

Rock Creek Coal Mine—Bust or Boom

Costs & benefits of proposed Coal Mine in Rock Creek

*prepared for Save Our Cumberland Mountains
2007*

Executive Summary

After nearly two decades of decline, rising coal prices combined with improved scrubber technology at power plants are fueling renewed interest in Tennessee coal mining, particularly in surface coal mining.¹ In particular, the Rock Creek area, already deemed partially unsuitable for mining because of the significant and irreversible projected environmental impacts, is once again subject to exploration and likely requests for mining permits.

The ecological reasons for prohibiting coal mines in the Rock Creek area remain unchanged – to date, management of the acid mine drainage from mine-sites is insufficient to avoid irreversible damage to water. At the same time, the socio-economic context has changed. Throughout the 1980's and 90's, second home development, urban growth, and land speculation have pushed land values upwards, putting pressure on Tennessee land and wildlife resources.² Rural land close to urban areas, such as that found in Bledsoe County, is particularly valuable for its scenic value, rural character, increasingly scarce outdoor recreational opportunities, watershed protection, and wildlife habitat. Increased land values have largely benefited local residents as land and homes are typically the sole source of equity and long-term savings. This changed context brings a new economic opportunity trade-off that must be taken into account when considering a proposed coal mine in the Rock Creek watershed.

History demonstrates that long-term sustainable economic well-being eludes local economies tied to the one-time windfall of resource extraction, particularly coal. Coal producing counties are among the poorest in the nation. In a review of more than 300 studies of the economic impacts of mining industries on non-metropolitan communities, university researchers found that roughly half of all published findings indicate negative economic outcomes in mining communities and the remaining half are split roughly evenly between positive and neutral/indeterminate outcomes. Positive outcomes are also more likely to come from the Western United States. Moreover, over half of all positive findings come from years prior to 1982. In virtually all other categories, the majority of the findings were negative.³

¹ “Conservationists Seek to Restrict surface coal mining in vital area of Cumberland Mountains,” Southern Environment Law Center, National Parks Conservation Association, National Audubon Society, joint press release, November 10, 2005. http://www.southernenvironment.org/newsroom/2005/11_10_tn_mining_petition.pdf

² “Coal Mining in Tennessee,” Tennessee National Wildlife Federation, November 2005.

³ Freudenburg, William, University of Wisconsin-Madison, and Wilson, Lisa, University of California- Santa Barbara, “Mining the Data: Analyzing the Economic Implications of Mining for Non-Metropolitan Regions,” *Sociological Inquiry*, Vol. 72, No. 4, Fall 2002.

Given both the negative economic track record and the severe ecological impacts of surface mining, it is critical that local communities and government fully evaluate the expected local benefits and local costs to determine if mining in fact brings sufficient benefits to merit the decision to approve a mine. This briefing explores some of the likely benefits and costs of a mine proposed by the Highlands Coal Company in the Hendon Community of Bledsoe County, Tennessee to help community members and local officials better evaluate current and future mining proposals.

Because our economic system rarely assigns a monetary value to community assets like waterways, topsoil and space for people to enjoy the outdoors, it is difficult to demonstrate in purely monetary terms the relative value of five to ten years of tax income compared to permanently impaired waterways and landscapes. Where possible, this report estimates the costs of some of the likely direct impacts of the mine, from reduced property values to increased road maintenance costs. Where monetary value is more difficult to assign, this report simply enumerates impacts.

PROJECTED SEVERANCE TAX REVENUES

The immediate benefit of a mine to Bledsoe County is the coal severance tax revenues that it would generate. Specifically, in a Bledsoe County Commission meeting in April 2006, Highlands Coal Company representative Randy Howser claimed the county would be losing out on \$1.4 million in coal severance tax revenues by refusing a mine that it is currently exploring the potential to develop. This proposed mine will be the reference scenario used throughout this report.

Over an estimated five-year permitted time horizon for the mine, the claimed \$1.4 million in severance tax revenue amounts to \$280,000 per year, or a relatively small 4.8% of the \$5.8 million in expenditures spent by Bledsoe county in fiscal year 2005.⁴ While this is no doubt a significant contribution from a single tax payer, it is a small part of the overall budget and must be compared to the potential costs associated with coal mining.

In addition, the projected revenues of \$1.4 million claimed by company representative Randy Howser probably overestimates either the amount of likely severance tax revenue. Either that or it would come in over such a long time period as to be virtually meaningless in the County budget. **In 2006, Tennessee's 20 active coal mines collectively generated \$689,843 in severance tax revenues, for an average of \$34,492 per mine per year.** Only one county, Claiborne, with six active mines, generated more than \$100,000 in severance tax revenues in 2006. Campbell and Anderson Counties, with the second and third largest coal severance tax revenues, received only \$89,340 from nine active mines and \$7,597 from three active mines respectively.

