

Tazewell County

Proposed Wind Farm Development

Final Report – Economic Impact Study

November 2009

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LETTER OF TRANSMITTAL

November 12, 2009

Mr. James H. Spencer, III County Administrator
Tazewell County
108 East Main Street
Tazewell, VA 24651

Re: **Economic Impact Study – Dominion Resources/BP Energy Wind Farm Proposal**

Dear Mr. Spencer:

We are pleased to provide you with Springsted's final report for the anticipated fiscal impacts of development of a wind farm by Dominion Power and BP Energy in Tazewell County. The report provides the projected economic impacts of the proposed development over a 20-year period and considers a wide range of local government revenues based upon information provided by the County and from Dominion Resources and research conducted by Springsted on the impact of wind farms on other communities throughout the country. The report incorporates all requested components of the County's approved Work Plan and we have prepared twenty-five (25) bound copies of the report and an electronic version for the County's use. Also, according to our Work Plan, we will present the final report at a public meeting of the Board of Supervisors on Tuesday, November 17th.

It has been our pleasure to work with the County on this project. We would like to thank you, County Engineer Gary Earp, County Attorney Eric Young, members of the Tazewell County Industrial Development Authority (IDA) and other County staff who provided us information, answered questions and assisted us in better understanding the nature of the project and potential issues as they relate to Tazewell County.

We look forward to answering any questions you may have and working with the County in the future.

Respectfully submitted,

John A. Anzivino

John A. Anzivino, Senior Vice President
Client Representative

1. Executive Summary

Dominion Power and BP Energy are proposing to develop a wind farm within Tazewell County, Virginia along the ridgeline of East River Mountain between the Towns of Bluefield and Tazewell. This Study is intended to aid the County and the Tazewell IDA in evaluating the proposed development and to forecast or understand the economic impact of the proposed development upon the County. The basis of this study is to project the direct and indirect/induced impacts on Tazewell County's local government revenue, property values, County tourism, estimated job creation, average annual wages of each job created, loss of property use and the effect on "The Bluestone – A Regional Business and Technology Center".

According to preliminary plans provided to Tazewell County by Dominion Resources, the proposed \$200 million project is anticipated to consist of approximately 60MW of turbines, which equates to approximately 30-40 turbines. The proposed development is anticipated to result in the following:

- 150 construction jobs during the construction period;
- 10-15 long term jobs;
- \$10 million in local products and services;

To determine indirect and induced impacts upon the County Springsted used numbers provided by the federal Bureau of Economic Analysis (BEA) through its Regional Input-Output Modeling System (RIMS II). The RIMS data includes direct-effect multipliers for 59 different industry aggregations and allowed us to calculate the number of positions likely to be created as a result of the business generated by the development, along with the total payroll associated with the new indirect/induced jobs. The multipliers provided by the BEA are specific to Tazewell County, Virginia.

The model also makes use of a number of underlying assumptions to arrive at potential impacts, the interactions between which may have significant effects on the projected outcomes of the proposed project. Some assumptions used in the analysis were provided by the IDA and some were initiated by Springsted utilizing information gained by research on similar projects with all assumptions detailed in the Assumptions section of the report.

The impact of the construction of the wind farm and job creation may create additional revenue opportunities for Tazewell County. Revenues will be received through a combination of property tax, sales tax, and other revenue sources, projected as follows:

- Total new County revenue of approximately \$9.2 million over the 20-year study period. This represents gross revenues; if any adverse impacts occur, they would be subtracted from this amount.
- Approximately \$3.7 million of this is expected to occur within the construction year and first five years of operations, as indicated below. For purposes of the study Year 2012 is utilized as a construction year for the actual site preparation and erection of the wind turbines and the following years 2013 through 2032 are considered years of wind turbine operation.

Projected Benefits	2013-2017		2018-2032		Total
	2012	(5 years)	(15 years)		
Sales Taxes: General	\$ 189,000	\$ 9,193	\$ 37,336	\$ 235,529	
Sales Taxes: Other	\$ -	\$ -	\$ -	\$ -	
Total Sales Tax	\$ 189,000	\$ 9,193	\$ 37,336	\$ 235,529	
Property Taxes: Commercial/Direct	\$ -	\$ 3,054,989	\$ 5,464,031	\$ 8,519,020	
Property Taxes: Residential/Indirect	\$ -	\$ -	\$ -	\$ -	
Total Property Tax	\$ -	\$ 3,054,989	\$ 5,464,031	\$ 8,519,020	
Other Revenues:	\$ 466,317	\$ -	\$ -	\$ 466,317	
Total Revenues	\$ 655,317	\$ 3,064,183	\$ 5,501,367	\$ 9,220,866	

As a component of the study and as previously noted, Springsted researched current literature regarding potential impacts of a wind farm on residential property values and tourism activities (see Appendix II for references). Though a variety of anecdotal research and opinion surveys has been done in this area, there is little in the way of statistical analysis on the real effects of such projects on communities throughout the country. With no defined evidence of impacts to utilize in our analysis, potential effects on the County are difficult to accurately assess. We have modeled hypothetical adverse impacts of 5% and 10% on tourism revenues and 5% on residential property values for illustrative purposes. These estimates are based upon anecdotal information from available resources which have been thoroughly researched. As calculated and illustrated in the tables below these hypothetical impacts would reduce the County's benefit by \$2.2 million to \$3.2 million over the course of the 20-year study period.

Potential Tourism Impacts	2012		2013-2017		2018-2032		Total
			(5 years)		(15 years)		
Baseline							
Traveler Expenditures	\$	50,436,345	\$	275,806,606	\$	1,120,094,168	\$ 1,446,337,118
Travel-Related Payroll	\$	10,569,704	\$	57,799,473	\$	234,732,785	\$ 303,101,962
Local Tax Receipts	\$	725,287	\$	3,966,166	\$	16,107,226	\$ 20,798,679
5% Impact							
Traveler Expenditures	\$	-	\$	(13,790,330)	\$	(56,004,708)	\$ (69,795,039)
Travel-Related Payroll	\$	-	\$	(2,889,974)	\$	(11,736,639)	\$ (14,626,613)
Local Tax Receipts	\$	-	\$	(198,308)	\$	(805,361)	\$ (1,003,670)
10% Impact							
Traveler Expenditures	\$	-	\$	(27,580,661)	\$	(112,009,417)	\$ (139,590,077)
Travel-Related Payroll	\$	-	\$	(5,779,947)	\$	(23,473,279)	\$ (29,253,226)
Local Tax Receipts	\$	-	\$	(396,617)	\$	(1,610,723)	\$ (2,007,339)
Potential Property Value Impacts							
Baseline							
Residential Property Values in Viewshed	\$	175,130,247	\$	915,852,546	\$	3,194,545,787	\$ 4,285,528,580
Estimated Real Estate Tax Receipts	\$	1,015,755	\$	5,311,945	\$	18,528,366	\$ 24,856,066
5% Impact							
Residential Property Value Impact	\$	-	\$	(45,792,627)	\$	(159,727,289)	\$ (205,519,917)
Real Estate Tax Impact	\$	-	\$	(265,597)	\$	(926,418)	\$ (1,192,016)
Net Impacts							
Project Benefits	\$	655,317	\$	3,064,183	\$	5,501,367	\$ 9,220,866
Tourism Impact (5%)	\$	-	\$	(198,308)	\$	(805,361)	\$ (1,003,670)
Residential Property Tax Impact (5%)	\$	-	\$	(265,597)	\$	(926,418)	\$ (1,192,016)
Net Benefit (Scenario 1)	\$	655,317	\$	2,600,277	\$	3,769,587	\$ 7,025,181
Tourism Impact (10%)	\$	-	\$	(396,617)	\$	(1,610,723)	\$ (2,007,339)
Residential Property Tax Impact (5%)	\$	-	\$	(265,597)	\$	(926,418)	\$ (1,192,016)
Net Benefit (Scenario 2)	\$	655,317	\$	2,401,969	\$	2,964,226	\$ 6,021,512

Finally, we examined any potential effects the project might have on development of the Bluestone Business Park which is in its initial stage of construction. Given the lack of quantifiable information of such projects upon residential effects, and the limited amount of indirect economic activity related to the proposed wind farm, we estimate no measurable impact on development at The Bluestone for business uses and impacts on future residential development consistent with the estimates provided in the study for the County overall.

