Repurposing the Green Mountain Racetrack: A Redevelopment Feasibility Study



Environmental Planning Final Project Center for Environmental Studies, Williams College

> Completed By: Wade Davis '13 Charles Lorenz '13 Julio Luquin '13 Evalynn Rosado '12

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Introduction: Overview

<u>Overview</u>

During the fall semester of 2011, our team of four Williams College environmental planning students has worked to create this feasibility study for development at the site of the former Green Mountain Racetrack in Pownal, Vermont. Our clients, Frank Cantatore and Chic Paustian of Progress Partners, asked us to research several alternative proposals for the racetrack site. After collecting community input, data gathering, and a review of case studies, we developed five alternative proposals and compiled the following report, *Repurposing the Green Mountain Racetrack*, to help further healthy and constructive discussion surrounding the most developable property in Pownal, Vermont.

Due to the "tabula-rasa" mentality of the project, we chose to conduct a survey of the local community in addition to interviews with stakeholders. Research of State and local policy and zoning helped us further narrow the possibilities for development. With this project, we hope to suggest creative and viable uses for the site that address the needs of the town of Pownal, Bennington County, and tri-state regional community. The five proposals we consider are in the realms of light manufacturing, recreation, agriculture, entertainment, and housing. Light manufacturing and recreation scored highest in our cost-benefit matrix, but we recognize that our other proposals have many merits as well as do other proposals not evaluated in this report. Ultimately, the future development of the site will require community support, developer ingenuity, and a desire to create a lasting and profitable venture at the site. We thank you for taking the time to learn about our project.

Problem Identification and Scoping

The site of the former Green Mountain Racetrack has had irregular and infrequent use since the racetrack was closed in 1992. As long as it sits underutilized, the 144-acre property with its 198,000 square-foot building represents a tremendous tax and maintenance burden for the owners. Much of the racetrack infrastructure has been removed, but there is great potential for the remaining building and property to fall into disrepair if they are not reclaimed. Already, the empty building stands against the beautiful landscape as a reminder of a depressed local economy and missed opportunities. Demolition costs of the building are in excess of one million dollars², so modification and use of the building are highly desirable in any redevelopment plan.

In 2010 and 2011, Beaver Wood Energy, LLC, proposed a 29.5-megawatt biomass facility for the site. This proposal was met with widespread, public outcry from within Pownal and several surrounding communities including Williamstown and Bennington. Concerns included potential impacts to public health and the environment, quantity and price of energy production, sustainable harvest of the feedstock, stresses on infrastructure, and the aesthetic nature of the facility. Controversy surrounding this project demonstrated the need for community input in any development of the site. Collecting this input and gauging the needs and desires of the community is a primary purpose of this report.

Our study of the redevelopment of the former Green Mountain Racetrack site hopes to address one or more of several local, regional, and statewide issues. These issues include limited supplies of high-paying jobs, affordable housing, alternative energy production, and indoor recreation and entertainment. An additional issue is the decreasing

profitability of local food production in the region. Pownal residents also face a substantial tax burden and limited opportunities to buy commercial goods and groceries within Pownal.

Frank Cantatore of Progress Partners, LLC, is our primary client and the principal of the property. He is seeking a redevelopment of the site that is economically viable in the long term and that will generate a benefit to the local and regional community. While he recognizes that the property is probably too large for a single tenant given the current state of the national economy and the scale of businesses in the area, Mr. Cantatore envisions a mixed-use area with possibilities including but not limited to commercial retail, light manufacturing, alternative energy production, or agriculture. Any tenant must be reliable and economically viable.

Our objective for this project is to research a variety of creative and feasible options for the redevelopment of this site that will help achieve our client's goals, benefit the community, and minimize negative environmental impacts. The possible uses for the site we are considering fall under the broad categories of affordable housing, entertainment, agriculture, recreation, and light manufacturing. We conducted random interview-style surveys in various locations in Pownal and Bennington and gave several surveys to facilities, dining services, and custodial services employees at Williams College but live around Pownal. We also conducted in-depth interviews with businesspeople, local, regional, and state politicians and policy makers, and energy, manufacturing, and planning experts. Through these surveys and interviews as well as additional research and case studies, we tried to establish a vision for the most effective mix of uses for the former Green Mountain Racetrack site. The ultimate goal of our

project is to generate realistic recommendations for development of the site that will

provide tangible benefits to the community.

Site History

Seth Hudson and fifty-five others chartered Pownal in 1762. It was originally inhabited by a group of Dutch Families but reached a population of 1,746 by 1791. Pownal consists of three villages: Pownal, North Pownal and Pownal Center. The town includes 23,000 acres of uneven land but good soil. It was known at one time for having the finest dairies in the State. It has also been the home of a cotton mill and a woolen factory containing 80 looms and two carriage manufactures.¹ Since that time, Pownal's major attraction and employing entity was the Green racetrack, which closed in 1992.

In 1962 the project site was transformed from farmland into the Green Mountain Racetrack. The horses raced from 1963 through the introduction of greyhound racing in 1975. Greyhound racing continued until the track closed its doors in 1992. The site has sat primarily vacant since 1992 hosting periodic car shows and Bingo nights. A notable exception was 1996 when the racetrack hosted Lollapalooza, a very popular music festival that attracts numerous national acts.

Building and Site Description

The Green Mountain Racetrack is located on Route 7 in Pownal, Vermont, near the Massachusetts border. The Hoosic River and a Pan Am Railways track run adjacent to the site. Once considered some of the most fertile agricultural land in the valley, the 144.6-acre site is exceptionally level and now has 86 acres of pavement. When the site

¹ Coolidge, Austin and John Mansfield, "A History and Description of New England, General and Local," (Cambridge: Houghton and Company: 1859), 878.

hosted Lollapalooza in 1996, the building and grounds accommodated 35,000 people in one day.

The existing building is 198,000 square feet with four floors and a penthouse. The first floor ceilings are 14'6", and the floors are concrete and heavy load bearing. The indoor grandstand seating can accommodate 3,500 people, and tables on the main floors can seat another 1,000. There are over one hundred toilets and nine walk-in refrigerators, three of which are freezers. The building is hooked up to the town sewer system and a sand-and-gravel well capable of pumping 750 gallons per minute. The building is set up for 3-phase power and oil heating. Currently, the building is quite energy inefficient due to the number and size of windows. Removing and replacing windows with a more energy efficient materials would cost approximately \$88,000² and is slated to occur soon.

² Chic Paustian. Personal Interview. 27 October 2011.

Pownal Community Profile

Pownal's current population is 3,474 in a total of 1,635 households,³ while the median household income is \$48,895 (US \$51,425) with 8.5% of families living below the poverty level (US 9.9%). The age distribution is comparable to the national averages with 8.3% 5 years old and younger (US 6.9%) and 8.7% residents 65 years old and over. 70.9% of the population, some 1,895 persons, qualify as the labor force (those 16 years old and older).⁴ We also found a rising percentage of unemployment in Pownal within the last 10 years, beginning in 2000 with 2.8% unemployment and ending with 6.4% in 2011. This number spiked in 2009 with an unemployment rate of 7.7%.⁵ These numbers point to a strong need for high paying jobs within this community, which we hope to provide with our final proposal.

Town statistics on occupations of residents allow us to create a plan for the site, which can provide jobs for the existing population. 15% of the working population works in assembly, fabrication or production while an additional 6% of the population works in manufacturing. This is a large percentage suggesting that light industry could be a viable option for the development of the site and could create job opportunities for the sector of the population already skilled in this area. 14% work in accommodation or food service. Because the site is already equipped for this type of industry, we will consider the options related to restoring the site to an entertainment or recreational purpose, which would provide jobs in this industry. 10% of the working population is in the construction

³ "Fact Sheet: Pownal town, Bennington County, Vermont." US. Census Bureau. http://factfinder.census.gov/

⁴ http://www.city-data.com/work/work-Pownal-Vermont.html

⁵ "Fact Sheet: Pownal town, Bennington County, Vermont." US. Census Bureau. http://factfinder.census.gov/

industry.⁶ Any proposal we recommend will require construction of new facilities or the retrofitting of the existing structure, while this would not provide permanent jobs, it would provide work on a temporary basis. Overall, this data gives us information on the skill set that exists in the community and can provide information as to what type of development should take place at the site that would benefit the existing community through providing jobs for which they are already skilled. We recognize however, that we want to create new opportunities in the community, not move around the existing job opportunities.

Finally, statistics on the commute time to work for Pownal residents shows that there are few jobs in the town. Over 50% of residents drive between 20 and 30 minutes to work (Figure 1, Appendix I).⁷ From just this, we can see that the surrounding towns, primarily Bennington and Williamstown support the residents through job opportunities. Our general feeling is that Pownal is lacking in a strong economic foundation, whether through retail or manufacturing job. Our plan will try to address these issues in a way that will benefit both the community and our client.

Regional Community Profile

The population base of the surrounding area is an important consideration in development of the site because nearby communities represent potential markets for goods and services provided by the site as well as a potential supply of labor. The three counties in the immediate Pownal region are Bennington, Rensselaer, and Berkshire Counties, in Vermont, New York, and Massachusetts, respectively. These three counties

⁶ http://www.city-data.com/work/work-Pownal-Vermont.html#unemployment

⁷ Ibid.

have a total population of 319,733 (159, 429 in Rensselaer,⁸ 131,219 in Berkshire,⁹ and 37,125 in Bennington¹⁰). Rensselaer County includes the cities of Troy (population 50,129) and Rensselaer (population 9,392).⁸ The cities of Albany and Schenectady lie in Albany County within a 35-mile radius of the racetrack site (Figure 2, Appendix I). Albany and Schenectady have a combined population of 163,991.⁸ Bennington (population 15,764), sits north of Pownal and is the largest town in Bennington County.¹⁰ Berkshire County includes the cities of Pittsfield (population 44,737) and North Adams (population 13,708).⁹

Within the three counties, over eighty-eight percent of the population twenty-five and older has a high school diploma, and over twenty-five percent of the population has a Bachelor's degree or higher (26.4 percent in Rensselaer,⁸ 30.1 percent in Berkshire,⁹ and 31.2 percent in Bennington¹⁰). Travel time to work averages between fifteen and twenty-five minutes in the three counties.⁸⁹¹⁰ The poverty rate is between eleven and thirteen percent in the three counties compared with the Massachusetts State Poverty rate of 10.3 percent (poverty rates are 11 percent in Rensselaer,⁸ 12.8 percent in Bennington,¹⁰ and 12.8 percent in Berkshire⁹). Median household income is highest in Rensselaer (\$54,262)⁸ and lower in Bennington (\$44,686)¹⁰ and Berkshire (\$44,061).⁹ Interestingly, retail sales were far higher in Bennington County (\$22,861 per capita)¹⁰ than in Rensselaer (\$8,915)⁸ and Berkshire (\$14,605).⁹

⁸ "State & County Quickfacts: Rensselaer County, New York."