⁴ Annual Financial Report of Bledsoe County, Tennessee and Bledsoe County School Department, for the year ended June 30, 2006. <http://www.comptroller1.state.tn.us/repository/CA/2006/Bledsoe.pdf>

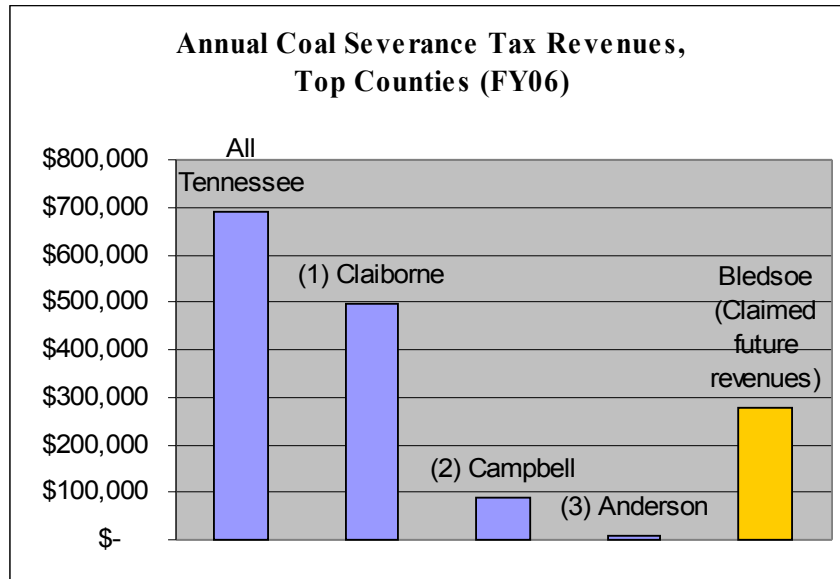


Figure 1. Highland Coal Company’s claimed annual severance tax revenues would exceed severance tax revenues in all but one county. This seems unlikely given that Campbell and Anderson Counties both receive less than \$100,000 annually with 9 and 3 active mines respectively.

The 1986 Environmental Impact Statement conducted by the Office of Surface Mining estimated the total recoverable surface reserves from the entire petition area at 16 million tons, and total underground recoverable reserves at 31 million tons. The Sewanee/Richland seams that Highlands is currently exploring are estimated to contain 14 million tons surface, and 14 million tons underground recoverable coal. OSMRE analysis at the time indicated a minimum of 350,000 tons production annually.⁵

The Tennessee coal severance tax rate is \$0.20 per ton of coal, which implies that the company expects to be able to get at least 7 million tons of coal from this site. That’s roughly half of the total estimated surface reserves in the Sewanee/Richland seams and 1.4 million tons per year over a 5-year time period. **At 40 tons per truck, that implies 35,000 truck-loads per year which is 96 trucks per day or one truck every 5 minutes, (assuming 7-days per week operations) just to transport the coal. Even if the projected time period to mine the site is doubled, that is still one truck every 10 minutes.**

In comparison to the current claim of \$1.4 million in severance tax revenues, the 1986 EIS estimated annual potential coal severance tax revenues from a potential mine in the Rock Creek area as approximately \$21,500. That was based on the then \$.10/ton tax and an estimated 175,000 tons per year surface mined, and 40,000 tons per year underground mined – amounts considered typical for a mine site at the time. A “typical” mine site at the time consisted of 200 acres (total disturbed area of 400 acres), and now 20-year-old extraction technology. The severance tax has doubled since that time, yielding approximately \$35,000/year from surface mined coal and \$8,000/year from underground coal, for a total of \$43,000 per year.

⁵ Rock Creek Watershed EIS, September 1986.

LAND & PROPERTY VALUES

Proximity to Chattanooga, scenic beauty, and low property prices and taxes, have made Bledsoe County, and particularly the area of Hendon Community in which the proposed mine site would be located, an increasingly popular residential location. Retirees and workers from Chattanooga are increasingly settling in Bledsoe County, and Hendon Community in particular, to enjoy a high quality of life, combining rural beauty with easy access to the dynamic city of Chattanooga. As a result land values – and therefore the equity community members have in their homes – have risen in recent years.

The 2000 census shows that the median house value in Bledsoe County was \$67,200, well below the Tennessee median of \$93,000. **According to data from the state property assessor’s website, in the last six months of 2006, seven houses on Hendon Road sold for an average price of \$170,843, more than double the 2000 median value for the county.**

Opening up the potential for surface coal mining in Hendon Community could reverse this fragile trend towards relative prosperity. The combined impacts of noise, dust, destruction of scenic beauty, impairment of surface and groundwater, and reduced safety and quality of local roads resulting from a surface coal mine would significantly undermine the very aesthetics and experience currently drawing people to settle in Hendon Community. It is generally accepted that residential property, and particularly retirement and second homes such as are being developed in Bledsoe County, are most sensitive to nuisance impacts as prospective buyers are highly attuned to the aesthetic value of the properties.

