RP-338 I-73/74 NHS Corridor Siting Assessment

A Report Produced for the:

West Virginia Department of Transportation (WVDOT)

Prepared by:

Appalachian Transportation Institute (ATI)

The Center for Environmental, Geotechnical and Applied Sciences (CEGAS)

Marshall University Research Corporation

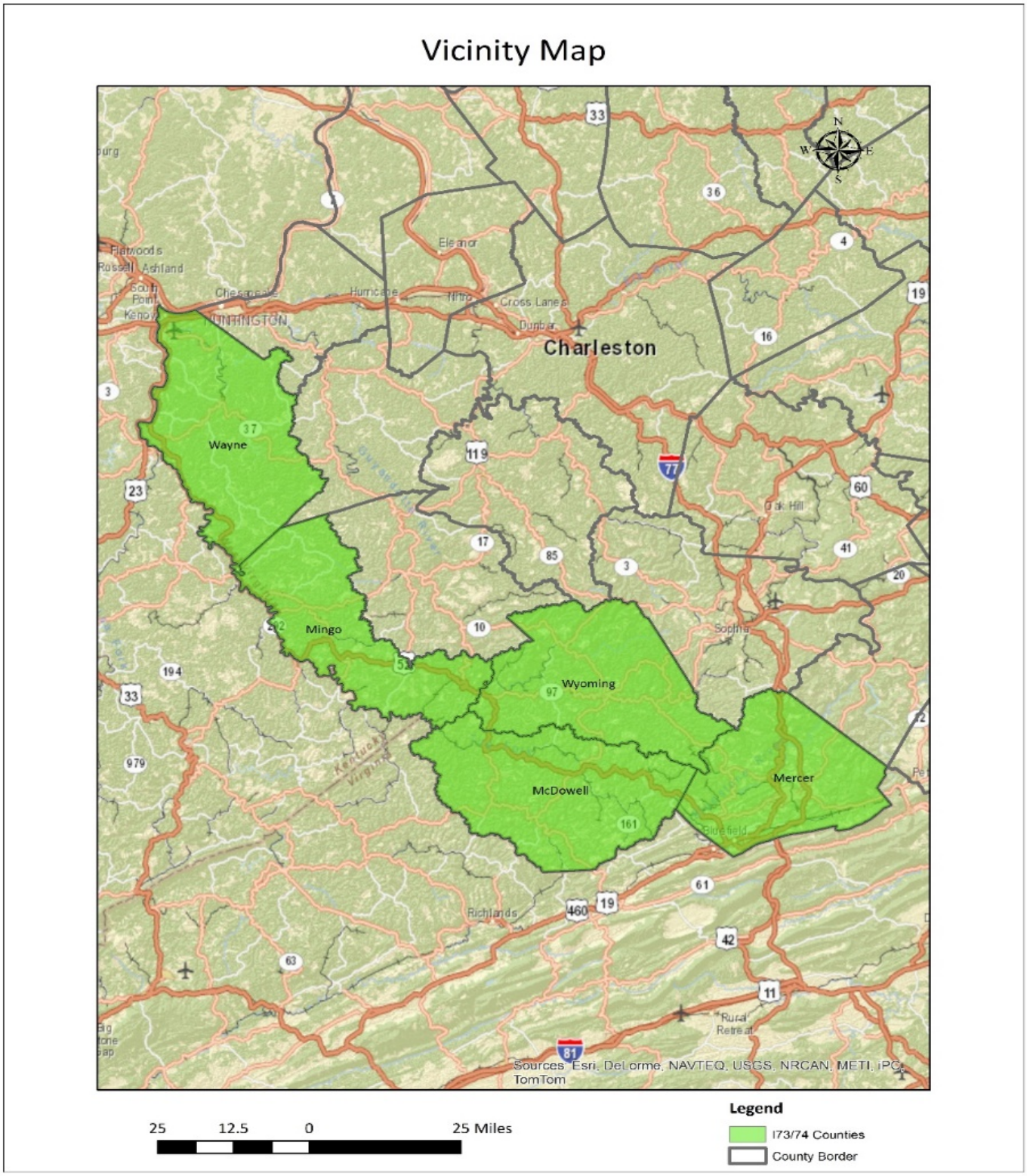
One John Marshall Drive Huntington, WV 25755

Introduction

In 1991, the United States Congress identified the need for a north-south highway corridor connecting northern Michigan to Myrtle Beach, South Carolina, routed through North Carolina, Virginia, West Virginia and Ohio. The I-73/74 North–South Corridor was defined High Priority Corridor 5 by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

The need was reiterated in 1995 when the West Virginia Department of Transportation (WVDOT) conducted the King Coal Highway Purpose and Need Study which, in part, concluded that there is a need for the King Coal Highway (KCH) to enhance both regional and local system linkages, improve access for emergency/community services and ultimately enhance employment opportunities in the region. Additions to the Corridor and detailed alignments were outlined as part of The National Highway System Designation Act (NHS) of 1995. The WV portion of this congressionally designated corridor is to serve as a multi-lane replacement of the existing US 52 alignment, extending approximately 140 miles from Huntington to Bluefield, WV. The corridor passes thru the West Virginia counties of Wayne, Mingo, McDowell, Wyoming and Mercer. A map of the study area is provided below in Figure 1.

Figure 1 – King Coal Highway Vicinity Map



Project Objectives

The goal of this project was to further develop and evaluate necessary considerations related to future construction of components along the I-73/74 NHS Corridor in West Virginia by:

- Identifying existing work performed by WVDOT and other entities related to sites within the study region;
- Presenting a compilation of existing data and future needs related to routing alternatives for WV components of the I-73/74 NHS Corridor; and
- Producing a visualization that will assist the WVDOT with determinations of future analysis.

Primary project tasks centered on the identification of existing coal seams, analysis of the data collection undertaken during siting and environmental impact studies of route alternatives and evaluation of the applicability of those data for inclusion in future GIS mapping applications.

Existing Research

The following routing studies, post-mine land-use analyses and environmental impact assessments have been completed:

- "Shawnee Parkway/King Coal Highway Feasibility Study". L. Robert Kimball and Associates. 1994.
- "King Coal Highway Final Environmental Impact Statement". U.S. Department of Transportation Federal Highway Administration and West Virginia Department of Transportation Division of Highways. 2000.
- "King Coal Highway Draft Supplemental Environmental Impact Statement". U.S. Department of Transportation Federal Highway Administration, West Virginia Department of Transportation Division of Highways and U.S. Department of the Army Corps of Engineers. 2013.

Key Meetings and Data Sources

Throughout the duration of the project, both ATI and CEGAS have had constant communications with various employees of local agencies and the WVDOT. These meetings and conversations are outlined below, in addition to a brief discussion of the data provided:

- October 2017: Matthew Strogen, Mapper, Wayne County Assessor's Office. Mr. Strogen provided CADD drawings of I73/74 alignment in Wayne County that he converted from paper maps drawn in the mid-1990s. This map is shown below in Figure 2

- March 2018: Scott Eplin, District Manager, District 2 WVDOT. Mr. Eplin indicated that he would work to provide applicable datasets to ATI and CEGAS.
- April 2018: Tom Smith, Secretary, WVDOT and his staff. Secretary Smith and his staff expressed interest in the continuation of the project and pledged cooperation with ATI and CEGAS.
- May 2018: WVDOT provided example of preliminary plans for the section for section between I-64 and Pritchard. These preliminary plans are shown in Figure 3 below.
- August 2018: Hussein Elkansa, provided shapefiles for proposed routes throughout West Virginia. Two of the sections provided by Mr. Elkansa were of interest for this project and include one section beginning at the intersection of U.S. Route 119 (Corridor G) and WV Route 65 to west end of the four-lane section near Mingo Central High School. The other section begins at the east end section of the four lane near Mingo Central High School ends at the intersection of U.S. Route 460 and 52 near Bluefield. These area and map layers for these proposed routes are shown in Figure 4.

