Potential Economic Impact of Outdoor Recreation in the Barre Town Forest, Vermont

Prepared for Kate Wanner, Trust for Public Land
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1.0. SUMMARY

This study presents estimates of the potential economic value of creating a new Barre Town Forest (BTF). The goal of the study is to detail and quantify the economic benefits that the protection of the BTF would have to the Town of Barre, Vermont, local businesses, and the surrounding region. Two main objectives guided the analysis: 1) assess potential impacts associated with recreational visits and tourist spending, and 2) assess potential impacts to revenues and new jobs in the regional economy.

Tourists that visit Barre to mountain bike or ski help generate employment by requiring related services (e.g. bike shop services), and by spending on other goods and services (e.g. food and lodging). It is conservatively estimated that approximately $481,000 is currently spent by mountain bike and winter use visitors through the Millstone Trails Association (MTA), the mountain biking and winter trail organization responsible for maintaining outdoor recreation opportunities at BTF. In a scenario with a conservative 10% annual growth rate in numbers of visitors, and protection and maintenance of the trail system, this amount could reach about $640,000 by 2015. The comparative case of Kingdom Trails in East Burke, Vermont was also assessed and used to build projections for BTF.

Kingdom Trails has been found to bring $4.5 million to the Vermont economy, based on a steady 18% annual growth rate since 2004.[1]. A second scenario was explored to determine the annual growth rate needed for MTA-managed recreation at BTF to match Kingdom Trails' total visitor spending by the year 2020. Based on current data, MTA would need an aggressive annual growth rate in visitors of about 29.5% to generate a similar contribution of $4.5 million to the Vermont economy by 2020.

Of the spending in these scenarios, approximately 73.7.2% is expected to be captured in the regional economy and re-circulated through the different sectors. Ripple effects are higher for goods and services produced locally, such as in the case of the lodging and restaurant services. Regional multipliers were conservatively chosen to reflect a rural context with limited economic development.

It is estimated that in 2015 20 jobs can be generated through an increased visitation of 10% per year. The restaurant and lodging sectors alone are expected to gain 13 additional jobs under this scenario.

[1] Tim Tierney, Executive Director of Kingdom Trails as described in appendix 1.

The higher growth scenario for BTF promises 142 jobs by year 2020 in the different sectors most directly affected by tourism spending. Each dollar in direct sales is expected to bring 39 cents in secondary effects yielding a total sales effect of $629,624 in 2015 and $4,482,927 in 2020. Visitor spending is projected to bring $269,083.56 as income in 2015 and $1,916,060.60 in 2020. Income impacts are again more pronounced for the restaurant and lodging sector. State sale taxes resulting from increased visitation in 2015 and 2020 are projected at $42,414 and $264,544 per year respectively.

2.0. BACKGROUND

The Trust for Public Land is working with the Town of Barre and non-profit Millstone Trails Association (MTA) to propose a Barre Town Forest. Trust for Public Land, MTA, other Barre non-profits and businesses, and the Kingdom Trails Association have played significant roles as stakeholders in the study.

3.0. METHODS

3.1. Overview

Four main objectives guided the analysis:

1. Estimate the change in the number of visitors and total spending to the region
2. Determine spending profiles for nonlocal (overnight) and local (day) visitors
3. Estimate local final demand, i.e. the portion of visitor spending remaining in the region, for different sectors
4. Apply sale, job, income, and tax multipliers to estimate economic impacts for different sectors

3.2. Site

The 370+/- acre site of the proposed Barre Town Forest is in the town of Barre, VT. The proposed site overlaps with a 70-mile trail network developed and maintained by the non-profit Millstone Trails Association. This trail network was compared with the development of Kingdom Trails in East Burke, VT to estimate potential economic impact.

3.3 Data Collection

Data for this analysis came from several key sources:

- Input from local experts and businesses
- Review of literature on economic impacts of tourism, recreation, and park systems
- Millstone Trails Association membership database 2006-2011

Interviews were conducted with Tim Tierney, Executive Director at Kingdom Trails Association; Darren Winham, Executive Director at Barre Area Development, Inc.; Todd Comen, Professor of Tourism and Hospitality at Lyndon State College; Mike Fraysier, President of MTA; and Cindy Lindemann, Trails Committee member of MTA. These conversations and other communications provided local expert input (see attached appendix 1).

Conversations were held with human resources staff at two local businesses, Northern Power Systems and SB Electronics. Surveys were developed and electronically distributed to employees of both organizations (see attached appendix 2). Unfortunately the surveys did not provide sufficient data (low return rate) and follow-up conversations with company staff indicated that recreational opportunities at Millstone trails were not used for employee recruitment.

3.4. Data Analysis – number of visitors and total visitor spending (objective 1)

Annual recreational values were derived by multiplying estimates of 1) recreational visits, and 2) visitor spending. For example, if the town forest is expected to cause an increase of 10 additional mountain bike visits per year, and mountain bike visits typically result in spending of $100 per visit, then the potential annual recreational value is $1,000.