Beyond even the scope of this particular mine would be the perception that the county is now open for mining. Removing the unsuitable land use restrictions for one applicant clearly leaves the entire area open for further permit applications. One mine likely means more mining so that even if a particular property is not currently directly impacted it has a higher chance of being impacted in the future.

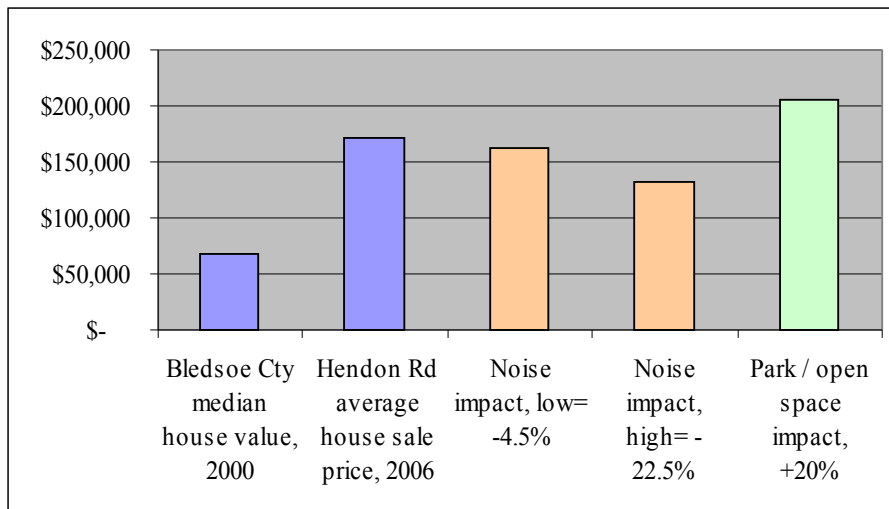


Figure 2. *The noise of mining alone could reduce home values in Hendon community by as much as 22.5%. Maintaining open space and scenic beauty, on the other hand, could add as much as 20% over time.*

In a review of more than 69 studies of the impacts of different types of noxious facilities on property values, University of Alberta researcher Chris Zeiss found that noise pollution in particular consistently has a large negative impact on property values. Property value impacts occur at 0.08 to 0.5% per decibel of noise level increase, up to totals of 4.5 to 22.5%.⁶ Construction, blasting, excavation, and hauling are all likely to produce significant noise pollution affecting both nearby properties as well as virtually any homes along Hendon Road given the large number of trucks needed to haul the projected amount of coal. Home owners would experience this as a drop in equity in their property, with resulting greater difficulty in selling should they need to do so, and greater difficulty in utilizing their home to generate equity for repairs, education, entrepreneurship, etc.

Parks and open space, on the other hand, have an overwhelmingly positive impact on property values. A review of approximately 30 empirical studies that looked at the extent to which parks influenced the market value of nearby properties (done by Prof. John L. Crompton of Texas A & M University) shows that well-maintained parks have an overwhelmingly positive effect on residential property values. Empirical evidence shows that passive recreation parks result in greater aggregate property price increments than do heavily used park whose main focus is active recreation, having such things as swimming pools or lighted ball fields. Properties adjacent to passive recreation parks are likely to sell for a 20% premium.⁷ As rural land with proximity to urban areas becomes more scarce, access to the quality of open space and landscape currently available in Hendon Community likely more closely approximate the premium effects of passive recreation space.

Case Study: Mining would undermine local development

Recognizing the demand for housing in the Hendon Community, Mr. Palmer developed his own property, creating a small lake and multiple lake front home sites. In July of 2006, Mr. Palmer was able to sell the first of these sites, a three-acre lake front lot with a custom built log cabin, for over \$250,000. Under current conditions, he anticipates being able to sell his remaining 8 lots for between \$27,500 and \$35,000 per acre. Mr. Palmer's property, however, is immediately adjacent to the proposed mine-site. In his case, a mine would destroy the lake front rural aesthetic that is key to his development, especially in the relatively high-end market he is pursuing. It would be very unlikely that he would be able to sell either the lots or developed houses at a price that would not be a loss to him. **For Mr. Palmer, that represents a loss of between \$220,000 and \$280,000 just for the undeveloped lots** – and he would lose the already sunk costs of preparing the sites and developing the lake. A more reasonable estimate of the impact on Mr. Palmer, however, is the lost opportunity to develop additional custom homes on the lots. At approximately \$250,000 per home, he stands to lose approximately \$2 million, minus the cost of development. Even at the low end, Mr. Palmer's loss alone comes close to a year's severance tax offered by the mine.