US Census Bureau. 2010. <http://quickfacts.census.gov/qfd/states/36/36083.html>. ⁹ "State & County Quickfacts: Berkshire County, Massachusetts."

US Census Bureau. 2010. <http://quickfacts.census.gov/qfd/states/25/25003.html>. ¹⁰ "State & County Quickfacts: Bennington County, Vermont."

US Census Bureau. 2010. < http://quickfacts.census.gov/qfd/states/50/50003.html>.

The October 2011 unemployment rates across the three counties are lower than the national unemployment rate of 9.1 percent,¹¹ but Rensselaer and Berkshire County both had unemployment rates higher than Vermont's statewide rate of 5.6 percent.¹² In October 2011, Rensselaer County had 6.6 percent unemployment,¹³ Berkshire County had 6.4 percent unemployment,¹⁴ and Bennington County had 5.6 percent unemployment.¹⁵

¹¹ "Unemployment Rate: All US." US Bureau of Labor Statistics. Google Public Data. November 2011. http://www.google.com>.

¹² "Unemployment Rate: Vermont." US Bureau of Labor Statistics. Google Public Data. November 2011. http://www.google.com>.

¹³ "Unemployment Rate: Renssaelaer County, NY." US Bureau of Labor Statistics. Google Public Data. November 2011. http://www.google.com>.

¹⁴ "Unemployment Rate: Berkshire County, MA." US Bureau of Labor Statistics. Google Public Data. November 2011. http://www.google.com>.

¹⁵ "Unemployment Rate: Bennington County, VT." US Bureau of Labor Statistics. Google Public Data. November 2011. http://www.google.com >.

Survey Results

The purpose of the survey was to gauge an understanding of the creative and feasible options for the redevelopment of this site that will help achieve the community's needs and desires. To accurately reflect the citizens who would most likely be using the redeveloped Green Mountain Racetrack Site and avoid bias we conducted a total of 61 in Pownal, Bennington, and Williams College. The respondents of Williams College were faculty members that lived in Pownal, Bennington, or Williamstown. We choose gas stations as our primary locations due to the high number and variability of people that use the gas station. Also, the time that it took to survey one person was approximately equivalent to the time it takes to pump gas. The survey consisted of eighteen questions and took roughly five to ten minutes to complete. Over a four-week period we conducted a total of sixty-one surveys.

To analyze our survey results, we counted the number responses for each quantitative and qualitative question. We entered all of our data into an excel spreadsheet and began to look for significant patterns in the data. The results from the survey helped us respond to needs of the people while at the same time proposing a feasible option for the site.¹⁶

First, out of all of respondents, the highest residency rate is Pownal at 39% (Figure 1, next page). This statistic confirms that we are foremost addressing the views of Pownal and not those of Williamstown or Bennington. It is important to understand that our preferred site of surveying could explain why the third highest respond rate is from "other" places. Some of the respondents who stopped at the gas station were people who

¹⁶ For a complete data set, see source website of this publication

did not reside in Pownal, Bennington, or Williamstown and were just stopping for gas on their drive through the area.



Figure 1: Primary Residence of Respondents

When asked "How important is the future development of the racetrack site to you?," the responses from Pownal residents show that the development of the racetrack site is important to them (96% responded that it was either very important or important, (Figure 2). Furthermore, not one resident of Pownal responded saying it's not important.



Figure 2: Importance of Future Development to Pownal Residents

This allows us to make the assumption that that they are the respondents who care most of about the development of the racetrack site. The respondents who believed that the redevelopment of the site was important or very important would allow us to further assess the needs of those who really care about the redevelopment. Furthermore, we can see a general trend that the further away a resident lives from Pownal the less important developing the racetrack property is to them (Figure 3).



Figure 3: Importance of Future Development of Racetrack by Location

When asked "Where do you spend most of your working hours?," a large proportion of the respondents, 82%, responded that they do not work in Pownal (Figure 4, next page). Even though 39% of the respondents resided in Pownal, less than half of them work there. The low quantity of respondents who work in Pownal suggest that a major aspect of the site could pertain to the creation of jobs for Pownal residents.



Figure 4: Where Pownal Residents Spend Their Working Hours

When asked "what aspects of the future development are important to you?," of the respondents who stated that the development of the site is very important or important, creation of jobs, support for the local economy, and environmentally friendliness were the most desired aspects of the development (Figure 5). This is particularly important because in focusing on our proposals, we proposed developments that would encompass all three of those components.



Figure 5: Important Aspects of the Future Development

When trying to figure possible uses of the site, the respondents were asked, "what aspects of the future development are important to you?" The wide variety of options chosen by the respondents suggests that their daily needs are not being met (Figure 6). Many times when respondents where asked this questions they would automatically respond by just replying, "anything, I just want the building to be used for something." This shows that respondents aren't picky, but would welcome a broad range of services, which would be utilized throughout the week.



Figure 6: Services Considered by Survey Respondents

When asked, "where do you do most of your shopping?" and consequently looking at Pownal-specific data, we were able to obtain information about where the respondents of Pownal do most of their shopping (Figure 7, next page). It's significant that none of the respondents from Pownal chose Pownal as the place where they do most of their shopping. Most of them do their shopping in Bennington (Figure 7). This suggests that retail/commercial component is possible for the triangular section of the site.



Figure 7: Where Pownal Residents Shop

Stakeholder Interviews

Interviews with state, regional, and town officials as well as business professionals and experts helped us to determine community and regional needs, the feasibility of various proposals, and legal and political barriers to development. Jim Sullivan, Director of the Bennington County Regional Planning Commission (BCRC) provided valuable information and data about feasible uses at the site within the context of Bennington County.¹⁷ Peter Odierna, Executive Director of the Bennington County Industrial Corporation (BCIC), discussed the possibility of a manufacturing establishment at the site.¹⁸ He also discussed the regional need for entertainment for young adults as well as the possibility of commercial retail.

Our interview process also included discussions with many of Pownal's elected and appointed officials. On November 15th, our team attended a Pownal Planning Board meeting where we presented our project to-date and received input from Board members. We also spoke with Nelson Brownell, Chair of the Pownal Board of Selectmen, who provided several innovative ideas for the site and information about town budget and zoning laws.¹⁹ Bill Botzow, State Representative for Pownal and Woodford, provided additional information on feasible development of the site that would most benefit the community.²⁰ Clinton Hutchins, Chair of the Pownal Economic Committee and Town Auditor, supplied information about Pownal's property taxes, town budget, and the

¹⁷ Jim Sullivan. Director Bennington County Regional Planning Commission. Personal Interview. November 22, 2011.

¹⁸ Peter Odierna. Executive Director Bennington County Industrial Corporation. Personal Interview. November 22, 2011.

¹⁹ Nelson Brownell. Chair of the Pownal Board of Selectmen. Personal Interview. December 4, 2011.

²⁰ Bill Botzow. State Representative, Pownal and Woodford. Personal Interview. December 4, 2011.

historical property value of the site.²¹ Ellen Strohmaier, Pownal's Town Treasurer, provided further information on the town budget.²² Harry Percey, Vice Chair of the Pownal Zoning Board, discussed the town's zoning laws and feasible uses for the site under those bylaws.²³

We also interviewed John Guerin, who is Director of Energy Development at EOS Ventures, the firm that helped plan and design the 10-acre solar park that will be established at the site early in 2012.²⁴ He provided information about Vermont incentives for alternative energy programs and constraints on expanding solar and other energy technologies at the site. Mr. Guerin also discussed technical considerations with respect to development in the flood plain and uses of the site that might be inconsistent with a solar park, such as tall buildings that might shade the site or intensive agriculture that would generate a lot of dust. Professor David Dethier²⁵ of the Williams College Geosciences Department and Todd Holland,²⁶ the Williams College Energy Conservation Project Manager, supplied further information on the feasibility of other alternative energies at the site.

²¹ Clinton Hutchins. Chair of the Pownal Economic Committee and Town Auditor. Personal Interview. December 4, 2011.

²² Ellen Strohmaier. Town Treasurer. Pownal, Vermont. Personal Interview. November 29, 2011.

²³ Harry Percey. Vice Chair of the Pownal Zoning Board. Personal Interview. December 4, 2011.

²⁴ John Guerin. Director of Energy Development. EOS Ventures. Personal Interview. November 29, 2011.

²⁵ Professor David Dethier. Williams College. Personal Interview. 1 November 2011.

²⁶ Todd Holland. Energy Conservation Project Manager. Williams College. Personal Interview. 1 November 2011.

Tax Burden and Development Benefits

Development of the Pownal racetrack could significantly decrease the tax burden on Pownal residents. In 2010 the municipal tax rate in Pownal was \$0.44 for every \$100 of property value, which is above the Bennington County average of \$0.37.²⁷ As of January 15, 2011, there were 216 Pownal residents delinquent on their property taxes, which is 16 percent of all Pownal households.²⁸

In 1964, the listed property value of the Green Mountain Racetrack was approximately \$5 million,²⁹ which is approximately \$35.5 million in 2011 dollars. Today, the grand list of the property value of the site is \$998,900.³⁰ A restoration of the property to its formal value would represent a 13.6 percent increase in the value of taxable real estate in Pownal, which would reduce the municipal tax rate from \$0.439 to \$0.386 (a 12 percent decrease).³¹ While the town occasionally defers road repairs, the town generally meets its budgetary needs. In 2010, for example, town tax revenues were \$923,258, and town spending was \$919,559.³² Therefore, an increase in tax revenue from the increased value of the racetrack site would reduce the tax burden on town residents rather than increase town spending.³³

²⁷ "2010 Annual Report." Vermont Department of Taxes. 2010.

http://www.state.vt.us/tax/pdf.word.excel/pvr/reports/2010/2010AnnualReport.pdf>.

²⁸ "Annual Report for the Year Ending June 30, 2010." The Town of Pownal, Vermont. 2010.

²⁹ Clinton Hutchins. Chair of the Pownal Economic Committee and Town Auditor. Personal Interview. December 4, 2011.

³⁰ "Official Notice of Change of Appraisal." Town of Pownal, Vermont. 2011.

³¹ "Pownal 2011 Bill Grand List Tax Book Report." Town of Pownal. 2011.

³² "Annual Report for the Year Ending June 30, 2010." The Town of Pownal, Vermont. 2010.

³³ Ellen Strohmaier. Town Treasurer. Pownal, Vermont. Personal Interview. November 29, 2011.