2. Project Description

Dominion Power and BP Energy are proposing to develop a wind farm within Tazewell County along the ridge line of East River Mountain between the Towns of Bluefield and Tazewell, Virginia. This Study is intended to aid the County of Tazewell and the Tazewell IDA in evaluating the proposed development and to forecast or understand the potential economic impacts of the proposed development and project the direct and indirect/induced impacts on local government revenue, property values, county tourism, estimated job creation, average annual wages of each job created, loss of property use and the effect on “The Bluestone – A Regional Business & Technology Center.”

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3. Assumptions

The model used to develop data on the proposed project makes use of a number of underlying assumptions, the interaction between which can have significant effects on the projected outcomes of the project. In this section, the variety of assumptions used in calculating the impacts of the development are outlined to set the baseline for calculations for the Study.

Proposed Development

Springsted was provided with a description of the proposed development including size of development, number of turbines, employment, and estimated cost by Tazewell County. The data was confirmed in discussions between Springsted staff and Dominion Resources representatives to ensure that there had not been significant modifications to the proposed project. The proposed project detail is summarized in the table below.

Area:	Approx 11 miles
Rated Generation Capacity:	60 MW
Number of Turbines:	30-40 (1.5MW to 2.0MW each)
Full-Time Jobs Created:	10-15
Construction Year:	2012
First Year of Operation:	2013

Based on data from obtained from other wind farm projects, as well as planning materials published by a variety of government and research entities, Springsted estimates the cost of each turbine to be approximately \$1.5 million per megawatt, for a total cost of approximately \$90 million for the new wind turbines. In addition, based upon available research we estimate that infrastructure improvements, electrical connections and related equipment will add approximately 35% to the project cost, bringing total taxable investment by Dominion and BP Energy to approximately \$121,500,000. The developer will also incur costs from other activities such as engineering, site studies, project management, insurance, etc. These activities and costs are not modeled, as they are not likely to have an economic impact in Tazewell County.

We assume that the bulk of sales tax revenues collected due to the proposed project will be received during the construction period for the project. When development is complete, we project that approximately 10-15 workers will be needed to maintain and monitor the turbines and related electrical equipment. We assume that these technicians will be drawn from the local area and will not require new homes nor add students to the local school system. We estimate the average salary of workers will be approximately \$46,500 in 2013, based on recent job listings for turbine maintenance technicians and field maintenance managers, adjusted for Tazewell County's wages and inflated to 2013 values.

Property Tax Assumptions:

- The developers have purchased over 2,500 acres for the project. This land generates \$8,831 in property taxes for the County. This amount is not included in our calculations, as it serves as an existing base figure from which future estimates are projected.
- We have assumed that the turbines will be treated as real property for property tax purposes. To the extent that any related equipment is treated as tangible personal property, revenues would be increased accordingly. At this time, due to the lack of available detail on the project we have no way of determining the proportion of equipment that would be taxed at the personal property rate. After conversations with County officials and in the interest of estimating benefits on the conservative side, we assume that all equipment will be taxed at the real property rate.
- Based on figures received from the developer, the turbines will be depreciated on a 12-year straight-line depreciation schedule.
- Current Tazewell County property tax rates (FY 2008/2009) per \$100 of assessed value have been utilized and held fixed throughout the study period, as follows:
 - Real Estate - \$0.58;
 - Tangible Business Property - \$2.00

Inflation:

- Payroll inflation: 3% per year (based on the cost of living adjustment over the ten year period of 1999-2008).
- Construction/Furniture Fixtures and Equipment (FF&E) cost inflation: 4.865% per year (based on 50-year construction cost index average).
- Property market value growth: 1.5% per year. This inflator is difficult to estimate in the current real estate environment, as the timing and extent of recovering real estate values remains unclear.

Construction Spending:

- Spending on the turbines themselves is not included in our construction spending calculations, as it is assumed that these materials are coming from outside Tazewell County.
- Other construction costs are assumed to be 50% materials and 50% labor, based on historical averages for earth moving and road projects.
- Taxable profits for construction firms are expected to be 10% of total costs.
- Construction permit fees are calculated at the estimated construction cost times the County's current fee rate of 0.003838.
- Of the total construction materials purchased, half are expected to be taxable by Tazewell County.
- Construction workers are projected to earn \$45,000 average salaries.
- Half of taxable spending by construction workers will occur in Tazewell County.

Sales Tax:

- Sales tax rates are assumed to be 4% for the Commonwealth, and 1% for localities.
- Workers are expected to spend 40% of their pay on taxable goods and services.

Other Assumptions

In addition to the direct impacts listed above, we have calculated indirect and induced impacts related to the proposed project. Indirect and induced impacts are defined as those arising from economic activity growing up around the development, but not directly part of the project. The indirect activities usually involve support industries which provide goods and services to the businesses involved in the development project (such as concrete and other construction related materials), or which serve as customers or clients to the project's businesses. The induced activities involve household spending by both the direct and indirect employees.

To model these indirect and induced impacts, Springsted used numbers provided by the federal Bureau of Economic Analysis (BEA) through its Regional Input-Output Modeling System (RIMS II). The RIMS data include direct-effect multipliers for 59 different industry aggregations. These multipliers allowed Springsted to calculate the number of positions likely to be created as a result of the business generated by the development, along with the total payroll associated with the new indirect/induced jobs. The multipliers provided by the BEA are specific to Tazewell County, Virginia.

For this analysis, the long-term jobs related to the project were assigned to the *Professional, Scientific and Technical Services* industry. As will be seen later in this report, the indirect and induced economic impacts related to this project are a small fraction of the direct impacts, due to the fact that the turbines and their crews require little in the way of support activities and materials.

4. Methodology

In computing the economic impact of the proposed development, the model uses the assumptions outlined in the previous section to calculate changes in the expected property tax and sales tax revenues available to Tazewell County. The economic impact generated by miscellaneous fees and services are also identified. This section will explain these calculations in more detail.

Property Tax Calculations

Growth in the tax base of the affected jurisdiction is calculated by combining the commercial/industrial growth resulting from the new development with the growth in residential property created when new housing is built to accommodate new employees.

New residential property construction is expected to be zero, as it is assumed that the workers hired to maintain the wind farm will be drawn from the local work force, and will have existing housing in the area.

For commercial and industrial property, the model looks at the total value of buildings and improvements and furniture, fixtures and equipment (FF&E). Each of these categories is expected to be taxed at the applicable local rates.

Building and improvement values are inflated annually by the property market value inflation factor. The turbines and related equipment are depreciated on a 12-year straight-line depreciation schedule as noted in the assumptions section. These values are multiplied by the appropriate assessment factors and tax rates to calculate the total property tax revenue.

Sales Tax Calculations

Fiscal impacts related to sales tax collections are derived from three primary sources: construction materials used in the development of the project, sales taxes generated by the businesses in the new development, and sales taxes generated by construction workers and long-term employees.

During the construction phase of the wind farm project, a proportion of the costs are assumed to come from taxable materials purchased. These proportions are defined by the values used in the assumptions section. The total value of the materials and FF&E purchases is multiplied by the local sales tax rate to arrive at a total sales tax impact from construction-related activities.

The final component of the sales tax impact comes from the personal spending of construction workers and the new employees directly or indirectly related to the new businesses. The total payroll of these employees is multiplied by the “taxable spending” factor and taxable personal spending is multiplied by the local tax rate to arrive at the total sales tax impact from personal spending.

Other Benefits

For the purposes of this model, “other” benefits are limited to direct payments made by the construction and development companies related to the project. These include payments for plan review, permits and inspections, and related services. No marginal or per-capita benefits are calculated outside of the property and sales taxes described above.

