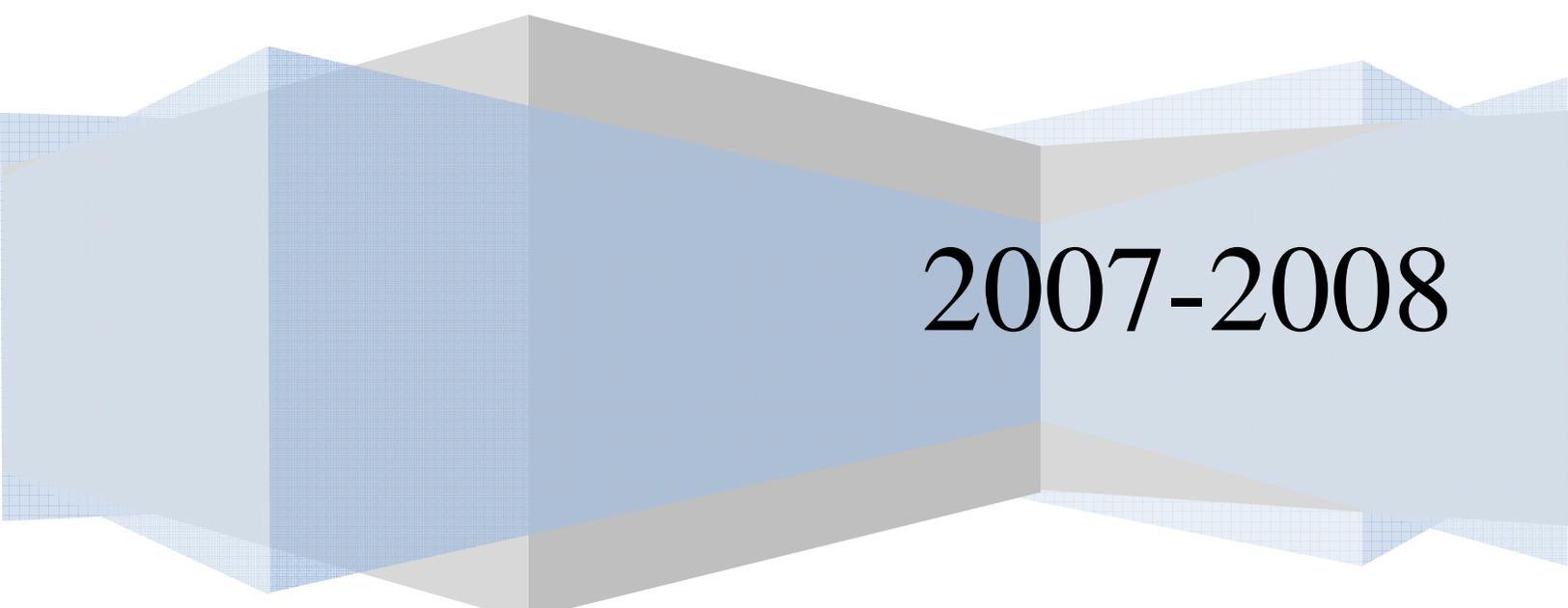


Westfield State College

Big-Box Retailer VS Greenfield Wetlands

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Table of Contents

Abstract	3
Introduction	3
Methods & Results	5
<i>State WPA and Town Bylaws</i>	7
<i>Maps</i>	8
Discussion	13
<i>History</i>	15
Conclusion	16
Appendix	17
Sources	26

Abstract

The City of Greenfield (MA) is attempting to attract the development of a Big-Box Discount Department Store. Though environmental concerns have only played a minor role in the prevention of a Wal-Mart store development over past years, the most recent proposed development involves some of Greenfield's locally regulated wetlands. According to recent reports by the Executive Office of Energy and Environmental Affairs, the proposed development in Greenfield will cover a substantial portion of wetland resource areas. Through analysis using GIS, we have designed a study to delineate the wetlands recorded on the parcel of land in question. Using three separate methods of delineation, we attempt to verify the aforementioned conclusion of the Commonwealth. In addition to our original research, we will present data gathered from past case studies that relate to the current development proposal in Greenfield and investigate the Wetlands Protection Act and its impact on our study.

Introduction

Thus far, our research has shown that Ceruzzi Developers plan to develop a parcel of land owned by Mackin Sand in Northern Greenfield (See Figure 7 in appendix for a picture taken of the Mackin site). The lot is approximately 160,000 sf. The EIR released by MassDEP in August of 2007 detail development plans and state that approximately 5,000 sf of wetland resources areas would be destroyed as a result of the proposed development. Plans to create a replicated wetland nearby had been confirmed as a way to mitigate. Since this EIR has been released, plans have changed. The retailer originally interested in the parcel has backed out of the project, and Ceruzzi has picked up a new prospective retailer. As with the change in retailer, development plans have also changed. Originally, the development was going to cover up much of the

wetlands north of Old Gill Road. However, now the development plans show that the building and parking lot will fall south of old Gill Road. Much of our research and findings have been affected by this change in development. According to recent reports, the development will be fully completed south of Old Gill Road meaning only one very small wetland resource area (approximately 2,000 sf) will be destroyed (See appendix, Figure 1 and Figure 8). The main wetland systems to the north of Old Gill Road will be reportedly left undisturbed. Plans to replicate the wetland system south of Gill Road have been compiled and state that an approximate 1:3 replication ratio will take place on the eastern edge of the parcel in question (See appendix, Figure 9).

Through our research and visit to Mackin Sand, we visually confirmed reports by MassDEP that the existing wetlands on the parcel of land are extremely polluted. Due to negligent care of vehicles on the site, an excessive amount of oil has reportedly seeped into the groundwater aquifer and made its way into the larger wetland systems nearby (Note Figure 2 in appendix). MassDEP has made clear that no development can take place on the parcel of land until the wetlands have been cleaned. The wetland that exists currently within the projected development is reportedly man made as well as extremely polluted. We will discuss ethics of wetland management later in this document.