Mountain bike and winter use (cross-country ski and snowshoe) visits were projected with known figures from MTA and a conservatively estimated annual visitor growth rate of 10%.[2] Visitor spending was estimated for local[3] (day use) and non-local (overnight) visitors.[4] All winter use visits were assumed to be day visits, while 85% of mountain bike visits were assumed to be day visits.[5] Overnight visits were assumed to involve 3 days.[6]

Visitor spending estimates were derived from a previous study of the Kingdom Trails and economic literature on the values and benefits of various recreational activities. Table 1 presents the primary estimate of spending at Kingdom Trails, followed by estimates from other economic studies. These values, when converted to 2011 dollars, validate Kingdom Trails estimates of spending by overnight visitors of $100 per person per day. Spending by locals is estimated at $30 per person per day.[7]

[2] Based on 18% growth at Kingdom Trails and estimates of reasonable expected growth rate from Tim Tierney and Mike Fraysier.

[3] Local visits are from visitors in the immediate vicinity of the BTF or within day trip distance. Non-local visits are from visitors outside of a day trip distance, including out-of-state, Canadian, and Southern Vermont visitors.

[4] Spending by local visitors has the potential to displace other local spending (local visitors may simply substitute recreation spending for other economic activities), but it also could indicate money staying in Barre that in the absence of local recreational opportunities would be spent on activities in other locations.

[5] Based on visitor profile from MTA membership database.

[6] Based on Kingdom Trails average length of visit of 3 days, and other recreational studies from e literature.

[7] It is unclear whether the Kingdom Trails study estimated local spending per day separately from overnight visitors.

Table 1: Estimates of visitor spending associated with recreational activities.

Source	Activity	Value per person per day (2011 US $)
Tim Tierney of Kingdom Trails, conservative estimate in personal interview Nov 16, 2011.	Mountain biking	$100 (overnight)
Fix, P. & J. Loomis. 1997. The Economic Benefits of Mountain Biking at One of Its Meccas: An Application of the Travel Cost Method to Mountain Biking in Moab, Utah. Journal of Leisure Research, Vol. 29: 342-352.	Mountain biking	$75-89
Wilbur Smith Associates. 2001. Bicycle Tourism in Maine: Economics Impacts and Marketing. Report prepared for Maine Department of Transportation.	Cycling	$13-64 (day use) $64-384 (overnight)
Connelly, N. & T. Brown. 1988. Estimates of nonconsumptive wildlife use on Forest Service and BLM lands. Series No. 88-2. Ithaca, NY: Human Dimensions Research Unit, Department of Natural Resources, Cornell University.	Nonconsumptive wildlife-related activities	$25.00
Hay, M.J. 1988. Net economic values of nonconsumptive wildlife-related recreation. Report 85-2. Washington, DC: US Fish and Wildlife Service.	Wildlife viewing	$64
Aiken, R. & G.P. la Rouche. 2003. Net Economic Values for Wildlife-Related Recreation: Addendum to the 2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation. Report 2001-3. Washington, DC: US Fish and Wildlife Service.	Wildlife viewing	$53 (day use) $187 (overnight)
Walsh et al., 1992 as referenced in the 1997 mountain biking study by Fix and Loomis.	Adirondacks hiking	$25-90

Annual day and overnight visitor spending was derived by combining annual numbers of visitors and spending per person per day, along with percent of visitors that were overnight visitor and relative average days per visit. Known visitation data from 2009 -2011 and growth rates informed by MTA and Kingdom Trails staff were used to project estimates to 2015. The same model was then used in a separate scenario to determine the conditions starting in 2010 that would be required to obtain an economic impact within 10 years similar in scale to Kingdom Trails.

3.5. Data Analysis – visitor spending profiles and local final demand (objectives 2 and 3)

The analysis draws from the conceptual framework and assumptions developed for the Money Generation Model (MGM), an Excel-based calculator developed to estimate economic impacts of

national parks.[8] The data for this study were not accurate and detailed enough to conduct a full MGM assessment and therefore a mix approach was followed, using default multiplier values from MGM and adapting them to the context of the Vermont economy based on previous tourism impact assessments and applications of the MGM in Vermont. Economic impacts in the MGM framework are assessed as follows:

*Economic impacts = Number of Visitors * Average spending per visitor * Economic multipliers*

It was assumed that visitors to BTF would allocate their spending among different categories as reported in other studies, with lodging accounting for the largest portion of overnight visitor spending followed by restaurant expenditures and a miscellaneous category (Other) that included local recreation in addition to the main tourism motivator and retail.[9] Spending profiles are assumed to remain unchanged in the projections for 2015 and 2020. Table 2 lists these categories per each visitor group.

Table 2: Percentage of visitor spending allocated to different categories of goods and services

Spending category	Overnight visits % spending	Day visits % spending
Lodging	0.35	0.00
Restaurant	0.25	0.30
Groceries	0.1	0.20
Gas	0.05	0.05
Other	0.25	0.45
Total	1.00	1.00

The extent to which visitor spending contributes to the local economy depends on the level that businesses and households in the region purchase goods and services from local suppliers. A significant portion of visitor spending typically "leaks" out of the regional economy due to imports. Lodging and restaurant services are provided entirely locally. Food produce that is grown locally generates earnings for the local producer and the local retailer. Gas for transportation by contrast is an import for which sales contribute very little to the local economy.

Table 3 lists the retail margins for each spending category and divides the producer price of the item between local producers and imports. For simplicity wholesale and transportation margins were ignored in these calculations. Lacking local figures for retail margins and producer price, the figures in the table are highly conservative.

