

Midwest Spatial Decision Support System Partnership Case Study

THE CASE OF THE PHEASANT BRANCH

THE TEASER The Pheasant Branch Conservancy in Middleton near Madison, Wisconsin, contains natural habitats sustaining a wide variety of plants and animals, including some that are threatened or endangered. Visitors often hear or see deer, herons, frogs, Sandhill Cranes, ducks, geese, hawks, owls, and dozens of different song birds.

An owner of a sizable adjacent property decided to sell it. There was a high probability a natural setting would be replaced by a high density residential housing development. Concerned citizens knew that such developments generally have a high negative impact on the environment. They also realized that winning a case of "a piece of nature vs. housing and jobs " would not be easy.

Fortunately, the citizens found a powerful ally in their struggle on behalf of nature: a freely accessible, user-friendly website running a computer model that turns a combination of prepackaged scientific data and simple menu-driven user input into usable and persuasive information within minutes.

The computer model revealed that a nearby high density residential development would send **TWO MILLION GALLONS OF POLLUTANTS-CARRYING STORM WATER RUNOFF** into the Pheasant Branch Conservancy and Lake Mendota each year. Being able to obtain this information based on science and made available via the Internet was a promising start for an ultimately successful effort to win the case while using hard facts in the context of rational discussions with all the parties involved.

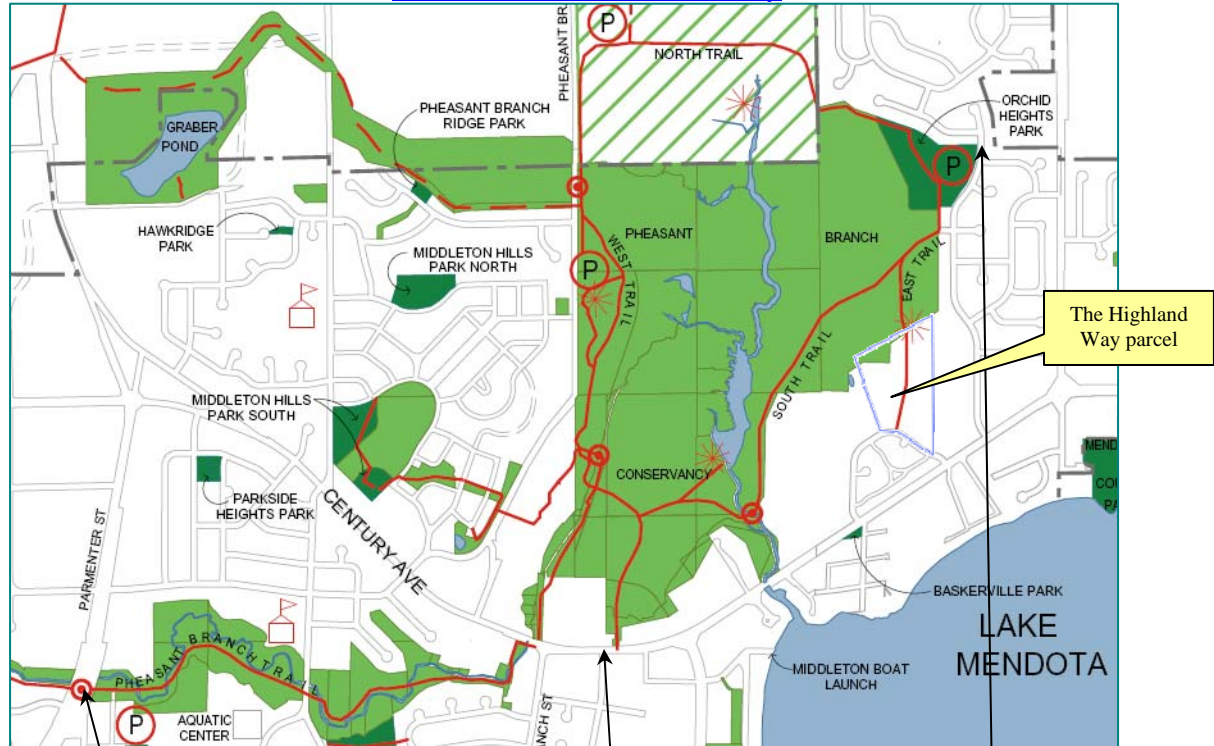
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A section of the [MIDDLETON PUBLIC LANDS& PARKS SYSTEM MAP](#) containing the [Pheasant Branch Conservancy](#)



Middleton, Wisconsin, United States 5/16/2000

Image courtesy of the [U.S. Geological Survey](#) (hosted on [TerraServer-USA](#))



[USGS Gauge Station](#)
[05427948](#)