⁶ Chris Zeiss, "Waste Facility Impacts on Property Values," Waste Management and Research 17 (1), 50-58, February 1999.

⁷ "The Economics of Parks and Open Spaces: Harnessing the Proximity Effect for Smart Growth," Community Open Space Partnership, 2003. <http://ouopenspaces.com/Issues/Econ--ProximityEffects.html>

In addition to reduced market-value and equity, nearby homeowners face potential damage to their homes that can be expensive and for which it can be very difficult to obtain compensation. Federal law requires mine operators to prevent blasting damage to homes, water supplies, and protect public safety. Coal companies routinely cause damage but state and federal regulators rarely enforce the blasting standards for any type of coal mining.

Dynamite explosions utilized in coal mining are akin to small, localized earthquakes, damaging nearby structures and causing changes to underground waterways. For nearby homes, the most damaging impact is often the cracking of foundations resulting from blasting. Although legally required to compensate home-owners for this damage, coal companies do not have a particularly strong track record of responsiveness.

Case Study: Mining damage to existing homes

The last time a coal mine was active in the area, pre- and post-inspections were carried out by the same coal company-employed firm. At least three homeowners adjacent to the mine site experienced significant foundation damage that the mining company claimed were unrelated to its activities. Subsequently, a geological expert consultant retained by David Hardeman, determined that new horizontal cracking patterns in his foundation were consistent with damage caused by stripmine blasting. He reached similar conclusions for the two other homes. This same expert, in examining the company's blast records, found approximately 26 blasts reported by local residents for which there were no matching company records, and at least five shots on which pounds per delay was in excess of the permit limits at the indicated 1000-foot distance. **The total estimated cost for repairs to structures on David Hardeman's property is \$19,795, plus another \$1,285 for geologic consulting.** He faces the prospect of either mounting an expensive legal campaign against a better-funded coal company with its own stable of hired experts, or footing the repair bills himself.

Properties immediately adjacent to the mine site would of course be most directly impacted, but even properties several miles away would potentially impacted both by the perception of likely future mining as well as through the surface water impacts of acid mine drainage and the water table impacts of blasting. Groundwater impacts will be dealt with in a subsequent section. Properties throughout the watershed face potential surface water impairment, further reducing aesthetic and recreational value as well as reduced ability to support wildlife, agricultural or animal husbandry.

Numerous homes in the Hendon community use kitchen gardens to supplement food consumption. The combination of dust from mining activities (on-site and truck traffic), and acidic surface water would likely significantly impact the ability to grow food. The 1986 EIS found that the relatively few prime agricultural areas in the Rock Creek study area were concentrated primarily along Hendon and Legget Roads, close to the newly proposed mine-site.

The cumulative impact of reduced property values throughout Hendon Community would be a drop in Bledsoe County property tax collections at the same time that mining activity would likely place some additional demands on infrastructure maintenance. A 5% to 20% drop in assessed property value, given stable tax rates, translates directly into a drop in tax revenues, undercutting any potential increase in revenues from coal severance taxes.

The overall impact is likely to be a negative one, combining lower quality of life and equity for community members, reduced tax revenues, as well as a reversal of the current development trend that is bringing prosperity to local residents.

DAMAGE TO PUBLIC INFRASTRUCTURE

In the 1986 Environmental Impact Statement, OSMRE found that existing public roads within the watershed were inadequate for use as haul roads. Their findings noted that ***“coal mining in the area would result in potentially significant short-term impacts to local roads... The increased use could require expensive upgrades and maintenance. OSMRE cannot require mitigating measures for impacts on public roads – addressing costs associated with road maintenance is entirely up to local road authorities... In the event of mining, any increased maintenance costs for existing roads or the need to build new roads could cause financial burden to the counties. These costs would be balanced to only a small degree by taxes generated from coal production.”***⁸

Although County roads in the area have improved since that time, it is likely that mining would still cause significant impacts to local roads. Hendon Community, for example, now has a paved two-lane road. This road has become key to the residential expansion underway in the area, making it possible for commuters, as well as retirees in need of medical and other services, to quickly and safely travel to Chattanooga. In keeping with the character of the community, it was built to accommodate local, residential traffic, (not coal mining trucks).

Based on the claimed coal severance tax revenues, the proposed mine would generate approximately 7 million tons of coal over 5 to 10 years, or between 700,000 and 1.4 million tons per year. At 40 tons per truck, that implies 17,500 to 35,000 truck loads per year or a truck every 5-10 minutes, (assuming 7-day week operations) just to transport the coal. Additional heavy vehicle trips would be required to transport machinery and construction materials.