Though we originally set out to discuss the viability of wetland replication and the delineation of wetland systems, our research has greatly expanded further beyond our initial expectations. In Greenfield, this controversy between local businesses, activists on both sides of the issue, and Big-Box retailers has been ongoing for more than 12 years. We have found that many more parameters of research exist within our original projection of research.

When looking at past accounts of Big-Box Retailers moving into Greenfield we found that a Wal-Mart development had been successfully defeated about ten years ago. There are many politics involved and the complexity of this issue has broadened as we continued our research over the months.

We have taken a look at many different deterrents of the development. An important issue in Greenfield involves the politics and local economics of the local businesses. The mayor of Greenfield (Christine Forgey) has insisted that the development of a Big-Box Retailer will bring in a substantial amount of revenue for the Town of Greenfield; not to mention badly needed jobs. Although this may be true, many local businesses around town are concerned about being put out of business by this development. Big-Box retailers that move into small towns such as Greenfield offer shopping with a broad range of products at a price that cannot be matched by local store owners. In turn, local stores are often forced to close, degenerating culture and unique nature of specific towns. This ethical issue will be discussed later in this document.

Other problems involved with the proposed development include issues dealing with transit in town. We have studied and concluded that most traffic going to and from the development will take place on High Street (Route 2A) in Greenfield. High Street runs through a highly dense residential zone and has been a problem with citizens of Greenfield. Traffic on High Street is already dangerously exceeding many of the citizen's comfort levels. (Note Figure 3 in appendix for map of Greenfield)

Methods & Results

Our research plans changed drastically through the course of this project. We assumed that we would be simply mapping the parcel of land in question and discussing the Wetlands

Protection Act. Through the course of our research we found that there were many aspects of the development we hadn't thought of. We organized everything into separate subjects and devoted our time to each individually.

Our first concern was carrying out the delineation of the area. We did this by downloading aerial photos and topographic maps from www.mass.gov/mgis. We downloaded these images and also included the layer *DEP Wetlands (1:12,000)* retrieved from www.mass.gov/mgis/wetdep.htm. This gave us an accurate visual depiction of the wetlands we were dealing with on the parcel of land in question. We made these maps presentable by adding the usual map elements in order to present them at the Bridgewater State Environmental Symposium (Note Figure 4 in the appendix for insert of poster that was presented).

Although our maps were created, our mapping work was not completed. We acquired a Garmin GPS and set foot out into the parcel in question. Once we reached the area, we realized that it was near impossible to map. Not only because of the extremely dense woodland surrounding the wetlands, but also because of the threat of ticks. We brushed off about 8 ticks total out of about the hour we spent out in the field. Lyme disease being in about 1 out of 500 host ticks this year, we didn't want to take any chances spending more time than we had to out there. However, we did spend enough time to confirm visually that the wetland layer we retrieved from MassGIS accurately depicts the wetlands on-site.

During the delineation process we confirmed that the wetland systems shown on MassGIS did in fact plainly exist on the parcel of land. We also assessed vernal pool indicators. Although the EIR did not mention the existence of vernal pools in the area, we wanted to confirm. If these wetland habitats did exist within the parcel of land, a whole new set of bylaws

would apply.

After completing the delineation process, we confirmed the existence and location of the wetlands in question. However, a whole other side of research still exists; laws and regulations governing wetlands in the U.S. The next part of our research was devoted to a thorough investigation of the Wetlands Protection Act. During this time we discovered that although this law somewhat constricted the developer, there was also a town bylaw pertaining to the parcel of land in question. We also spent time assessing the town bylaw.

State WPA and Town Bylaws

The south parcel has five small wetlands; four of which are not regulated under the WPA or the local bylaw. The one which is, Wetland 4, is regulated as a bank and bordering vegetated wetlands (BVW). This wetland is in the center of the proposed construction and will be permanently altered but mitigated by a 6,800 sf wetland replication. According to the EIR, construction of the project complies with MassDEP's wetlands protection laws and the city of Greenfield's bylaw. With that, the Secretary of Energy and Environmental Affairs deemed the single EIR to be sufficient enough to allow the project to ensue.