Laws and Policies

The Pownal Racetrack site is currently classified in the Pownal Zoning Bylaws as Village. This classification is relatively flexible allowing both high-density residential areas and mixed-use activities. The Pownal Planning Commission expanded the possibilities for development by changing the Village Residential zoning laws to allow for I-1 Industrial usage. This was done specifically because of the Green Mountain Race Track in order to "stabilize the tax base and to provide more jobs" through clean industry.³⁴

Under Village classification, a great variety of opportunities are either permitted or permitted conditionally. Several of these options seem applicable to the site and will become the basis of our suggestions for the future development of the site. These include: agricultural operations including commercial greenhouses, fruit and vegetable stands and farm product processing; commercial businesses; recreational facilities; entertainment centers such as auditoriums; concert halls and amphitheaters; power generating plants; housing and hotels; amusement parks; bus and rail terminals and light industry which includes food processing and packing.

The bylaws restrict development possibilities in several areas, which include categories such as fish and poultry hatcheries, fur-bearing animal farms, heavy industry, truck terminals and storage of bulk materials. However, in our interview with Harry Percey, the Vice Chair of the Pownal Zoning Board, it was discussed that some of these restrictions can be changed if a viable proposal was brought before the board. On the basis of this interview, we chose to propose a fish hatchery as part of a larger agricultural proposal.

³⁴ The Town of Pownal Vermont, Vermont Town Plan, 26.

Proposals for the development of the site must consider restrictions from other sources such as those associated with flood zones, railroad crossings and Vermont ACT 250. Additionally, in our research of each proposal we found other policies and regulations that would affect each development specifically.

The racetrack property borders the Hoosic River and much of the property is classified as within the flood hazard zone. FEMA recently resurveyed the area and extended these boundaries (Figure 4, Appendix I). These new boundaries have not yet been approved but because of their great effect on the development of the Pownal Racetrack property, we are using these new boundaries for our project. The new flood hazard zone covers the existing building entirely as well as about half of the property closest to the river. There are several restrictions that are associated with this flood hazard. While development is allowed on a flood plane, it is closely monitored for its overall and long-term effects on the area. First, any "land development [in this area] which would cause any increase in the base flood level" are only permitted with conditional approval.³⁵ Any displacement that occurs must be accounted for elsewhere on the property. The current pond that exists on the site is an example of one such compensatory flood pond. Development in a flood hazard zone cannot include junkyards, storage areas, chemicals explosives or any other hazardous or toxic materials. Permitted uses for the area include: agricultural uses, municipal services, recreational uses and residential uses.

Outside the hazard zone is another area called the Fringe Area, the laws relating to this classification of land are in place to ensure that any large flood has minimal affect on the buildings within its region. These restrictions will affect most of the development

³⁵ The Town of Pownal Vermont, Town of Pownal Zoning Bylaws: Revised Draft June 19, 2007, 40-42.

that can occur on the racetrack site. All structures must be designed or modified to withstand a base flood, water supply and sewage systems must also be designed with flooding in mind and existing buildings must meet additional requirements regarding modification.³⁶

Another restriction that affects development involves one of the property's greatest assets: the railroad. The railroad crosses both entrances to the large, main section of the Racetrack property. This restricts the types of development that can be created on the site because, if there were an emergency on west side of the property while a train was passing, emergency vehicles would not be able to respond. There are infrastructural solutions to this problem, but as the property is right now, this law does pose restrictions to the development of the property.

Because the site qualifies as large development, Vermont Act 250 will play an important role in the future of the site. Act 250 was passed in 1970 and is in place to ensure that any development in Vermont does not negatively influence the environment, the community or the character of Vermont. It also serves to provide "balance[ed] development with local, regional and state issues; and to provide a forum for neighbors, municipalities and other interest groups to voice their concerns."³⁷ The legislature does this by allotting power to District Environmental Commissions, which permit or deny development plans according to a list of ten criteria. These criteria relate to environmental concerns of water, air and soil in addition to burdens of education facilities, municipalities and transportation systems. Act 250 also relates to aesthetics of

³⁶ The Town of Pownal Vermont, *Town of Pownal Zoning* Bylaws: *Revised Draft June 19, 2007,* 40-42.

³⁷ Vermont Heritage Network, "Vermont Act 250," http://www.uvm.edu/~vhnet/prespl/laws/act250.html

development, natural areas and historic sites.³⁸ Any development that is proposed for the site must go through the Act 250 process and be examined in all of these ten areas before it can be approved for construction.

³⁸ Vermont Heritage Network, "Vermont Act 250," http://www.uvm.edu/~vhnet/prespl/laws/act250.html

Energy Considerations

Due to widespread community opposition and feasibility studies, we have decided not to pursue Beaverwood Energy's proposal for a wood-burning biomass facility in this report. We are concerned with the negative impacts of this type of facility and long-term sustainability of such a venture. Studies performed by Bennington County Regional Planning Commission show that the "net energy produced by the proposed electricity generating facility appears to be less than 3:1, a relatively inefficient and costly energy source."³⁹ Furthermore, the area of feedstock significantly overlaps the area of feedstock required by the already established Beaverwood Fair Haven facility and encompasses nearly the entire Green Mountain National Forest (Figure 3, Appendix I). The Commission does acknowledge later in their report that a smaller facility would be much more sustainable while still providing benefits for Pownal and the region as a whole. An equally important aspect is the great concern expressed by the strongly opposed Pownal and Williamstown communities, as highlighted by our survey (Figures 8 and 9).



Figure 8: Support and Opposition of the Biomass Proposal

Figure 9: Position on the Biomass Proposal by Primary Residence

³⁹ Sullivan, Jim. BCRPC. "Beaver Wood Energy Biomass Project – Comments." p. 4. 7 December 2011.

Surveyed residents explained their opposition citing fears of decreased air and water quality, aesthetic displeasure, and heavily increased trucking traffic. Additional negatives to the biomass plant include site-specific environmental effects (dust from trucking and unloading wood could severely impact efficiency of solar field), reduction in property values in proximity to an industrial facility,⁴⁰ and an increase in electricity cost from the plant. According to Peter Odierna of the Bennington County Industrial Corporation, electricity cost could be more than twice the cost of the region's standard rate of 6 cents/kwh (Beaverwood's biomass facility in Fair Haven will produce electricity at a rate of 13 cents/kwh). In regards to railway implementation at the site, the BCRPC predicts that "use of rail for deliveries would only make sense if the feedstock were harvested at a distant location, but that would involve additional transport costs (thus reducing already marginal net energy yields) and fail to achieve the objective of using local renewable energy resources."⁴¹

Beaverwood's proposed facility would provide job creation, which is a priority of our client and a majority of our survey respondents. Job creation at the site would be both temporary and long-term and would be of a moderate quality. In addition, as the BCRPC report states, the biomass facility would "support jobs in logging and transportation."⁴² The biomass and solar facilities satisfy both our client's and the state of Vermont's goals in promoting renewable energies. Lastly, the biomass facility already has very strong developer interest, which is not yet true of the other projects in our proposal with the exception of EOS Venture's planned solar park.

⁴⁰ Sullivan, Jim. BCRPC. "Beaver Wood Energy Biomass Project – Comments." p. 6. 7 December 2011.

⁴¹ Ibid. p. 4

⁴² Ibid. p. 8.

Our research indicates that solar energy is the most viable large-scale energy technology for this site. In fact, EOS Ventures is nearly finished with the design and permitting process for a 10-acre solar photovoltaic park at the site. Construction will begin as soon as the project is sold to a willing developer. John Guerin, Director of Energy Development at EOS Ventures, expects that this transaction will occur in the very near future and that construction will begin early in 2012. John Guerin also explained some of the constraints on expanding the park in future. These constraints are related to connectivity complications with the electrical grid infrastructure and a financial cap placed on the project by Vermont's SPEED program, which provided tax incentives and a power purchase agreement for the project.

Through our research and interviews, we explored several other energy technologies but found that they would lack sufficient inputs. For example, wind turbines or generators need a minimum wind speed threshold to generate electricity and the site has a low wind speed average. Any sort of hydropower is unfeasible because the Hoosic River does not have a large enough flow rate to make it viable. Other technologies include conversion plants for biofuels and anaerobic digesters that create methane gas. Unfortunately, there is a lack of access to sufficient inputs to make these technologies viable at the site. Ultimately, we feel that renewable energy (apart from the EOS Venture solar park) is unlikely to be part of the site's future development.

Proposal #1- Housing

There is high demand for affordable housing in both Pownal and Bennington County at large. When horse racing began at the Green Mountain Racetrack in the early 1960s, mobile home parks were quickly erected to house seasonal employees. Since the end of horse racing in 1975, many of these mobile homes have become permanent residences, and some of these homes may now represent substandard living conditions.⁴³ In 2010, there were 363 mobile homes in Pownal, 267 of which were in mobile home parks and 116 of which were on individual lots.⁴⁴ The Regional Affordable Housing Corporation of Bennington is currently assessing the quantity of substandard residences in Pownal.⁴⁵

In Bennington County, there is a striking gap between fair market rent and the price of rent that the average renter can afford. In Bennington County in 2010, the fair market rent for a 2-bedroom apartment was \$904 per month.⁴⁶ Vermont Affordable Housing defines affordable housing as costing less than 30 percent of income, so an income of \$36,160 is required to afford the fair market rent in Bennington County. In Pownal, 30.6 percent of households have an annual income of less than \$35,000, so the fair market rent in Bennington County is unaffordable for over 30 percent of Pownal residents.⁴⁷ In 2010, 28 percent of households in Bennington County were renters (compared to 26 percent of

⁴³ Jim Sullivan. Director Bennington County Regional Planning Commission. Personal Interview. November 22, 2011.

⁴⁴ "Pownal 2011 Billed Grand List Form 411." Town of Pownal, Vermont. 2011.

⁴⁵ Nelson Brownell. Chair of the Pownal Board of Selectmen. Personal Interview. December 4, 2011.

⁴⁶ "Out of Reach 2011 Vermont Factsheet and Comparison Table." The National Low Income Housing Coalition Wage Report. 2 May 2011.

<http://www.vtaffordablehousing.org/documents/resources/696_VT_2011_OOR_fact_sheet_+_comparison __charts.pdf>.

⁴⁷ "Fact Sheet: Pownal town, Bennington County, Vermont." US. Census Bureau. <http://factfinder.census.gov/>.

households in Pownal), and the mean hourly wage of renters in the county was \$10.63.⁴⁸ The affordable rent at that wage is \$553, which is \$351 below the fair market rent for a 2-bedroom apartment in the County. The disparity between fair market rent and affordable rent in Bennington County implies that there is a strong demand for less expensive housing alternatives.