[8] Accessed December, 2011 from http://35.8.125.11/mgm2_new/

[9] The Impact of the Tourism Sector on the Vermont Economy 1999-2000. Vermont Tourism Data Center, University of Vermont. September 2011.
The Travel and Tourism Industry in Vermont: A Benchmark Study of the Economic Impact of Visitor Expenditures on the Vermont Economy - 2007. Vermont Department of Tourism and Marketing

Table 3: Retail margins and producer prices for goods and services. Wholesale and transportations margins not included. Figures are highly conservative.

Spending category	Retail margin	Regional production	Imports	Total
Lodging	0	1	0	1.00
Restaurant	0	1	0	1.00
Groceries	0.1	0.1	0.8	1.00
Gas	0.1	0	0.9	1.00
Other	0.4	0.3	0.3	1.00

Lodging and restaurant services were considered as produced entirely locally. Groceries were accounted mostly as imports with only 20% of the direct sales accruing to the local economy. Only 10% of gas direct sales were assumed to be captured locally. The "Other" category includes direct sales of services such as recreation or locally manufactured goods, for which over 70% of direct sales would stay in the region.

Applying retail margins and producer prices factors to visitor spending generated estimates of direct sales effects (local final demand) and an overall *capture rate* of 73.7%, indicating the percentage of visitor spending that is captured and that can generate ripple effects through the local economy.

3.6. Data Analysis – impacts across sectors (objective 4)

Economic multipliers capture the various "rounds" of re-spending of the initial input of visitor spending until it leaks out of the region to buy goods and services from elsewhere (imports). It was beyond the scope of this study to extensively characterize, develop and apply multipliers for the region. Regional multipliers can be purchased through the US Department of Commerce's Bureau of Economic Analysis if a more accurate analysis is of interest in the future. Multipliers in this study were adapted from the default figures for a generic rural region in GMG. GMG defines rural regions as being "smaller regions (1-5 counties) with limited economic development, and low population (below 30,000)." These regions normally have low sales multipliers and higher than average job to sales ratios. Type II total effects multipliers were used, i.e. multipliers that account for *direct*, *indirect*, and *induced* effects (see definitions of key terms).

Multipliers were applied to direct sales to calculate total sales impacts, total job impacts, total income impacts, and sales tax impacts (Table 4).

Definitions of key terms:

Direct impacts are changes in sales, income, or jobs in the recreation/tourism sector. These effects are captured by the businesses directly involved in the sales of goods and services to tourists, such as retail shops, restaurants and lodging.

Indirect effects are the changes in sales, income or jobs in sectors within the region that supply goods and services to the recreation/tourism sectors. For example the increased sales in professional kitchen equipment resulting from more restaurant sales is an indirect effect of visitor spending.

Induced effects are the increased sales within the region from household spending of the income earned in the tourism and supporting sectors. For example employees of MTA might spend the income they earn from tourists on housing, utilities, groceries, etc.

Definitions of multiplier terms:

Sales multiplier: the change in sales for every dollar change in direct sales through the economy.

Employment multiplier: The change in jobs per every million dollar change in direct sales (visitor spending corrected for leakage).

Personal income multiplier: the change in household income for every dollar change in direct sales. Income to sales ratios express the amount of direct sales that converts into personal income in the region (including the wage and salary income and proprietor's income, rents and profits). This multiplier varies across industries in a similar fashion as the job ratios. Tourism businesses may turn 50-60% of sales directly into income, while ratios for manufacturing can be much lower (20-40%).

Tax multiplier: Tax effects of visitor spending can be estimated by applying local tax rates to direct sales estimates. Tax revenue benefits were calculated based on a retail sale tax rate of 9% for lodging and restaurants and 7% for groceries and other retail goods. The tax multiplier was not applied to gas direct sales due to high price fluctuations.

The number of jobs that are expected as a result of increased direct sales differs across sectors. The tourism industry and retail trade sector tend to have high job to sales ratios (40-50 jobs per million dollars in sales) while manufacturing typically has lower ratios (less than 25 jobs per million in sales). The MGM suggests that an average of 30 jobs per million dollars in direct tourism sales is a reasonable figure to use and one that adequately reflects jobs resulting from a mix of direct, indirect, and induced sales. This is also the figured used for the tourism sector in the Impact of the Tourism Sector on the Vermont Economy 1999-2000.

Resource economists warn that sales and job economic impacts can be misleading. As discussed above, sales may be directed to buying parts from outside the region (an aspect that was taken into account in this study) and job estimates can be distorted by part time and seasonal positions and different wage rates across sectors. For this reason, income multipliers are generally preferred.

Table 4: Economic multipliers adapted for a rural region, for years 2015 and 2020.

Spending category	Sales multiplier	Job multiplier	Income multiplier %	Tax multiplier %
Lodging	1.39	30	0.42	0.09
Restaurant	1.32	35	0.42	0.09
Groceries	1.28	32	0.50	0.07
Gas	1.28	7	0.13	NA
Other	1.3	30	0.44	0.07

4.0. ANALYSIS AND RESULTS

4.1. Visitors and Amounts of Spending

A membership database from MTA was used to generate a profile for site visitors 2006-2011.

Table 5: Millstone Trials visitor profile.