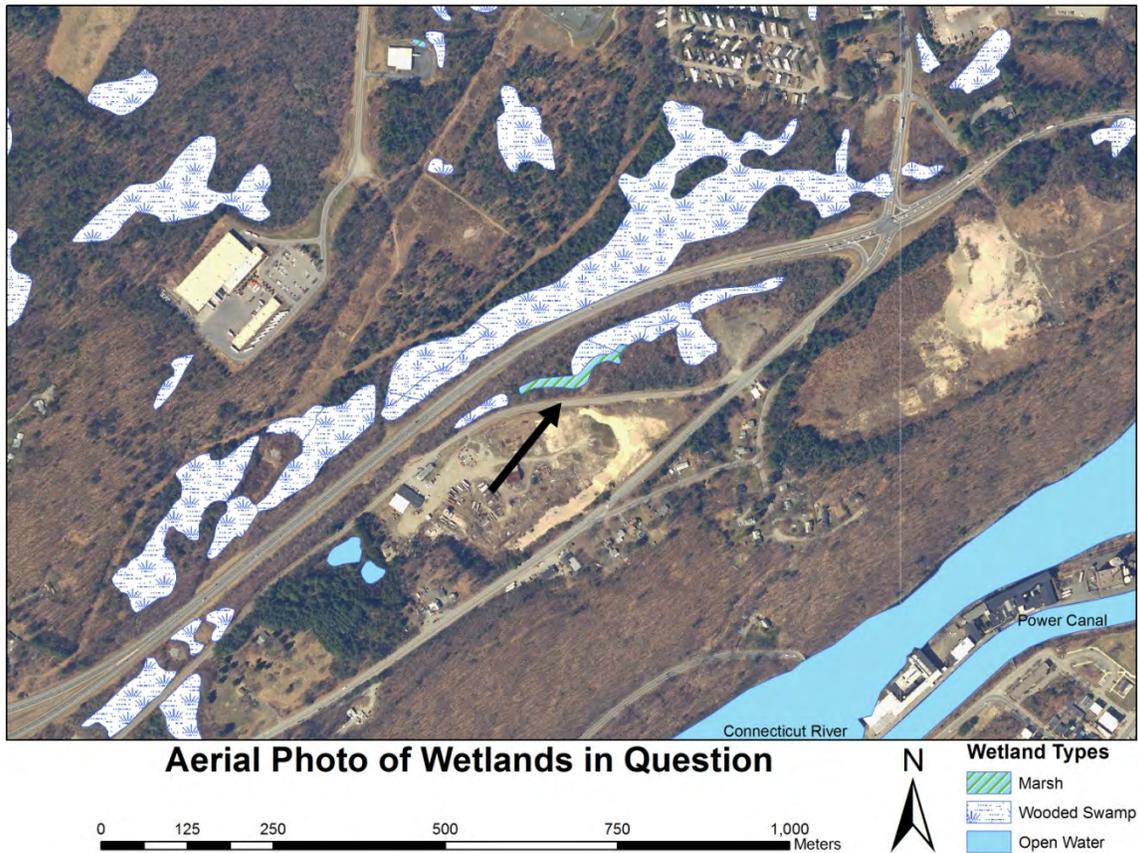
Greenfield's bylaw was adopted by the Town Council August 15, 2001. It provides additional local protection to its wetlands and is enforced by the WPA. Greenfield's Conservation Commission holds the right to create a wider "No Disturb Zone" than the original 25 feet within the 100-foot buffer zone if necessary, to protect the resources. The destruction of wetlands will only be allowed if it is a last resort, and that replication of wetlands will in general not be permitted since replicated wetlands do not sustain the same important functions as natural wetlands. Development potential is not a good reason for replication; however, it is at the commission's discretion but must be based on "solid scientific reasoning".

Unfortunately as stated previously, Wetland 4 is in poor condition and it could in no way sustain native species better than the proposed replicated wetland. There are however some issues of environmental concern. Although the wetlands in this location are not suitable for most organisms, the aquifers and wetland systems here drain into the east branch of the Cherry Rum Brook, which eventually drains into the Green River and then into the Deerfield River. It also drains into the Fall Brook which flows into the Fall River, and then into the Connecticut River. Cherry Rum and Fall Brook, Fall and Green River are all designated Cold Water Fisheries and the proponent will have to address the concern of the possibility of increased temperatures.

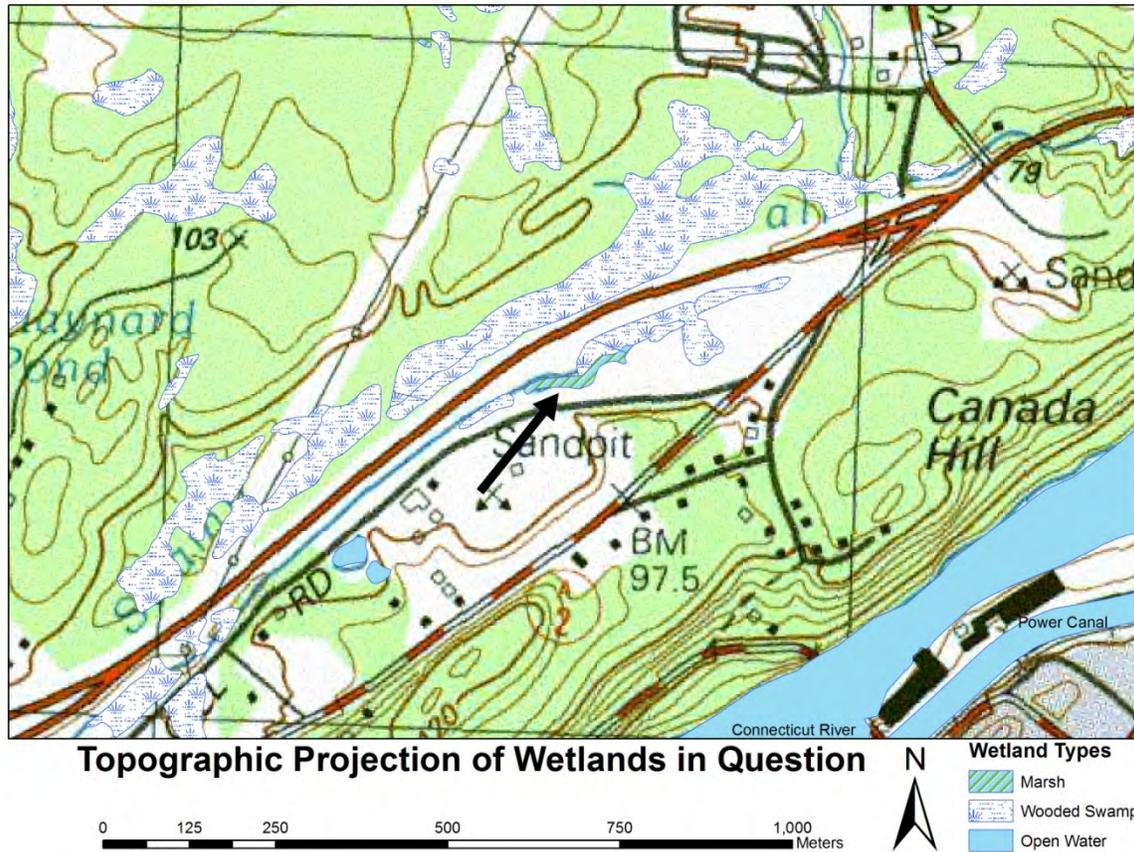
According to the Massachusetts Highway Department (www.mhd.state.ma.us) there are 9,000 average daily vehicle trips on Route 2A and 15,000 average daily vehicle trips west of Route 5 along Route 2. It is estimated that this new development will cause an increase of an extra 16,000 average daily vehicle trips. This is a health and traffic concern. It is a known fact that living within 500-1500 feet of traffic burdened areas results in breathing in higher concentrations of pollutants and increasing risk for asthma, lung and heart disease, and cancer. The increased traffic will also increase the rate at which the roads degrade costing the city of Greenfield more tax dollars to sustain. The roads noted above are depicted in appendix, figure 3.

