lets convert back to acreage for the natural forest cover and for the ROW clearing. I think it would clean this up, apologies for the confusion on this item. ROW Clearing per acre should be assumed as ~$10,500 per acre.

Please advise if you have any questions on this. My cell number is in the signature line below if you'd like to discuss on a call or if we need to set up a brief call I can arrange that as well.

[image003.png]

Thanks,

Lucas Spencer, PE

Senior Engineer – Project Management

East Kentucky Power Co-Op

Work: 859-745-9383

Cell: 859-771-5394

[image004.png]

From: Edelina Harmon <Edelina.Harmon@nv5.com>
Sent: Wednesday, June 18, 2025 11:44 AM
To: Lucas Spencer <Lucas.Spencer@ekpc.coop>; Phin Hanson <Phin.Hanson@nv5.com>; Priscilla Montalto <Priscilla.Montalto@nv5.com>; Michael DuCharme <Michael.DuCharme@nv5.com>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop>
Subject: Re: Cooper - Alcalde Project Schedule

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Hi Lucas,

Appendix C: EKPC and NV5 Rebuild Weighting Discussion

Thank you for the clarification. We went ahead and updated the numbers using the linear mileage for clearing cost and have attached the new spreadsheet here. Overall the top 3 ranked routes remain the same. We can discuss further at our meeting coming up shortly.

Thank you,

Edelina Harmon | Technical Specialist | NV5<https://www.quantumspatial.com/>

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From: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>
Sent: Wednesday, June 18, 2025 8:09 AM
To: Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>; Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>
Subject: RE: Cooper - Alcalde Project Schedule

Thanks Phin,

The only item that I see as problematic is for the ROW clearing costs. When I said 150k/mile, it was per linear mile of ROW, not square mile. Other than that, these look correct.

Thanks,

Lucas

From: Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Sent: Wednesday, June 18, 2025 11:01 AM

To: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>; Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>
Subject: RE: Cooper - Alcalde Project Schedule

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Hi Lucas,

Please see the attached spreadsheet for our route scoring results.

Best,

Phin Hanson

From: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>
Sent: Wednesday, June 18, 2025 6:40 AM
To: Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>; Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper - Alcalde Project Schedule

I realize my previous e-mail may have been confusing. I don't have the ability to go beyond our proposed meeting time in the event that its necessary from a discussion standpoint. Which is why I'd like to see the scores early.

From: Lucas Spencer
Sent: Wednesday, June 18, 2025 9:38 AM
To: 'Edelina Harmon' <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>; Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme

<Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper - Alcalde Project Schedule

Do you think you will have the opportunity to send over the route scoring summary prior to our meeting? I'm going to have a hardstop at 11:30 but would like to see the routes beforehand to come up with questions prior.

From: Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Sent: Tuesday, June 17, 2025 4:53 PM
To: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>; Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: Re: Cooper - Alcalde Project Schedule

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That works for us, thank you!

Edelina Harmon | Technical Specialist | NV5<https://www.quantumspatial.com/>

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From: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>
Sent: Tuesday, June 17, 2025 1:06 PM
To: Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>; Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>

Appendix C: EKPC and NV5 Rebuild Weighting Discussion

Subject: RE: Cooper - Alcalde Project Schedule

I'll get something on the calendar. I put it on there for 9 AM PST. If I messed up the time difference please let me know.

Thanks,

Lucas

From: Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Sent: Tuesday, June 17, 2025 3:47 PM
To: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>; Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: Re: Cooper - Alcalde Project Schedule

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Hi Lucas,

Thank you for the information, I believe that all makes sense. We should have the scored routes available for review by tomorrow, the 18th. Do you have availability to meet and go over them tomorrow? That would give us a couple days of buffer time in case we need to incorporate any new feedback.

We have availability 9-10am, 11:30-1pm and 2-2:30pm (pacific standard time).

Let us know if any of these work for you, otherwise we can meet Thursday or Friday.

Thank you,

Edelina Harmon | Technical Specialist | NV5<https://www.quantumspatial.com/>

Appendix C: EKPC and NV5 Rebuild Weighting Discussion

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From: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>
Sent: Tuesday, June 17, 2025 5:52 AM
To: Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>; Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper - Alcalde Project Schedule

Hi Edelina,

There are two construction costs per mile, I didn’t previously articulate this because I know it doesn’t change the routing study.

EKPC had a slight scope modification that will need to captured in the report. It will not change the span lengths, ROW width or anything actionable on the routing study, but will be important for clear communication later on. I will end a memo over discussing this scope change that I’d like included as an appendix in the routing study.