Figure 2 – Wayne County Assessor Map

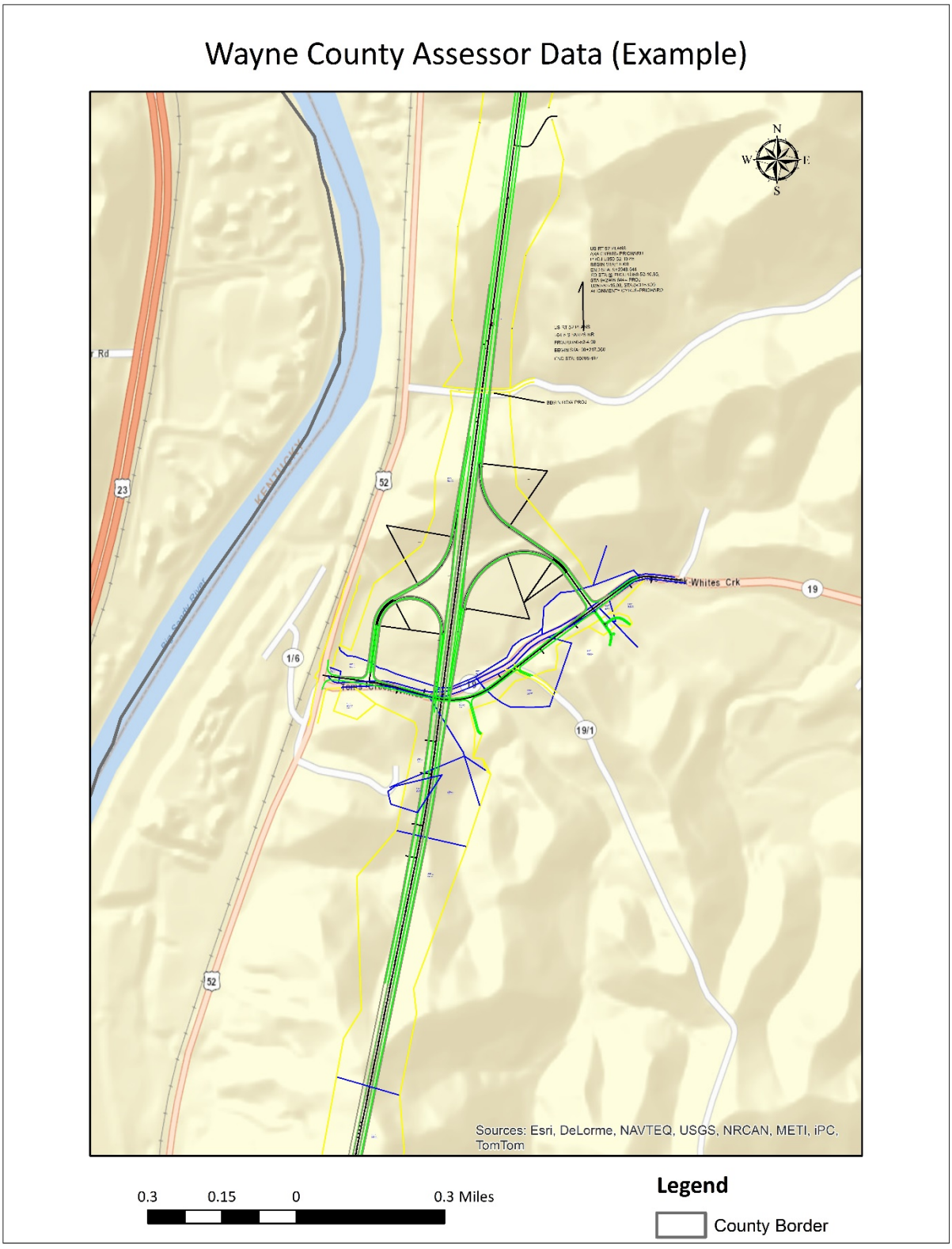


Figure 3 – WVDOT Preliminary Maps

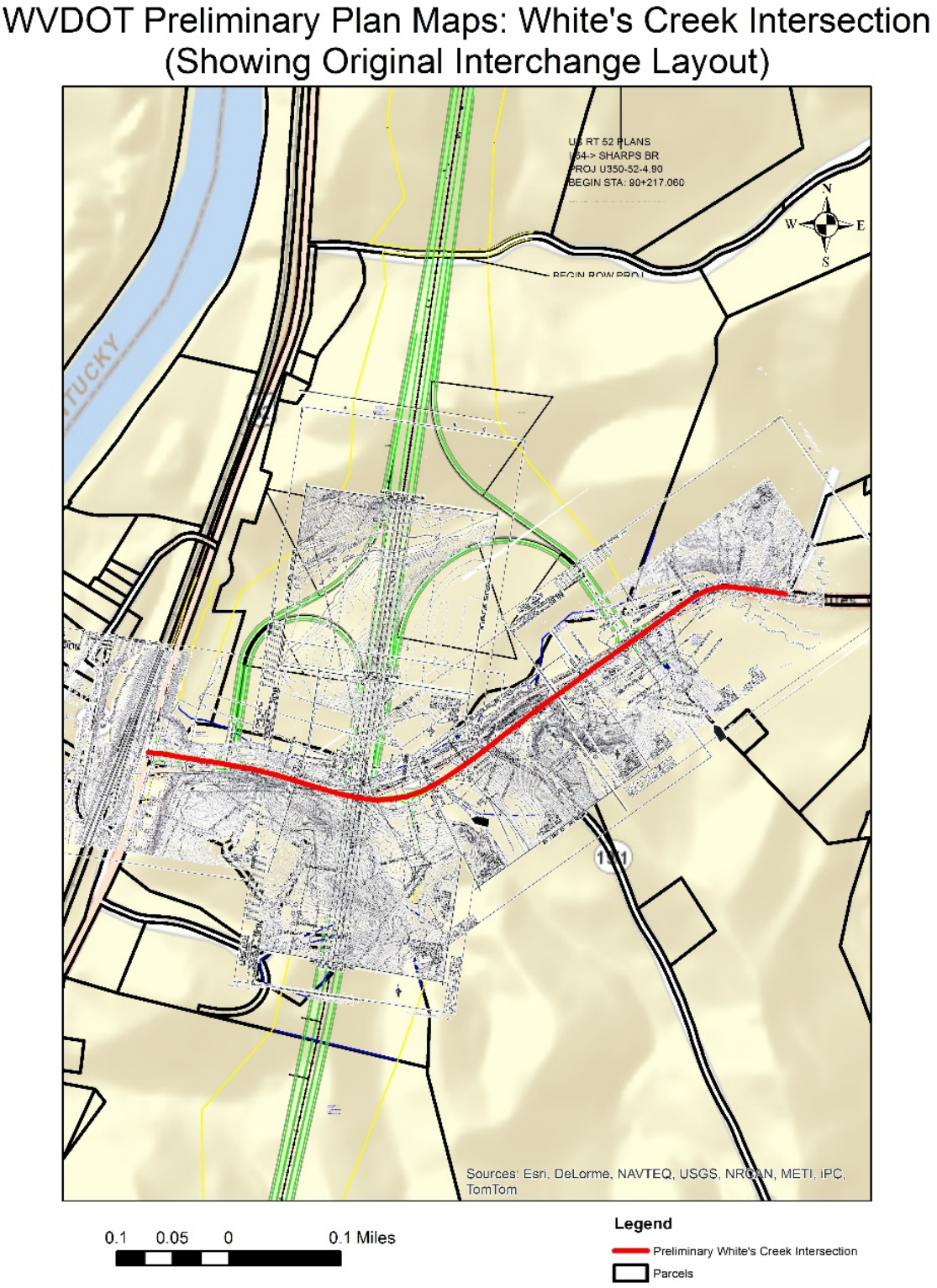
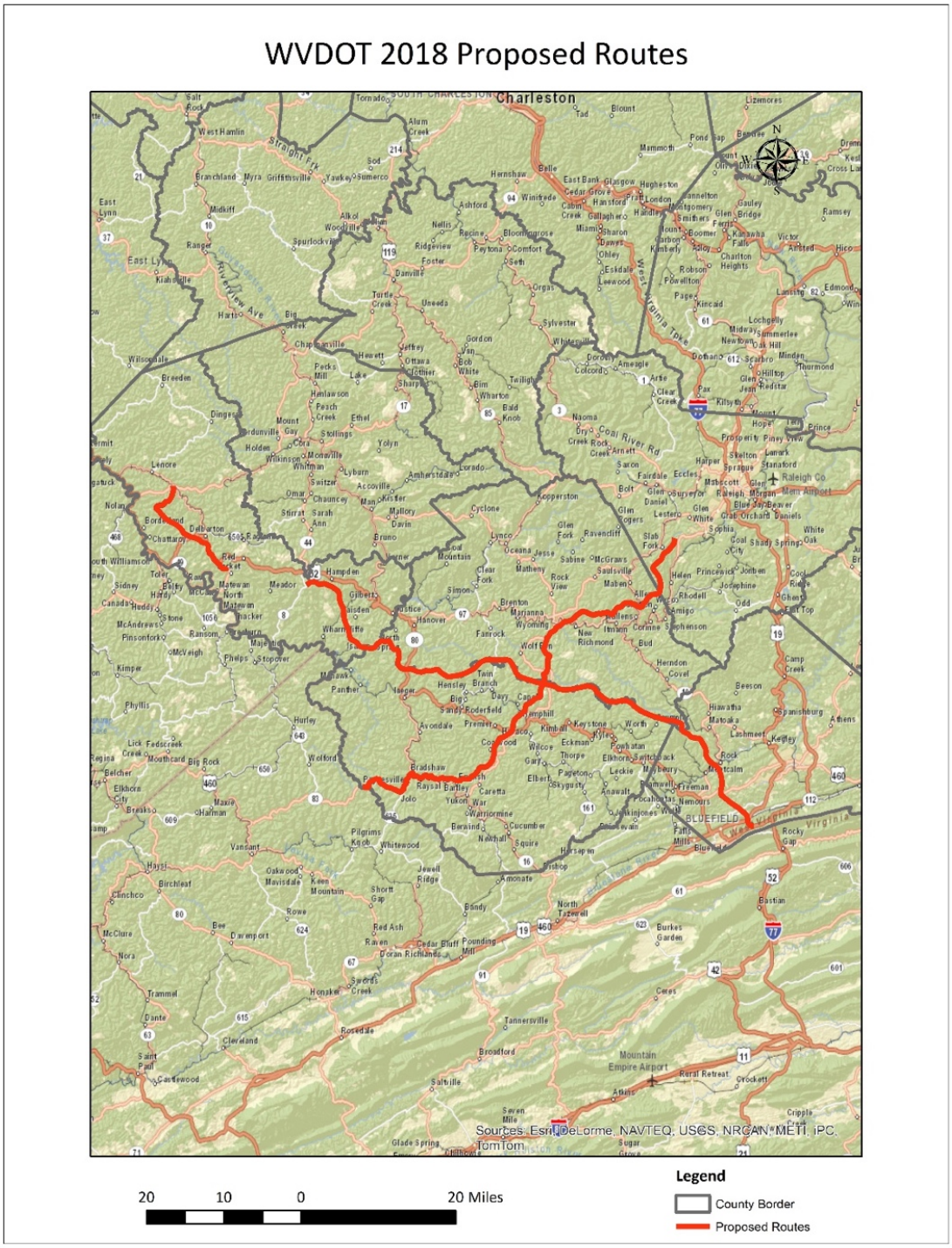
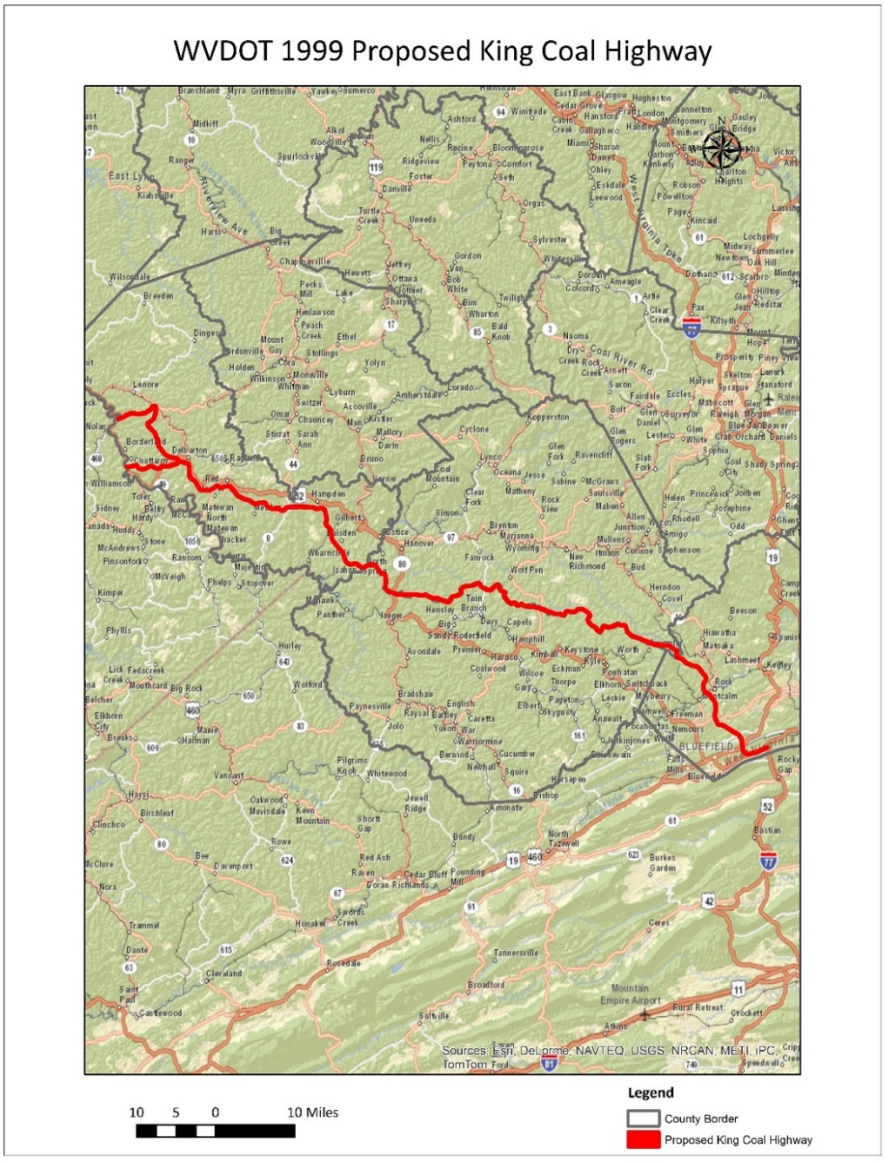


