Appendix C – Indicators and Data Sources

Description and data sources used for GIS-based indicators developed for n=612 potential SEP sites throughout West Virginia (sorted by status of completion).

Indicator	Status	Description	Data Source	Date
COMPLETED				
Abandoned Mine Land status	completed	presence/ absence of AML features, distance to closest AML feature (m)	WVDEP mapped Abandoned Mine Land features (point, line, polygon) available from http://wvgis.wvu.edu/data/dataset.php?ID=150	1996
Area	completed	area of site, in acres	WVDEP Surface Mine Permits	XXXX
Aspect	completed	area of site in multiple aspect classes (particularly south-facing)	WV SAMB 3 meter Digital Elevation Model	2003
Current vegetation	completed	area of forested, non-forested land cover within site	2009/2010 interpreted land cover from Landsat TM 5 imagery (NRAC)	2009/2010
Development/structures (distance to closest)	completed	Euclidean distance from site to nearest mapped structure	WV SAMB mapped structures (available from http://wvgis.wvu.edu/data/dataset.php?ID=288)	2003
Interstate highways (distance to closest)	completed	distance from site along road network to nearest interstate highway on-ramp	Road network and interstate on-ramp data from ESRI's Street Maps USA, an enhanced version of US Census TIGER/Line data (2000)	2007
Major road (distance to closest)	completed	distance from site along road network to nearest major road intersection (interstate or US/state highway)	Road network, major highway, and interstate on-ramp data from ESRI's Street Maps USA, an enhanced version of US Census TIGER/Line data (2000)	2007
Mine permit status	completed	presence/absence of current mine permit feature (all permit status types)	WVDEP Mine Permit Database, available from http://gis.dep.wv.gov/	2011

Indicator	Status	Description	Data Source	Date
Power lines (distance to closest)	completed	Euclidean distance from site to nearest mapped transmission line	WVDNR (2003) (available from http://wvgis.wvu.edu/data/dataset.php?ID=395)	2003
Precipitation (annual average)	completed	average annual precipitation at site	PRISM Climate Group 800m normals (Data from 1970-2000), available at www.prism.oregonstate.edu	1970-2000
Railroad terminals (distance to closest)	completed	distance from site along road network to nearest railroad intermodal facility	Bureau of Transportation Statistics National Transportation Atlas Database (2011) (available from: http://www.bts.gov/publications/national_transportation_atlas_database/2011/)	2011
Slope (percent)	completed	area of site in multiple slope classes	WV SAMB 3 meter Digital Elevation Model	2003
Streams (distance to closest)	completed	distance to closest mapped surface water	WV SAMB statewide surface water features (available from http://wvgis.wvu.edu/data/dataset.php?ID=265)	2003
Substations (distance to closest)	completed	Euclidean distance from site to nearest mapped power substation	WVDNR (2003) (available from http://wvgis.wvu.edu/data/dataset.php?ID=395)	2003
Temperature	completed	temperature, annual maximum average	PRISM Climate Group 800m normals (Data from 1970-2000), available at www.prism.oregonstate.edu	1970-2000
Town/city (distance to closest)	completed	distance from site along road network to nearest population center	Population centers defined as towns with population (2000 Census) over 1000. Road netwrok from	
Water supply (distance to) municipal	completed	distance from site to nearest municipal water supply facility	Proprietary dataset obtained from WV Infrastructure and Jobs Development Council	2011
Wetlands (acreage)	completed	area of wetland features within site	USFWS National Wetlands Inventory	varies
Wind speed data	completed	wind energy resource potential at site (maximum value)	National Renewable Energy Laboratory (NREL) data from TrueWind LLC (available from http://wvgis.wvu.edu/data/dataset.php?ID=369)	2003
NOT AVAILABLE STATEWIDE				

Indicator	Status	Description	Data Source	Date
Landowners (number, number of companies)	not available statewide	current landowner(s) for site	none statewide	
Leases	not available statewide	current land lease holder(s) for site	none statewide	
Number of parcels	not available statewide	number of parcels for site	none statewide	
PLANNED				
Ethanol facilities (distance to closest)	planned	distance from site along road network to nearest ethanol processing plant	Currently working to locate appropriate dataset	
Intermediate stockpile/ processing locations	planned	distance from site along road network to nearest stockpile/processin g location	Currently working to locate appropriate dataset	
Power plants (distance to closest)	planned	not available at this point, more info needed	Currently working to locate appropriate dataset	
ORIGINALLY CONSIDERED, REMOVED FROM ANALYSIS				
Acid Mine Drainage (acres)	removed from analysis	not needed		
Market proximity	removed from analysis	not needed		
Paved roads (distance to closest)	removed from analysis	distance from site to nearest paved road feature		
Population (within 15 minutes)	removed from analysis			
Population (within 30 minutes)	removed from analysis			
Population (within 60 minutes)	removed from analysis			

Indicator	Status	Description	Data Source	Date
Soil type	removed from analysis	not needed		
Sunny days per year	removed from analysis	no suitable data source located		
TO BE ANALYZED AT SITE LEVEL ONLY				
Bedrock, depth to	site level only	depth to bedrock at site	NRCS Statewide Soil Survey Geographic Database (SSURGO) county level data compiled statewide	varies
Ecological land units (ELUs)	site level only	area of site in multiple Ecological Land Unit classes	Calculated with methods from Anderson et al. (1998) using WV SAMB 3 meter Digital Elevation Model	2003
Forest fragmentation	site level only	area of site in various categories of forest fragmentation	2009/2010 interpreted land cover from Landsat TM 5 imagery (NRAC)	2009/2010
Moisture index	site level only	relative moisture index for site	Derived from WV SAMB 3 meter Digital Elevation Model using methods from (Grayson et al. 1992; Mitasova et al. 1996; Moore et al. 1991; Boer et al. 1996; O'Loughlin 1986; Parker 1982).	2003
Rock formations	site level only	bedrock geology at site, area by category/type	WVGES Geologic Map of West Virginia (available from http://wvgis.wvu.edu/data/dataset.php?ID=43)	1968