Maps

Through the delineation process, our main source of information came from www.mass.gov/mgis. We imported the state wetland layer and it matched up with what we previously observed in the field. The four maps created during this process are pictured as follows:



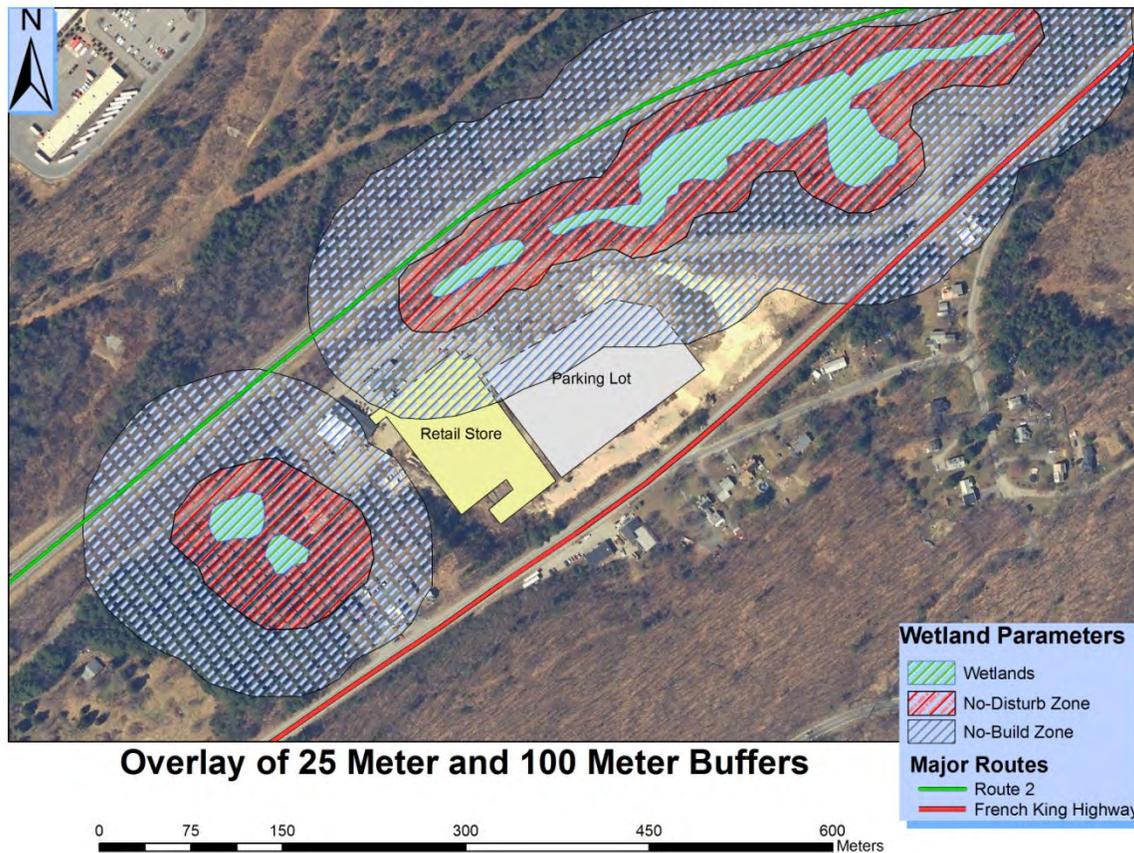
- 1) This first map is an aerial view of the parcel of land in question. The area is large enough so the reader may see the Connecticut River and the power canal in the SE corner. Using aerial photos retrieved from www.mass.gov/mgis, we simply imported the wetland layer on top of the aerial photos. This map is used to show the location of the wetlands in regards to the parcel of land in question.



2) This map was created through a similar process. We retrieved the topographic map tiles from www.mass.gov/mgis and imported the same wetland file used in the first map. We decided to use both aerial and topographic style maps so we could show the reader two different perspectives. We needed the topographic map in order to project contour lines. The contour lines help us determine the viability of the BVWs in question.



3) The third map that was created applies a theoretical approach to projecting the possible scenario of a retail store on the parcel of land in question. This was achieved by using the aerial photos we obtained from www.mass.gov/mgis as well as the wetland layer we used before. This map zooms in more in order to give the reader a better view of the parcel of land in question. In this map we downloaded a layer from www.mass.gov/mgis to show the major highways in the area. The interesting piece of this map is the projection of the retail store and parking lot. We were able to digitize a Wal-Mart from an aerial photo of Hadley, Massachusetts. We placed the elements on the map where the developer plans to put the retail store. These plans were obtained from the developer, Ceruzzi.



- 4) The fourth map was created to incorporate the State WPA and local wetland bylaws into a visual representation. We adopted all the map elements of map 3, except we added two buffer zones. The red zones depict the 25 meter no-disturb zone in compliance with the city of Greenfield local bylaw. The blue zones represent the 100 meter no-build zone enforced by MassDEP. As you can see, the development infringes upon both the State WPA and Town of Greenfield bylaw. However, if the developer is permitted, they will be able to develop the land within both the no-build zone and no-disturb zone.