Figure 4 – WVDOT 2018 Proposed Routes



Additionally, the WV GIS Technical Center has a dataset called the Preferred Alternative (PA) of proposed King Coal Highway.[1][2] This map layer is shown in Figure 5.

Figure 5 – Proposed King Coal Highway (1999)



[1] http://wvgis.wvu.edu/data/dataset.php?ID=110.

[2] The Technical Center describes the dataset as follows: The King Coal Highway EIS was published in 1999 by Michael Baker Jr., Inc and WV DOH. The road corridor shapefile represents the same preferred corridor that is depicted in the final environmental impact statement (EIS), a rigorous interdisciplinary report that considered many alternatives. Minor adjustments to every foot of this road were made in order to avoid adverse environmental impacts. The base mapping for the EIS and the mitigatory engineering work is at least 1" = 2000'-scale or better. GPS and ground-run surveys were used in many places to adjust this alignment in relation to the EIS.

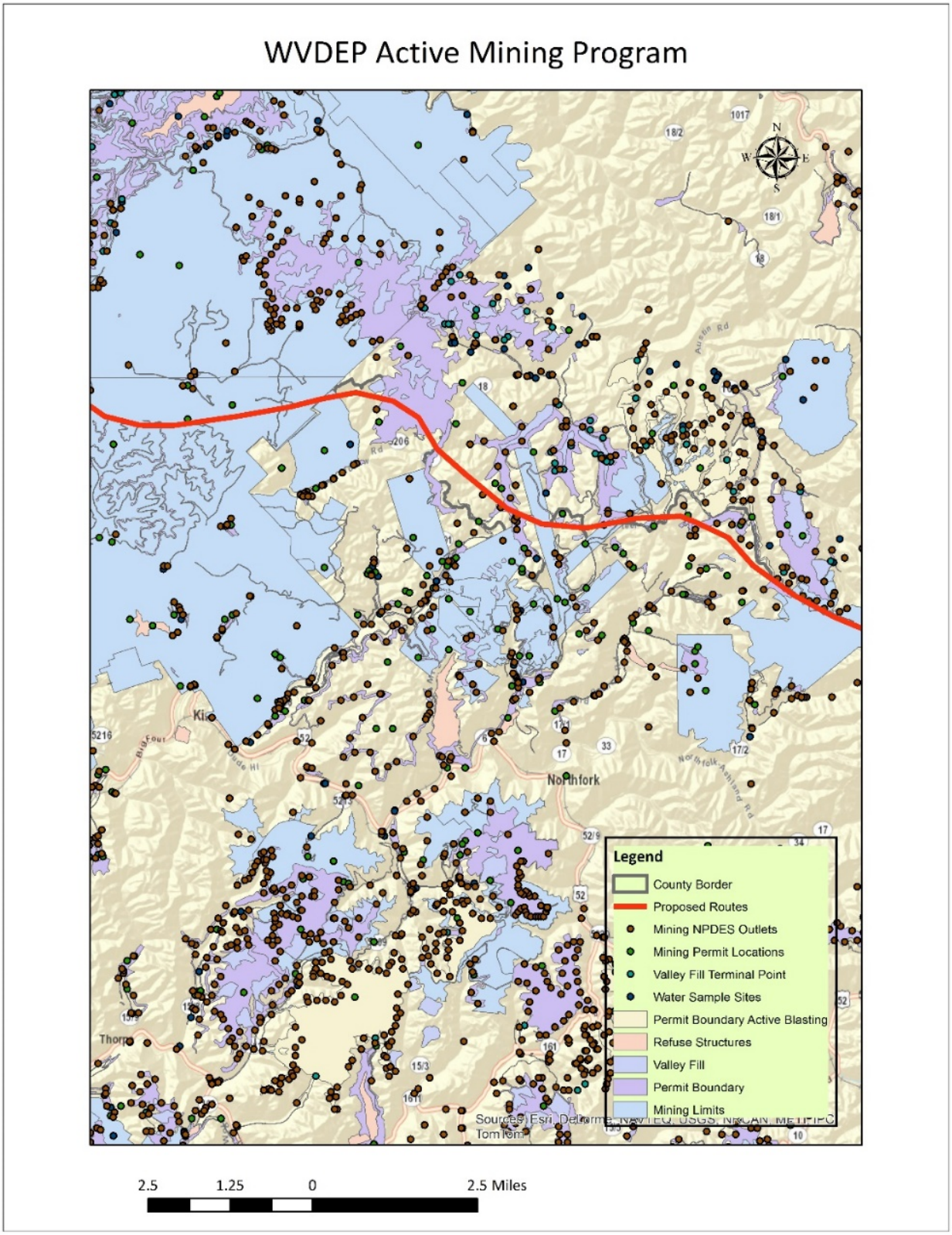
Available Data

While some of these data sets can depict similar data, coal seam data is available from both the West Virginia Department of Environmental Protection (WVDEP) and the West Virginia Geological and Economic Survey (WVGES). A cataloged list of these data has been included in Appendix A but an expanded description and brief discussion follows:

West Virginia Department of Environmental Protection (WVDEP)

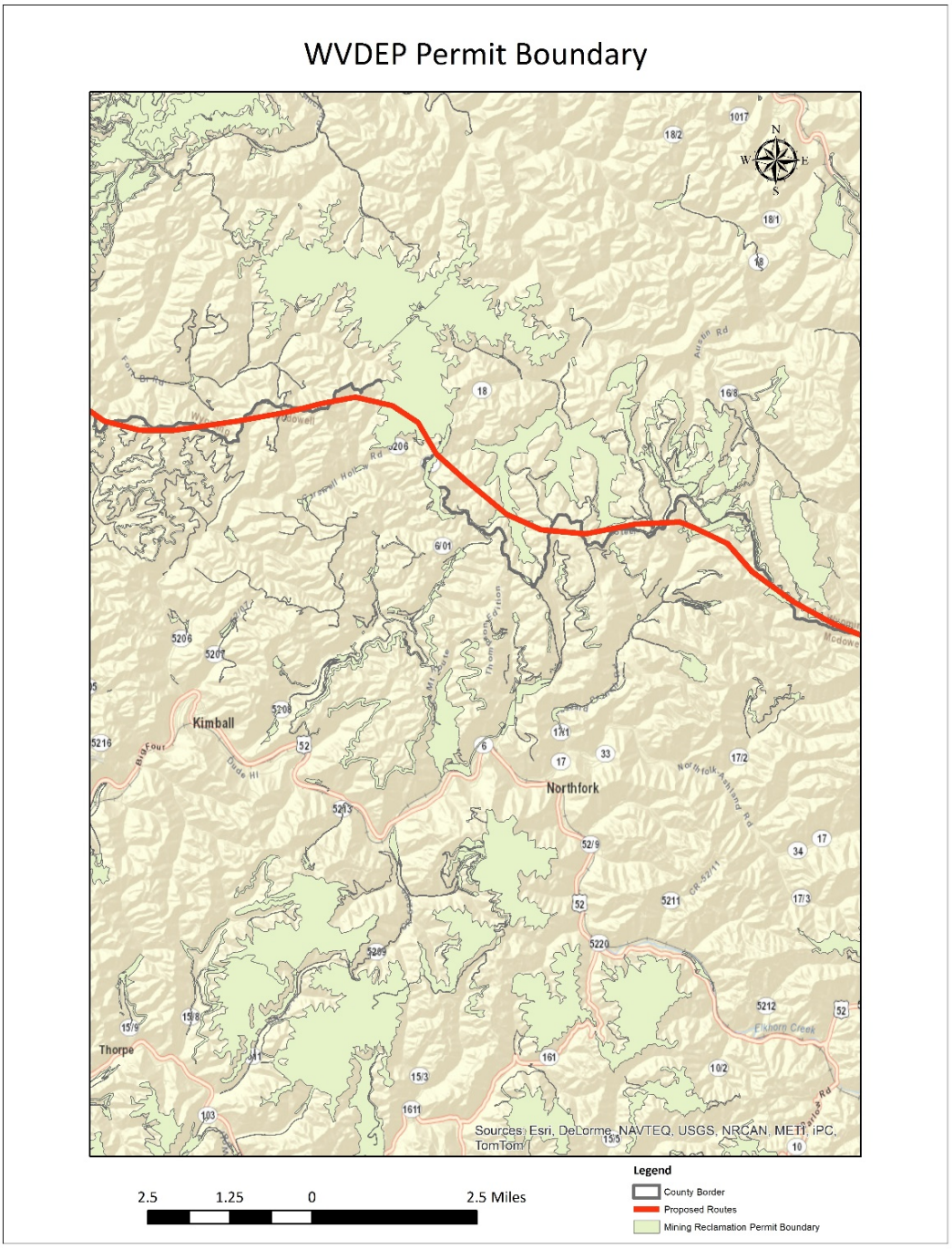
WVDEP Active Mining Program Dataset: This data set focuses on active mining programs. Feature classes associated with the active mining program include permit boundaries, mining limits, valley fills, refuse structures and permit point locations. An example map is shown in Figure 6.

Figure 6 -WVDEP Active Mining Program



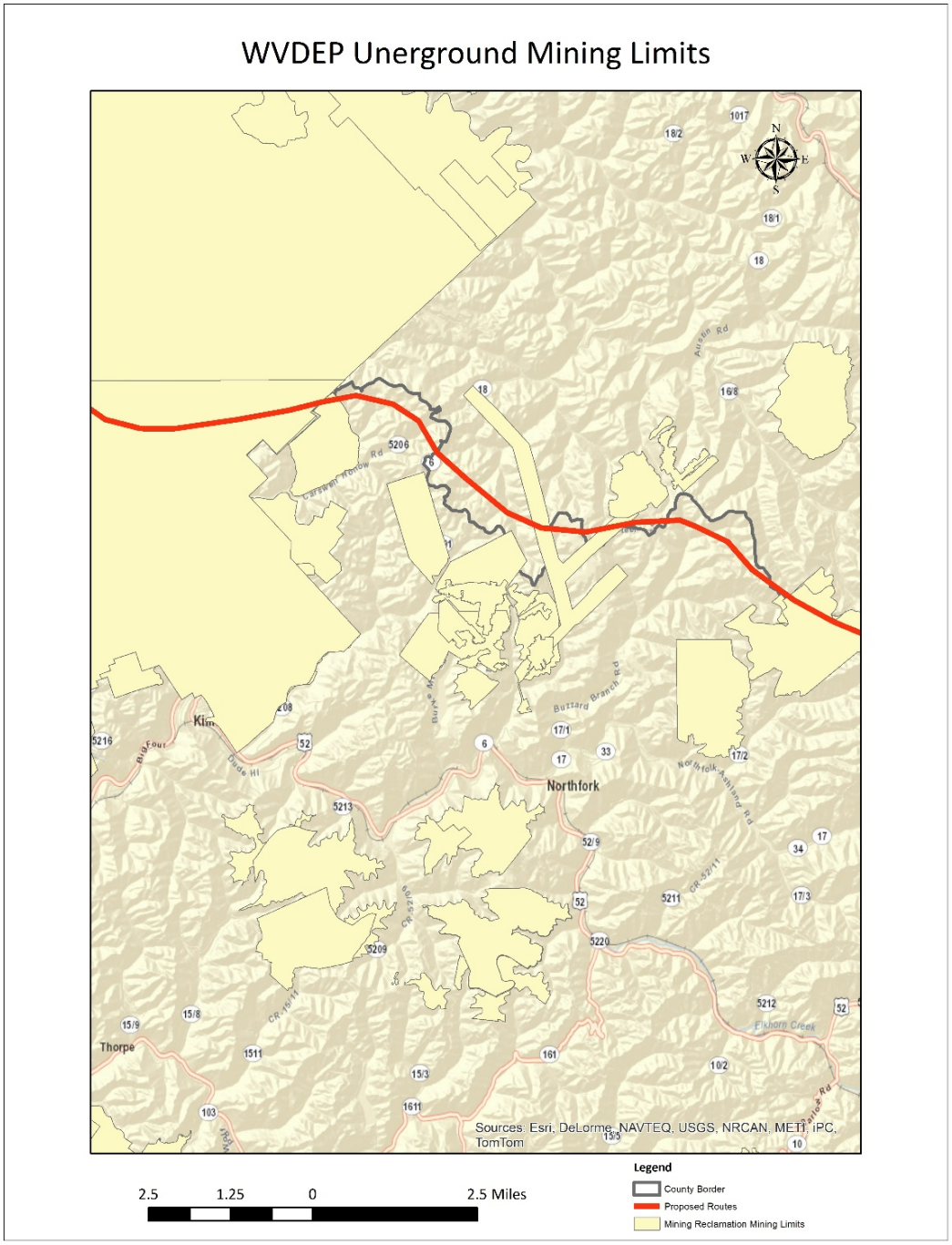
(DMR) Permit Boundary: These maps focus on mining permit boundaries and represent areas of surface disturbances associated with coal and quarry mining operations. An example map is shown in Figure 7 below.