The northern portion of the Green Mountain Racetrack site that lies outside of the floodplain (Figures 4 and 5, Appendix I) could easily accommodate 25 to 50 one to three bedroom housing units (400 to 1,500 square feet) on 3 to 5 acres.⁴⁹ We envision a nicely landscaped neighborhood with easy access to walking trails along the Hoosic River. Most likely, this neighborhood would have a mix of fair market and affordable rent homes to increase the economic viability of the project for the developer. From Table 1, Appendix I, we were able to compare construction costs, size ranges, densities, and federal funding restrictions for ten different types of affordable housing, which we discuss in more detail in the paragraphs below. Typical construction costs range from \$110 to \$150 per square foot.^{50 51} Land development costs (including landscaping, parking, and driveways) may range from \$5 to \$6 per square foot of the associated dwelling unit (i.e., a duplex with two 1,000 square foot dwelling units might have associated land development costs of \$10,000).⁵² Town, County, and State permitting costs may be expensive depending on the

⁴⁸ "Out of Reach 2011 Vermont Factsheet and Comparison Table." The National Low Income Housing Coalition Wage Report. 2 May 2011.<<u>http://www.vtaffordablehousing.org/documents/resources/696_VT_2011_OOR_fact_sheet_+comparison_charts.pdf</u>>.

⁴⁹ "Russian River Affordable Housing Alternatives Study." Bay Area Economics and INDIGO. 30 October 2006.http://www.sonoma-county.org/cdc/pdf/rd/rr/site_assessment.pdf>.

⁵⁰ Peter Odierna. Executive Director Bennington County Industrial Corporation. Personal Interview. November 22, 2011.

⁵¹ "Russian River Affordable Housing Alternatives Study." Bay Area Economics and INDIGO. 30 October 2006. http://www.sonoma-county.org/cdc/pdf/rd/rr/site_assessment.pdf>.

⁵² Ibid.

scale of the project and environmental impacts.

In general, mobile homes are the least expensive housing option costing between \$75 and \$100 dollars per square foot. Manufactured homes are the second-most cost effective option costing between \$100 and \$120 dollars per square foot.⁵³ Mobile homes and manufactured homes are both pre-fabricated, but manufactured homes sit on a permanent foundation, while mobile homes are re-locatable and sit on a wheeled chassis. Mobile homes are also considered to be of lesser quality. The permanent foundation of manufactured homes may qualify developers for government funding and tax credits for which mobiles homes do not.⁵⁴ Manufactured homes might make sense at the site if they are built out of the flood plain or built with flood-resistant materials and design.

Work/live units are intended for employees of on-site businesses.⁵⁵ If part of the site is developed for some commercial use (i.e. manufacturing, entertainment, or agriculture), employees could live in this type of on-location affordable housing. These types of homes do not cater to families due to their small size and integration with business, so these homes would probably serve a younger demographic on a short or medium-term basis. Similar to work/live housing, mixed-use housing is constructed above or alongside commercial retail or office buildings. Although mixed-use housing is not specifically designed for employees of the site, employees living in this type of housing have the benefit of walking to work. Mixed-use housing benefits the associated businesses because residents may be reliable customers or employees. Also, a mix of

⁵³ "Russian River Affordable Housing Alternatives Study." Bay Area Economics and INDIGO. 30 October 2006. http://www.sonoma-county.org/cdc/pdf/rd/rr/site_assessment.pdf>.

⁵⁴ Ibid.

⁵⁵ Ibid.

residential and business use implies that there is activity at traditionally off-peak hours, which makes the site feel safer and livelier.

Duplexes, row houses, and apartment rental homes are attractive options because they may be family oriented, and they may accommodate more dwelling units per area than manufactured or mobile homes. Co-housing is a community-oriented alternative to these former strategies. Co-housing usually involves adjoined dwelling units (or series of adjoined dwelling units) that share certain common spaces within and outside of the building.⁵⁶ Shared spaces may include a common dining area, recreation room, childcare center, or park. Sometimes, prospective residents design co-housing themselves. Similarly, co-operative housing makes each resident a member of the co-op that is involved in the management and maintenance of the housing units.⁵⁷ Co-op members may rent or own their unit, but their stake represents a share in the entire housing project.

Finally, amphibious housing may make sense in the most flood-prone parts of the site. Amphibious housing is constructed on floatable concrete barges rather than tradition foundation. The barge is anchored to wooden or steel piers so that the house may float vertically in the event of flood but not horizontally.⁵⁸ Unfortunately, amphibious housing is probably not feasible at the site because it is so much more expensive that any of the other options (construction costs for amphibious housing range from \$160 to \$300 per square foot).⁵⁹ A better alternative may be building on the portion of the site outside of the flood plain or using flood resistant design and materials. According to the Portland Cement Association, insulating concrete forms (concrete homes) are flood and fire

⁵⁶ "Russian River Affordable Housing Alternatives Study." Bay Area Economics and INDIGO. 30 October 2006. http://www.sonoma-county.org/cdc/pdf/rd/rr/site_assessment.pdf>.

⁵⁷ Ibid.

⁵⁸ Ibid.

⁵⁹ Ibid.

resistant, which decreases insurance costs. Submerged concrete absorbs little water even over long periods of time, and submerged concrete does not lose structural integrity.⁶⁰

Pros

The Green Mountain Racetrack site is an attractive location for housing because it is a large, level site with access to sewer, electricity, well water, and a good school system. The site also has excellent access to the Hoosic River and beautiful views of surrounding hills and mountains. Affordable housing is a demonstrated need in the community, and the construction of the housing would bolster local construction and contracting. The housing development would be on a fairly small scale with a compact design so as to minimize costs and avoid sprawl. Therefore, the environmental impacts are likely to be low.

In order to make rents affordable in mixed rent developments, landlords must charge some rents that are below the fair market value, which is not economically sustainable without government interventions. Fortunately, there are several sources of state and federal funding and tax credits that help make affordable housing projects feasible for developers so that they do not lose money on their investments. The Vermont Housing Finance Agency (VHFA) allocates Federal Low Income Housing Tax Credits (LIHTC), Federal Bond Credits, and State Affordable Housing Credits to affordable housing developers. ⁶¹ The application process for these tax credits is extremely competitive. The two relevant programs related to the U.S. Department of Housing and

⁶⁰ "Benefits: Disaster Resistance." Portland Concrete Association. 2011. http://www.concretethinker.com/solutions/Disaster-Resistance.aspx.

⁶¹ "Federal and State Housing Tax Credit Programs." Vermont Housing Finance Agency. http://www.vhfa.org/about/overview/lihtc.php>.

Urban Development (HUD) are the Community Development Block Grant (CDBG) and Home Investment Partnership Program (HOME).⁶² Both programs target local residents earning less than the local median income. Under the HOME program, local jurisdictions may receive up to \$500,000, but they must match every dollar of HOME funds with at least \$0.25 of nonfederal funds.⁶³ By executive order, HUD cannot support development within a floodplain unless there is no practicable alternative. Fortunately, the racetrack site does have buildable lots outside of the floodplain, but any applications for federal funding to build within the floodplain must demonstrate that Pownal has no alternative.⁶⁴

A new housing project in Bennington demonstrates the feasibility of these ventures in the area. In Spring 2011, the Vermont Community Development Plan allocated \$650,000 of CDBG grant money to the town of Bennington, the Regional Affordable Housing Corporation of Bennington, and Housing Vermont.⁶⁵ The project involves the construction of 14 rental units and renovations of 12 existing units at a total estimated cost of \$5.4 million. The project will have at least 12 different funding sources, of which the grant is second largest. The new units will be duplexes with a biomass-heating component.⁶⁶ This timely success story demonstrates that affordable housing can be combined with sustainable energy to win state and federal grant money in Bennington County.

<http://www.hud.gov/offices/cpd/affordablehousing/programs/home/>.

⁶² "Russian River Affordable Housing Alternatives Study." Bay Area Economics and INDIGO. 30 October 2006. http://www.sonoma-county.org/cdc/pdf/rd/rr/site_assessment.pdf>.

⁶³ "HOME Investment Partnerships Programs." HUD. 2011.

⁶⁴ "Flood Plain Management." HUD.

<http://portal.hud.gov:80/hudportal/HUD?src=/program_offices/comm_planning/environment/rev iew/floodplain>.

⁶⁵ Goswami, Neal. "Grants Will Build New Local Housing." Bennington Banner. 4 April 2011. http://www.vtaffordablehousing.org/news/wp-content/uploads/2011/04/Grants-will-build-new-local-housing-Bennington-Banner.pdf>.

⁶⁶ "VHCB Annual Report to the General Assembly: FY 2010." Vermont Housing and Conservation Board. 2010. http://www.leg.state.vt.us/reports/2011ExternalReports/264768.pdf>.

Considerations

Major challenges for the development of mixed rent housing projects at this site include competiveness for federal and state incentives and flood plain constraints. The housing plan does not designate a use for the existing structure on the site, so another plan is necessary to find a new use for the building or accommodate for its removal. An additional concern is that housing does not address the regional need for permanent job creation. While we did not specifically address housing in our survey, we found that community members see job creation as a priority for the site's development (Figure 5, page 15), and housing does not create permanent jobs. However, housing does not preclude other uses at the site, and housing might actually complement an adjacent business enterprise as described in the merits of mixed use and work/live housing (pages 30-31).

<u>Proposal #2 – Agriculture</u>

Much of the former Green Mountain Racetrack site lies in the flood plain of the Hoosic River, therefore it is one of the most fertile agricultural lands in the region.⁶⁷ While once used intensively for agriculture, more than sixty percent of the property is paved, and it is unlikely that the site will be reclaimed as pasture or cropland. However, the site could still host agricultural uses, such as commercial greenhouses, a meat processing facility, a fish farm, food processing facility, or periodic farmers markets. There is still a strong agricultural tradition in the region, but New England agriculture faces tremendous economic and cultural challenges, which put it on the decline. While there were 2,121 farmers in Bennington County in 2008, the Vermont Department of Labor expects that number to fall by 7.7 percent by 2018.⁶⁸ Loss of local agriculture is a concern because it represents a loss of food security and the farm economy. Also, local food can have a variety of health and environmental benefits over imported food.

A periodic farmers market could be located in the area next to the solar field. If a greenhouse were installed, the greens produced from the greenhouse could be sold at the market. Other farmers from the region would be able to sell their products at the proposed site. This would allow for citizens of Pownal, Williamstown, and Bennington to purchase fresh local greens and vegetables at a reasonable price. However, the supply of local produce must be evaluated to ensure the need for a farmers market.

⁶⁷ Professor David Dethier. Personal Interview. 1 November 2011.