Criteria	Count	Percentage*
Members listed with VT as home state (local)	599	85.0 %
Individual	560	79.9 %
Family	95	13.6 %
Yearly membership	76	10.8 %
Bike	422	60.2 %
Walk	67	9.6 %
Ski	51	7.3 %
Snowshoe	43	6.1 %
Northern Power Systems group discount	21	3.0 %
** Total 701 entries.*		

The comparison between Millstone Trails and Kingdom Trails is valid. The two areas have much in common and both MTA and Kingdom Trails Association view them as complementary. MTA as an organization has been developed based on the Kingdom Trails model. MTA receives visitors who also engaged in recreational activities at Kingdom Trails. Based on a mountain bike study in British Columbia, Canada[10], the three most important factors in choosing a mountain bike destination are 1) variety of trails, 2) ease of getting to destination, and 3) the number of trails. Millstone Trails are believed to be more challenging overall with not as many intermediate trails[11]; Millstone Trails is 20 miles closer than Kingdom Trails from points south on route 89 and has better proximity to other area destinations[12]; and Millstone has 70 trails vs. 100 trails at Kingdom.

The following Table 6 presents projections[13] to 2015 of mountain bike and winter use visitors with a conservative 10% annual growth rate. These conservative estimates do not explicitly account for the potential to increase winter use perceived by local stakeholders (see conversation with Mike Fraysier in appendix). Growth projections are also based on increases in regular use of trails, but the popularity of annual events such as the Millstone Grind, Winterfest weekend, 12-hour Endurance Race, and Vermont high school cross-country meets indicates that races and events already bring in hundreds of participants and supporters, many from outside of Vermont. In fact, MTA marketing efforts in Quebec have led to frequent visits from Canadian mountain bikers, while other visitors have been found to travel from as far as New Hampshire, New York, New Jersey, and Maryland.

[10] Western Canada Mountain Bike Tourism Association. 2007. Sea to Sky Mountain Biking Economic Impact Study. Vancouver, British Columbia.
[11] Mike Fraysier, President of MTA as described in appendix 1.
[12] Based on vehicle travel distance calculations with Google Maps.
[13] Projection figures are not corrected for effects from inflation.

Table 6: Mountain bike and winter use visits projected to 2015.

Year	Annual mountain bike visits	Annual winter use visits
2009*	3,000	1,000
2010*	4,000	1,500
2011*	5,500	1,650
2012	6,050	1,815
2013	6,655	1,997
2014	7,321	2,196
2015	8,053	2,416
** Known figures from MTA. 2011 known figure for mountain bike visits only.*		

Table 7 presents estimates of potential direct expenditures by mountain bike and winter use visitors attributable to the activity at Millstone Trails. This includes their direct spending on food, lodging, transportation and other services and fees. These figures indicate that the existing trail network currently generates significant benefits to the Barre economy. A town forest that protects and enhances these recreational opportunities would be an important factor in realizing the potential growth in spending associated with visitors to Millstone Trails and described in this report.

Table 7: Current and potential direct expenditures by mountain bike and winter use visitors to Millstone Trails.

Year	Annual day visitor spending	Annual overnight visitor spending	Total annual spending (2011 US $)
2009	$106,500	$135,000	$241,500
2010	$147,000	$180,000	$327,000
2011	$189,750	$247,500	$437,250
2012	$208,725	$272,250	$480,975
2013	$229,598	$299,475	$529,073
2014	$252,557	$329,423	$581,980
2015	$277,813	$362,365	$640,178
Total annual spending is sum of local and non-local spending. 10% annual growth rate in visitors begins 2011.			

Kingdom Trails has been found to bring $4.5 million to the Vermont economy, based on a steady 18% annual growth rate since 2004.[14]. A second scenario was explored to determine the annual growth rate needed for MTA-managed recreation at BTF to match Kingdom Trails' total visitor spending by the year 2020. Based on current data, MTA would need an aggressive annual growth rate in visitors of about 29.5% to generate a similar contribution of $4.5 million to the Vermont economy by 2020. These results are presented in table 8.

[14] Tim Tierney, Executive Director of Kingdom Trails as described in appendix 1.

Table 8: Projections of growth needed in annual visitor spending for MTA to generate contributions to Vermont economy similar to Kingdom Trails.

Year	Annual day visitor spending	Annual overnight visitor spending	Total annual spending (2011 US $)
2009	$106,500	$135,000	$241,500
2010	$147,000	$180,000	$327,000
2011	$198,525	$247,500	$446,025
2012	$257,090	$320,513	$577,602
2013	$332,931	$415,064	$747,995
2014	$431,146	$537,807	$968,654
2015	$558,334	$696,072	$1,254,406
2016	$723,043	$901,413	$1,624,456
2017	$936,341	$1,167,330	$2,103,671
2018	$1,212,561	$1,511,693	$2,724,254
2019	$1,570,266	$1,957,642	$3,527,909
2020	$2,033,495	$2,535,147	$4,568,642

Total annual spending is sum of local and non-local spending. 29.5% annual growth rate in visitors begins 2011.

4.2. Local Final Demand and Impacts across Sectors

A more detailed analysis of final demand (i.e. the spending that is actually captured in the regional economy once imports are excluded) was conducted to understand how this potential spending could be expected to impact the local economy in the year 2015 and 2020. Tables 9 and 10 on the following pages present the results.

Table 9: Table of direct sales impacts.

