



Connecticut
Resource Conservation
& Development

NATURAL RESOURCES INVENTORY

UNIVERSITY OF HARTFORD'S NORTH CAMPUS
BLOOMFIELD, CONNECTICUT

OCTOBER 2019

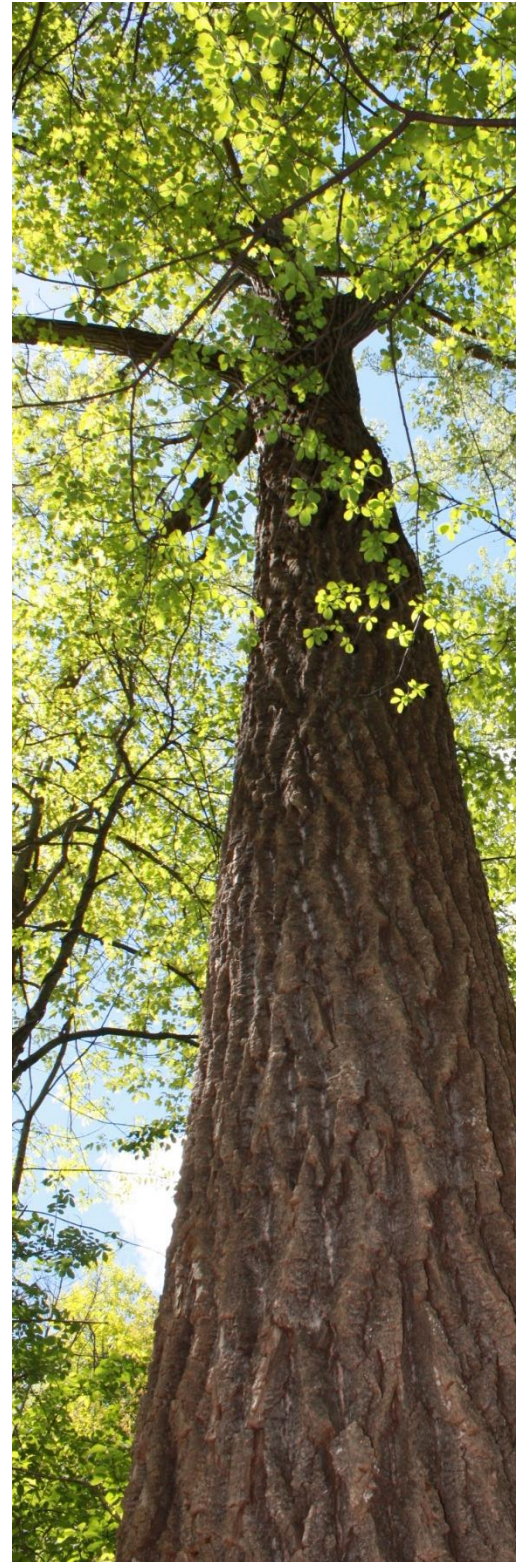
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(All site photos were taken by CT RC&D staff unless stated otherwise. Cover photo provided by the USGS TopoView website)



Vernal pool on the site



Tree on site

Acknowledgments

This report is the product of a request from the Town of Bloomfield's Director of Planning and Economic Development to CT Resource Conservation and Development's (CT RC&D) Environmental Review Team (ERT) program. The CT RC&D Environmental Review Team program is a service for Connecticut municipalities and land trusts to obtain baseline environmental data and best management practices for town properties or properties of significant interest for existing or future development or conservation. The ERT program is funded by the CT Department of Energy and Environmental Protection (CT DEEP) Passport to the Parks Program as well as CT RC&D.

CT RC&D would like to acknowledge and express their appreciation for the important work of the following Environmental Review Team members. Their professionalism and expertise were critical to the analysis of the University of Hartford's property for the Town of Bloomfield.

The field review was conducted on Thursday, May 16, 2019.

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We'd also like to thank Mike Kosilla of the Bloomfield Planning Department, José Giner, the Director of Planning and Economic Development for the Town of Bloomfield and Nick Macy, the former Director of Planning and Construction at the University of Hartford for their cooperation and assistance during the ERT review process.

Prior to the review day, each Environmental Review Team member receives a summary of the proposed concepts or projects anticipated for the property along with various information and geographic information maps. Some team members made separate visits to the site following the initial ERT review. Reports from each team member were submitted to the CT RC&D Environmental Programs Coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project – all final decisions rest with the town and property owner. This report identifies the existing resource base and evaluates its significance to potential development and suggests considerations that should be of concern to the town. The results of this Team action are oriented toward the development of better environmental quality and the long-term economics of land use.

An additional valued resource for conservation information is the North Central Conservation District (conservect.org/northcentral).