Discussion

Another major concern for many residents is the economic impact of a Big-Box store. Although these stores bring cheap products, they also come with unseen costs. Big-Box stores have been known to pay their employees very little, give them little or no benefits, and provide little to the surrounding communities. The main focus during this discussion will be on Wal-Mart, but other retailers will be mentioned as well. This decision was made due to the fact that a Wal-Mart had previously tried to move into the city of Greenfield.

Thousands of these Big-Box stores have abandoned their original locations to move to bigger and better areas leaving behind an enormous empty building for the local tax payers to deal with. These empty lots are not only aesthetically offensive, but lower property values.

Many of these stores pay their employees so little that they are eligible for public assistance. Public assistance of course is courtesy of our tax dollars. Only 48% of these stores' employees are on their benefits plans compared with the national average of 68% for small businesses. This is because of the costs that these stores charge their employees for their supposed benefits, costs they cannot afford with the dismal wages they receive. For example Wal-Mart employees earn 20% less than the average retail worker and with that they have to pay 8% of their total earnings to pay for Wal-Mart's healthcare benefits which are twice the national average percentage. In 2005, 46% of Wal-Mart's employees' children were on Medicaid or were altogether uninsured.

A study conducted in San Francisco showed that locally owned business gave back far more revenue to their local town than the Big-Box and chain stores did. 52% of the revenue generated by local business stayed local by buying other local products and town taxes. Only

14% of big box stores revenue on average stayed locally. Small independent businesses do not have a corporate headquarters, meaning that all their employees work in that one area and are generally paid better rates. On average, a big box store will lower the employee pay rates by up to 1.5% once it is established within a community. Basically, if you spent \$100 at a local business around \$45 to \$52 would be circulated through the local economy, opposed to a Big-Box store which would be as low as \$15. In the state of Maine we see the same trend. 8 local business's spending were recorded and revealed that 44.6% of their combined sales of \$5.7million went to the surrounding counties and another 8.7% circulated through the state. An analysis of a national Big-Box retailer in Maine estimated only 14.1% of its revenue went to the local economy. The rest of this money went out of state.

To add more to the loss, there is a misconception that Big-Box stores offer more employment; this is not true. On average, when one of these stores moves in it does not equal the loss of jobs it caused from the closing of local businesses. In 2007, Wal-Mart alone caused a gigantic loss of \$4.5billion in our national gross. This figure was derived from the amount of businesses that were forced to close as a result of their opening, also resulting in fewer jobs and lower hourly rates. A study that was conducted using 1,749 counties that added a Wal-Mart to their community discovered on average each town had a net loss of up to 40-60 jobs within four years and the closing of at least four small local businesses.

Another hidden cost is that these stores constantly use subsidizing to create their projects. In the state of Illinois, Wal-Mart on average uses \$7.1million in subsidizing per store and some used as much as \$46million.

If the plan goes through, Greenfield's businesses could lose as much as \$24million

yearly. Within a few years we could expect to lose as much as 239,000 square feet of retail and a 33% reduction in commercial property values.

History

A Wal-Mart had previously tried to build within an industrial zoned 63 acre parcel in Greenfield in 1993. The proposed Wal-Mart was projected to be 121,267 square feet, approximately the same size as the local downtown. The Greenfield Town Council had approved the construction of a new Wal-Mart in May of 1993. The decision caused controversy within the town and a group led by a David L. Bete and Al Norman fought and won for a public referendum on the issue.

After a campaign of advertisements, the Town Council's vote was barely overturned. So close in fact was the decision that it was only nine votes that stopped the construction of Wal-Mart (2,854 – 2,845). More than 60% of Greenfield's registered voters came to cast their vote which is more than twice as many people that show up for the local elections.

Greenfield would have removed 40% of its 85 acres of available industrial zoning if it switched the zoning to commercial and allowed the construction. The total size of the proposed Wal-Mart was gargantuan at 264,272 square feet, three times larger than the one in Hinsdale, New Hampshire which totals at 93,613 square feet. The Wal-Mart itself would have been 164,272 square feet but it also included plans of two other "free standing" stores which would take up an additional 100,000 square feet. It was estimated that the retail giant would bring an extra 16,000 vehicle trips per day.

Conclusion

After reviewing the data and information we have learned it is in our opinion that there is no benefit in rezoning this parcel from industrial to commercial to allow for the construction of a large retailer. The economic and environmental impacts of such a project outweigh the convenience of having such a store. We would also like to note that the proposed site is in no condition to be suitable habitat nor would it be of any loss if it were replaced. With that, this should not and cannot be used as a feasible argument to prevent the construction. However, the surrounding wetlands within this area are also greatly degraded and orders for rehabilitating the site have been issued by the MassDEP. We would like to see this project completed and allow for native plant and animal species to reutilize the wetlands and assess its ability to harbor species and compose another EIR before allowing construction of such a large scale project. It is important to also remember that although at first glance it may seem that a large retailer would increase revenue, we must investigate all the data and hidden expenditures which show otherwise. Through research and analyses we have concluded that it is ethically wrong to allow our community and its citizens to be employed for retailers that use dishonest employment practices.

Appendix

Figure 1: The below aerial photo shows a close-up picture of Wetland 4. The arrow you see in the photo points directly to the wetland in question.



Figure 2: The photo below was taken during the delineation process of the wetlands in question. These oil spots you see are present in most of the wetlands in within the Mackin property. They prove that anthropogenic influences have tainted the groundwater supply as well as compromised the viability of the BVWs in the area.



Figure 3: Below is an aerial view of Greenfield retrieved from www.mapquest.com. This photo shows all of the roads that will be affected by the increase in traffic due to a Big-Box retailer; most notably High Street (Route 2A), Route 2, and the Rotary in the Southwest region of Greenfield.