Costs versus Benefits

The model used for this Study limits the costs incurred by the County to include extraordinary one-time expenditures, and direct incentives offered to the developers. As of this report’s publishing date, no such costs have been identified. Costs to provide governmental services, including marginal or per-capita costs based on population or employment are outside the scope of this study; due to the small number of permanent jobs created, we estimate limited expenditure impacts to be incurred by the County for operational purposes.

5. Local Government Revenue Impacts

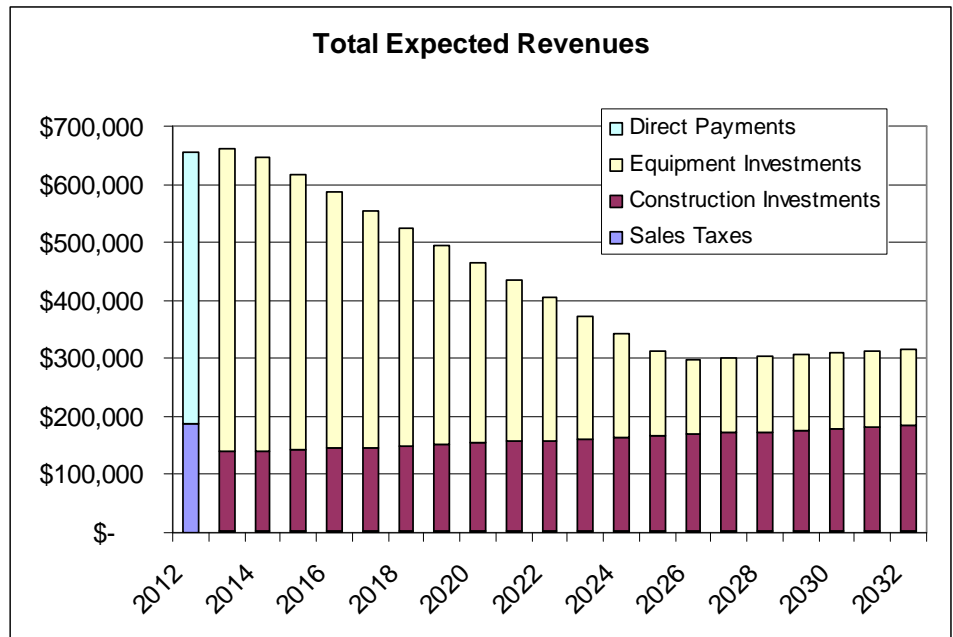
An overview of the economic impacts represented by the proposed development have been developed and are included below. The results are cumulative and include a subset for the first five years of operation with cumulative impacts presented for years 2018 through 2032.

Direct Impacts

In this section of the model, direct economic impacts generated by the proposed project are broken into three areas: sales taxes, property taxes, and other revenues. Sales taxes include revenues generated by sales of construction materials during the construction period, as well as consumer spending by construction workers and long-term workers. Property taxes cover those revenues generated by buildings, improvements, and equipment. Other revenues represent direct payments made by the developer.

	2012	2013-2017 (5 years)	2018-2032 (15 years)	Total
Sales Taxes - General				
Construction				
Bluestone Wind Project	\$ 189,000	\$ -	\$ -	\$ 189,000
New business sales and purchases				
Bluestone Wind Project	\$ -	\$ -	\$ -	\$ -
Employee spending				
Bluestone Wind Project	\$ 9,193	\$ 37,336	\$ 46,529	\$ 46,529
Total Sales Taxes - General:				
Bluestone Wind Project	\$ 189,000	\$ 9,193	\$ 37,336	\$ 235,529
Property Taxes				
Project land				
Bluestone Wind Project	\$ -	\$ -	\$ -	\$ -
Project construction				
Bluestone Wind Project	\$ 705,989	\$ 2,462,531	\$ 3,168,520	\$ 3,168,520
Project FFE				
Bluestone Wind Project	\$ 2,349,000	\$ 3,001,500	\$ 5,350,500	\$ 5,350,500
New residences				
Bluestone Wind Project	\$ -	\$ -	\$ -	\$ -
Total Property Taxes:				
Bluestone Wind Project	\$ 3,054,989	\$ 5,464,031	\$ 8,519,020	\$ 8,519,020
Other Revenues				
Direct payments from developer				
Bluestone Wind Project	\$ 466,317	\$ -	\$ -	\$ 466,317
Total Other:				
Bluestone Wind Project	\$ 466,317	\$ -	\$ -	\$ 466,317
Total County Benefits				
Bluestone Wind Project	\$ 655,317	\$ 3,064,183	\$ 5,501,367	\$ 9,220,866

The figures on the previous page indicate that the majority of the County’s revenues are expected to be derived from property taxes generated by the project. The table below shows the estimated year-to-year revenues which would be generated by each major category.



As shown above, sales taxes have a noticeable impact on County revenues in the first year, when construction activities are under way. After operations begin, the sales tax generated by maintenance staff is negligible due to the small amount of goods and materials that may be purchased to sustain the project. This is due to the projected payroll for long-term workers which is estimated at approximately \$558,000 in 2013, with an additional \$60,000 in indirect and induced payroll added to the County’s economy. Given the model’s spending assumptions, this level of payroll means an additional \$173,000 would be spent on taxable goods and services in the County, resulting in an estimated \$1,730 in sales tax revenues being returned directly to the County. By 2032, annual sales tax receipts are expected to reach \$3,000. Over the course of the planning period, sales tax revenues are expected to make up approximately 2.5% of the County’s anticipated benefit.

As estimated in the model, property taxes generated by the value of the turbines and related equipment are significant in the early years of operations, and decrease in value each year as the equipment depreciates. These values level off at approximately \$130,000 annually after the year 2025. The taxes paid on other buildings and improvements related to the project are expected to be approximately \$137,000 in 2013, growing to a value of \$182,000 by 2032.

The numbers calculated in this report are comparable to the estimates provided by the developer in its past presentations to the County. In later years, our figures are somewhat higher than those of the developer; we assume this is largely due to different assumptions regarding inflation and property appreciation rates, as listed in the Assumptions section (page 6) of this report.

Indirect Impacts

In addition to the direct economic benefits generated by the proposed project, we also modeled impacts from anticipated indirect and induced economic activity created by the project. In general terms, these impacts represent employment generated in order to provide materials and services directly in support of the project.

As noted above, the indirect and induced impacts calculated for the proposed wind farm project are negligible, given that payroll impacts would create an additional \$60,000 in potential revenues. This is because the anticipated 10-15 permanent jobs to be created consist mostly of operations and maintenance staff, which are expected to require little by way of goods and services purchased in Tazewell County to support their activities.

It should be noted that our results are somewhat different from those of a recent study produced by ECONorthwest analyzing the economic impacts of the Desert Claim Wind Power Project in Kittitas County, Washington. Although that analysis appears to project more substantial indirect and induced impacts, Springsted disagrees with the report's assumptions. Specifically, the economic multipliers used in the study appear to correspond to a regular utility project. We believe that the long-term jobs and activities related to a wind farm are more properly considered as technical maintenance and operations activities. This difference in approach to calculating the potential impacts of the proposed Tazewell project is significant, as the multiplier for a new electrical generating facility or water works can have an induced/indirect multiplier in excess of 100%, while projections used in the Study and which Springsted relied upon used a multiplier of just over 10%. In addition, the proposed Tazewell County project is about one-third the size of the Washington State project, further limiting the opportunities for induced or secondary impacts.

6. Tourism Impacts

A concern raised by the County pertains to the proposed development's potential effects on the County's tourism industry. Measurements of the impact of wind farms on tourism are limited due to the relatively recent development of wind farms within the United States and throughout the world. Two of the most widely cited studies come from Nantucket Sound (Massachusetts) and from Scotland. In each of these studies, tourists were asked whether the presence of wind turbines would affect their decisions on where they visit and how long they stay. Because the studies were survey-based, their results are of limited usefulness in predicting future effects, because respondents do not always behave as they say they would. Nevertheless, these studies can provide some indication for possible effects on tourism, if we bear in mind their limitations.