The generally accepted damage calculation from heavy truck use of roads is that damage done by heavy vehicles increases with approximately the fourth power of the axle load. This has been used for over 30 years as the best approximation available, although it is widely recognized that the power should be higher on weaker roads and lower on stronger road surfaces. Using the 4th power law, one axle of 10 tons is 160,000 times more damaging to a road surface than an axle of 0.5tonnes (car scale). This is why road surface maintenance is generally taken to be almost exclusively attributable to the heaviest vehicles.⁹

⁸ Rock Creek Watershed EIS, September 1986.

⁹ “Road Maintenance Costs to Local Authorities,” March 2006, <http://www.freightonrail.org.uk/PDF/Research-Maintenance.pdf>

In a very rough cost estimate, Tennessee Department of Transportation Assistant Director of Construction for the region, Richard Sullivan, notes that the kind of traffic described would likely need two 12-foot lanes for a 24-foot wide roadway. **If existing county roads are inadequate to handle the volume of heavy truck traffic generated by a mine, the cost to construct a new roadway to handle the load would be \$370,000 per linear mile** (without the installation of a shoulder which is advisable for coal hauling trucks). **Even just the maintenance of resurfacing of the existing pavement to deal with the wear and tear caused by heavy trucks would cost approximately \$85,000 per linear mile.**¹⁰ These costs of course will increase, perhaps significantly and likely more rapidly than coal tax revenues, over the next five to ten years as petroleum costs increase.

Bledsoe County is already experiencing problems keeping up with road maintenance. In the spring of 2006, developers and landowners filed a lawsuit claiming \$10 million in damages in compensation for the county's failure to maintain 21 miles of roads. Bledsoe County was not required to pay damages, but was required to immediately implement an extensive repair and maintenance effort. And as of June 30, 2006, the local Highway / Public Works Fund had uncompleted construction projects of \$172,612.

In addition to the direct costs of road maintenance, deteriorating road conditions over the life of the mine will mean that local residents have to spend additional money on car maintenance at the same time that they are losing valuable equity in their homes and face more difficult commutes competing with coal trucks. **In the end, local residents will pay increased personal car maintenance or increased taxes or both.**

EMPLOYMENT

Coal mines typically claim to bring jobs. Modern surface mining techniques, however, take the labor force out of mining. Large machines do most of the work, with little need for human labor input. Most mines in Tennessee currently employ fewer than 20 people.

Employment benefits to Bledsoe County residents of coal mining in the Rock Creek area would be extremely small. Given the characteristics of the region – thin coal seams and a small area – this mine would likely be a pan and dozer operation. The last time a coal mine was active in the area, it employed between ten and twelve people, mostly heavy equipment operators. Local residents, however, remember only one local person hired by the mine, as a night watchman.

Any jobs created by the mine would likely be short-lived. The proposed mine is relatively small and would likely take about 7-8 years to completely mine out, including initial construction and post-mining clean up.

RECLAMATION COSTS

¹⁰ Personal communication, Richard Sullivan, P.E., Assistant Director, TDOT Construction, March 21, 2007.

After the Surface Mining Control and Reclamation Act of 1977, mining companies were required to post a bond to pay for cases in which restoration is inadequate. Tennessee already has an estimated \$26.3 million price tag to deal with damage from past mines.¹¹ Eighteen counties are known to have damage. Southeast Tennessee is home to nine high-priority mine sites in need of reclamation. Homeowners whose new homes have slid into abandoned mines sites can attest to areas of unknown damage in southern counties.¹²

In Tennessee, bond amounts are based on the Office of Surface Mining's assessment of each site's mining and reclamation plan, unlike other states that are set on a per acre basis. Costs are based first on surface restoration – “filling in the open pits”, and then dealing with things like reclamation ponds, getting rid of buildings, etc. The benefit of this is that the amount hopefully more closely matches the actual costs. The downside of course is if OSM has incorrectly assessed the risk associated with the plan. Currently, the bonds posted at active mines range dramatically, from less than \$100,000 up to \$6.3 million.¹³ In the last five years OSM has forfeited a bond money to on one site, in contrast to the late 1980's and early 90's when several companies defaulted on their obligations and forfeited their bonds.

In many cases, full impacts and therefore reclamation costs are not known until after the company has done the minimal clean up and left. Once the mine site has been restored to its original contour, there is still acid mine drainage, damage to ground water storage and movement, and the long-term challenge of restoring soil productivity. The high susceptibility of the Rock Creek area to acid mine drainage makes it particularly difficult to accurately assess potential reclamation costs. In an earlier study of twelve reclaimed surface mine sites conducted by Save Our Cumberland Mountains, 83% of the sites continued to generate acid mine drainage that affected the quality of water outside of the permit area. In all of these sites, the majority of the bonds had been returned because OSM considered the site reclaimed.

One property owner in Bledsoe County is currently unable to get a building permit on her property because of damage to the water table caused by previous mining. She cannot get enough water percolation on her land to build the sewer system that is required for residential development in the area (because of the lack of city water).