⁶⁸ "Occupational Projections: Southern Balance of State." 2010. Vermont Department of Labor. http://www.vtlmi.info/occupation.cfm. (November 2010)

Aquaponics and Food Processing Plant

Year-round food production in greenhouses is an important component of local food production in cold climates like New England. Aquaponics is a possible agricultural use within the site because it combines aquaculture (raising aquatic animals like fish in artificial tanks) and hydroponics (growing plants in nutrient-enriched water) to provide two major crops, fish and vegetables. Both the fish and vegetables benefit from this closed loop system because the waste products from the fish are use to supply nutrients to the vegetable while the vegetables purify the water that is then returned to the fish.⁶⁹

Local Ocean is a local example of successful aquaculture. In 2008, a company called Local Ocean converted a 160,000 square foot warehouse in Hudson, New York, into an indoor aquaculture center.⁷⁰ The initial investment was \$10 million, and since then, Local Ocean has added two additional eighty thousand square foot buildings. Annually, the facility produces over one thousand tons of tropical fish including royal dorado, flounder, yellowtail, white sea bass, European sea bass, and black sea bass. With royal dorado often selling for \$9.99 a pound, this is a profitable venture. Water and energy use are highly efficient with less than one percent of water lost per day to evaporation and waste. Local Ocean retails to over 30 local restaurants and regional Price Choppers as well as markets in New York City and Boston.70 The racetrack building has adequate floor space for this use, and the size of the property affords the opportunity of expansion as was possible for Local Ocean. A sand and gravel well capable of pumping 750 gallons per minute⁷¹ and the nearby Hoosic River would supply more than sufficient

⁶⁹Cropking Inc. 2011. <u>http://www.cropking.com/aqua.shtml</u>. (November 2010)

⁷⁰David Levine. "Fish Farming in a Local Ocean". September 14, 2010. http://www.hvmag.com/Hudson Valley-Magazine/October-2010/Fish-Farming-in-a-Local-Ocean (December 2010)

⁷¹ Chic Paustian. Personal Interview. 27 October 2011.

water for this facility. This local success story provides an example an aquaculture system could be feasible and profitable.

While saltwater aquaculture by Local Ocean is certainly profitable and proven, a freshwater aquaculture system would be required in order to implement hydroponic vegetable growing. Nelson and Pade is a company that offers complete freshwater aquaponic systems that vary from home use to commercial systems⁷². This company constructed a table of specifications and pricing for commercial aquaponic systems that can be used as a model for the proposed aquaponic system at the Green Mountain Racetrack (Table 2, Appendix I). The cost of an aquaponic system that would accommodate the Green Mountain Racetrack would be approximately \$90,000. This cost includes a 10,920 square foot greenhouse and four twelve hundred gallon fish tanks. The portion of the building that would not be used by the aquaponic system would be used as a food processing plant.

The Farm to Plate Initiative, approved in 2009 by Vermont legislature, directed the Vermont Sustainable Jobs Fund to develop a 10-year strategic plan to strengthen Vermont's food system.⁷³ According to the strategic plan there are around 30 food production sites located in Bennington County. By locating the food processing facility onsite, the local food movement will be further improved. The food processing facility would contain all the materials needed to transform the raw materials from the

 ⁷² Nelson and Pade: Aquaponics Technology, Systems and Supplies. 2011. <u>https://aquaponics.com/</u>.
(December 2010)

⁷³ Farm to Plate Strategic Plan, "Food Processing and Manufacturing," 2010, http://web.williams.edu/wpetc/ces/new-markets-for-farmers.pdf (November 2010)

greenhouses and farmers into more profitable end products.⁷⁴ As explained in "Developing New Markets for Farmers: The Berkshire Community Development Corporation Plan for a Commercial Kitchen and Value-Added Processing Facility", growers could deliver a portion of their yield along with a recipe to the facility, where employees would process and package these products for market. These value-added goods could then be distributed or sold back on the farm from which they originated.74

Pros

Installing an aquaponic and food processing system at the Green Mountain Racetrack would allow for a fish market in Pownal to be implemented. This would provide fresh fish to the citizens and restaurants of southern Vermont and the rest of the region. The aquaponic and food processing system at the Green Mountain racetrack site would create a closed loop system, thereby reducing waste and energy inefficiencies. The fish and vegetables produced from the aquaponic system would be processed at the site and could either be sold in collaboration with farmers market or to stores and restaurants. The food processing plant could be made available to other users as well. The proposed food-processing facility would increase the interactions between farmers and buyers because consumers would be aware from where there food is coming. Farmers would have an incentive to grow local food because they would be able to take their food to the local food-processing facility and market it. The overall communication between the producer and consumer would create a better network for "marketing, opportunities for

⁷⁴ Elizabeth Dorr, Lauren McDonald, Thuy Phung, "Developing New Markets for Farmers: The Berkshire Community Development Corporation Plan for a Commercial Kitchen and Value-Added Processing Facility," 2010, http://web.williams.edu/wp-etc/ces/new-markets-for-farmers.pdf (December 2010)

profit, as well as education and awareness of the value of locally produced food."74 also, this proposal encompasses the three main components of what people wanted to see redeveloped at the site (Figure 5, page 15).

Considerations

The profitability of an aquaponic system is not clear because of the unknown climate, labor cost, marketing plans, and the availability of skilled technicians to run the system.72 Also, currently local zoning does not allow systems like hatcheries in Pownal, but it's unclear whether this would fall under that category. Regulations and requirements that the processing facilities need to consider are controlled by the Vermont Agency of Natural Resources, the Department of Environmental Conservation, the Vermont Agency of Agriculture, the Vermont Department of Health – Food & Lodging Division, the USDA Food Safety and Inspection Service, U.S. Food and Drug Administration, and the Hazard Analysis and Critical Control Points (HACCP).73 Currently some of the hatcheries in the Massachusetts area can be used to obtain the hatchlings for the aquaponic system include McLaughlin Hatchery, Sunderland Hatchery, and Bitzer Hatchery all of which are 2 hours away from Pownal, but they are all used for conservation purposes, not commercial aquaculture ventures.⁷⁵

Meat Processing and Slaughtering Plant

As mentioned before, the Farm to Plate Strategic Plan is an analysis of Vermont's food system focusing on food processing and manufacturing.73 This report states that the

⁷⁵ Massachusetts Division of Fisheries and Wildlife. 2010.

http://www.mass.gov/dfwele/dfw/facilities/hatcheries.htm

Alternative Proposals: Agriculture

demand for a slaughter facility has been increasing in Vermont, however the current decrease of slaughter and processing plants has not been able to meet the demand. There are currently 58 state- and federal-inspected slaughter and processing plants in Vermont,73 one of which is currently in Bennington County. One problem that the report addressed was that many farmers have to book six months or a year in advance to ensure timely use of the processing facility. By placing a meat processing facility at the Green Mountain Racetrack, the bottleneck effect of meat processing facilities could be alleviated. According to the <u>Developing New Markets for Farmers: The Berkshire</u> Community Development Corporation Plan for a Commercial Kitchen and Value-Added Processing Facility the cost of meat processing equipment including freezers, slicers, grinders, and dehydrators can each cost between two hundred and nine hundred dollars.74

In 2000, Shepstone Management Company conducted a feasibility study for a meat processing facility in the Hudson Valley, which overlaps with the markets in western Massachusetts and southern Vermont.⁷⁶ The study found that a viable facility would need to have a building of at least five thousand square feet including one thousand square feet of slaughterhouse floor space, coolers, and employee offices. Such a facility could accommodate two thousand head of cattle, twenty-two hundred hogs, and a similar number of other livestock annually.⁷⁶ More space would be required for an onsite retail component. At nearly two hundred thousand square feet, the existing building has more than enough space to accommodate any desired slaughtering and processing operation. Also, the building already has nine walk-in refrigerators three of which are

⁷⁶ Meat Processing Feasibility Study." Shepstone Management Company. 2000. http://agmarke ting.extension.psu.edu/Processing/PDFs/meat_plant_feasability.pdf (November 2010).

freezers. While the existing building could clearly accommodate this type of facility, some other business would probably be necessary to complement the meat processing so as to share rental, heating, and other utility costs of the large building.

One applicable case study is Westminster Meats. Westminster Meats, located in Westminster Station, Vermont, it is a new state-of-the-art, USDA-inspected slaughterhouse and meat processing plant.⁷⁷ Dan Mandich of Westminster Meats converted an eighteen thousand square foot, former seafood processing plant, into a fullscale slaughterhouse that provides around twenty full-time jobs.⁷⁸ Westminster is now looking forward to expanding and possibly also selling meat.⁷⁸ It demonstrates how a slaughterhouse processing facility is feasible and profitable.

Pros

A meat processing facility would benefit Pownal and Bennington County. The freezers and refrigerators that are already located in the site can be used to store the products of the meat processing facility. This site would help alleviate the shortage of meat processing facilities thus providing an incentive to increase local meat production.

Considerations

The availability of skilled slaughterhouse workers could limit the feasibility of this proposal. Many regulations need to be complied with in order for a proper meat processing facility to be developed at the proposed site. Regulations and requirements that the processing facilities need to be considered are controlled by the same agencies as

⁷⁷ Westminster Meats. 2011. westminstermeats.com/default.aspx. (December 2011)

⁷⁸ Chris Garofolo. "Vermont slaughterhouse now looking to expand". December 15, 2011. http://www.benningtonbanner.com/business/ci 19558512. (December 2011)

govern food processing.73 As with any proposal that considers the building, the building will have to be retrofitted in order to comply with the proposed floodplain laws. A market study needs to be conducted in order to ensure a sufficient market for meat processing and slaughterhouse products.

Proposal #3 – Entertainment

Pownal, Vermont is especially lacking in the area of entertainment since the closing of the Racetrack. Many respondents to our surveys expressed nostalgia for the former entertainment and gaming that took place there. Twenty five percent of survey respondents specifically named entertainment and/or casino as the type of development they envisioned for the Pownal Racetrack site. Nelson Brownell, Chair of the Selectboard and Zoning Administrator mentioned in an interview, as a space for gambling is a place to socialize, drink, eat, and relax. As suggested by Brownell, a casino complex at this site would include multiple entertainment attributes.

We imagine the first floor as the primary location of gambling including slot machines, off-track betting and gaming tables. The higher levels of the building could easily accommodate a bar, a club, a restaurant as well as large spaces for parties. While these primary features could all be retrofitted into the current building on site, an additional structure would have to be created for the hotel and movie theater. We suggest that these additions be made to the North and East of the current building, toward the track in order to avoid the flood zone.

Thalden.Boyd.Emery, an architectural firm specializing in casinos, hotels and resorts, can provide a case study for the Green Mountain Casino Complex. They designed the Aqueduct Gaming Facility for a racetrack site in Queens, New York. This \$250 million, 330,000 square foot complex facility transformed an existing racetrack building into a casino complex and connected the facility to an existing train station.⁷⁹ This case

⁷⁹ Thalden Boyd Emery Architects, "Local Casino: Aqueduct Gaming Facility," http://www.thalden.com/projects/projects.php?project_type=1&page=1.

study provides a possible plan for the Pownal racetrack site (Figures 6 and 7, Appendix I).