Research Findings

The Scottish survey results indicated that tourism spending in areas within view of a wind farm might be reduced by 5.1% to 13.6%. These impacts were based on survey results in which respondents representing 5.1% of tourism spending said they would not return to an area with wind farms, and another group representing 8.5% of spending who said they might possibly not return.

In the United States, the primary research on the impacts of wind farms on tourism studied the effects of a proposed wind farm in Nantucket Sound and its potential effects on tourism in the Cape Cod area. The results of this survey showed that approximately 5% of visitors would avoid spending time in an area with wind farms or shorten their visits, offset by approximately 1% of visitors who said they would be more likely to stay longer. This study also showed that about 11% of visitors would pay less for lodging, again offset somewhat by 1% who would pay more.

In its final analysis, the Cape Cod/Nantucket Sound study estimated that the presence of a wind farm would result in the loss of 1.2% to 2.6% of the area's tourism jobs.

We wish to emphasize that the figures cited above are based on opinion surveys, and that it would be inappropriate to treat them as predictive of actual effects.

Current Tourism Levels

The Virginia Tourism Board's report on Tazewell County estimates that tourism accounted for approximately 580 jobs and \$644,000 in local tax receipts in 2008. These figures were up from 508 jobs and \$473,000 in tax receipts in 2004. Detailed figures are shown in the following table.

	2004	2005	2006	2007	2008
Traveler Expenditures	\$ 31,866,630	\$ 34,362,782	\$ 38,890,075	\$ 42,144,284	\$ 44,812,039
Travel-Related Employment	508	509	542	560	580
Travel-Related Payroll	\$ 7,740,127	\$ 7,823,476	\$ 8,558,524	\$ 8,865,777	\$ 9,391,045
Local Tax Receipts	\$ 473,452	\$ 496,687	\$ 556,621	\$ 600,353	\$ 644,408
State Tax Receipts	\$ 1,532,568	\$ 1,587,209	\$ 1,753,605	\$ 1,860,336	\$ 1,930,521

Comparing payroll to job numbers, we have estimated that the average annual wage of tourism-related jobs in Tazewell County rose from approximately \$15,000 per year in 2004 to approximately \$16,000 per year in 2008. It is assumed for the purposes of the Study that the modest size of tourism related wages is due to a high proportion of seasonal and part-time jobs in the industry.

In verifying the data we compared the Tourism Board's estimates against the 2002 Economic Census numbers from the U.S. Census Bureau and reviewed County employment estimates in the areas of recreation, food service, and accommodations. From the review of data conducted we have found that the estimates are compatible.

Illustrative Impacts

With the available research that has been completed, we have found it difficult to model any impacts related to tourism that would be generated by the proposed wind project. For the sake of illustration, we projected potential impacts on the County if the proposed development were to negatively affect tourism by 5% or 10%. The model projects the reduction across the entire County, while the view shed covers only a fraction of the County. It does not take into account those areas outside the view shed, nor does it account for the offsetting factor of tourism shifting from a location in the view shed to another location within the County. For this reason, we believe the numbers used in our illustration are very aggressive.

The 2008 tourism figures from the Virginia Tourism Board are inflated each year by the 3% payroll inflation factor discussed in the assumptions section. The projected effects are listed in the table on the following page.

Potential Tourism Impacts	2013-2017		2018-2032		Total
	2012	(5 years)	(15 years)		
Baseline					
Traveler Expenditures	\$ 50,436,345	\$ 275,806,606	\$ 1,120,094,168	\$	1,446,337,118
Travel-Related Payroll	\$ 10,569,704	\$ 57,799,473	\$ 234,732,785	\$	303,101,962
Local Tax Receipts	\$ 725,287	\$ 3,966,166	\$ 16,107,226	\$	20,798,679
5% Impact					
Traveler Expenditures	\$ -	\$ (13,790,330)	\$ (56,004,708)	\$	(69,795,039)
Travel-Related Payroll	\$ -	\$ (2,889,974)	\$ (11,736,639)	\$	(14,626,613)
Local Tax Receipts	\$ -	\$ (198,308)	\$ (805,361)	\$	(1,003,670)
10% Impact					
Traveler Expenditures	\$ -	\$ (27,580,661)	\$ (112,009,417)	\$	(139,590,077)
Travel-Related Payroll	\$ -	\$ (5,779,947)	\$ (23,473,279)	\$	(29,253,226)
Local Tax Receipts	\$ -	\$ (396,617)	\$ (1,610,723)	\$	(2,007,339)

Little impact is expected on the County's tourism revenues during the construction year of 2012, which is used as a baseline year for estimates. In the 5% impact scenario, County tax receipts are expected to be reduced by approximately \$1 million between 2013 and 2032. In the 10% scenario, this doubles to \$2 million over the study period. If these factors are applied to tourism-related jobs, they estimate a potential loss of 60-120 seasonal and part-time jobs over the 20-year period. Again, we emphasize that these projections are intended to be illustrative, and not predictive.

7. Residential Property Value Impacts

Another concern expressed by the County was the potential impact to residential property values near the proposed development or within the view shed. Springsted reviewed an array of studies on these potential effects.

Research Findings

Studies of the estimated impacts of wind farms on real property values are more numerous than tourism studies, though many of these studies suffer similar weaknesses in methodology. In most cases, studies rely on survey data to determine the impacts anticipated by residents and real estate professionals. Unfortunately, subjective opinions cannot be relied upon to predict real-life behaviors or the effects of a particular project on the value of real estate and real property.

For the purposes of this study, we eliminated previously developed reports based on anecdotal data or opinion surveys as being too unreliable from which to draw conclusions, and concentrated on four reports which dealt with actual property transactions that occurred before and after wind farms were built and became operational. These include a 2003 study by Sterzinger, Beck & Kostiuk for the Renewable Energy Policy Project (REPP), a 2005 study by Poletti for Invenergy, a 2006 study by Hoen, and an ongoing study by Hoen and Wisner. None of the four transaction-based studies demonstrated a statistically significant effect on real property values due to wind farm construction.

We acknowledge that the transaction-based studies are limited by virtue of methodology and sample sizes. The Hoen and Wisner study expected to be released in the near future addresses many of these concerns, though its findings are still preliminary at the time of this report. Even in light of their limitations, we believe that these studies represent the best available research at this time, and they do not support the contention that wind farms adversely affect property values in their view shed.

Given that information and quantitative studies of wind farm impacts are limited, we looked to related areas of study for guidance on potential property value impacts. One such area involved the impacts of high-tension power lines on nearby residential properties. This is an area that has received significantly more analysis than wind farms. One of the most widely cited studies was performed by Des Rosier in 2002, and concluded that electric power lines have an adverse impact on residential values of roughly 10%, if the property is located within 500 feet of a transmission tower. Given that there is almost no residential property within 500 feet of the proposed wind turbines, the HVTL study also provides little guidance in the area of adverse impacts created by a wind farm project.

Illustrative Impacts

Without statistically reliable studies that clearly demonstrate property value impacts, we were reduced to looking at opinion-based studies, much as we were when examining tourism impacts. The Nantucket Sound study referenced earlier in this report estimated that in addition to tourism effects, residents and visitors felt property values could be reduced by approximately 4% due to the proposed wind farm; realtors surveyed in the same study estimated negative property impacts at approximately 5%. With the understanding that no firm numbers exist to quantify property value impacts, we estimated the potential effects of a 5% value reduction on residential properties in the proposed view shed area in the County.

To identify those properties that might potentially be impacted by views of the turbines, Springsted started with a review of the photo simulations provided by the developer. These simulations provided examples of how the ridge would look after wind turbines were erected, and included views from eight different points around the area. From these simulations, we determined that the greatest potential impacts were north and south of the proposed development, along the Highway 19/460 and Highway 61 corridors.

The simulated views from Tazewell and Bluefield showed towers in the distance, consistent with the estimated distance between the turbines and the two towns. From reference maps of the area, we estimate that the distance from Tazewell to the edge of the wind farm is over three (3) miles, while the distance from Bluefield to the eastern edge of the farm is approximately two (2) miles. The distance factor, combined with the presence of significant other man-made objects (such as cell phone towers, power lines, etc.) and visual distractions in the developed areas of the two towns, prompted us to discount potential impacts in these areas.