WATER

The biggest deterrent to mining of any sort in this area is the impact of acid mine drainage. Even very small disturbances to the shale rock layer under a relatively thin layer of topsoil causes permanent increases in acidity of surface water. Shallow ponds built on local property have caused acid drainage problems, with now permanently acidic waterways below the pond. This is a well-known problem associated with mining in this area that has been covered in the previous Environmental Impact Statement and resulting in a Land Unsuitable for Mining Permit designation. The area remains highly susceptible to acid mine drainage, technology remains inadequate to control acid mine drainage, and the Rock Creek area's premier gorges and unaffected watershed have become more valuable as a result of development over the last 20 years.

¹¹ Office of Surface Mines, Abandoned Mine Land Inventory System. Accessed March 15, 2007.

¹² “Coal Mining in Tennessee,” Tennessee National Wildlife Federation, November 2005.

¹³ Personal communication, Doug Siddell, Office of Surface Mining, Knoxville Field Office, March 21, 2007.

Because mining has been prohibited for the last 20 years, Rock Creek Watershed as a whole remains relatively unaffected compared to other watersheds in the region, and although not pristine, the lower watershed supports diverse aquatic fauna and an excellent recreational fishery. The economic impact of this is perhaps best seen in the recreation and tourism, described in another section below.

In 1992 Save Our Cumberland Mountains conducted a study of the effectiveness of mine reclamation in addressing acid mine drainage impacts on area water supplies. They found that 83% of mine sites along the Sewanee coal seam were generating AMD that was affecting quality of water outside of the permit area. All of the sites in the study had already gone through at least Phase II Bond Release, meaning that a significant portion of the performance bond posted by the responsible mining company had already been released back to the company.¹⁴

The fourth most costly problem associated with abandoned coal mines in Tennessee is water pollution. Water pollution from abandoned coal mines has cost the state of Tennessee \$3.6 million.¹⁵ In the Appalachian Plateau, iron and manganese concentrations exceeded US Environmental Protection Agency drinking water guidelines in at least 40% of the wells, and about 70% of the wells near reclaimed surface coal mines.¹⁶ One study indicates a 25% to 33% reduction in home prices associated with groundwater pollution.¹⁷

In addition to water quality impacts, there is a good chance that mining in Rock Creek will impact the amount of water available to local residents. During active mining operations, ground water yield to a specific well may increase or decrease because of unpredictable fracturing of the strata within water-bearing zones. The 1986 final Environmental Impact Statement was unable to predict potential impacts of mining on local communities' groundwater supplies, noting that should protection plans prove inadequate, the impacts could be significant. The study further noted that **area hydrogeologic conditions are such that it is not possible to fully predict the impacts of mining or ensure that area wells maintain their current volume and quality.** As was true in 1986, area residents continue rely on groundwater, for which alternate, unaffected ground-water supplies are not be available.

Although OSMRE claimed that existing state regulations requiring a mining operation to replace water supplies lost as a result of mining activities provided adequate protection against this possibility, they also noted that it could be difficult to find replacement water. This is even more true today as intermittent water scarcity has developed throughout the region and urban development increases competition for water. Bledsoe County seat Pikeville, for example, has experienced water shortages in recent years, mining will potentially exacerbate this problem. In the

¹⁴ Save Our Cumberland Mountains, "Does Reclamation Work? A Study of Water Quality at Reclaimed Stripmine Sites in the Sewanee Coal Seam of Tennessee," April 1992.

¹⁵ Office of Surface Mines, Abandoned Mine Land Inventory System. Accessed March 15, 2007.

¹⁶ Economics of Mountain Top Removal Coal Mining, Appalachian Voices, <http://www.appvoices.org/index.php?mtr/economics/>, accessed March 19, 2007.

¹⁷ Simons, Robert & Winson-Geideman Kimberly, "Determining Market Perceptions on Contamination of Residential Property Buyers Using Contingent Valuation," The Journal of Real Estate Research, April-June 2005. http://www.findarticles.com/p/articles/mi_qa3750/is_200504/ai_n13638903

future, increased climate variability is likely to further impact water supplies, causing greater fluctuations in timing and greater competition between uses.¹⁸

Researchers have already identified groundwater protection as vital to economic development throughout the state. “Beginning in 1985 and continuing on through the summer of 1988, Tennessee experienced another major drought period which severely strained the water supplies of many communities across the state. In recent years, many of the small municipal water suppliers and utility districts that rely on wells, springs, or minor tributaries for their water sources continue to face severe water shortage problems. All across the state many private, domestic, and commercial use wells have become severely strained, forcing users to seek alternative sources of water. Providing an adequate supply of water for industrial, commercial, and domestic uses and the protection of these surface and groundwater resources are of major concern in all regions of the state and vital to the economic development and growth of the state.”¹⁹

OSMRE ultimately concluded that mining using conventional overburden mixing techniques could result in significant impacts to wells downhill from the Sewanee seam. OSMRE found that conventional reclamation techniques were not adequate to provide protection to domestic wells from the potential water-quality impact from mining the Sewanee seam. In communities like Hendon Community, where groundwater is the only source of drinking water, damage from acid mine drainage can force people to choose between leaving their homes and living with water they can’t use.