Pros

This complex would provide several hundred jobs, which could be filled by the local community. A casino complex would attract visitors from the surrounding area and make the Racetrack and Pownal a destination town once again. Additionally, the State of Vermont is currently facing a \$176 million budget shortfall in the 2012 fiscal year. The taxable revenue from a casino could considerably help Vermont's financial situation. Connecticut has two tribal casinos that "pay [the state] a combined total of 25% of their slot machine revenues or \$80 million, whichever is greater".⁸⁰ If the two casinos divide this amount, a Vermont casino has the possibility of contributing upwards of \$40 million annually to the state.

Considerations

The success of the casino complex is ultimately reliant on the demand of the region. The Town of Pownal and the towns immediately surrounding do not have the population to support even a small casino. Such a complex would stress the local infrastructure, meaning that Pownal would have to undergo multiple expensive modifications in transportation, policing and other fields. Additionally, Jim Sullivan expressed concerns that such a casino complex would be inconsistent with Vermont's rural image and that its location at the entrance to the state could send a negative message

⁸⁰ National Conference of State Legislatures, "State Casino Taxes," last modified June 4, 2004, http://www.ncsl.org/default.aspx?tabid=12805.

to tourists. Finally, while our survey suggested a strong desire for a casino complex at this site, this proposal would cause a significant amount of controversy with the larger community, suggesting that investment in such a proposal might not be rewarded.

Limits of Feasibility

Two large limits of feasibility exist with regard to this plan. The first is that Massachusetts has recently approved plans for three casinos throughout the state, one of which will be placed in Berkshire County approximately 30 miles from Pownal. The proximity of this casino would inevitably reduce the regional demand of such a complex. The second limit of feasibility is the Vermont state law currently prohibits casinos. While it is worth noting that Peter Odierna has identified the current Vermont budget shortfall to an incentive for the Governor to support a casino project, it is very unlikely that such a significant change in state legislature will occur in the near future.⁸¹ For these reasons, we acknowledge this proposal as unfeasible at this time.

⁸¹ Peter Odierna. Executive Director Bennington County Industrial Corporation. Personal Interview. November 22, 2011.

<u>Proposal #4 – Recreation</u>

Green Mountain Entertainment Facility

A Family Entertainment Center (FEC), which would be promoted as the Green Mountain Entertainment Facility (GMEF), is another viable alternative for implementation at the Green Mountain Racetrack site. FECs are characterized by "fewer attractions, [and] a lower per-person per-hour cost to consumers than a traditional amusement park³² and allow for diverse uses across the site. The GMEF would utilize the building entirely, retrofitting and renovating it to suit the attractions implemented. On the first floor, we envision an industry-standard indoor playground, which would have slides, tubes, plastic ball pits, etc. Also on the first floor would be a small restaurant or concession stand with seating in sight of the playground. It would be possible, as well, to include a small assortment of beers at the concession stand, but only after a certain time at night. The rest of the first floor could accommodate a sizeable arcade and prize bar, where children could gather tickets to exchange for prizes. The first floor could possibly also accommodate a private birthday party room. The second floor could be a split between a two-screen movie theater and laser tag arena. The two-screen movie theater would utilize the grandstand arrangement with new, cinema-style seating. The laser tag arena would utilize the other half of the floor, separated from the grandstand by a hallway, and would be constructed by a company such as LaZer Runner⁸³. Bowling lanes could also be an option as part of the GMEF. The basement could be used for administrative offices for the entire site and the suite on the top floor would have no specific use.

 ⁸² "Family Entertainment Center." Wikipedia. http://en.wikipedia.org/wiki/Family_entertainment_center
⁸³ "What You Must Know About Designing Your Arena." Free Reports.

http://www.lasertagencyclopedia.com/

The remaining land of the site is open to other small developments that would supplement the GMEF seasonally. Seasonal attractions that could include a mini-golf course, a ropes course, electric go-kart track, Ferris wheel, or other attractions found at small amusement parks. A creative use of the pond within this theme would be bumper boats during the warm months and ice-skating during the frozen months.

Green Mountain Sporting Facility

Furthermore, in this recreation proposal, we envision the GMEF coordinated with the construction of a sporting facility, either as an inflatable dome or field house, promoted as the Green Mountain Sporting Facility (GMSF). These structures come in various sizes depending on their prescribed use. Options include an artificial turf field for use by field sports, hard court tennis courts, or multipurpose flooring. Another option, or as additional structure, could be a baseball "wedge," which would be more square in orientation than the rectangular field or courts. Either one or two fieldhouses would be possible, with the possibility of one being smaller and used for paintball. The GMSF could also be built in conjunction with a sports bar and restaurant. A perfect case study is the Portland Sports Complex (Portland, ME), which houses a forty-five thousand square foot fieldhouse⁸⁴ complete with two team changing rooms and is incorporated with a sports pub that offers a "diverse menu, mezzanine viewing [of the field] and multiple TV's."⁸⁵ The GMSF would likely be located in the northern section of the site (Figure 5, Appendix I).

⁸⁴ "About Portland Sports: Our Facility." Portland Sports Complex. http://www.portlandsportscomplex.com/index.cfm?area=our facility

⁸⁵ Ibid

Pros

There are many benefits to this proposal. Firstly, many respondents to our surveys expressed a desire for recreation opportunities, while others specifically mentioned a need for child-friendly recreation. Additionally, when asked, "Which of the following services, if located at the racetrack, would you consider using?," restaurants (goldenrod) and bars (pink), combined, accounted for the largest percentage (Figure 6, page 16). Additionally, Nelson Brownell, Chair of Pownal Selectmen and Zoning Administrator, suggests that there is a dearth of nighttime entertainment activities in Pownal, which could be addressed by a sports bar and a lively, family-oriented restaurant. We envision this to development to be popular in Pownal and the region at large attracting steady flow of patrons from nearby population centers (Regional Community Profile, pages 9-11). Furthermore, local colleges (Williams College, Bennington College, and MCLA) could utilize the GMSF for winter and early season sports practices.

Considerations

There are some associated negative aspects to such development. Jobs will be created, but the wage-rate may be relatively low. Except for managerial or administrative positions, part-time employees would probably fill most of the jobs in the Green Mountain Entertainment Center. As for the Green Mountain Sporting Facility, jobs would be of slightly higher quality due to the administrative and service staff required to run a restaurant, bar, and sporting complex. Also, there is the cost of renovating the existing building and constructing the inflatable or rigid field house and associated restaurant and bar. Of course, all proposals must address the retrofitting of the existing building or

Alternative Proposals: Recreation

construction of new structures. Lastly, part of the facility may overlap with the floodplain.

Proposal #5 – Manufacturing

Light manufacturing is characterized by an industrial business that does all of its processing and assembly within an enclosed building.⁸⁶ The end products tend to be of high value relative to their size and weight. Examples include electronics, furniture, vehicle components, brake pads, home appliances, capacitors, and robotic arms.

Pros

Based on our community survey responses, interviews, and research, we conclude that a light-manufacturing establishment would be a good fit at the site. Our survey results indicate that unobtrusive light manufacturing is likely to receive community support (Figure 6, page 16). Of our 61 respondents, 21 respondents indicated that manufacturing as a type of development they would *most* like to see at the site, which is comparable to the response results for the seven other uses we proposed in the survey (no proposed use was chosen by more than 27 respondents (Figure 6, page 16). When asked to choose among priorities for site development, 36 and 37 respondents considered supporting the local economy and job creation, respectively, to be among the *most* important aspects of site development (Figure 5, page 15). A manufacturing enterprise would certainly provide quality job creation; manufacturing wages are generally twice those of retail.⁸⁷

Located in Bennington, Vermont Composites, is a model of successful manufacturing in the region employing over 230 local workers and generating \$32

⁸⁶ "Light Manufacturing." It's All About Business. PT Consulting Partners. 2010. http://itsallaboutbusiness.com/Manufacturing.htm

⁸⁷ Peter Odierna. Executive Director Bennington County Industrial Corporation. Personal Interview. November 22, 2011.

million in sales in 2011.⁸⁸ Vermont Composites produces a variety of goods including airplane components, medical products, and robotic arms that are used in heavier manufacturing processes. Steinerfilm, just one and a half miles down the road in Williamstown, Massachusetts, is another example of successful manufacturing in the area. Steinerfilm has been creating capacitor films and papers in Williamstown since 1971.⁸⁹

Several features of the site increase its appeal from a manufacturer's perspective including the site's size, transportation options, and level topography. A 144.6-acre parcel of level land is relatively rare in this region of hills and mountains. Also, 86 acres of the site have already been paved to accommodate vehicle traffic, storage, and the construction of additional buildings (Site Specifications, pages 6-7). Route 7 and a Pan Am Railways track run along the northeastern property line. Pan Am Railways already has a longstanding relationship with Progress Partners,⁹⁰ and a partnership with the railroad could provide a manufacturer with alternative transportation options for materials and finished goods.

Some prospective developers may be concerned that manufacturing is not viable Vermont, but Vermont has a long and successful manufacturing tradition. In 2009, the value of Vermont's manufacturing output was 2.9 billion dollars, which accounts for 11.4 percent of Vermont's gross product.⁹¹ Vermont has over 1,100 manufacturing establishments, and the state exports products all over the world with Canada, China, and

⁸⁸ "Kaman Acquires Vermont Composites." Composites World. 7 November 2011.

<http://www.compositesworld.com/news/kaman-acquires-vermont-composites>. ⁸⁹ "Steinerfilm: Company Information." Steinerfilm.

^{2011.&}lt;http://www.steinerfilm.ie/company/index.html>.

⁹⁰ Chic Paustian. Personal Interview. 27 October 2011.

⁹¹ "Vermont Manufacturing Facts." 30 June 2011. National Association of Manufacturers. 7 November 2011. <http://www.nam.org/Search/Site.aspx?q=vermont>.

the United Kingdom receiving 42, 13, and 7 percent of the state's manufacturing exports, respectively. ⁹² In 2010, over 8,000 people were employed in production occupations in southern Vermont, which was almost 10 percent of total employment.⁹³ These statistics indicate that a significant portion of the regional population already possess manufacturing experience and skills. Also, the large population centers within the 35-mile radius of the site indicate that there may be a market for manufactured goods on a local or regional scale. In addition to Vermont Composites, examples of thriving Vermont-based manufacturing companies include IBM Burlington (producing semiconductors in Essex Junction), NRG Systems (producing wind power and turbine equipment in Hinesburg), and Amoskeag Woodworking (producing architectural products and furniture in Colchester).⁹⁴

Several Vermont business incentive programs help make Vermont competitive for business and manufacturing on a regional basis. One of the incentives is the Vermont Employment Growth Incentive (VEGI), which provides cash payments to businesses based on their revenue return to the State.⁹⁵ Vermont also offers tax incentive programs and programs to stabilize property taxes.