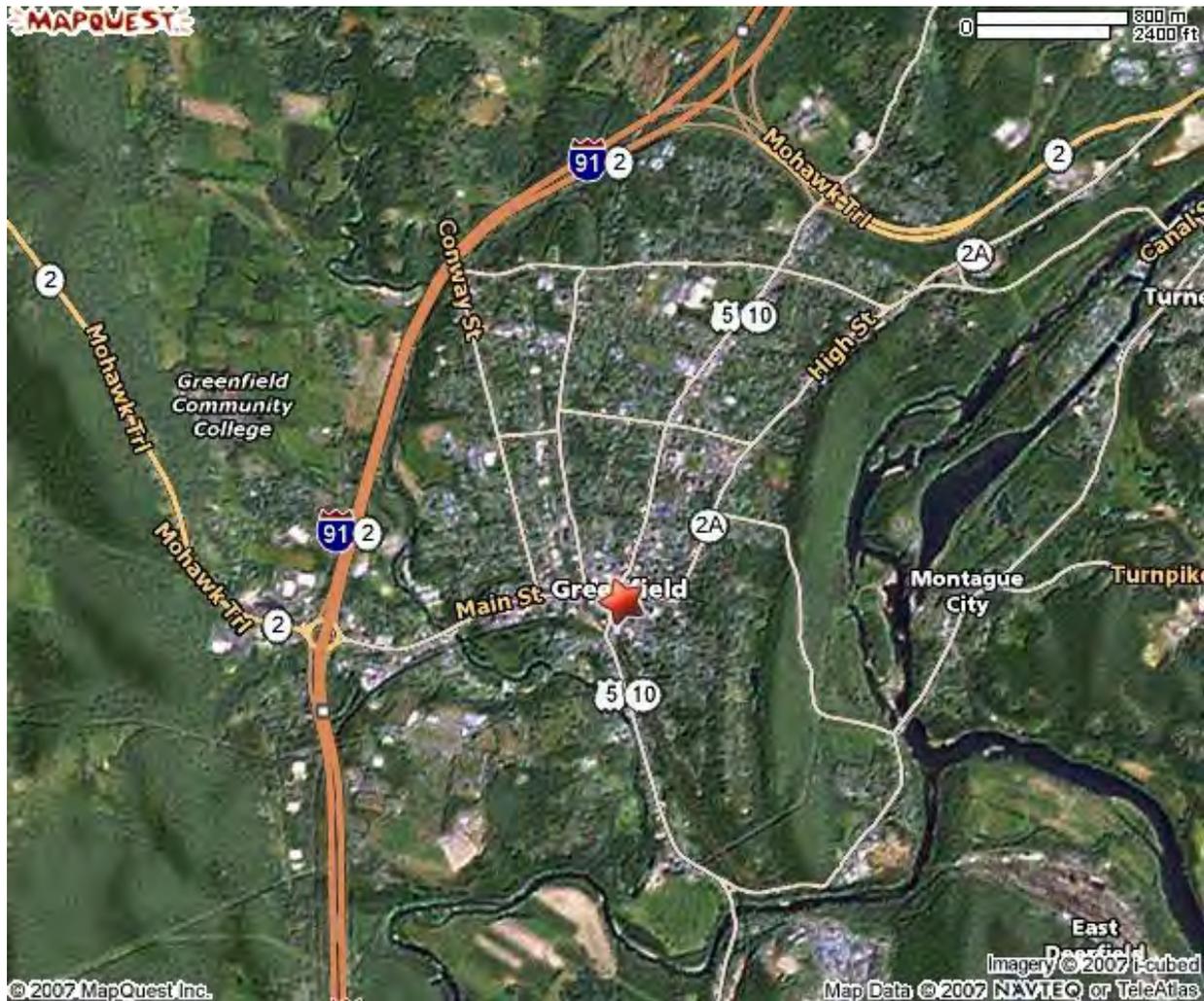
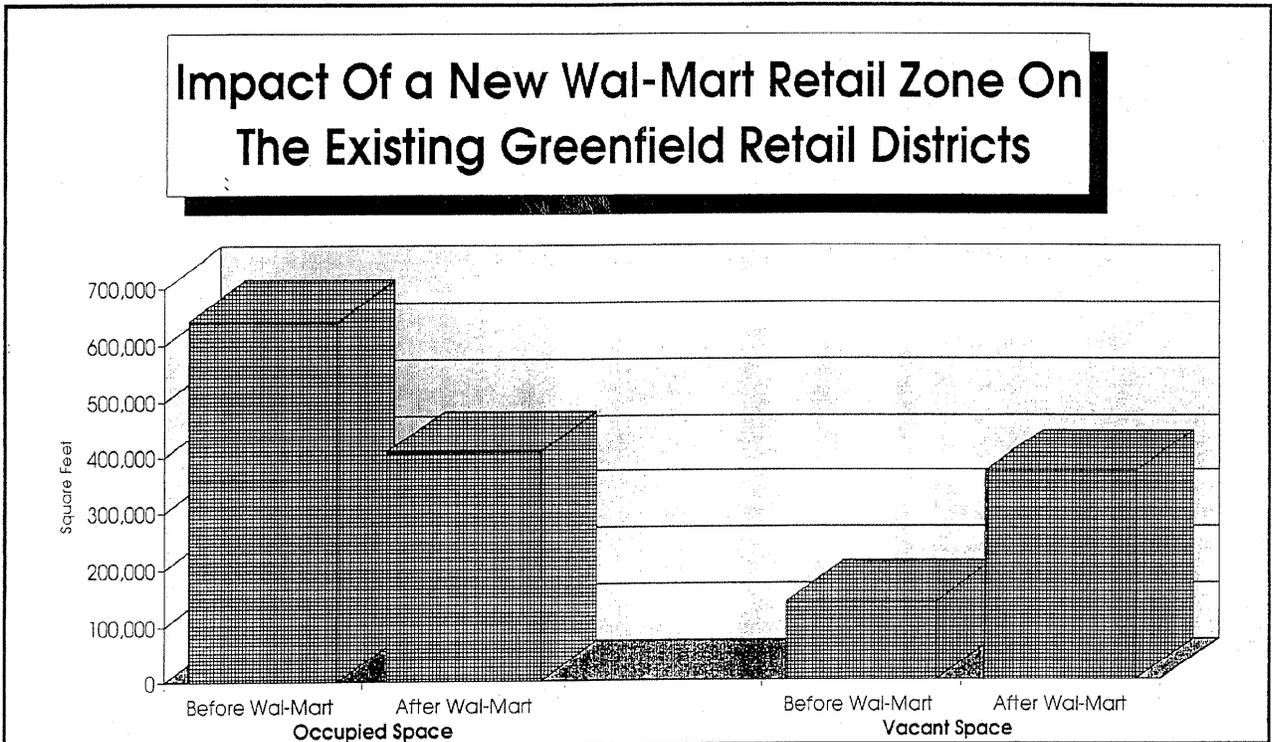