CASE STUDY DETAILS

The Case of	<p>In 2004, the Middleton-Cross Plains Area School District in Dane County, Wisconsin made the decision to sell a 19.27-acre parcel of land in order to buy land in one of the areas where the district is experiencing higher rates of growth.</p>
The Description	<p>The Highland Way parcel is a partially wooded tract surrounded by high-density residential development on two sides. The remaining two sides are adjacent to the existing Pheasant Branch Conservancy located just inland of the northwest shore of Lake Mendota. Two sets of springs in the Pheasant Branch Conservancy discharge approximately 2.6 million gallons of clear, cool groundwater annually into the Pheasant Branch marsh and Lake Mendota. The diverse topography of the 160-acre Pheasant Branch Conservancy provides a panoramic view of the Capitol Building, the downtown Madison skyline, and Lake Mendota</p> <p>The soils found in the Highland Way parcel are composed of Hydrologic Soil Group B – silt loams and loams with moderate infiltration rates. Such soils drain well. Therefore grounds consisting of these highly permeable soils have a natural capacity to recharge groundwater supplies located beneath them and reduce sediment and storm water runoff on their surface. Groundwater helps maintain water levels in the North Fork and main channel of Pheasant Branch, and is the main source of water for the Pheasant Branch springs.</p>
The Response	<p>The Friends of Pheasant Branch (FOPB) is a dedicated group working and succeeding in protecting ecologically significant lands in the Middleton area of Wisconsin's Dane County. It sprung up in 1995 as an ad hoc group protesting the construction of sewer mains through the Pheasant Branch Conservancy acquired by the City of Middleton in the 1970s. The following year the FOPB managed to adjust one sewer route so as to keep it out of the Conservancy wetlands as much as possible. By the end of the same year the Middleton City Council voted 6-2 to stop plans for building a second sewer in the Conservancy. With a mission to “restore, preserve and understand the value of conservancy lands, other natural habitats, and cultural sites in the Pheasant Branch watershed for today and tomorrow” the FOPB has made it their priority that all land use decisions in the area are given the full attention of the group.</p> <p>The Middleton-Cross Plains School Board has granted an option to the FOPB for its fair market value, \$3 million. Members of the group have been working on raising the funds needed to purchase the land.</p>
The Goals	<p>Preservation of this parcel would preserve the soils’ ability to absorb infiltrating water. Conversely, development of the forested parcel into high-density residential use would significantly increase runoff, i.e. amount of water from rainfall, snowmelt, or irrigation that runs over land or through the ground, instead of being absorbed by it. Runoff picks up pollutants on its way, and deposits them into rivers, lakes, and coastal waters or introduces them into ground water. This type of pollution is called non-point source pollution because it does not come from a single source such as a pipe carrying waste</p>

such as a byproduct of industrial production. Preserving the natural state of the Highland Way parcel would prevent an increase of non-point source pollution being washed into Pheasant Branch Conservancy and [Lake Mendota waters](#).

The Process To be convincing, their grant applications and fund raising publications require the inclusion of hard data—facts that would make it obvious that preserving this parcel would be best for the community for both ecological and economical reasons.

The Tool(s) The FOPB used [Detailed Input version](#) of the [L-THIA \(Long-Term Hydrologic Impact Assessment\) tool](#) to help support their efforts in preserving the Highland Way parcel. Detailed Input L-THIA is similar to the [Basic Input version](#) but gives users the added ability to enter detailed and customized land uses. Basic Input L-THIA allows users to select from only eight land use choices.

L-THIA makes it apparent that preservation of this parcel in its current state would be beneficial to the watershed. Not only would the amount of non-point source pollution be less but the economic costs of handling the increased volume of runoff would be avoided.

The Actions With the results from L-THIA, the FOPB has been able to effectively communicate the importance of conserving the Highland Way parcel. The results from L-THIA will be useful for educating the community about alternative land uses and raising the funds necessary to protect the land.

The Outcomes During a review of 25 projects submitted to the Wisconsin Department of Natural Resources for grant funding in 2005, staff ranked the Highland Way project as the highest priority project due in part to the environmental benefits that could be identified through the use of L-THIA and related models.

Because of the documentable water quality benefits that will be derived from protecting the property, Dane County agreed to contribute almost \$1 million toward acquisition of the property, an unprecedented percentage of the purchase price.

The FOPB were successful in reaching the \$3 million fund-raising goal. On December 7, 2005, the [FOPB exercised their option to purchase the Highland Way property](#).

On January 31, 2006, Friends of Pheasant Branch transferred title to the 19.27 acre Highland Way Parcel to the City of Middleton to permanently protect and add to city conservancy lands. This section will be called the John C. Bock Urban Forest to reflect on the Bock Foundation's substantial support for the purchase. To reach the \$3 million purchase price, FOPB took out a loan for \$180,000 which must be paid back to "The Conservation Fund" a non-profit organization who loaned the money to help FOPB to close on the acquisition.

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