⁹² "Vermont Manufacturing Facts." 30 June 2011. National Association of Manufacturers. 7 November 2011. http://www.nam.org/Search/Site.aspx?q=vermont>.

⁹³ "Occupational Employment and Wages: Southern Balance of State." 2010. Vermont Department of Labor. 7 November 2011. http://www.vtlmi.info/occupation.cfm>.

⁹⁴ "Success Stories." 2010. Vermont Manufacturing Extension Center. 7 November 2011. http://www.vmec.org/impact-a-successes/success-stories.

⁹⁵ "Vermont Employment Growth Incentive." Vermont Department of Economic Development. http://www.thinkvermont.com/Programs/VEPC/VermontEmploymentGrowthIncentiveProgram/t abid/157/Default.aspx>.

Considerations

As in any redevelopment of the site, the existing structure must be either retrofitted or removed. In general, a multiple-story manufacturing arrangement is considered less efficient than a single-story arrangement due to costs associated with shipping and receiving.⁹⁶ However, the cost of acquiring an existing building (averaging \$20 per square foot) is significantly less than the cost of constructing a new one (averaging \$120 per square foot).⁹⁷ A manufacturing enterprise on the scale suitable for this site typically requires a building between 40,000 and 120,000 square feet⁹⁸ (Vermont Composites uses an 85,000 square foot building⁹⁹), so the size of the existing building is more than sufficient. If a new structure were deemed necessary, state incentives could help drive down some of the construction costs.¹⁰⁰

Another challenge for a manufacturing enterprise may be finding a workforce (on the order of 100 people) that has the requisite skills and is seeking employment.¹⁰¹ The Bennington County Industrial Corporation is helping to address this problem by teaming with community colleges to launch two new workforce-training initiatives.¹⁰² Meanwhile, Vermont Composites has its own on-site training center.¹⁰³ These training concerns are relevant considerations for any manufacturing interest looking at the site. Of course, the company may be able to draw additional workers from not-so-distant population centers

<http://www.vtcomposites.com/Production_Facility.aspx>.

⁹⁶ Peter Odierna. Executive Director. Bennington County Industrial Corp. Personal Interview. November 22, 2011.

⁹⁷ Ibid

⁹⁸ Ibid

⁹⁹ "Production Facility Details." Vermon Composites. 2011.

 ¹⁰⁰ Peter Odierna. Executive Director. Bennington County Industrial Corp. Personal Interview. November 22, 2011.

¹⁰¹ Ibid.

¹⁰² Ibid

¹⁰³ "Training Center." Vermont Composites. 2011.

http://www.vtcomposites.com/Production_Facility/Training_Center.aspx>.

including North Adams, Williamstown, and Bennington and possibly even Troy, Albany, Schenectady, and Pittsfield (Regional Community Profile, pages 9-11). As with any development of the site, a manufacturing venture will have to consider flood plain constraints by building out of the flood plain or facing higher insurance costs.

Cost/Benefit Analysis and Matrix

The Green Mountain Racetrack site is very flexible in its topography, zoning, and the owner's willingness for development. With this and the diverse proposals in mind, we set out to determine a fair ranking system of the proposals. We decided to create a decision matrix with proposals along the top and the ranking categories vertically sorted by the benefits and costs of each project (Table 3, Appendix I). This allows us to compare all of the proposals along each ranking category. Some example benefit categories include "Taxable Revenue," "Tourism Development Potential," and "Compatibility with Survey Responses." Some example cost categories include "Stress on Transportation Infrastructure" and "Environmental Effects." All categories within each proposal were ranked on a one to five scale where a five is a many, high, or great benefit or cost respectively. For example, a five in the "Permanent Job Creation" category means that the project creates many jobs relative to our other proposals. A five in the "Environmental Effects" category means that the project has a high potential for adversely affecting the environment. In our attempt to create a fair ranking system, we added different weights to each category, from one to five. We assigned categories weights between one and five where one is of lowest importance and five is of highest importance. As with our category scores, we assigned weights based on survey and interview results, case studies, client goals, and our other research. Permanent job creation, job quality, compatibility with survey, long-term profitability, initial development cost, political opposition, and environmental impacts were the seven categories receiving weights of five. A perfect score is 153 with all benefits give a score of five and all costs given a score of one.

Ranking

After evaluating all of our proposals in the twelve benefits and the seven costs categories and summing those values, our decision matrix ranks our proposals in the following order, from highest ranked to lowest ranked: Manufacturing, Recreation, Entertainment, Agriculture, and Housing.

Manufacturing Matrix Score

In our cost-benefit matrix, light manufacturing scores 84 out of 153 possible points, the highest of our five proposals. Manufacturing scored a five in permanent job creation, job quality, compatibility with state law, compatibility with current zoning, and compatibility with survey responses. Manufacturing scored a four in potential for long-term profitability (as evidenced by the success of Vermont Composites and Steinerfilm). Of course, any manufacturing enterprise will need to conduct a thorough market study before it is established.

Manufacturing also scored well in the cost analysis. Light manufacturing should place fairly low stress on infrastructure, have fairly low environmental impacts, and low risk of flood damage given that any structures are placed out of the flood plain or constructed with floodsavvy design. Our interviews and survey results suggest that light, unobtrusive manufacturing would face low political opposition, as community members indicated a strong desire for jobcreating development at the site. An additional advantage of manufacturing over entertainment and recreation facilities is that manufacturing does not rely on its ability to attract patrons from the surrounding region. The other side of this coin is that manufacturing has low tourism development potential, which may be a priority for some members of the community. An additional concern (as with all proposals) is the feasibility of retrofitting the existing building.

Recreation Matrix Score

Recreation scored second highest of our proposals with a score of 71 out of the 153 points. It was particularly strong in addressing community survey responses, compatibility with state law, and use of existing site structures. Many of those surveyed desired for entertainment opportunities for both adults and children. Furthermore, it scored low in environmental effects, a testament to its inability to negatively harm the environment compared to an industrial facility that would incur pollution. Weak aspects of this proposal stemmed from it requiring more visitors than Pownal can sustain in order to support it financially as well as a high initial development cost due to extensive construction and retrofitting of the building for use by the family entertainment portion.

Entertainment Matrix Score

The entertainment casino proposal scored third on our cost/benefit matrix, receiving 47 out of a possible 153 points. The proposal scored particularly high in the categories of permanent job creation, temporary job creation and job quality. This is because a complex as large as a casino needs many diverse positions. The proposal also scored highly in the categories of taxable revenue, long-term profitability and tourism development potential because of its status as a large attraction and its ability to operate year round.

Although the entertainment proposal shows many benefits, we found several elements that make it also extremely costly. For instance, the initial development cost for a casino complex is the largest of any of the proposals we considered. Additionally, the state law prohibiting gaming houses combined with some mixed opinions on the idea from both community members suggests strong political and social contention might result from such a

proposal. Finally, development of this proposal would rely strongly on the regional community. Without a market research study or other forms of research, it is impossible to know if such a facility could be economically feasible at this location.

Agriculture Matrix Score

Aquaponics and food processing scored 28 out of 153 possible points on our cost-benefit matrix. Aquaponics and food processing scored particularly well in their potential to use the existing building. A variety of food processing activities, from Greek yogurt production to animal slaughtering, could be accommodated in this building, as could an aquaculture or aquaponics system. One concern with food processing is the capacity of regional farmers to provide a consistent supply of agricultural products. However, demand for food produced from this facility would probably be high because it is fresh and local. Given the seasonality of northeastern agriculture, we also have some concerns about the permanence and quality of jobs at the facility. Of course, an indoor fish farm and/or greenhouse would not be subject to the constraints of the seasonal harvest. Finally, we are concerned that an agricultural system may stress local infrastructure depending on the volume of food moving to and from the facility, which could cause increased traffic around the site.

Housing Matrix Score

Mixed affordable and fair market rent housing ranks the lowest of our alternative proposals scoring 16 out of the 153 possible points. Housing ranks particularly poorly in the categories of permanent job creation, long term profitability, compatibility with our survey results, and use of existing features. The poor compatibility with survey results is somewhat

misleading due the fact that our survey did not specifically address housing. However, the emphasis on job creation and developing the local economy in our survey results indicates that Pownal residents may not consider housing a high priority use of the site. Housing also scored poorly in the cost category for flood damage potential, as housing is probably more vulnerable to flooding constraints than other uses of the site. Of course, housing may be constructed out of the flood plain, which would eliminate this concern altogether. Housing scored well on temporary job creation and compatibility with state law. Mixed rent housing scored well in the costs analysis because it is unlikely to stress local infrastructure, does not rely on drawing people from a large radius, and will have relatively low environmental impacts.

Commercial Retail Development Recommendation

In addition to the manufacturing or recreation facility, we propose the construction of a commercial retail component that would be placed in the triangular section of the site (Figure 3, Appendix I). This component would be easily visible and accessible to the busy thoroughfare that is Route 7. This small commercial development could incorporate establishments indicated in our survey results (Figure 6, page 16). When asked about shopping, most respondents from Pownal responded that they do their shopping in Bennington, highlighting the opportunity for commercial development within the town (Figure 7, page 17). The survey results suggested that Pownal residents would use a grocery store if it were established at the site. Although Pownal has a Stewart's Shops convenience store, a grocery store would provide a more diverse selection that satisfies more shopping needs, particularly fresh, local produce. The survey results also demonstrated a strong demand for a regular farmer's market. An advantage of a regulate farmer's market is advantageous because it has essentially no development costs. While a farmer's market and grocery store could be complementary uses for the site, the grocery store could address the desire for local food itself by stocking local foods on a regular basis. If an agricultural business is established at the site (along the lines of the proposed aquaponics and food-processing proposal, pages 35-42), then its products may be distributed through the on-site grocer as well. As indicated by the survey results, there are several other types of service and retail establishments that could also be compatible with this site.

Conclusion

Our cost-benefit matrix supports the establishment of light manufacturing that creates jobs and bolsters the local economy or a recreational facility that satisfies the regional need for four-season entertainment. However, all of our five alternative proposals have numerous merits, and they are not mutually exclusive. The feasible development of the entire site will involve a medley of uses, and there is certainly the possibility for development of more than one of our proposals. For example, housing alongside an aquaponics system would help satisfy the demand for local housing while contributing to the regional food system. Also, we acknowledge that our list of proposals is far from comprehensive, and there are certainly other viable uses for the site that we have not evaluated. At this point, we would like to thank our clients, survey respondents, and interviewees for their time, guidance, and enthusiasm that have made our project possible. We hope that our analysis has positively contributed to the community discussion and helped the town of Pownal and our clients move a step closer to finding the best type of redevelopment for the Green Mountain Racetrack.