EKPC realized that given the other work in the area, it was prudent to build Cooper-Alcalde as double circuit up to the point where it crosses another EKPC transmission line. Then when it pulled off, it would be built as single circuit. There is one route that we sent over with more col-location than others, where it would be double circuited up until the point it intersects the existing 161kV line, then it would continue north as single ciruit until it gets to an existing EKPC 69kV line, where it would be built as Double circuit again. If you’d like to do a brief teams call later today to discuss, that won’t be a problem, so just let me know. I want to make sure you guys understand what we’re doing here.

My experience is that normally we give you a per mile cost for the steel poles, in this instance it’s baked into the total cost per mile. These numbers are based on averages that EKPC has seen.

Every PI or angle, should be considered a self-supporting structure. Self supporting structure adders for the DBL CKT section would be 350k. The single circuit angles should utilize a cost adder of $200k.

The cost of DBL Circuit construction plus material per mile is $1.4M, Cost of ROW clearing per mile of vegetation is ~150k.

Cost of Single Circuit construction per mile is ~1M per mile. ROW Clearing cost stays the same because we would use the same ROW for either set up.

Thanks,

Lucas

From: Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Sent: Friday, June 13, 2025 7:00 PM
To: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>; Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: Re: Cooper - Alcalde Project Schedule

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Hi Lucas,

Thank you for sending these over. We will consider them as unique routes and proceed to score them over the next few days.

Would you be able to provide us with numbers to use for Cost Per Mile, Cost Per Structure and Vegetation Clearing Cost?

Appendix C: EKPC and NV5 Rebuild Weighting Discussion

Thank you,

Edelina Harmon | Technical Specialist | NV5<https://www.quantumspatial.com/>

421 SW 6th Ave, Suite 800 | Portland, OR 97204

From: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>
Sent: Friday, June 13, 2025 7:37 AM
To: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper - Alcalde Project Schedule

See attached. All of these routes should be viewed as unique routes for scoring and not segments.

Thanks!

Lucas

From: Lucas Spencer
Sent: Friday, June 13, 2025 8:19 AM
To: 'Priscilla Montalto' <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper - Alcalde Project Schedule

We will have them sent over to you by this afternoon today at the latest.

We have a meeting to review our routes this morning and we'll cull routes prior to sending them to you.

From: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>
Sent: Thursday, June 12, 2025 12:05 PM
To: Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>; Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper - Alcalde Project Schedule

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Hi Lucas,

Just checking in to see if you have updated routes available to send to us. If we can get them today or tomorrow, we should be able to meet next week to present the scores.

Thanks!

Priscilla Montalto |Associate Project Manager | NV5 Geospatial<https://www.quantumspatial.com/>

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From: Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>

Appendix C: EKPC and NV5 Rebuild Weighting Discussion

Sent: Tuesday, June 3, 2025 6:18 PM
To: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: Re: Cooper - Alcalde Project Schedule

Hi Lucas,

Attached are the top 5% and top 3% shapefiles and kmzs of the alternate corridors and Phase 2 AOI.

Please let us know if you have any questions.

Thank you,

Edelina Harmon | Technical Specialist | NV5<https://www.quantumspatial.com/>

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From: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>
Sent: Monday, June 2, 2025 10:57 AM
To: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper - Alcalde Project Schedule

Hi Lucas,

I'll send you an invite for 3:30 EST on Tuesday.

Thanks!

Priscilla Montalto |Associate Project Manager | NV5 Geospatial<https://www.quantumspatial.com/>

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From: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>
Sent: Monday, June 2, 2025 1:43 PM
To: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper - Alcalde Project Schedule

Tuesday at 3:30, Wednesday from Noon-4:00 PM, Thursday from 8-9AM, 10:30-1:00, 2:00-3:00.

I should be the only that has to be on the call from EKPC, and can disseminate information accordingly on our end.

All times are in EST.

From: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>

Appendix C: EKPC and NV5 Rebuild Weighting Discussion

Sent: Monday, June 2, 2025 1:36 PM
To: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper - Alcalde Project Schedule

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Hi Lucas,

Unfortunately the team is booked during that time, do you have other windows of time/days that would work?

Thanks!

Priscilla Montalto |Associate Project Manager | NV5 Geospatial<https://www.quantumspatial.com/>

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From: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>
Sent: Friday, May 30, 2025 9:30 AM
To: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper - Alcalde Project Schedule

Appendix C: EKPC and NV5 Rebuild Weighting Discussion

Hi Priscilla,

What about Tuesday from 1:00 – 1:30?

Thanks,

Lucas

From: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>
Sent: Thursday, May 29, 2025 6:44 PM
To: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper - Alcalde Project Schedule

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Hi Lucas,

We are ready to review the alternate corridors next week! Our survey team will be in the field starting tomorrow. We are still on track to meet the 6/20 delivery date. What does your availability look like?