Category	Overnight visitor spending	Day visitor spending	Impact on retailer	Impact on regional production	Direct sales impact	Leakage
Year 2015 (low growth)						
Lodging	$126,827.66	$0.00	$0.00	$126,827.66	$126,827.66	$0.00
Restaurant	$90,591.19	$83,343.89	$0.00	$173,935.08	$173,935.08	$0.00
Groceries	$36,236.48	$55,562.60	$9,179.91	$9,179.91	$18,359.81	$73,439.26
Gas	$18,118.24	$13,890.65	$3,200.89	$0.00	$3,200.89	$28,808.00
Other	$90,591.19	$125,015.84	$86,242.81	$64,682.11	$150,924.92	$64,682.11
Total	$362,364.75	$277,812.98	$98,623.61	$374,624.76	$473,248.36	$166,929.36
Year 2020 (high growth)						
Lodging	$887,301.39	$0.00	$0.00	$887,301.39	$887,301.39	$0.00
Restaurant	$633,786.71	$610,048.52	$0.00	$1,243,835.23	$1,243,835.23	$0.00
Groceries	$253,514.68	$406,699.01	$66,021.37	$66,021.37	$132,042.74	$528,170.96
Gas	$126,757.34	$101,674.75	$22,843.21	$0.00	$22,843.21	$205,588.89
Other	$633,786.71	$915,072.77	$619,543.79	$464,657.85	$1,084,201.64	$464,657.85
Total	$2,535,146.84	$2,033,495.05	$708,408.37	$2,661,815.83	$3,370,224.21	$1,198,417.69

Table 10: Multiplier effects

Category	Total visitor spending	Direct sale impacts	Total sales impacts	Total job impacts	Total income impacts	Sale Tax impacts
Year 2015 (low growth)						
Lodging	$126,827.66	$126,827.66	$176,290.45	5.3	$74,041.99	$15,866.14
Restaurant	$173,935.08	$173,935.08	$229,594.31	8.0	$96,429.61	$20,663.49
Groceries	$91,799.07	$18,359.81	$23,500.56	0.8	$11,750.28	$705.02
Gas	$32,008.89	$3,200.89	$4,097.14	0.0	$532.63	NA
Other	$215,607.03	$150,924.92	$196,202.39	5.9	$86,329.05	$5,179.74
Total	**$640,177.73**	**$473,248.36**	**$629,684.85**	**20.0**	**$269,083.56**	**$42,414.39**
Year 2020 (high growth)						
Lodging	$887,301.39	$887,301.39	$1,233,348.94	37.0	$518,006.55	$111,001.40
Restaurant	$1,243,835.23	$1,243,835.23	$1,641,862.50	57.5	$689,582.25	$147,767.62
Groceries	$660,213.69	$132,042.74	$169,014.71	5.4	$84,507.35	$5,070.44
Gas	$228,432.09	$22,843.21	$29,239.31	0.2	$3,801.11	NA
Other	$1,548,859.48	$1,084,201.64	$1,409,462.13	42.3	$620,163.34	$705.02
Total	**$4,568,641.89**	**$3,370,224.21**	**$4,482,927.58**	**142.4**	**$1,916,060.60**	**$264,544.49**

Visitor spending is projected to amount to $640,178 in 2015 and to $4,568,642 in 2020. Of this spending, 73.7% is expected to be captured in the regional economy and re-circulated through the different sectors (Table 8). Ripple effects are higher for goods and services produced locally, such as in the case of the lodging and restaurant services. Regional multipliers were conservatively chosen to reflect a rural context with limited economic development. In this context, the best way to counteract low multiplier effects is to build stronger local economies with limited leakage and where most of direct sales are re-circulated multiple times before being spent on imports.

It is estimated that in 2015, 20 jobs can be generated through an increased visitation of 10% per year (Table 9). The restaurant and lodging sectors alone are expected to gain 13 additional jobs under this scenario. The higher growth scenario for BTF promises 142 jobs by year 2020 in the different sectors most directly affected by tourism spending. Each dollar in direct sales is expected to bring 39 cents in secondary effects yielding a total sales effect of $629,624 in 2015 and $4,482,927 in 2020. Visitor spending is projected to bring $269,083.56 as income in 2015 and $1,916,060.60 in 2020. Income impacts are again more pronounced for the restaurant and lodging sector. State sale taxes resulting from increased visitation in 2015 and 2020 are projected at $42,414 and $264,544 per year respectively.

4.3. Benefits to Local Businesses

The conversations and surveys with two local businesses, SB Electronics and Northern Power Systems, did not return useful input for this study of potential economic value. While the MTA membership database did reflect that over 20 Northern Power Systems employees have benefited from a group discount pass since 2006 (MTA offers discounts to groups of 10 or more), human resources staff at the businesses did not confirm that recreational amenities were used for employee recruitment. Two SB Electronics employees regularly make use of an area bike path, but there were no reports of regular use of the Millstone Trails. Survey results were insufficient for use in the analysis due to low return.

However, other studies of impacts of recreation indicate that trail systems can enhance long-term economic vitality and quality of life for entire regions, with benefits to businesses. For example, a 2009 state agency study in Minnesota found that "attractive recreational trails improve quality of life in all regions, and this has been used as an important recruiting tool by local businesses, chambers of commerce and public agencies, which target people with special skills or talents, and encourage new and expanding businesses. The Economic Research Service, U.S. Dept of Agriculture has advocated amenity-based development strategies that improve socioeconomic well-being of rural communities."[15]

4.4. Additional Potential Timber and Forest Value in BTF

In September 2010 Washington County Forester Russ Barrett conducted a survey of the BTF stands to assess the quality of the timber and forest management options. This section reports the main results of this assessment. More detailed information can be found in Appendix 3.