Appendix I

Figure 2: 25-Mile Radius Surrounding the Green Mountain Racetrack in Pownal, VT

A map of the 25-mile radius surrounding the racetrack site includes parts of Bennington County, Vermont, Berkshire County, Massachusetts, and Rensselaer County, New York. The cities of Troy, Albany, and Schenectady lying at the edge of the 25-mile radius have a combined population of over 200,000.

Figure 3: Feedstock Radii for Proposed Pownal Biomass Plant and Implemented Fair Haven Plant

Figure 4: Proposed FEMA Floodplain Boundaries

Figure 5: Sections of the Green Mountain

Housing Type	Size Range ^α	Number of Bedrooms ^β	Dwelling Units per Acre	Constructio n Cost per Sq. Ft.	Cost per 900 Sq. Ft. Dwelling Unit ^γ	Federal Funding Restrictions
Mobile Homes	560 to 1,500	1 to 4	5 to 15	\$75 to \$100	\$72,000 to \$95,400	Not Eligible for LIHTC
Manufactured Homes	650 to 1,500	1 to 4	5 to 10	\$100 to \$120	\$94,500 to \$113,400	Not Eligible for LIHTC
Work/Live Unitz	800 to 1,400	2 to 4	15 to 30	\$110 to \$150	\$103,500 to \$140,400	Not Eligible for LIHTC or HOME Funds
Duplex	900 to 1,200	2 to 3	8 to 16	\$110 to \$150	\$103,500 to \$140,400	
Row Houses	900 to 1,200	2 to 3	10 to 18	\$110 to \$150	\$103,500 to \$140,400	
Apartments	650 to 1,200	1 to 3	18 to 50 (or more)	\$110 to \$150	\$103,500 to \$140,400	
Co-Housing	900 to 1,200	2 to 3	18 to 50 (or more)	\$110 to \$150	\$103,500 to \$140,400	
Cooperative Housing	900 to 1,200	2 to 3	18 to 50 (or more)	\$110 to \$150	\$103,500 to \$140,400	
Mixed Use Housing	900 to 1,200	2 to 3	18 to 50 (or more)	\$110 to \$150	\$103,500 to \$140,400	
Amphibious Housing	1,400 to 1,600	4 to 5	5 to 15	\$160 to \$300	\$236,000 - \$434,400	

Table 1: Housing Type Comparisons

 α Square feet

 β Smallest Unit to Largest Unit

γ Includes Land Development Costs

This table shows typical sizes, costs, densities, and restrictions on government incentives for ten diff. Mobile homes and manufactured homes are the least expensive options, while amphibious housing is the most expensive. Source: Bay Area Economics, 2006.

	Commercia 1 500	Commercia 1 800	Commercia l 1200
Estimated* lbs. of fish	2,200 lbs	3,565 lbs	5,294 lbs
*Estimated pounds of fish is based on raising	·		·
Nile Tilapia, under optimum conditions.			
Estimated* number of heads of lettuce/greens *The amount of vegetables you will grow is dependent on climate, management, the amount of environmental control you have and whether you are using grow lights. Growing in a controlled environment greenhouse with high intensity grow lights will yield the best results. We have used lettuce as an example because it is commonly grown in aquaponics. Most other greens such as collards, chard, bok choi and herb varieties such as basil, chives and cilantro, can be grown using the same plant spacing. Other crops, such as tomatoes, eggplant, melons, beans, cucumbers, etc., can be grown using the	28,800 – 46,080 /year 552 - 884/week, average	48,240 – 77,184/year 925 – 1,480/week, average	70,560– 112,896/yea r 1,353 – 2,165/week, average
appropriate plant spacing.			
Estimated lbs of tomatoes	2400 - 3360/year	4,200 – 5,880 /year	12,000 - 16,800/ year
Size of vegetable grow beds: Raft NFT Aquaponic Flow Channels Media-Beds	2 - 8' x 40' 2 - 10' x 32' 2 - 3' x 32' 2880 plant sites (leaf) 96 plant sites (vine)	2 - 8' x 64' 2 - 10' x 56' 2 - 3' x 56' 4824 plant sites (leaf) 168 plant sites (vine)	$2-8' \times 96'$ $2-10' \times 80'$ $4-3' \times 80'$ 7056 plant sites (leaf) 480 plant sites (vine)
Number and size of fish tanks	4 – 500 gal fish tanks	4 – 800 gal fish tanks	4– 1200 gal fish tanks
Approximate Greenhouse/space dimensions	2 – 28' x 72' 4,032 sq. ft.	3 – 28' x 104' 8,736 sq. ft.	3 – 28' x 130' 10,920 sq. ft.
Estimated amount of time required/day For feeding fish, maintaining filters, seeding, transplanting and harvesting	5 - 8 hours/day	8 - 14 hours/day	14 - 23 hours/day
Electrical Requirements call	Call	Call	Call
Package Cost	\$ 45,495	\$66,795	\$82,500
Crating Fee (if shipping via motor freight)	\$825	\$925	\$1025

Table 2: Specifications and Pricing for Nelson and Pade Commercial Aquaponics Systems

This table compares three commercially-sized aquaponics systems developed by Nelson and Pade. Their systems can fit all types of facilities and provide quality fish and vegetables.

Figure 6: Aqueduct Gaming Facility (Concept), Queens, NY

Figure 7: Aqueduct Gaming Facility Aerial View (Concept), Queens, NY

Table 3: Cost/Benefit Analysis Matrix o	f Proposals
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		Weight	Hou	ising	Manufacturing Entert		inment	Recreation		eation	Aqua & I Proc	ponics 'ood essing	
Be	enefits	s	B	sB	В	sB	В	sB		B	sB	В	sB
Permanent Job (Creation	5	1	5	5	25	5	25		3	15	3	15
Temporary Job	Creation	2	4	8	4	8	5	10		5	10	4	8
Job Quality		5	2	10	5	25	4	20		3	15	3	15
Taxable Revenue	e	2	1	2	4	8	5	10		5	10	4	8
Tourism Develop	oment Potential	2	1	2	1	2	5	10		4	8	1	2
Compatability w	ith State Law	5	5	25	5	25	1	5		5	25	5	25
Compatibility Lo	ocal Zoning/Policies	2	4	8	5	10	2	4		4	8	4	8
Compatibility wi	ith Survey Responses	5	1	5	5	25	5	25		4	20	2	10
Uses Existing Site Features (i.e. the building)		3	2	6	2	6	5	15		5	15	5	15
Long-term Profi	tability	5	3	15	4	20	5	25		3	15	2	10
Cumulative	Smallest Benefit Score	36	_	86	_	154	_	149		_	141	_	116
Score	Largest Benefit Score	180	-		-	134	-	14)		-	141	-	110
Costs		4	C	+C	C	+C	C	+C		C	+C	C	+C
		l	C	u	C	il.	C	it		t	iC	U	
Stress on Transportation Infrastructure		3	3	9	3	9	3	9		2	6	4	12
Initial Developm	Initial Development Cost		3	15	4	20	5	25		4	20	4	20
Political Opposit	tion	5	3	15	2	10	5	25		2	10	3	15
Environmental H	Effects	5	2	10	2	10	2	10		1	5	3	15
Risk of Flood Da	image	2	4	8	2	4	2	4		2	4	2	4
Relies on Regional Community		4	1	4	2	8	5	20		4	16	4	16
Disruption of Floodplain Zone		3	3	9	3	9	3	9		3	9	2	6
Cumulative	Smallest Cost Score	27		70		70		103			70		00
Cost Score	Largest Cost Score	135	- 70		-	70	-	102		-	/0	-	00
Cumulative	Worst Possible Score	-99				0.4		-		_		_	
Score	Best Possible Score	153	16			84	4			7	1	2	8

This figure shows our cost-benefit matrix with weights and scores based on survey and interview results, case studies, client goals, and other research. Manufacturing ranks highest followed by recreation with housing scoring lowest. s, t = benefit, cost weight respectively; B, C = benefit, cost score respectively; sB, tC = weighted benefit, cost score respectively

Appendix II

Community Survey: Spoken Interview

Date:	
Location:	
Town:	
Interviewer:	

Hello, good afternoon/morning. My name is _____ and I'm a Williams student conducting a survey for the owners of the Pownal Racetrack Site. Do you have a couple minutes to answer some questions? I will start with the focus of the survey and finish with personal information.

Our goal is to determine the most suitable business or industry for the old racetrack site in Pownal based on the needs and desires of the community.

Please skip any questions that you are not comfortable answering. The results of this survey are anonymous.

Are you aware of the former "Green Mountain" racetrack property in Pownal?

Pownal Racetrack General

1) Where is your primary residence? _____(Town, State)

2) How long have you been familiar with the Pownal Racetrack?

3) Where do you spend most of your working hours?

4) How often do you pass the Racetrack during an average week?

5) How important is the future development of the racetrack site?

- 6) What sort of businesses, services, or other development would you like to see there and would you use them?
- 7) Of the following, which would you most like to see developed at the Racetrack?
- ____ Agriculture
- ___ Energy Production
- ____ Services (bank, pharmacy, medical, law practices, exercise and fitness, etc)
- ____ Manufacturing (Heavy)
- _____Manufacturing (Light)
- ___ Grocery store
- ____ Commercial retail (chain stores, wholesale distributors, etc)
- Local/independent shops
- ____ Restaurants/Bars
- __OTHER, Describe:
- 8) What aspects of the future development are important to you?
- __ minimizes noise pollution
- ___ minimizes light pollution
- _____is environmentally friendly
- ___ creates jobs
- ____ supports the local economy
- ____ is aesthetically attractive

Biomass:

9) Are you aware of the proposal for a wood (biomass) burning, electrical generation plant and pellet manufacturing facility at the racetrack site?

 Yes

 No

If Yes:

- 9a.) Are you:
- ____ Strongly supportive of the proposal ___ Strongly opposed to the proposal _____ Supportive of the proposal
 - ____ Opposed to the proposal

No opinion Please explain:

Shopping: 10) Where do you do most of your shopping?

11) Which of the following services, if located at the racetrack, would you consider using? grocery store
Personal and Employment Information: Gender: Male Female
1) In what decade were you born? before 1930s1930s1940s1950s1960s1970s1980s1990s
2) What is your current employment status?
If applicable: 2a) What is your job?
2b) Is there a job you would prefer?
3) What is your highest level of education?

Thank you very much for your time. Your input is greatly appreciated.