Thanks,

Priscilla Montalto |Associate Project Manager | NV5 Geospatial<https://www.quantumspatial.com/>

421 SW 6th Ave #800 | Portland, OR 97204 |

Thank you!

Priscilla Montalto |Associate Project Manager | NV5 Geospatial<https://www.quantumspatial.com/>

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From: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>
Sent: Monday, May 12, 2025 2:21 PM
To: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: Cooper - Alcalde Project Schedule

Priscilla,

I wanted to discuss the schedule with you a bit more.

[image005.png]

This schedule will work for the delivery of the final report but not for completing the routing study. We had anticipated a completed routing study by 06/20 – based on the SOW that we drafted and sent over to NV5. Completed routing study would be running the analysis to obtain the final preferred route based on EKPC's inputs during EKPC's identification of alternate routes. I'm confident that we can turn around the routes on EKPC's end very quickly (1 week at the most), but would be very appreciative of expediting the alternate corridor identification and consequently the field verification to enable EKPC to kick-off identification of preferred routes. The need date was originally driven based on what EKPC needs to be able to get in front of the required regulatory approvals from a funding perspective. All of this ultimately feeds back into a needed date of July 11th for a public open house, to maintain the projects overall schedule.

If the field verification component of the schedule was completed just two weeks sooner, it would greatly aide EKPC's efforts for this project. We don't need the "final" report prior to the open house, we just need the preferred route that we will utilize for the open house.

Please advise if you'd like to discuss this further via phone call instead of e-mail, I look forward to your reply in the meantime.

Thanks,

Lucas

From: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>
Sent: Tuesday, May 6, 2025 4:39 PM
To: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper Landfill - kmz boundaries

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Hi Lucas,

Thank you for the information! We are ready to review the Phase 1 macro corridor analysis (attached). What does your team's availability look like this week?

And we are able to move forward with a June 6th completion date of alternate corridors, dependent on any changes that need to be made to the Phase 1 AOI.

Thanks,

Priscilla Montalto |Associate Project Manager | NV5 Geospatial<https://www.quantumspatial.com/>

421 SW 6th Ave #800 | Portland, OR 97204 |

From: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>
Sent: Tuesday, May 6, 2025 10:00 AM
To: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper Landfill - kmz boundaries

Hi Priscilla,

Two things:

The long-span to be utilized should be 1000’. Regarding the boundaries at Cooper landfill, the main thing is that new structures can’t be located in those areas – however, this does mean that if we can span a corner, or slightly clip it without placing poles there, we will cross it if needed from a final route perspective. Does that make sense?

Any update on the previously discussed completion date for this routing study?

Thanks,

Lucas

From: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>
Sent: Monday, May 5, 2025 6:51 PM
To: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>; Phin Hanson <Phin.Hanson@nv5.com<mailto:Phin.Hanson@nv5.com>>
Subject: RE: Cooper Landfill - kmz boundaries

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Hi Lucas!

Just checking in to see if you have any updates for us.

Thanks,

Priscilla Montalto |Associate Project Manager | NV5 Geospatial<https://www.quantumspatial.com/>

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Appendix C: EKPC and NV5 Rebuild Weighting Discussion

From: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>
Sent: Friday, April 25, 2025 9:14 PM
To: Priscilla Montalto <Priscilla.Montalto@nv5.com<mailto:Priscilla.Montalto@nv5.com>>; Michael DuCharme <Michael.DuCharme@nv5.com<mailto:Michael.DuCharme@nv5.com>>; Edelina Harmon <Edelina.Harmon@nv5.com<mailto:Edelina.Harmon@nv5.com>>
Cc: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>
Subject: FW: Cooper Landfill - kmz boundaries

See attached boundaries.

I've got one more question floating internally about making this a total avoidance area, will clarify on Monday with you guys. Am also currently awaiting a response from our design engineer and will advise when I have the maximum span length we'll design to.

From: Patrick Bischoff <Patrick.Bischoff@ekpc.coop<mailto:Patrick.Bischoff@ekpc.coop>>
Sent: Friday, April 25, 2025 2:59 PM
To: Lucas Spencer <Lucas.Spencer@ekpc.coop<mailto:Lucas.Spencer@ekpc.coop>>
Subject: Cooper Landfill - kmz boundaries

Lucas –

Here are kmz files that show the permitted and constructed boundaries for Cooper Landfill. I would recommend we consider both areas of avoidance, but we may be able to talk to environmental about the permitted boundary.

If we need these files in a different format, let me know.

Thanks –

Patrick

Appendix C: EKPC and NV5 Rebuild Weighting Discussion

Patrick Bischoff, P.E.