Figure 7 – WVDEP Permit Boundary Map



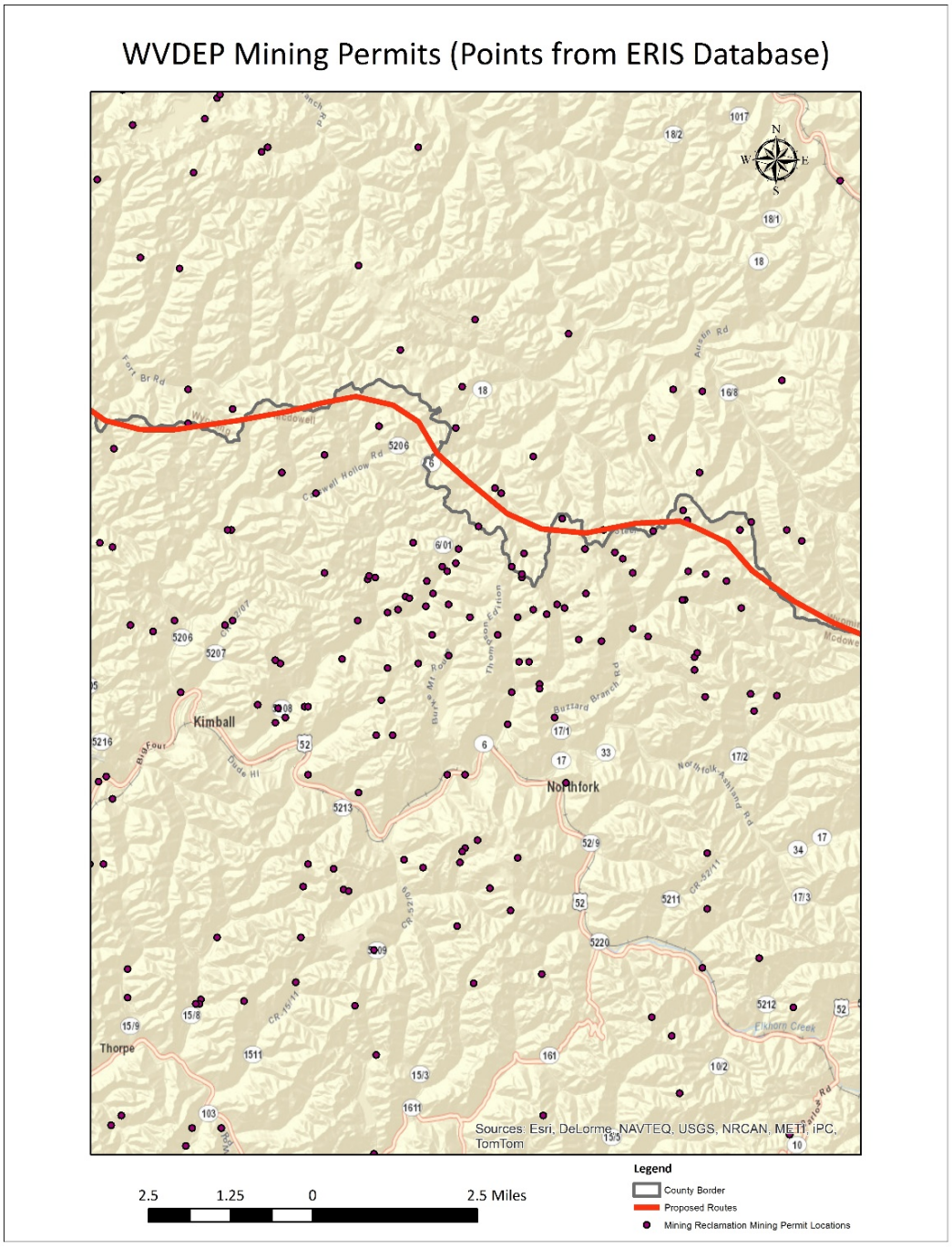
(DMR) Underground mining limits: Data is taken from subsidence control plan maps and shows the extents of potential underground mining. It represents the area within which mining may take place, for purposes of subsidence planning, and not the area which already has been mined. This map is shown in Figure 8 below.

Figure 8 – WVDEP Underground Mining Limits Map



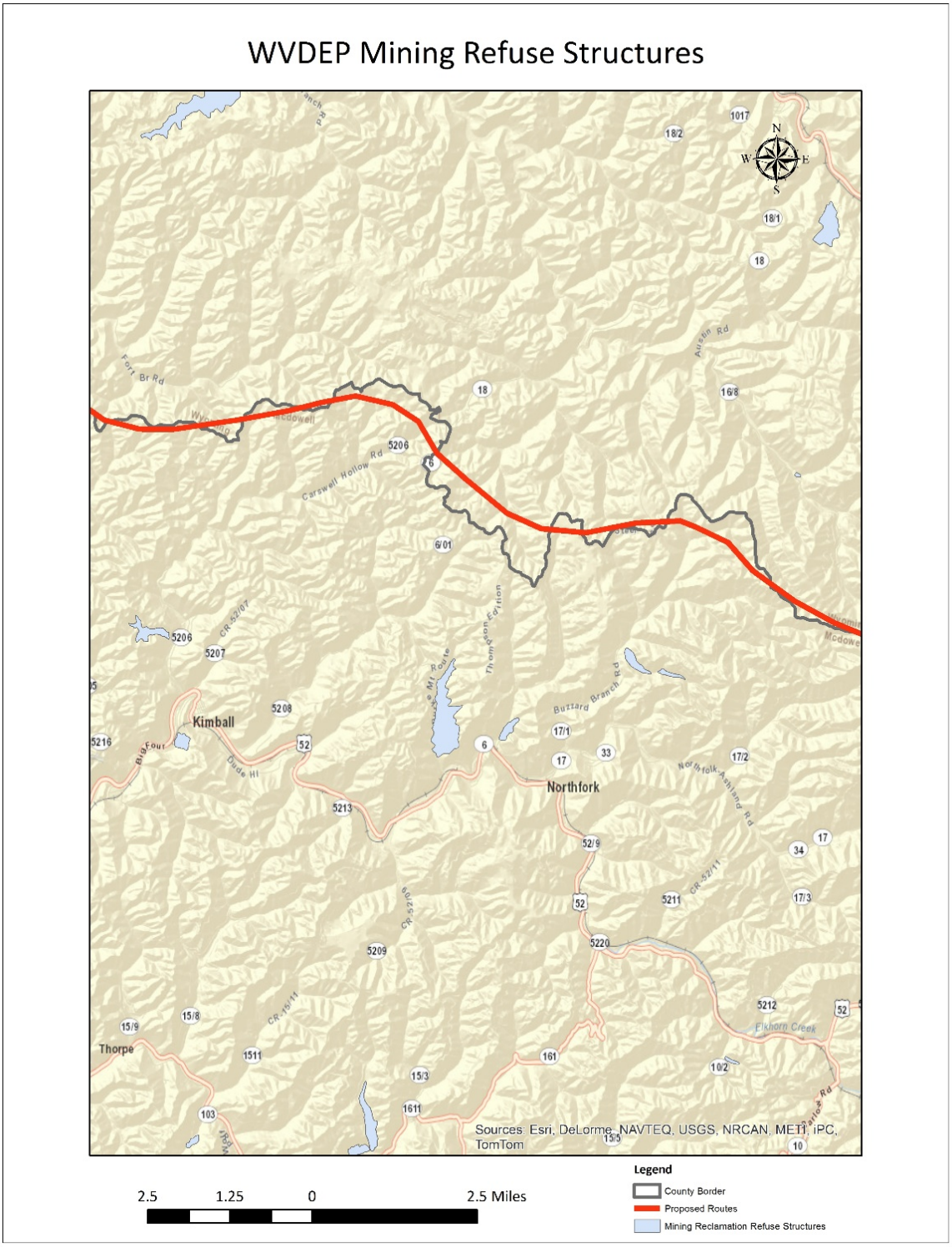
(DMR) Mining Permits (points, from ERIS database): Displays point locations of mining permits, from the WVDEP ERIS database. Includes many older, closed permits for which no permit boundary is available. This map is shown in Figure 9 below.