[15] Venegas, E.C. 2009. Economic Impact of Recreational Trail Use. Minnesota Department of Employment and Economic Development. Pg. 8.

More than 70% of the forest at BTF (271 acres) has good to excellent potential for sustainable forest management now and in the future. The stand at BTF is relatively young but with high quality species such as sugar maple, white ash, yellow birch and eastern hemlock. Over time and with the necessary improvement harvests, the stand can generate a steady flow of revenues that can be reinvested in managing the forest. Current value of all timber and pulp is estimated to be $143,000. The stand value appreciates by $4,000 a year using a 3% rate of return per year and as much as by $10,000 a year if an 8% rate of return is used. Four harvests are suggested for inclusion in the future management plan over the next 10 years: three improvement harvests (in 2014, 2015, and 2018) and one uneven aged harvest in 2016. The improvement harvests are expected to generate a total of $19,500 over the next six years, while the uneven-aged cut of 2016 would bring a return of $4,700. Applying a commonly accepted multiplier for the Vermont forest sector of 7 jobs per each million of economic output, the projected returns from timber harvests are not enough to generate full-time equivalents but can certainly provide funding for hourly forestry consultants and for park maintenance activities.

APPENDIX 1. Input from Local Experts

A1.1. Conversation with Mike Fraysier (Dec 5)

Q1. How do Kingdom Trails (KT) and Milstone Trails (MT) compare in number of trails, number of difficulty levels, etc. Is it realistic to assume that in the near future MT will be able to offer similar quality? Does MT have loop trails?

KT and MT are very similar currently. MT has about 70 miles of trails, KT a little over 100. MT does not have as many intermediate trails, but is believed to be more challenging and varied terrain. MT has loop trails. KT has downhill because of ski area location while MT has unique cultural, historical, and landscape features (quarry and granite piles) as well as some built features (bridges, banked curves, etc).

MT by-laws and structure were based on those of KT, and they have relied upon KT expertise throughout development of MT. There is complementarity between the two destinations, also acknowledged by Tim Tierney at KT.

Q2. What are the major impediments for MTA to become as established as Kingdom Trails?
Protection of the core part of the town forest area is seen as the single largest barrier to replicating KT.

Q3. What impacts on the economy does he see? Any new hires since they started? What is MTA's growth? for example KT seems to grow at 18% per year.
Mike believes that a Barre Town Forest would bring real positive impacts to the economy. Local businesses stand to benefit, as do local organizations. Big races and events (Millstone Grind, Winterfest weekend, 12-hour endurance race) bring food vendors, participants, and those accompanying participants (cheerleaders, race supporters, parents). Campgrounds and RV Parks could see more visitors. Spalding High School cross-country run team trains at MT, and there's interest in holding actual meets (races) there, as happens in Thetford area.

MTA continues to grow each year. They add to their organization, though they still rely heavily upon volunteers. However, there is potential for future partnerships with state or other organizations to maintain trails.

Q4. Does MT receive business from KT?
Yes, and there is interest among Vermont Mountain Bike Association folks in establishing a regional network of regional mountain bike destinations. Pat Kell, VMBA president.

Q5. What is the average profile of mountain bikers at MT? At KT is groups of 5, avg age 38.
Probably similar to KT.

Q6. Where are the bikers coming from? Boston, NY, Montreal, local?
Pierre has done marketing throughout Quebec, so they see many folks from Canada. Others come from New York, New Jersey, New Hampshire, as far as Maryland.

Q7. Are members mostly local or from different locations? What percentages?
Tough to say. Even mix.

Q8. Do you know anything about companies in the region advertising MT as a plus in their hiring package?
Not really, but MT offers a discount for any group that purchases 10 or more passes. This has happened for some local groups.

MTA is doing a fundraiser to raise $100K for land acquisition. They are halfway to their goal and hope others will contribute too.

Q9. Any regular visitors from local companies such as SB electronics of Northern Power?
Darren Winham speaks passionately at public meetings about the potential benefits to Northern Power Systems, SB Electronics, and other area businesses. No knowledge of regular visits from employees at any particular business. Pierre hosted a Boy Scout Jamboree event on land he owns that is part of MT.

Q10. How long do bikers stay (lodge) on average?
Day trip or overnight. Occasionally groups stay longer.

Q11. What is the main motivator of the trip? DO people come just for biking or do other things?
Most people visiting MT come for the biking. In winter, they have 20 of 70 miles groomed for cross country skiing. There is big potential for growth in winter use, especially given popularity of Winterfest weekend event.

Q12. What is the busiest season?
Summer and Fall (foliage) are the busiest times of year.

A1.2. Conversation with Tim Tierney (Nov 16)

Q. Do you see Millstone Trails (MT) as complementary to Kingdom Trails (KT)?

KT is very supportive of MT, more trails is good for the VT economy and for attracting more mountain bikers (MB) to the area. KT has helped MT earlier on plan the trails and strategizing. KT sends people from their trails to MT all the time (MBs often ask where else they could go).

Q. Info on KT?

KT has been growing 18% per year since 2004

Average distance traveled is 250 miles, with Boston and Montreal being the main points of origin.

Memberships are 1/4 local, 1/4 regional (VT), 50% out of state.