Manager Construction & Capital Projects

East Kentucky Power Cooperative

4775 Lexington Road

Winchester, KY 40391

Phone: (859) 745-9693

Cell: (859) 229-4684

patrick.bischoff@ekpc.coop<mailto:patrick.bischoff@ekpc.coop>

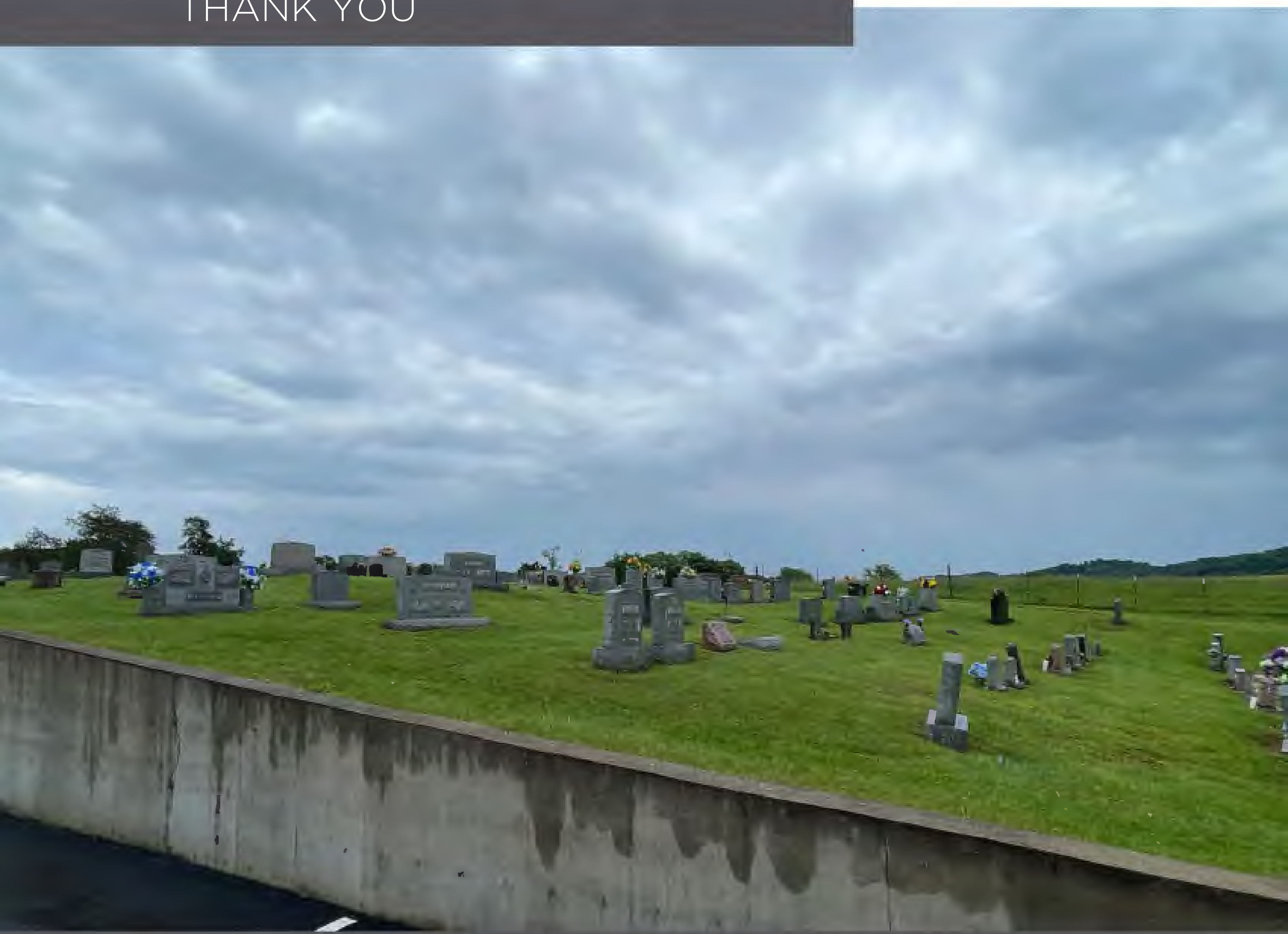
[image006.png]

<EKPC_Cooper_KU_Alcalde_RouteScoring_v5.xlsx>

POINT OF CONTACT

Michael DuCharme
Project Manager
Portland, OR 97204
E: michael.ducharme@nv5.com

THANK YOU



EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2025-00311
THIRD REQUEST FOR INFORMATION RESPONSE

STAFF'S REQUEST DATED JANUARY 30, 2026
REQUEST 2
RESPONSIBLE PARTY: Legal

Request 2. Confirm that EKPC continues to want a decision on the record. If not, explain the response.

Response 2. Confirmed.