Figure 4: Below is a picture of the poster presented at the Bridgewater State Environmental Symposium.



Figure 5: The below graph demonstrates the projected loss of occupied retail space

(www.newrules.org/retail).



Figures from Fiscal and Economic Impact Assessment of the Proposed Wal-Mart Development; High Impact Scenario In Year 5

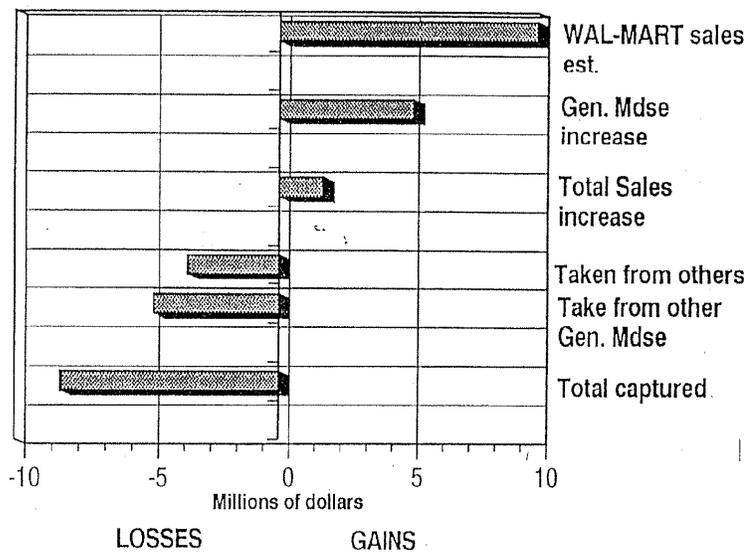
Figure 6: The below graph demonstrates the potential net loss of revenue if a Big-Box retailer were to move into the community.

"We're Against the WAL Committee"

WAL-MART: A BLACK HOLE

"Some people misinterpret the sales changes after a WAL-MART store comes into town. They observe an increase in general merchandise sales and in total sales and believe that all is well. But, upon further study, it is clear that the WAL-MART gains are at the expense of other merchants."

Losses of Sales to Other Firms in average WAL-MART town in Iowa, two years after opening.



"If it is assumed that the WAL-MART store is 65,000 square feet and has a sales level of \$150 per square foot per year, its annual sales would be approx. \$10 million. Yet if general merchandise sales increase only by \$5.2 million, then existing general merchandise stores must have lost \$4.8 million. Total sales increased only by \$1.7 million, then other merchants must have suffered net losses of \$3.5 million. In other words, even though town sales increased, it was primarily WAL-MART's gain, and was at the expense of \$8.3 million loss to existing merchants."

-- Source: Iowa State University study, March, 1989.

Figure 7: The below photo is presented to familiarize the reader with the Mackin property (parcel of land in question).



Figure 8: The below photo was taken during a meeting held by the conservation commission in the city of Greenfield. The poster was created by the Ceruzzi developer (VHB) and depicts their plans for development.