A review of Tazewell County's tax assessment records for the view shed area identified approximately \$160 million in residential property, including land, buildings and improvements. These values are from the County's 2006 reassessment; they are estimated to increase to approximately \$175 million by 2012. This value includes all residential properties along the two highway corridors, and is likely to overstate the total values, due to a number of properties with restricted or non-existent views of the ridge line. In particular, we believe that a significant number of properties along Highway 61 would have their views of East River Mountain obscured by Buckhorn Mountain in the foreground. Nevertheless, without a reasonable means of determining which properties would have obscured views, we felt it more appropriate to overstate this value rather than to understate it.

A summary of potential property value impacts is shown in the table on the following page.

Potential Property Value Impacts	2012	2013-2017 (5 years)	2018-2032 (15 years)	<u>Total</u>
Baseline				
Residential Property Values in Viewshed	\$ 175,130,247	\$ 915,852,546	\$ 3,194,545,787	\$ 4,285,528,580
Estimated Real Estate Tax Receipts	\$ 1,015,755	\$ 5,311,945	\$ 18,528,366	\$ 24,856,066
5% Impact				
Residential Property Value Impact	\$ -	\$ (45,792,627)	\$ (159,727,289)	\$ (205,519,917)
Real Estate Tax Impact	\$ -	\$ (265,597)	\$ (926,418)	\$ (1,192,016)

As seen in the table above, a 5% impact on residential property values would reduce the County's property tax revenues by approximately \$266,000 in the first five years of the wind farms operation. If real property appreciates at an average annual rate of 1.5%, the total tax impact of a hypothetical 5% value reduction would equal just under \$1.2 million over the course of the 20-year planning period.

8. Business Park Impacts

The last area of concern examined in the report regards the potential effects of the proposed wind farm on the County's efforts to develop the Bluestone Regional Business and Technology Center, a multi-use development site between Tazewell and Bluestone.

Typically, when attempting to measure an economic impact on a specific real estate development such as a business park, there is either a presumption that the economic event (in this case the wind farm) involves a direct purchase/lease of the particular real estate in question, or that the economic event is of a nature that it enhances or induces an industry cluster. The proposed wind farm is not a manufacturing facility that might induce a vertical industry supply chain cluster. Neither does the wind farm alone suggest that there would develop an extensive horizontal interconnection between businesses sharing knowledge and resources.

On the commercial and industrial side, we find little impact on development of the Center. Our analysis shows very limited indirect or induced economic effects due to the wind farm, far less than the amount needed to promote development of support industries and businesses in the area.

On the residential and recreational side, we also find little impact. The Center is expected to have a limited view of the wind farm, and our research shows no evidence of adverse property value effects due to locations in the view shed.

On the whole, we foresee no significant impacts on the Bluestone Regional Business and Technology Center. This should not be interpreted to suggest that the Bluestone Regional Business and Technology Center will not be successful, only that the wind farm alone will not have a significant impact. It is possible that as part of the community's economic development marketing and incentive efforts and commitment to renewable and alternative energy production, business and research prospects might emerge for the Technology Center; but to what extent is highly speculative and relies upon numerous factors difficult to quantify.

9. Conclusion

The basis for this study is to estimate what economic impacts a wind farm proposed by Dominion Resources and BP Energy may have on Tazewell County, Virginia. More specifically, Springsted worked to project the potential impacts on local government revenue, property values, County tourism, future employment and loss of property use using available resources which quantified and in some cases estimated the impacts of similar operations on communities.

The model makes use of a number of underlying assumptions, the interaction between which can have significant effects on the projected outcomes of the project. Some assumptions were provided by the County, the County's IDA and the developer, and others were initiated by Springsted; these are detailed in the Assumptions section of the report.

An overview of the economic impacts represented by each scenario is shown in the table on the next page and serves as the basis of our summary of potential impacts.

Wind Farm Project Impacts

Projected Benefits	2013-2017		2018-2032		Total
	2012	(5 years)	(15 years)		
Sales Taxes: General	\$ 189,000	\$ 9,193	\$ 37,336	\$	235,529
Sales Taxes: Other	\$ -	\$ -	\$ -	\$	-
Total Sales Tax	\$ 189,000	\$ 9,193	\$ 37,336	\$	235,529
Property Taxes: Commercial/Direct	\$ -	\$ 3,054,989	\$ 5,464,031	\$	8,519,020
Property Taxes: Residential/Indirect	\$ -	\$ -	\$ -	\$	-
Total Property Tax	\$ -	\$ 3,054,989	\$ 5,464,031	\$	8,519,020
Other Revenues:	\$ 466,317	\$ -	\$ -	\$	466,317
Total Revenues	\$ 655,317	\$ 3,064,183	\$ 5,501,367	\$	9,220,866

Potential Tourism Impacts	2013-2017		2018-2032		Total
	2012	(5 years)	(15 years)		
Baseline					
Traveler Expenditures	\$ 50,436,345	\$ 275,806,606	\$ 1,120,094,168	\$	1,446,337,118
Travel-Related Payroll	\$ 10,569,704	\$ 57,799,473	\$ 234,732,785	\$	303,101,962
Local Tax Receipts	\$ 725,287	\$ 3,966,166	\$ 16,107,226	\$	20,798,679
5% Impact					
Traveler Expenditures	\$ -	\$ (13,790,330)	\$ (56,004,708)	\$	(69,795,039)
Travel-Related Payroll	\$ -	\$ (2,889,974)	\$ (11,736,639)	\$	(14,626,613)
Local Tax Receipts	\$ -	\$ (198,308)	\$ (805,361)	\$	(1,003,670)
10% Impact					
Traveler Expenditures	\$ -	\$ (27,580,661)	\$ (112,009,417)	\$	(139,590,077)
Travel-Related Payroll	\$ -	\$ (5,779,947)	\$ (23,473,279)	\$	(29,253,226)
Local Tax Receipts	\$ -	\$ (396,617)	\$ (1,610,723)	\$	(2,007,339)

Potential Property Value Impacts	2013-2017		2018-2032		Total
	2012	(5 years)	(15 years)		
Baseline					
Residential Property Values in Viewshed	\$ 175,130,247	\$ 915,852,546	\$ 3,194,545,787	\$	4,285,528,580
Estimated Real Estate Tax Receipts	\$ 1,015,755	\$ 5,311,945	\$ 18,528,366	\$	24,856,066
5% Impact					
Residential Property Value Impact	\$ -	\$ (45,792,627)	\$ (159,727,289)	\$	(205,519,917)
Real Estate Tax Impact	\$ -	\$ (265,597)	\$ (926,418)	\$	(1,192,016)

Net Impacts	2013-2017		2018-2032		Total
	2012	(5 years)	(15 years)		
Project Benefits	\$ 655,317	\$ 3,064,183	\$ 5,501,367	\$	9,220,866
Tourism Impact (5%)	\$ -	\$ (198,308)	\$ (805,361)	\$	(1,003,670)
Residential Property Tax Impact (5%)	\$ -	\$ (265,597)	\$ (926,418)	\$	(1,192,016)
Net Benefit (Scenario 1)	\$ 655,317	\$ 2,600,277	\$ 3,769,587	\$	7,025,181
Tourism Impact (10%)	\$ -	\$ (396,617)	\$ (1,610,723)	\$	(2,007,339)
Residential Property Tax Impact (5%)	\$ -	\$ (265,597)	\$ (926,418)	\$	(1,192,016)
Net Benefit (Scenario 2)	\$ 655,317	\$ 2,401,969	\$ 2,964,226	\$	6,021,512

The primary benefit estimated to accrue to the County comes in the form of property tax receipts, which are dominated by the taxes collected from the wind farms turbines and their associated equipment. These revenues are particularly significant in the early years of the project, though they decline steadily as the assets depreciate.