RECREATION AND TOURISM

Tourists spent an estimated \$2.73 million in Bledsoe County in 2004.²⁰

Mountain counties in Virginia, West Virginia, North Carolina and Tennessee that have no coal industry have enjoyed some of the greatest economic growth and property value increases in the country over the past few decades. Because of the booming economy built around tourism, for instance, Watauga County, North Carolina, has maintained one of the lowest unemployment rates of all 100 North Carolina counties in recent years. In contrast, the coal-producing counties to the north suffer some of the highest unemployment rates, lowest education rates, and highest poverty in the nation.²¹

In the 1986 EIS for the Rock Creek watershed, the Rock Creek gorge area was identified as “having high esthetic value,” and “valued as a relatively isolated area for hiking, hunting, fishing, and camping.” This area has increased in recreational and esthetic value in the last 20 years as urban growth in nearby Chattanooga increases regional population and decreases available recreational

¹⁸ Eastern Regional Energy-Water Needs Assessment Workshop notes, December 13, 2005.

¹⁹ Tennessee Water Resources Research Center Annual Technical Report 2001, http://water.usgs.gov/wrri/AnnualReports/2001/FY2001_TN_Annual_Report.pdf

²⁰ The Economic Impact of Tourism on Tennessee Counties, 2004 prepared by the Travel Industry of America (TIA) for the Tennessee Department of Tourist Development, August 2005.

²¹ What are the Economic Consequences of Mountaintop Removal in Appalachia?, Appalachian Voices, <http://www.appvoices.org/index.php?/mtr/economics/>

land area. Increased population also increases demand for environmental quality, and particularly recreational use of water.²²

Tourism is currently the number one employer in the state of Tennessee, employing 175,700 and generating more than \$11 billion in revenue in 2004. What’s more, tourism is a growth industry for Tennessee and has fewer detrimental impacts to the landscape and ecology. A large percentage of this is local and regional tourism – within-state tourism generates almost 10 million visits per year.

Proximity to Chattanooga and Knoxville provides a strong source of local outdoor tourism for Bledsoe County. Most recent trends in outdoor activity participation show that more participants are seeking outdoor activities that can be “done in a day”.²³ Bledsoe County provides the perfect day-trip destination for Chattanooga residents to hike, bicycle, (fish & hunt?), and kayak. Knoxville is a bit further, but still within an occasional day-trip’s distance, as are the even larger cities of Nashville and Atlanta.

Overall, nearly three quarters of all Americans participated in outdoor activities in 2005, and more than 25% of Americans plan vacations around outdoor activities.²⁴ Bicycling, fishing, and hiking are among the most popular outdoor activities, and Bledsoe County currently has excellent opportunities to enjoy all of these.

Based on industry participation studies, the Chattanooga and Knoxville metropolitan areas respectively generate almost 450,000 and 630,000 recreational trips to the outdoors every year. Based on relatively conservative market share estimates, Bledsoe County could draw more than 22,000 visitors from Chattanooga and another 6,300 visitors from Knoxville in a year.²⁵

Activity	Total Potential Visitors, from Chattanooga MSA	Total Potential Visitors, from Knoxville MSA
Fishing	119,764	168,444
Bicycling	101,339	142,530
Hiking	82,913	116,615
Camping	79,843	112,296
Trail running	49,134	69,105
Kayaking	15,354	21,595
TOTAL VISITORS	448,346	630,587
Potential Bledsoe Share	22,417 <i>(5% of total)</i>	6,306 <i>(1% of total)</i>

Figure 3. Total potential visitor calculations are based on data from the Outdoor Industry Foundation, participation rates for the Southern U.S., and U.S. Census

population figures for 2004, Chattanooga and Knoxville Metropolitan Statistical Areas, populations between ages of 18 and 65.

Bledsoe County, and Hendon Community in particular, are already popular destinations for cyclists, hikers and kayakers. Kayakers currently use Hall Creek, Rock Creek, and McGill Creek. Even with only very limited parking and no developed put-in spots, the area is known as a premier

²² Eastern Regional Energy-Water Needs Assessment Workshop notes, December 13, 2005.

²³ Outdoor Industry Foundation, Participation Study, 2006.

²⁴ Outdoor Industry Foundation, Participation Study, 2006.

²⁵ Outdoor Industry Foundation, Participation Study, 2006.

kayaking spot among Southeast enthusiasts. Minimal additional development of parking and facilities to support kayaking, combined with distribution of information to potential users, would be a great boon to even greater use.