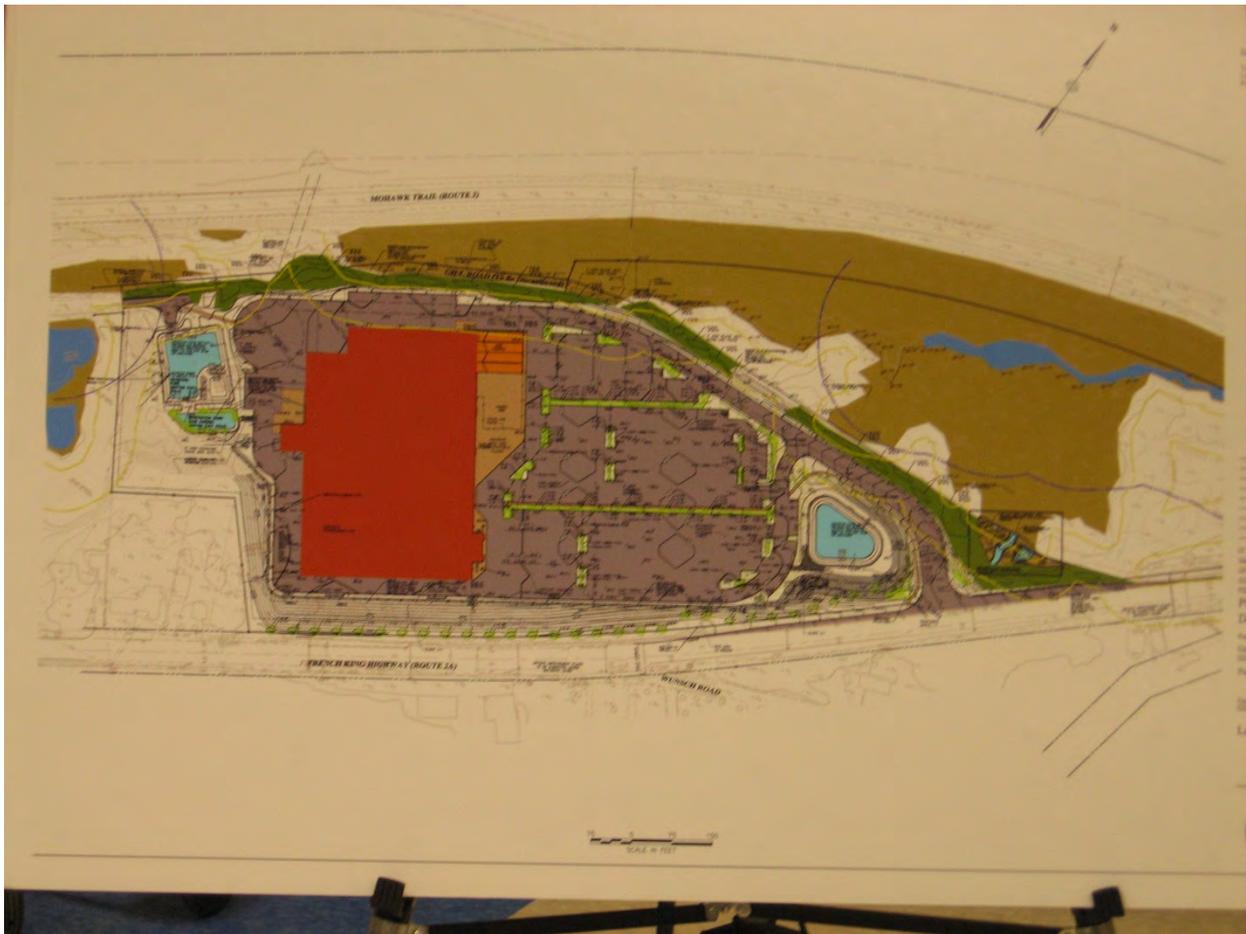
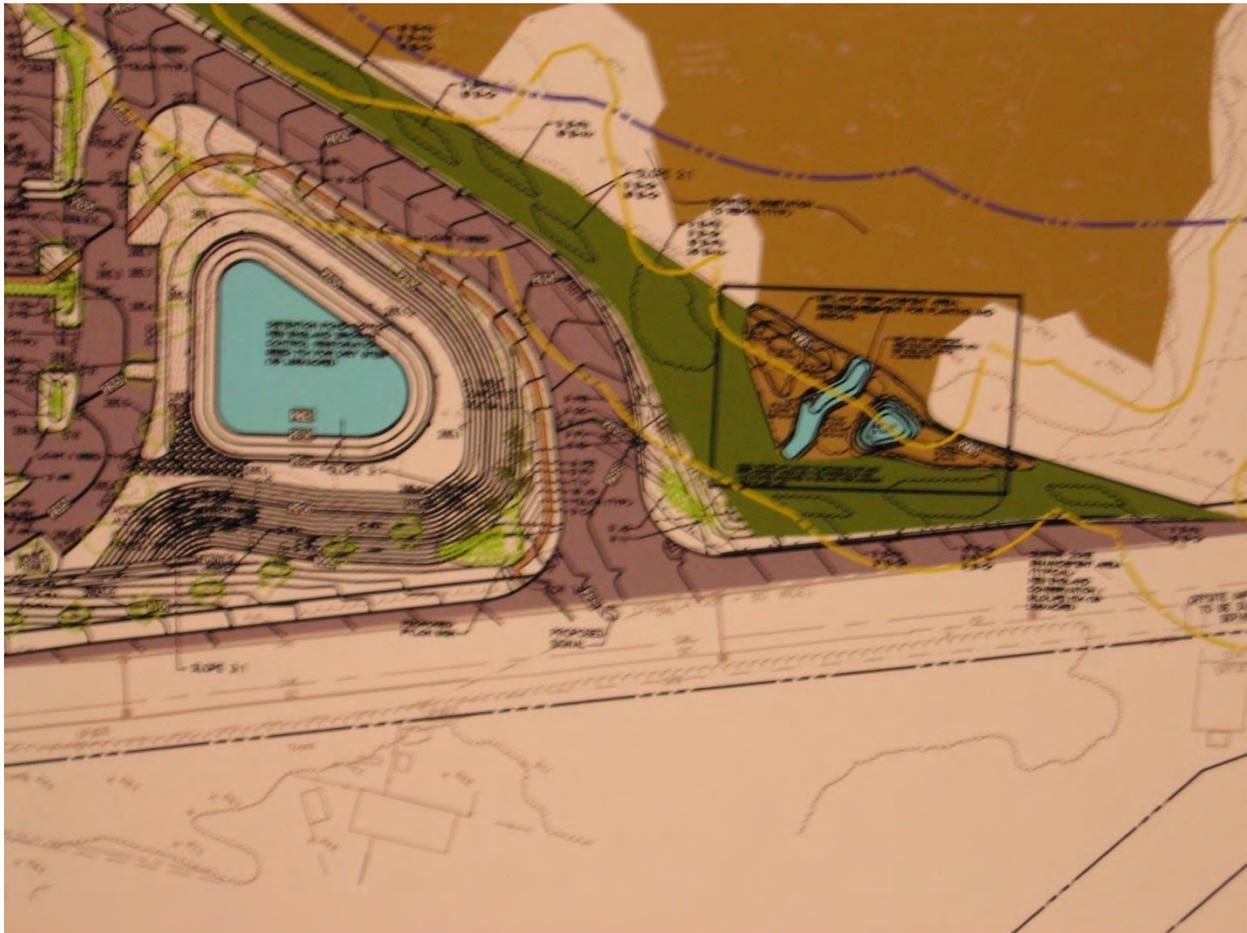


Figure 9: The below photo was taken during a meeting held by the conservation commission in the city of Greenfield. It demonstrates plans for the mitigation of Wetland 4.



Sources

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