Sales tax and local employment are expected to be significant during the construction period itself, though long-term employment is expected to be modest, along the lines of 10-15 full-time employees engaged in maintaining and monitoring the wind farm.

Total benefits in the form of additional revenues to the County are estimated to be approximately \$9.2 million over the 20-year planning period.

Critics of wind development cite negative impacts to tourism and property values as offsetting factors to be considered when calculating economic benefits from a wind farm. Although reliable research numbers on tourism impacts are difficult to find, we have included two impact scenarios in our models that envision impacts at the 5% and 10% levels of adverse impact. Similarly, research on property value impacts has yet to show any measurable effects, so we include a hypothetical adverse residential property value impact of 5% for illustrative purposes.

In the first scenario, negative tourism impacts would offset the projected benefits by approximately \$1 million over the course of the 20-year study period. This represents a reduction of approximately 11% of the expected total benefits estimated. In the second scenario, these impacts are doubled, to approximately \$2 million and represent an impact of 22% of project benefits. In addition to the financial impacts, the scenarios estimate that tourism-related employment could be reduced by 65-135 seasonal and part-time positions.

Hypothetical property value impacts would offset the projected benefits by approximately \$1.2 million over the 20-year period. This represents a reduction of approximately 13% of the expected benefit.

Combined, the two hypothetical impacts would reduce total benefits from approximately \$9.2 million by 24% to 35%, resulting in a final benefit of approximately \$6.0 million to \$7.0 million.

APPENDIX I
Annual Economic Projections

County Annual Economic Projection – 5% Impact Scenario

Wind Farm Project Impacts

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Projected Benefits											
Sales Taxes: General	\$ 189,000	\$ 1,732	\$ 1,784	\$ 1,837	\$ 1,892	\$ 1,949	\$ 2,007	\$ 2,068	\$ 2,130	\$ 2,194	\$ 2,259
Sales Taxes: Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Sales Tax	\$ 189,000	\$ 1,732	\$ 1,784	\$ 1,837	\$ 1,892	\$ 1,949	\$ 2,007	\$ 2,068	\$ 2,130	\$ 2,194	\$ 2,259
Property Taxes: Commercial/Direct	\$ -	\$ 659,025	\$ 644,768	\$ 614,229	\$ 583,722	\$ 553,246	\$ 522,802	\$ 492,392	\$ 462,014	\$ 431,670	\$ 401,361
Property Taxes: Residential/Indirect	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Property Tax	\$ -	\$ 659,025	\$ 644,768	\$ 614,229	\$ 583,722	\$ 553,246	\$ 522,802	\$ 492,392	\$ 462,014	\$ 431,670	\$ 401,361
Other Revenues:	\$ 466,317	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Revenues	\$ 655,317	\$ 660,757	\$ 646,551	\$ 616,066	\$ 585,614	\$ 555,195	\$ 524,810	\$ 494,459	\$ 464,144	\$ 433,864	\$ 403,620

Potential Tourism Impacts

Baseline

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Traveler Expenditures	\$ 50,436,345	\$ 51,949,435	\$ 53,507,918	\$ 55,113,156	\$ 56,766,550	\$ 58,469,547	\$ 60,223,633	\$ 62,030,342	\$ 63,891,252	\$ 65,807,990	\$ 67,782,230
Travel-Related Payroll	\$ 10,569,704	\$ 10,886,795	\$ 11,213,399	\$ 11,549,801	\$ 11,896,295	\$ 12,253,184	\$ 12,620,779	\$ 12,999,403	\$ 13,389,385	\$ 13,791,066	\$ 14,204,798
Local Tax Receipts	\$ 725,287	\$ 747,045	\$ 769,457	\$ 792,541	\$ 816,317	\$ 840,806	\$ 866,030	\$ 892,011	\$ 918,772	\$ 946,335	\$ 974,725

5% Impact

Traveler Expenditures	\$ -	\$ (2,597,472)	\$ (2,675,396)	\$ (2,755,658)	\$ (2,838,328)	\$ (2,923,477)	\$ (3,011,182)	\$ (3,101,517)	\$ (3,194,563)	\$ (3,290,400)	\$ (3,389,111)
Travel-Related Payroll	\$ -	\$ (544,340)	\$ (560,670)	\$ (577,490)	\$ (594,815)	\$ (612,659)	\$ (631,039)	\$ (649,970)	\$ (669,469)	\$ (689,553)	\$ (710,240)
Local Tax Receipts	\$ -	\$ (37,352)	\$ (38,473)	\$ (39,627)	\$ (40,816)	\$ (42,040)	\$ (43,302)	\$ (44,601)	\$ (45,939)	\$ (47,317)	\$ (48,736)

Potential Property Value Impacts

Baseline

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Residential Property Values in Viewshed	\$ 175,130,247	\$ 177,757,201	\$ 180,423,559	\$ 183,129,912	\$ 185,876,861	\$ 188,665,014	\$ 191,494,989	\$ 194,367,414	\$ 197,282,925	\$ 200,242,169	\$ 203,245,801
Estimated Real Estate Tax Receipts	\$ 1,015,755	\$ 1,030,992	\$ 1,046,457	\$ 1,062,153	\$ 1,078,086	\$ 1,094,257	\$ 1,110,671	\$ 1,127,331	\$ 1,144,241	\$ 1,161,405	\$ 1,178,826

5% Impact

Residential Property Value Impact	\$ -	\$ (8,887,860)	\$ (9,021,178)	\$ (9,156,496)	\$ (9,293,843)	\$ (9,433,251)	\$ (9,574,749)	\$ (9,718,371)	\$ (9,864,146)	\$ (10,012,108)	\$ (10,162,290)
Real Estate Tax Impact	\$ -	\$ (51,550)	\$ (52,323)	\$ (53,108)	\$ (53,904)	\$ (54,713)	\$ (55,534)	\$ (56,367)	\$ (57,212)	\$ (58,070)	\$ (58,941)

Net Impacts

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Project Benefits	\$ 655,317	\$ 660,757	\$ 646,551	\$ 616,066	\$ 585,614	\$ 555,195	\$ 524,810	\$ 494,459	\$ 464,144	\$ 433,864	\$ 403,620
Tourism Impact (5%)	\$ -	\$ (37,352)	\$ (38,473)	\$ (39,627)	\$ (40,816)	\$ (42,040)	\$ (43,302)	\$ (44,601)	\$ (45,939)	\$ (47,317)	\$ (48,736)
Residential Property Tax Impact (5%)	\$ -	\$ (51,550)	\$ (52,323)	\$ (53,108)	\$ (53,904)	\$ (54,713)	\$ (55,534)	\$ (56,367)	\$ (57,212)	\$ (58,070)	\$ (58,941)
Net Benefit (Scenario 1)	\$ 655,317	\$ 571,855	\$ 555,756	\$ 523,331	\$ 490,894	\$ 458,442	\$ 425,975	\$ 393,492	\$ 360,993	\$ 328,477	\$ 295,942

County Annual Economic Projection – 5% Impact Scenario (cont.)