Figure 9 – WVDEP Mining Permits Map



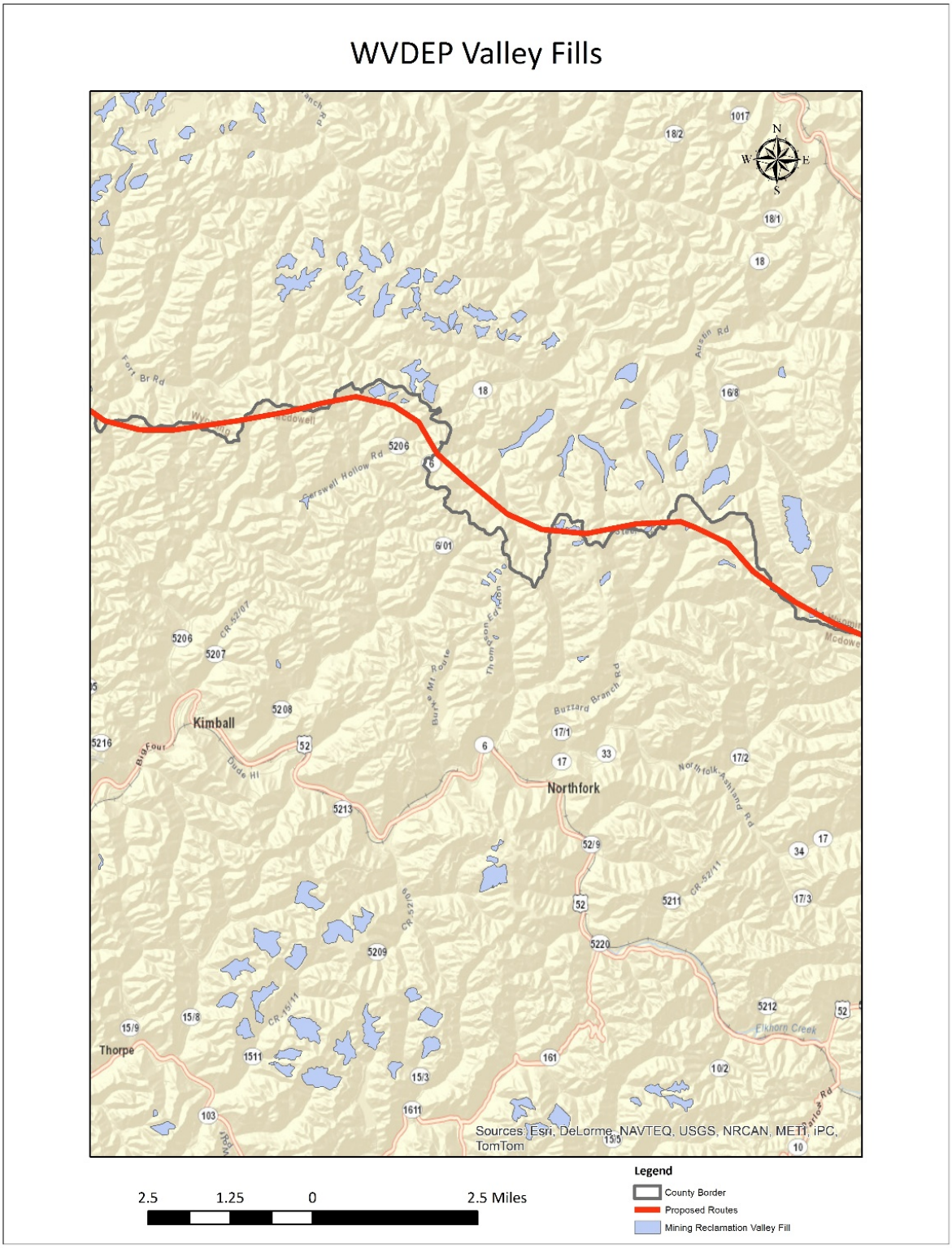
(DMR) Mining refuse structures: The map in Figure 10 shows locations of coal refuse fills and impoundment.

Figure 10 – WVDEP Mining Refuse Structures Map



(DMR) Valley fills: Figure 11 shows the *e*xtents of overburden fills associated with mining activity.

Figure 10 – WVDEP Valley Fills Map



West Virginia Geological and Economic Survey

Various coal seam datasets are available from the WVGES.[3] . Of particular interest are coal seam datasets associated with the coal bed mapping project. These datasets have data associated with coal seam elevations and other applicable data. The layers within each coal seam that would be useful for initial transportation planning are: Study Area, Mined and Remaining, Outcrop, and Structural Contours. Two overall mapped layers that are useful are the Mining and All Mapped Outcrops layers. The WVGES maintains a FTP server to allow access for download of this data. Example maps are shown in the figures below.

[3] The list of datasets can be viewed at http://www.wvgs.wvnet.edu/www/maps/maps.htm