Average group size is 5 (MB is for friends getting together; X-country skiing is for families). Canadians travel in larger groups up to 20 people.

Lodging had to adjust (and so did advertisement) to accommodate larger groups of friends not interested in regular hotel rooms.

Average length of stay is 3 days (2 nights) over a weekend but visits during working days are on the rise

Most visitors come in the Fall, same number of people visited KT in the past 6 weeks as in the other 14 weeks

KT sells individual all-year adult passes (age 16 - 69) ($75) or day passes ($15) no season passes (except for youth, day: $7, all season: $75)

Average day pass holder comes 4 times/year

Average member in 2007 came 8 times per year, in 2009 10 times per year, and in 2010 12 times year (based on large surveys of up to 500 respondents)

Average age of MBs is 38 ys old

Average visitor is respectful, civilized, on the trails from 10AM to 3:00 PM

Main motivator of their destination choice: quality of the trails, range of levels. Everything else is extra. They don't mind logging, scenery is important but after all it is an amusement park experience.

51% of visitors has a salary of $75,000 per year or more

Each non-local visitor spends an average of $100 per day (conservative estimate)

KT brings 4.5 millions to the VT economy

Local economy: more beer, wine, groceries, campgrounds always full in season, same with vacation rentals, inns, lines at restaurants, a new "hostel" for large groups opened, a new campground opened, mountain biking weddings are becoming popular. Since lodging is limited in East Burke, people stay as

far as 40 miles away. New jobs: cleaners of cabins and rooms, waiters, bartenders, sandwich makers, kitchen help staff.

KT grew from 2 staff to 22 people in customer service ($22,000 per year) and trail management

Mountain biking provides a low impact economic driver, non one is going to get rich, but whereas in other parts of VT businesses are closing down, East Burke is doing just fine. Community support is key. 55 landowners make it possible, in addition there is state and town land. there was a conflict study done, which shows no conflict with other uses/interests. Visitors like to feel that there is community support. Important to keep the "vibe" going (it is the result of many people working together).

Q. Can MT replicate the growth of KT?

Sure it is all about the trails, if they can provide diversified and high quality trails, it can be achieved. KT has various loops which are really appreciated by MBs, because of their convenience of ending in the same location.

About the existing study at Lyndon State College: a very academic study, more a study of how conducting a study than producing results. It was the project for a student to graduate. The professor retired, the former student is still around and Tim will try to get a hold of him. Time mentioned other studies (not sure whether they're part of the Lyndon study or independent): the marketing strategy study and conflict study.

A1.3. Conversation with Darren Winham (Nov 1)

Q. How comparable are Kingdom Trails and Millstone Trails?

1. Very comparable. But MTA can attract twice as many visitors as Kingdom Trails. Barre is more connected to cities than East Burke. We also should not discount the Barre downtown (where a lot of development is planned)

2. MTA can be very important for scuba diving, there are not many places that are secure and accessible where to do scuba diving in VT. Check for comparison Dutch Springs in PA (http://worlddiving.info/dutch-springs-pennsylvania/)

3. MTA and Kingdom Trails are complementary, there wouldn't be competition, it would help VT get even more on the map for mountain biking and MTA is already getting bikers that visit East Burke anyway

A1.4. Expert opinion from Todd Comen - Lyndon State College professor of Tourism and Hospitality (Oct 31)

The first thing that comes to mind is whether the Kingdom Trails is comparable to the Barre Town Forest? The Kingdom Trails are obviously a destination that has grow rapidly over the past five to ten years through incredible marketing and PR efforts as well as concerted effort from the Northeast Kingdom Travel and Tourism Association among other initiatives. Barre has such a different

demographic, image, and feel to it that I'm not sure how attractive it will be to various user groups especially given the alternative choices for recreation in the Central Vermont region. That said, I'm glad that you are on the project and hope you find the source of the study you are asking about.

A1.5. E-mail excerpt from Myke Fraysier at Millstone Trails (Oct 30)

Here is some use information that may be helpful to your study:

In 2005 (our initial year) we sold 140 season passes (including both winter and summer) and about 1000 day passes. In 2006, this grew to 210 season passes and about 1350 day passes respectively. We grew at about the same pace in 2007 (about 250 season passes and 1500 day passes).

We have conservatively estimated that approximately 3000 mountain bikers visited Millstone Trails in 2009 along with 1000 cross country skiers and snowshoers. These numbers have now grown to over 4000 bikers and 1500 winter users respectively, though this is just an educated guess. On busy summer or fall weekends, it is not unusual to see more than 300 bikers on the MTA trail system.

The total MTA membership (includes everyone who has ever purchased an MTA season pass) is about 760. Of this, about 225 are from Barre City/Barre Town area.

As of July of this year, current MTA membership (i.e., those who purchased a season pass of some type) was close to 485. We've had over 105 new members since May of this year. Of these new members, about 10% are from Barre Town or Barre City.

Hopefully, this information will prove useful to your study. If you would like, we can probably review our membership log and get you more information on MTA season pass/day pass sold in 2010 and 2011.

Thanks!

Mike Fraysier MTA President

APPENDIX 2. Employee Survey for SB Electronics and Northern Power Systems

Hello, we are doing important research with Trust for Public Land regarding a proposed Barre Town Forest. The answers you provide could help permanently protect a recreational and open space area for Barre area residents and visitors.