“Bledsoe County is an awesome whitewater county. It contains the headwaters of many of the best (kayak) runs on Walden Ridge... If more people knew about it, it would be a lot busier. I would say it is a step up from the Ocoee.” (Personal communication from local kayaker.)

Bicycling is even more popular. Nationwide, bicycling is one of the most popular outdoor activities, with more than 38% of adults participating. Bledsoe County is a popular destination for Chattanooga cyclists and the paving of Hendon Road spurred a boom in bicycling in Hendon Community. Cyclists travel to the area almost every weekend to take advantage of the rural scenery, rolling hills, smooth roads, and low traffic.

Finally, the completion of the Rock Ridge section of the Cumberland Trail State Scenic Trail through Bledsoe County provides a unique opportunity for some of the best hiking in the state. Once completed, the Cumberland Trail will traverse the entire state, providing 300 miles of backpacking and hiking. The section through the gorges in the Rock Creek is likely to be one of the more popular sections of the trail given it’s scenic beauty and easy access from Chattanooga.

In addition to in-state tourism, Bledsoe County stands to benefit in particular from tourism from nearby Georgia, which, after in-state travel, generates the most visits (4.4 million) to Tennessee.²⁶

A surface coal mine would negatively impact all of these tourist activities. Acid mine drainage would potentially increase acidity throughout the watershed, turning it orange, killing aquatic wildlife and reducing esthetic value. Mine traffic, particularly fast-moving trucks, would significantly increase the hazards for bicyclists, as would the long-term damage to the road. Bicyclists are particularly sensitive to competition with traffic and rough roads that can cause wrecks and damage bicycles. All potential travelers would also be deterred from driving in the area by mining trucks. Hikers attracted by river may be less likely to visit areas with impaired water and would be deterred by truck traffic.

“Overall visual impacts range from negligible...to potentially significant in the scenic Rock Creek gorge areas (including along the Cumberland Trail).”
-1986 Environmental Impact Statement.

Conclusions

Overall, the identified local costs associated with mining in the Rock Creek watershed appear to undermine the likely benefits that would accrue locally. Primary local benefits of a coal mine are the coal severance tax revenues and jobs. The severance tax revenues of \$1.4 million projected by Highlands Coal Company appear to be overstated when compared to revenues generated elsewhere in Tennessee. Even as claimed, spread out over the life of the project, they provide

²⁶ Profile of the State of Tennessee, Tennessee Department of Tourist Development, May 2006.
<http://state.tn.us/tourdev/pdf/state%20profile%202006%20revised.pdf>

relatively modest annual revenue to Bledsoe County, about \$200,000 of Bledsoe County's annual budget of \$5.8 million. If production is consistent with other surface mines in Tennessee, annual revenues would be closer to \$35,000-\$50,000.

It is possible that the mine would employ 10-12 people. Previous mines in the area employed primarily people from out of the county who already had the needed skills.

Both revenues and employment would last for about seven years.

In contrast, local residents are likely to be directly impacted by reduced property values, and in at least one case, largely destroying development potential. Noise, reduced scenic value, the stigma of mining, water pollution, and truck traffic all combine to undermine the very reasons that people are seeking to live in Hendon Community and Bledsoe County. Although immediate neighbors will of course be most directly impacted, several of the impacts such as truck traffic, deteriorated roads, and water pollution, are likely to be felt over a wide area.

Severance tax revenues provided by the mine would be severely undercut if not completely overwhelmed with the cost of repairing the roads impacted by coal trucks. Resurfacing of the primary roads used could cost \$85,000 per mile or more. Upgrading roads to be able to handle the projected amount of traffic could cost significantly more.

The original reason for rejected coal mining in the watershed, high susceptibility and inability to manage acid mine drainage, of course remains a significant threat to the watershed. Water quality and quantity impacts, although difficult to assign monetary value to, are key considerations. Potential impacts on local drinking water supplies are even more of a concern than when mining was previously considered given increasing regional water scarcity and the potential for climate change to shift surface water availability patterns.

The existing rural character and scenic beauty have raised home values in recent years and, combined with open space development, is beginning to draw a nascent outdoor tourism industry for the county. The physical presence of the coal mine as well as the large number of trucks projected would both deter visitors, reducing the \$2.73 million that Bledsoe already receives from tourism. In addition, the synergy between nearby open space opportunities and property values would be undercut (one estimate indicates a nearly 20% premium associated with access to open space).

Even stepping back to consider the potential contribution to national energy security, the proposed coal mine would provide less than one thousandth (.001%) of the nation's annual coal consumption (1,128 tons in 2005). All together, given the information currently available, this preliminary cost benefit analysis indicates that the costs born by local residents appear greater than the relatively few benefits.