Figure 12 - WVGES Study Area Map

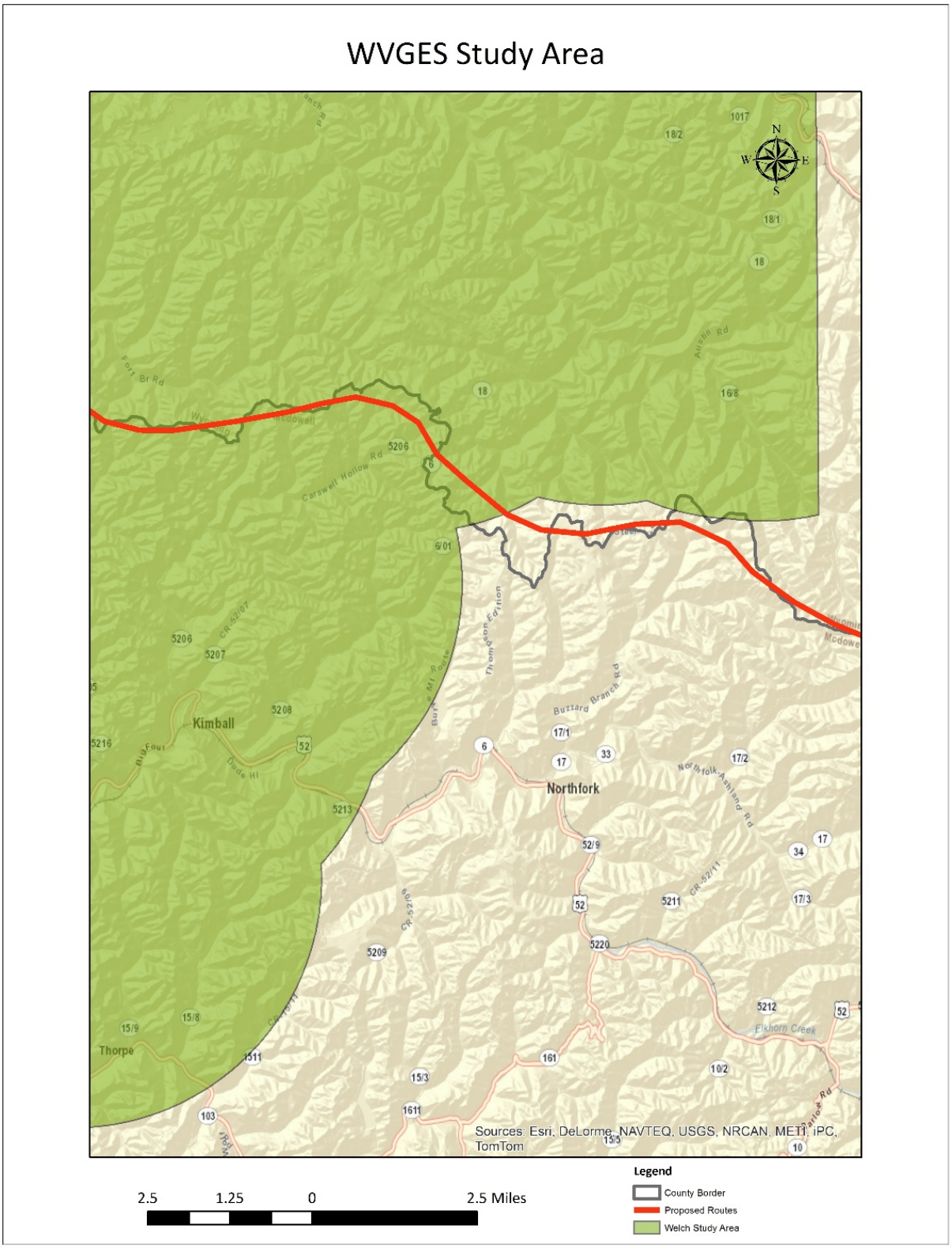


Figure 13 - WVGES Mined and Remaining Map

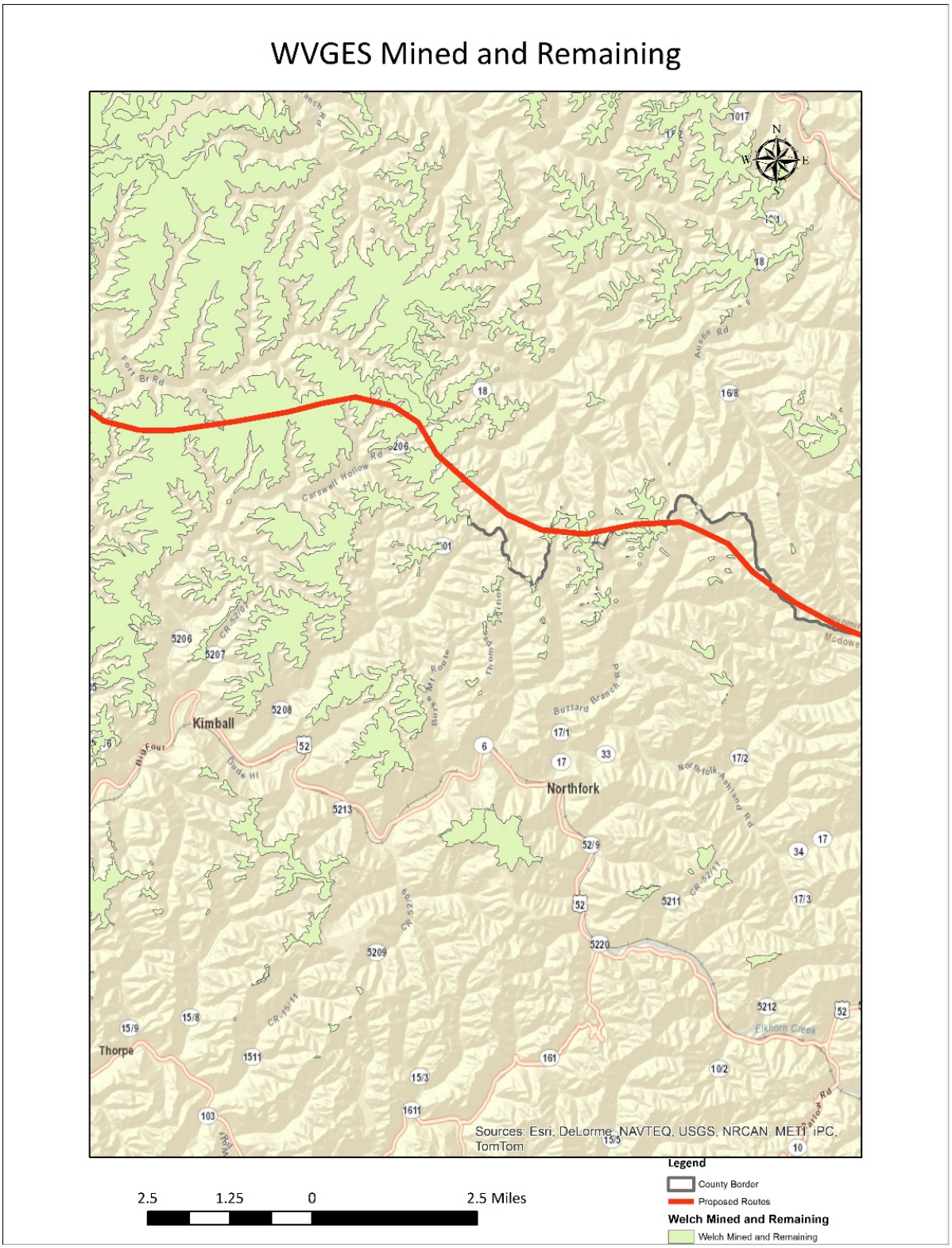


Figure 14 - WVGES Outcrop Map

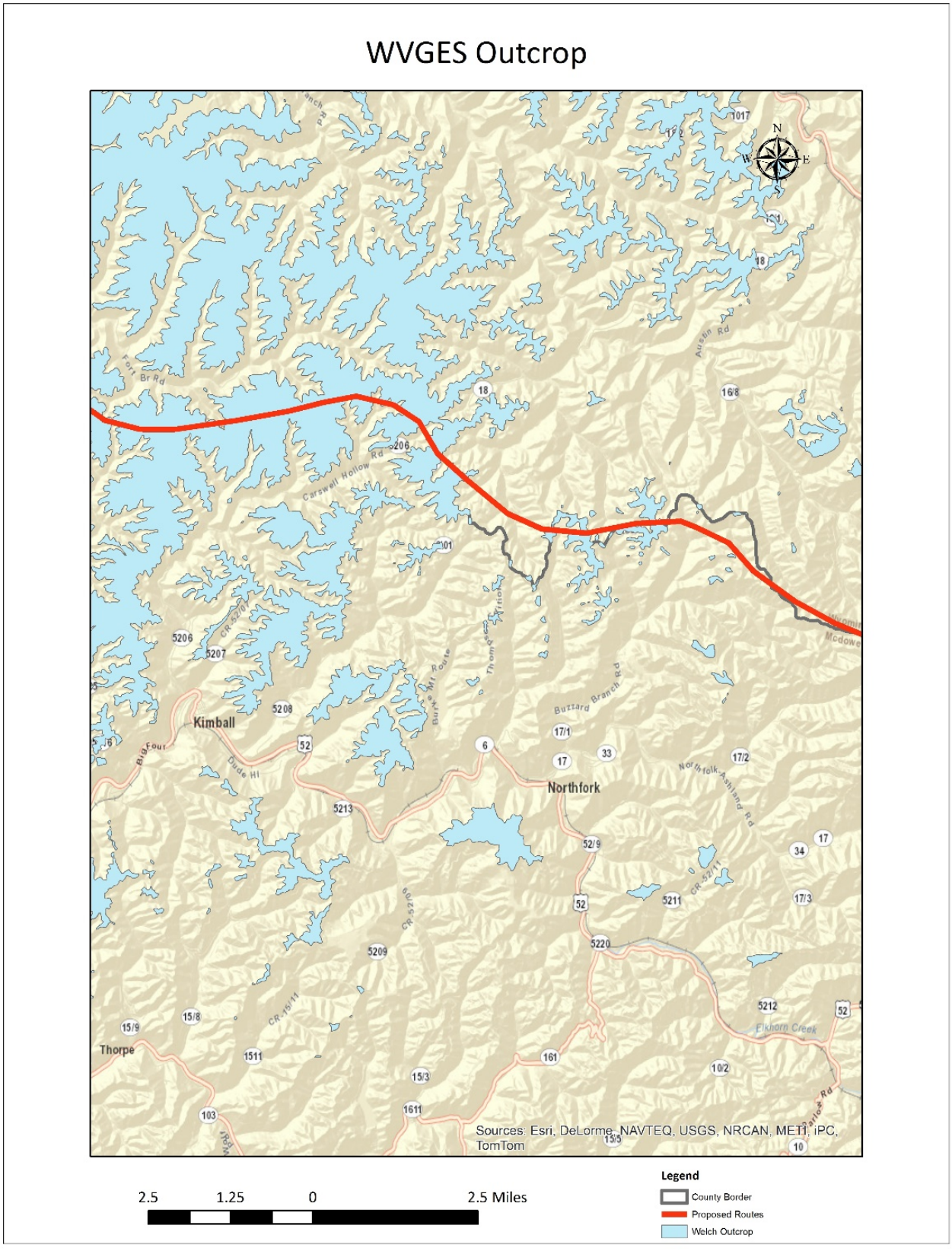


Figure 15 - WVGES Structural Contours Map

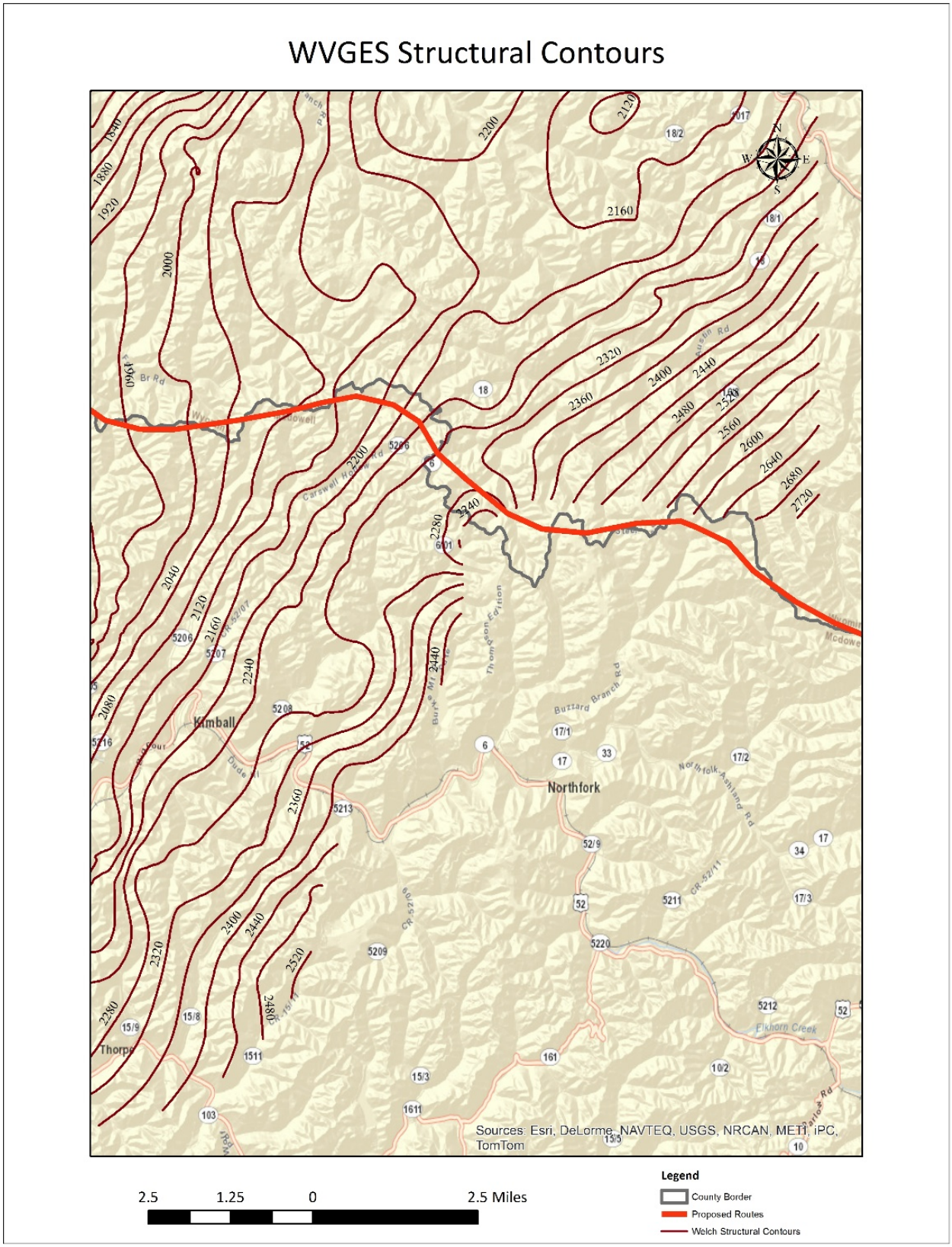


Figure 16 - WVGES Mining Map

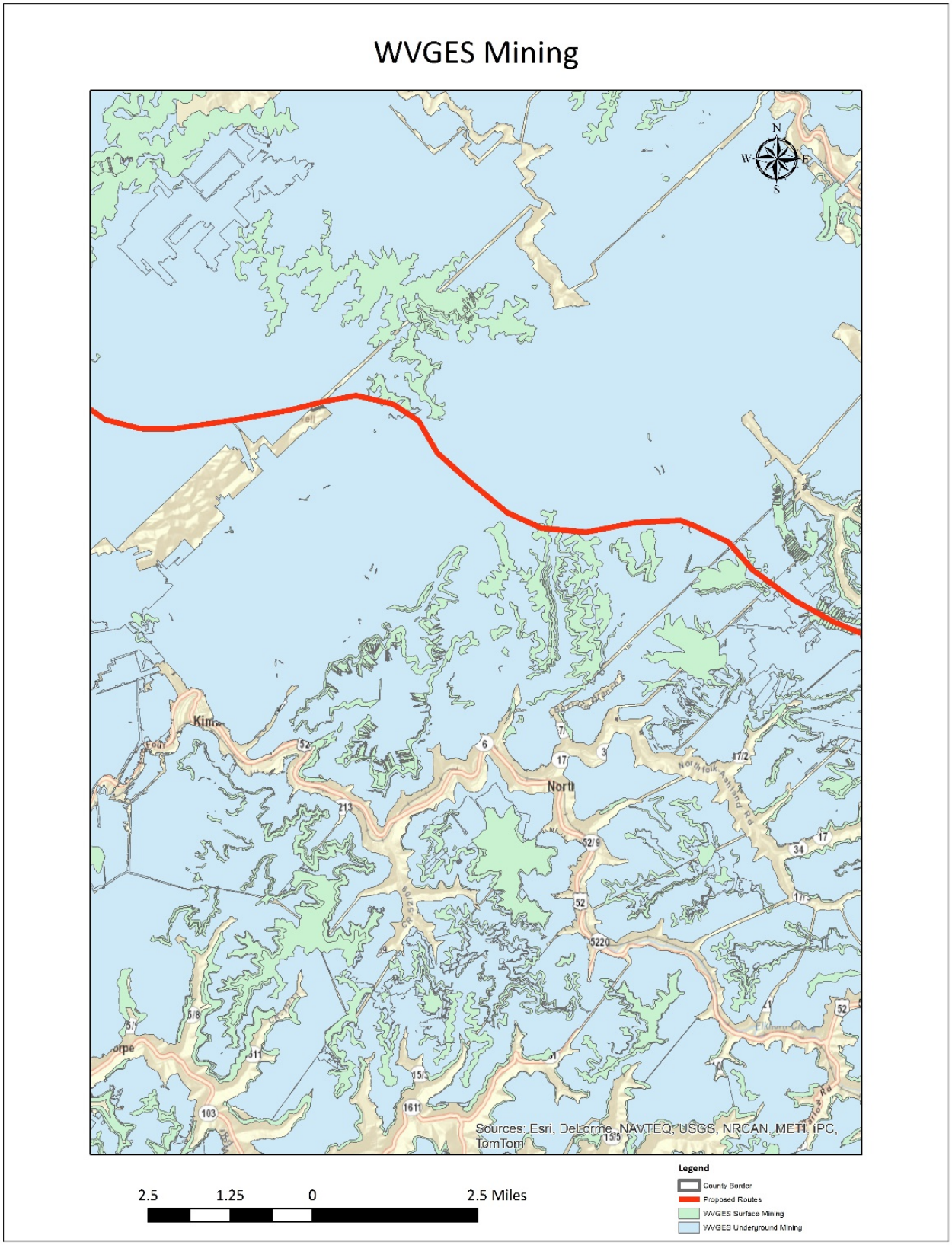
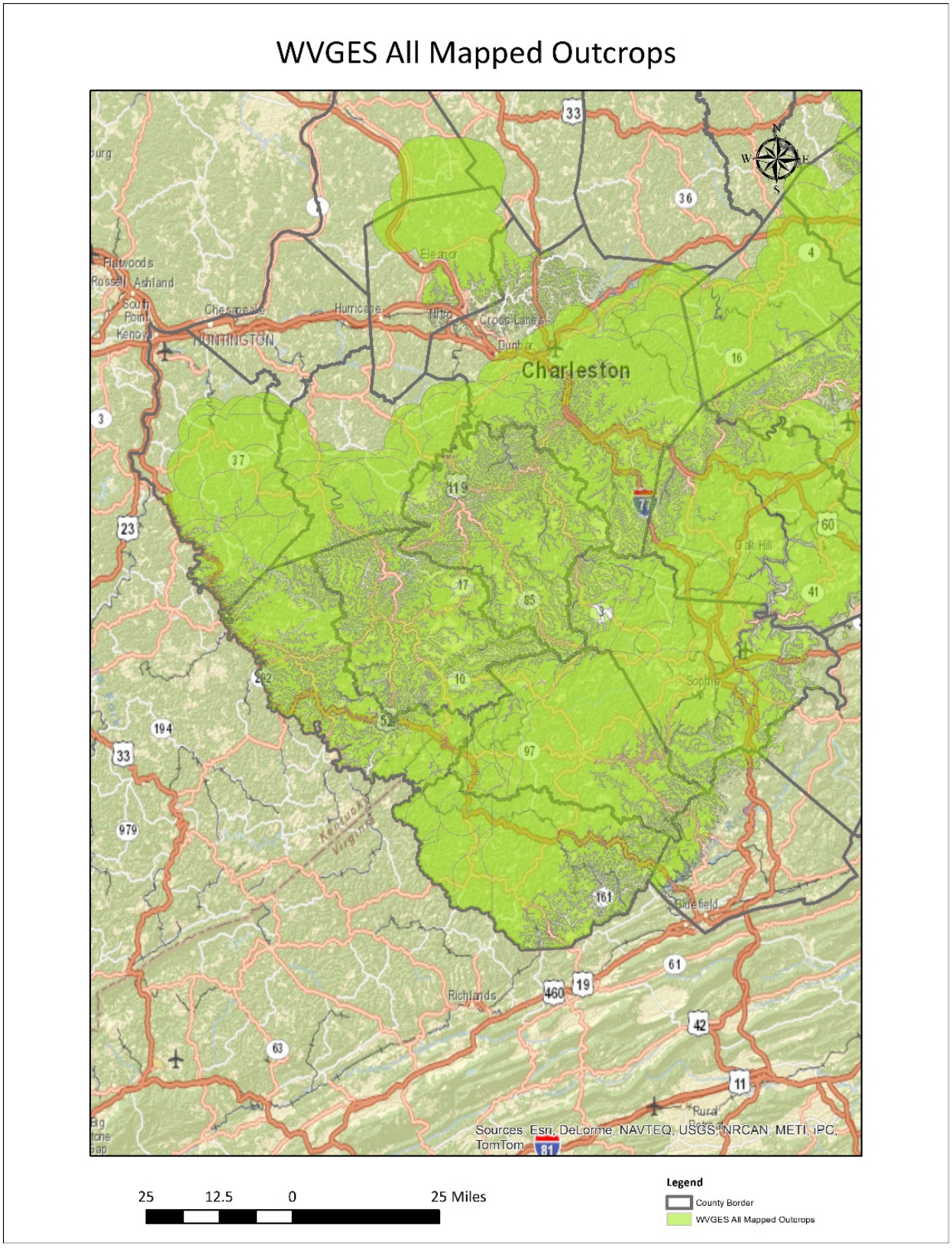


Figure 17 - WVGES All Mapped Outcrops Map



Data Needs and Study Limitation

Due to limited data provide by the WVDOT, the research team cannot adequately develop any datasets or complete any additional research that could incorporate the acquired coal data to feasibly identify and assess alternative routings. While this project was not intended to select alternatives, given the available roadway data provided we are unable to accomplish the task of showing the feasibility of these alternatives.

Potential Data Sources

Other data sources are available and could provide valuable information for the analysis of alternative routes include the following:

- WVDEP Oil and Gas Data
- WVDEP (DMR) NPDES Outlets (Mining Only)
- WVDEP (OWR) NPDES Outlets (Non-Mining)
- West Virginia State Tax Department Tax Map Layers

Conclusion

In order to complete the research as outlined in the scope of work, a number of additional maps and datasets are needed. The most important being existing and planned system components including roadways, bridges etc., that will aide in facilitating an analysis of the horizontal and vertical geometry alternatives. To date, the only information received by ATI and CEGAS was the proposed routes shapefiles provided in August of 2018. Unfortunately, only parts of I-73/74 are shown and the dataset is somewhat limited as it only displays two-dimensional line work of proposed routes throughout the state. Additionally, data showing completed sections or the status of completed sections is needed. This information can help determine where deviations to the original alignment can occur and where plans have been finalized and changes to the alignment are not possible.