Wind Farm Project Impacts

Projected Benefits	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Sales Taxes: General	\$ 2,327	\$ 2,397	\$ 2,469	\$ 2,543	\$ 2,619	\$ 2,698	\$ 2,779	\$ 2,862	\$ 2,948	\$ 3,036	\$ 235,529
Sales Taxes: Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Sales Tax	\$ 2,327	\$ 2,397	\$ 2,469	\$ 2,543	\$ 2,619	\$ 2,698	\$ 2,779	\$ 2,862	\$ 2,948	\$ 3,036	\$ 235,529
Property Taxes: Commercial/Direct	\$ 371,086	\$ 340,846	\$ 310,642	\$ 296,787	\$ 299,281	\$ 301,813	\$ 304,383	\$ 306,991	\$ 309,638	\$ 312,325	\$ 8,519,020
Property Taxes: Residential/Indirect	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Property Tax	\$ 371,086	\$ 340,846	\$ 310,642	\$ 296,787	\$ 299,281	\$ 301,813	\$ 304,383	\$ 306,991	\$ 309,638	\$ 312,325	\$ 8,519,020
Other Revenues:	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 466,317
Total Revenues	\$ 373,413	\$ 343,243	\$ 313,111	\$ 299,330	\$ 301,901	\$ 304,511	\$ 307,161	\$ 309,853	\$ 312,586	\$ 315,362	\$ 9,220,866

Potential Tourism Impacts	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Baseline											
Traveler Expenditures	\$ 69,815,697	\$ 71,910,168	\$ 74,067,473	\$ 76,289,497	\$ 78,578,182	\$ 80,935,527	\$ 83,363,593	\$ 85,864,501	\$ 88,440,436	\$ 91,093,649	\$ 1,446,337,118
Travel-Related Payroll	\$ 14,630,942	\$ 15,069,870	\$ 15,521,966	\$ 15,987,625	\$ 16,467,254	\$ 16,961,272	\$ 17,470,110	\$ 17,994,213	\$ 18,534,040	\$ 19,090,061	\$ 303,101,962
Local Tax Receipts	\$ 1,003,967	\$ 1,034,086	\$ 1,065,108	\$ 1,097,061	\$ 1,129,973	\$ 1,163,873	\$ 1,198,789	\$ 1,234,752	\$ 1,271,795	\$ 1,309,949	\$ 20,798,679
5% Impact											
Traveler Expenditures	\$ (3,490,785)	\$ (3,595,508)	\$ (3,703,374)	\$ (3,814,475)	\$ (3,928,909)	\$ (4,046,776)	\$ (4,168,180)	\$ (4,293,225)	\$ (4,422,022)	\$ (4,554,682)	\$ (69,795,039)
Travel-Related Payroll	\$ (731,547)	\$ (753,494)	\$ (776,098)	\$ (799,381)	\$ (823,363)	\$ (848,064)	\$ (873,506)	\$ (899,711)	\$ (926,702)	\$ (954,503)	\$ (14,626,613)
Local Tax Receipts	\$ (50,198)	\$ (51,704)	\$ (53,255)	\$ (54,853)	\$ (56,499)	\$ (58,194)	\$ (59,939)	\$ (61,738)	\$ (63,590)	\$ (65,497)	\$ (1,003,670)

Potential Property Value Impacts	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Baseline											
Residential Property Values in Viewshed	\$ 206,294,488	\$ 209,388,906	\$ 212,529,739	\$ 215,717,685	\$ 218,953,451	\$ 222,237,752	\$ 225,571,319	\$ 228,954,888	\$ 232,389,212	\$ 235,875,050	\$ 4,285,528,580
Estimated Real Estate Tax Receipts	\$ 1,196,508	\$ 1,214,456	\$ 1,232,672	\$ 1,251,163	\$ 1,269,930	\$ 1,288,979	\$ 1,308,314	\$ 1,327,938	\$ 1,347,857	\$ 1,368,075	\$ 24,856,066
5% Impact											
Residential Property Value Impact	\$ (10,314,724)	\$ (10,469,445)	\$ (10,626,487)	\$ (10,785,884)	\$ (10,947,673)	\$ (11,111,888)	\$ (11,278,566)	\$ (11,447,744)	\$ (11,619,461)	\$ (11,793,752)	\$ (205,519,917)
Real Estate Tax Impact	\$ (59,825)	\$ (60,723)	\$ (61,634)	\$ (62,558)	\$ (63,497)	\$ (64,449)	\$ (65,416)	\$ (66,397)	\$ (67,393)	\$ (68,404)	\$ (1,192,016)

Net Impacts	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Project Benefits	\$ 373,413	\$ 343,243	\$ 313,111	\$ 299,330	\$ 301,901	\$ 304,511	\$ 307,161	\$ 309,853	\$ 312,586	\$ 315,362	\$ 9,220,866
Tourism Impact (5%)	\$ (50,198)	\$ (51,704)	\$ (53,255)	\$ (54,853)	\$ (56,499)	\$ (58,194)	\$ (59,939)	\$ (61,738)	\$ (63,590)	\$ (65,497)	\$ (1,003,670)
Residential Property Tax Impact (5%)	\$ (59,825)	\$ (60,723)	\$ (61,634)	\$ (62,558)	\$ (63,497)	\$ (64,449)	\$ (65,416)	\$ (66,397)	\$ (67,393)	\$ (68,404)	\$ (1,192,016)
Net Benefit (Scenario 1)	\$ 263,389	\$ 230,816	\$ 198,222	\$ 181,919	\$ 181,905	\$ 181,868	\$ 181,806	\$ 181,719	\$ 181,604	\$ 181,461	\$ 7,025,181

County Annual Economic Projection – 10% Impact Scenario

Wind Farm Project Impacts

Projected Benefits	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Sales Taxes: General	\$ 189,000	\$ 1,732	\$ 1,784	\$ 1,837	\$ 1,892	\$ 1,949	\$ 2,007	\$ 2,068	\$ 2,130	\$ 2,194	\$ 2,259
Sales Taxes: Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Sales Tax	\$ 189,000	\$ 1,732	\$ 1,784	\$ 1,837	\$ 1,892	\$ 1,949	\$ 2,007	\$ 2,068	\$ 2,130	\$ 2,194	\$ 2,259
Property Taxes: Commercial/Direct	\$ -	\$ 659,025	\$ 644,768	\$ 614,229	\$ 583,722	\$ 553,246	\$ 522,802	\$ 492,392	\$ 462,014	\$ 431,670	\$ 401,361
Property Taxes: Residential/Indirect	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Property Tax	\$ -	\$ 659,025	\$ 644,768	\$ 614,229	\$ 583,722	\$ 553,246	\$ 522,802	\$ 492,392	\$ 462,014	\$ 431,670	\$ 401,361
Other Revenues:	\$ 466,317	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Revenues	\$ 655,317	\$ 660,757	\$ 646,551	\$ 616,066	\$ 585,614	\$ 555,195	\$ 524,810	\$ 494,459	\$ 464,144	\$ 433,864	\$ 403,620

Potential Tourism Impacts

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Baseline											
Traveler Expenditures	\$ 50,436,345	\$ 51,949,435	\$ 53,507,918	\$ 55,113,156	\$ 56,766,550	\$ 58,469,547	\$ 60,223,633	\$ 62,030,342	\$ 63,891,252	\$ 65,807,990	\$ 67,782,230
Travel-Related Payroll	\$ 10,569,704	\$ 10,886,795	\$ 11,213,399	\$ 11,549,801	\$ 11,896,295	\$ 12,253,184	\$ 12,620,779	\$ 12,999,403	\$ 13,389,385	\$ 13,791,066	\$ 14,204,798
Local Tax Receipts	\$ 725,287	\$ 747,045	\$ 769,457	\$ 792,541	\$ 816,317	\$ 840,806	\$ 866,030	\$ 892,011	\$ 918,772	\$ 946,335	\$ 974,725
10% Impact											
Traveler Expenditures	\$ -	\$ (5,194,944)	\$ (5,350,792)	\$ (5,511,316)	\$ (5,676,655)	\$ (5,846,955)	\$ (6,022,363)	\$ (6,203,034)	\$ (6,389,125)	\$ (6,580,799)	\$ (6,778,223)
Travel-Related Payroll	\$ -	\$ (1,088,679)	\$ (1,121,340)	\$ (1,154,980)	\$ (1,189,629)	\$ (1,225,318)	\$ (1,262,078)	\$ (1,299,940)	\$ (1,338,938)	\$ (1,379,107)	\$ (1,420,480)
Local Tax Receipts	\$ -	\$ (74,705)	\$ (76,946)	\$ (79,254)	\$ (81,632)	\$ (84,081)	\$ (86,603)	\$ (89,201)	\$ (91,877)	\$ (94,633)	\$ (97,472)