Before you start, rest assured this survey is completely confidential and voluntary. This survey will take about 5-7 minutes. Only persons age 18 and older may respond.

How long have you been an employee at [name of business]?

- 1 year or less
- 2-5 years
- 6-10 years
- 11-15 years
- 16 or more years

Do you currently live in the Barre area?
If yes, when did you move to the Barre area?

On a scale of 1-5, how interested are you in mountain biking?

- 1 - not at all interested
- 2 - not very interested
- 3 - somewhat interested
- 4 - interested
- 5 - very interested

On a scale of 1-5, how interested are you in cross country skiing or snowshoeing?

- 1 - not at all interested
- 2 - not very interested
- 3 - somewhat interested
- 4 - interested
- 5 - very interested

Do you use the Millstone Trails...

- alone?
- with others?
- I do not use the Millstone Trails
- Other (please specify)

If yes, how often and for how long do you use Millstone Trails?

- How often?
- For how long each time?

In considering the factors that went into your decision to work for [name of business], how important was 'proximity to open space or recreation opportunities'?

- 1 - not at all important
- 2 - not very important

3 - somewhat important
4 - important
5 - very important

In the hypothetical case that Millstone Trails were permanently closed, would you... (check all that apply and provide details in the box)

continue working with your current employer?
go somewhere else to use trails? (specify location in box)
move to an area with easier access to recreation opportunities? (specify location in box)
ask for a salary increase to compensate for loss of recreational benefits? (specify amount in box)
be willing to pay a small fee to preserve trail access? (specify amount in box)
More details

What was your approximate annual gross salary last year?
What is your age at the time of this survey?
What is your gender?

Please add any comment or thoughts you may have regarding the value of a proposed Barre Town Forest to you or local businesses. Thank you for your time.

APPENDIX 3. Potential Timber Production

A.3.1. Summary of Timber Inventory of Proposed Barre Town Forest

by Russ Barrett, Washington County Forester
September 2010

During the last 2 weeks of September I took measurements at 85 plots randomly selected throughout the property. I noted tree species, stem diameters and crown position of trees in each plot using a 20-factor and NED 1(Northeast Decision Model) as inventory software for the cruise.

I divided the parcel into 8 stands based on forest type and size. Plot locations are shown and stands are numbered on accompanying map.

To summarize:

- I would estimate that 271 acres of the proposed Town Forest might be able to be managed for sustainable forest products.
- Total timber volume is 928,000 board feet of saw timber and 3,757 cords of pulp and fuel wood.
- Value of all timber and pulp on 271 acres manageable would be approximately $143,000.
- Present growth in value would be about $4,000 a year using a 3% rate of return and as much as $10,000 a year using an 8% rate of return. This value would be compounded over time.
- Most common trees by basal area are – sugar maple (25%), white ash (15%), red maple (10%) and eastern hemlock (10%).
- Much of the area shows no or little sign of past harvesting activity. Where harvesting has occurred, it has been done under supervision of a forester and in compliance with Use-Value standards.
- In short – the parcel is fully stocked with medium to high value species that are generally considered to be small saw timber sized trees. The parcel has good to excellent potential for sustainable forest management now and in the future.

Timber value by stand:
Stand 1 - $3,600
Stand 2 - $12,300
Stand 3 - $14,800
Stand 4 - $8,200
Stand 5 - $10,943
Stand 6 - $67,000
Stand 7 - $25,382
Stand 8 - $900

A.3.2. Timber Income Estimate

The present draft management plan for the proposed Barre Town Municipal Forest has some timber harvest activity scheduled in four of the next 10 years. The following is an estimate of the products to be harvested and approximate income the Town might receive from the sales.

2014 – An improvement harvest is scheduled for forest stand 3. The stand is approximately 23 acres is size and a typical improvement harvest and the estimated volume to be cut is 12 MBF of saw timber and 115 cords of pulp and firewood. Value of the timber cut would be about $2,500.

2015 – An improvement harvest is scheduled for forest stand 4. The stand is approximately 18 acres in size and the estimated volume to be cut is 9 MBF of saw timber and 90 cords of pulp and firewood. The value of this cut would be about $2,000.

There is also some wildlife improvement works scheduled in forest stand 8. There would be no income from this activity.

2016 – An uneven-aged harvest is scheduled for forest sand 5. This stand is 32 acres in size of which approximately 28 acres would be cut, the remaining acres would provide a buffer zone for a small water course. The estimated volume to be cut is 42 MPF saw timber and 140 cords of pulp and firewood. The value of this cut would be about $4,700.

2018 – An improvement harvest is scheduled for forest stand 7. The stand is approximately 70 acres in size and the estimated volume to be cut is 85 MBF saw timber and 500 cords of pulp and firewood. The value of this cut would be about $15,000.

These estimates are based on the County forester being able to mark and administer the scheduled sales. The cost of hiring a private consulting forester might decrease the income the town would receive from these sales by 10 or 15 percent, although not necessarily. Quite often, consulting can negotiate a higher price for the timber being cut.

The inventory program I used for the cruise doesn't have an option to "grow" the stands like some do, so I would be somewhat hesitant to make any further estimates at this time. In general, however, most forest stands in the northeast can be thinned or harvested every 15 to 25 years. If done properly, the trees will become more valuable in time and income per acre harvested will increase. Good quality hardwood trees increase in value not only because of growth, but also because of grade.