Potential Property Value Impacts

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Baseline											
Residential Property Values in Viewshed	\$ 175,130,247	\$ 177,757,201	\$ 180,423,559	\$ 183,129,912	\$ 185,876,861	\$ 188,665,014	\$ 191,494,989	\$ 194,367,414	\$ 197,282,925	\$ 200,242,169	\$ 203,245,801
Estimated Real Estate Tax Receipts	\$ 1,015,755	\$ 1,030,992	\$ 1,046,457	\$ 1,062,153	\$ 1,078,086	\$ 1,094,257	\$ 1,110,671	\$ 1,127,331	\$ 1,144,241	\$ 1,161,405	\$ 1,178,826
5% Impact											
Residential Property Value Impact	\$ -	\$ (8,887,860)	\$ (9,021,178)	\$ (9,156,496)	\$ (9,293,843)	\$ (9,433,251)	\$ (9,574,749)	\$ (9,718,371)	\$ (9,864,146)	\$ (10,012,108)	\$ (10,162,290)
Real Estate Tax Impact	\$ -	\$ (51,550)	\$ (52,323)	\$ (53,108)	\$ (53,904)	\$ (54,713)	\$ (55,534)	\$ (56,367)	\$ (57,212)	\$ (58,070)	\$ (58,941)

Net Impacts

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Project Benefits	\$ 655,317	\$ 660,757	\$ 646,551	\$ 616,066	\$ 585,614	\$ 555,195	\$ 524,810	\$ 494,459	\$ 464,144	\$ 433,864	\$ 403,620
Tourism Impact (10%)	\$ -	\$ (74,705)	\$ (76,946)	\$ (79,254)	\$ (81,632)	\$ (84,081)	\$ (86,603)	\$ (89,201)	\$ (91,877)	\$ (94,633)	\$ (97,472)
Residential Property Tax Impact (5%)	\$ -	\$ (51,550)	\$ (52,323)	\$ (53,108)	\$ (53,904)	\$ (54,713)	\$ (55,534)	\$ (56,367)	\$ (57,212)	\$ (58,070)	\$ (58,941)
Net Benefit (Scenario 2)	\$ 655,317	\$ 534,502	\$ 517,283	\$ 483,704	\$ 450,078	\$ 416,401	\$ 382,673	\$ 348,892	\$ 315,054	\$ 281,160	\$ 247,206

County Annual Economic Projection – 10% Impact Scenario (cont.)

Wind Farm Project Impacts

Projected Benefits	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Sales Taxes: General	\$ 2,327	\$ 2,397	\$ 2,469	\$ 2,543	\$ 2,619	\$ 2,698	\$ 2,779	\$ 2,862	\$ 2,948	\$ 3,036	\$ 235,529
Sales Taxes: Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Sales Tax	\$ 2,327	\$ 2,397	\$ 2,469	\$ 2,543	\$ 2,619	\$ 2,698	\$ 2,779	\$ 2,862	\$ 2,948	\$ 3,036	\$ 235,529
Property Taxes: Commercial/Direct	\$ 371,086	\$ 340,846	\$ 310,642	\$ 296,787	\$ 299,281	\$ 301,813	\$ 304,383	\$ 306,991	\$ 309,638	\$ 312,325	\$ 8,519,020
Property Taxes: Residential/Indirect	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Property Tax	\$ 371,086	\$ 340,846	\$ 310,642	\$ 296,787	\$ 299,281	\$ 301,813	\$ 304,383	\$ 306,991	\$ 309,638	\$ 312,325	\$ 8,519,020
Other Revenues:	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 466,317
Total Revenues	\$ 373,413	\$ 343,243	\$ 313,111	\$ 299,330	\$ 301,901	\$ 304,511	\$ 307,161	\$ 309,853	\$ 312,586	\$ 315,362	\$ 9,220,866

Potential Tourism Impacts

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Baseline											
Traveler Expenditures	\$ 69,815,697	\$ 71,910,168	\$ 74,067,473	\$ 76,289,497	\$ 78,578,182	\$ 80,935,527	\$ 83,363,593	\$ 85,864,501	\$ 88,440,436	\$ 91,093,649	\$ 1,446,337,118
Travel-Related Payroll	\$ 14,630,942	\$ 15,069,870	\$ 15,521,966	\$ 15,987,625	\$ 16,467,254	\$ 16,961,272	\$ 17,470,110	\$ 17,994,213	\$ 18,534,040	\$ 19,090,061	\$ 303,101,962
Local Tax Receipts	\$ 1,003,967	\$ 1,034,086	\$ 1,065,108	\$ 1,097,061	\$ 1,129,973	\$ 1,163,873	\$ 1,198,789	\$ 1,234,752	\$ 1,271,795	\$ 1,309,949	\$ 20,798,679
10% Impact											
Traveler Expenditures	\$ (6,981,570)	\$ (7,191,017)	\$ (7,406,747)	\$ (7,628,950)	\$ (7,857,818)	\$ (8,093,553)	\$ (8,336,359)	\$ (8,586,450)	\$ (8,844,044)	\$ (9,109,365)	\$ (139,590,077)
Travel-Related Payroll	\$ (1,463,094)	\$ (1,506,987)	\$ (1,552,197)	\$ (1,598,763)	\$ (1,646,725)	\$ (1,696,127)	\$ (1,747,011)	\$ (1,799,421)	\$ (1,853,404)	\$ (1,909,006)	\$ (29,253,226)
Local Tax Receipts	\$ (100,397)	\$ (103,409)	\$ (106,511)	\$ (109,706)	\$ (112,997)	\$ (116,387)	\$ (119,879)	\$ (123,475)	\$ (127,179)	\$ (130,995)	\$ (2,007,339)

Potential Property Value Impacts

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Baseline											
Residential Property Values in Viewshed	\$ 206,294,488	\$ 209,388,906	\$ 212,529,739	\$ 215,717,685	\$ 218,953,451	\$ 222,237,752	\$ 225,571,319	\$ 228,954,888	\$ 232,389,212	\$ 235,875,050	\$ 4,285,528,580
Estimated Real Estate Tax Receipts	\$ 1,196,508	\$ 1,214,456	\$ 1,232,672	\$ 1,251,163	\$ 1,269,930	\$ 1,288,979	\$ 1,308,314	\$ 1,327,938	\$ 1,347,857	\$ 1,368,075	\$ 24,856,066
5% Impact											
Residential Property Value Impact	\$ (10,314,724)	\$ (10,469,445)	\$ (10,626,487)	\$ (10,785,884)	\$ (10,947,673)	\$ (11,111,888)	\$ (11,278,566)	\$ (11,447,744)	\$ (11,619,461)	\$ (11,793,752)	\$ (205,519,917)
Real Estate Tax Impact	\$ (59,825)	\$ (60,723)	\$ (61,634)	\$ (62,558)	\$ (63,497)	\$ (64,449)	\$ (65,416)	\$ (66,397)	\$ (67,393)	\$ (68,404)	\$ (1,192,016)

Net Impacts

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Project Benefits	\$ 373,413	\$ 343,243	\$ 313,111	\$ 299,330	\$ 301,901	\$ 304,511	\$ 307,161	\$ 309,853	\$ 312,586	\$ 315,362	\$ 9,220,866
Tourism Impact (10%)	\$ (100,397)	\$ (103,409)	\$ (106,511)	\$ (109,706)	\$ (112,997)	\$ (116,387)	\$ (119,879)	\$ (123,475)	\$ (127,179)	\$ (130,995)	\$ (2,007,339)
Residential Property Tax Impact (5%)	\$ (59,825)	\$ (60,723)	\$ (61,634)	\$ (62,558)	\$ (63,497)	\$ (64,449)	\$ (65,416)	\$ (66,397)	\$ (67,393)	\$ (68,404)	\$ (1,192,016)
Net Benefit (Scenario 2)	\$ 213,191	\$ 179,112	\$ 144,966	\$ 127,066	\$ 125,407	\$ 123,675	\$ 121,867	\$ 119,981	\$ 118,014	\$ 115,963	\$ 6,021,512

APPENDIX II

References

In gathering data for this report, Springsted relied on an assortment of different sources. In addition to our conversations with representatives of Tazewell County and the developers, we reviewed a wide variety of current literature relating to construction costs, property value impacts, and impacts on tourism-related business. A list of these references follows.

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