The CT RC&D Council hopes you will find this report of value and assistance in providing information to the Town of Bloomfield about the currently undeveloped property of the University of Hartford located in Bloomfield. If you require additional information, please contact:

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Environmental Review Team members walking through the property on May 16, 2019

Introduction

On August 8, 2018, the Town of Bloomfield completed an ERT application for a natural resources inventory of the University of Hartford's undeveloped property in Bloomfield. The property is just north of the University's main campus from Cottage Grove Road south to the West Hartford and Hartford line. The property is 138 acres with a large area of wetlands as well as FEMA regulated flood zones. A large tract of the land was previously zoned Planned Luxury Residential (PLR), but was never developed. The town is interested in providing a connection to the campus for the East Coast Greenway.

No specific project was proposed at the time of the ERT application. This ERT review will help shape the discussion on what the best use of the property will be. The Town is interested in establishing a Greenway connection and in determining any economic development potential for the lands that front Cottage Grove Road and Tobey Road.

The specific issues the Town wanted to address in the ERT report include:

- Land Use Context
- Open Space
- Traffic/Access
- Economic Development
- Wetlands
- Wildlife
- Flood Hazard Issues and Mitigation

During the site review on May 16th, it was determined that it'd be important to have a herpetologist visit the site and give a report of his or her findings.

In the University of Hartford's Facilities Master Plan of 2000, it states: "Working with the Town of Bloomfield to identify and develop a mutually beneficial land use for the University's north 100-acre parcel. Recently designated by the Town as part of their economic development Enterprise Zone, this parcel could be offered tax incentives to foster economic development. The Master Plan calls for laying the groundwork for future development of this important asset. Further study to determine the extent and type of site access and allowable development is needed. Initial thinking for the approximately 40-acre site of developable land includes shared town-gown passive or active recreational athletic facilities and fields."

In the 2009 Facilities Master Plan, the University plans for a potential road connecting the north athletic lot to Tobey Road (1500' of roadway) along the Griffin Line. They also plan for a north campus road extension to upland developable land in the southwest corner of the North Campus (an additional 2500' of roadway). In order to create these roadways, wetlands would likely be disturbed and crossed.

This ERT report is provided to help land use professionals at the University and the Town make environmentally responsible decisions with these currently undeveloped parcels.



Site location; undeveloped parcels owned by the University in green



University of Hartford's undeveloped property along the North Branch Park River

Highlights of the Report

The 138-acre site, located in south central Bloomfield, is owned by the University of Hartford and is currently undeveloped. The site has limited accessibility due to poorly drained soils, wetlands, and stream crossings.

Geology & Soil

The site has extensive wetlands and poorly drained soils. Clay layers are 25-50 feet thick over most of the local area but are greater than 100 feet in the northeast near Copaco Shopping Center. Clay is porous but highly impermeable and where present results in poorly drained soils and swampy conditions. Thus, most of the area is too wet to develop. Several vernal pools and a pond were observed.

In the upland area, the only developable area is an elongate hill of about 18 acres on the southwestern corner of the site. The seasonally high groundwater table and slow soil permeability are the main limitations to development associated with upland soils.

Slopes on the site are low to very locally moderate. The steepest slopes are on the eastern banks of the North Branch Park River at the southwest corner of the parcel. There the river under-cuts the bank causing an approximately 10-15-foot erosional scarp.

Herpetology & Wildlife

Although situated in an urban area the site is suitable for a variety of state listed amphibians and reptiles including:

- Blue-spotted Salamander “Complex” - *Ambystoma laterale*
- Spotted Turtle - *Clemmys guttata*
- Wood Turtle - *Glyptemys insculpta*
- Eastern Box Turtle - *Terrapene .c carolina*
- Eastern Ribbon Snake - *Thamnophis sauritus*

The following amphibians and reptiles were observed in a 4-hour period:

- American Bullfrog - *Rana catesbeiana*
- Green Frog - *Rana clamitans*
- Spring Peeper - *Pseudacris crucifer*
- Wood Frog - *Rana sylvatica*
- Spotted Salamander - *Ambystoma maculatum*
- Red-backed Salamander - *Plethodon cinereus*
- Painted Turtle - *Chrysemys picta*
- Eastern Garter Snake - *Thamnophis*

A large number of red backed salamanders were observed, an indication of a healthy forest system.

Water Resources

Significant portions of the site are designated 100-year floodplains which would require particular construction criteria. Compensatory storage and equal conveyance would also be required for any encroachment in 100-year floodplains. Additionally, if state or federal funds are utilized for any portion of the

development, a state flood management certification would be required that may require higher regulatory standards.

The floodway (the stream channel and adjacent areas which carry the majority of the flood flow) and the 100-year flood line illustrate the significance of the North Branch Park River drainage through the property. The floodway through most of the property is elevation 84. It has been observed that the North Branch Park River floods the University of Hartford parking lot after significant rain events (for example, 2.5" of rain over a 16-hour time span). The EPA has noted the Northeastern climate is experiencing noticeable changes that are expected to increase in the future. Changes include the amount and frequency of heavy precipitation events, and the increase in rainfall. It can be predicted that flooding will worsen and should be considered in the planning process.

CT State Plan of Conservation and Development

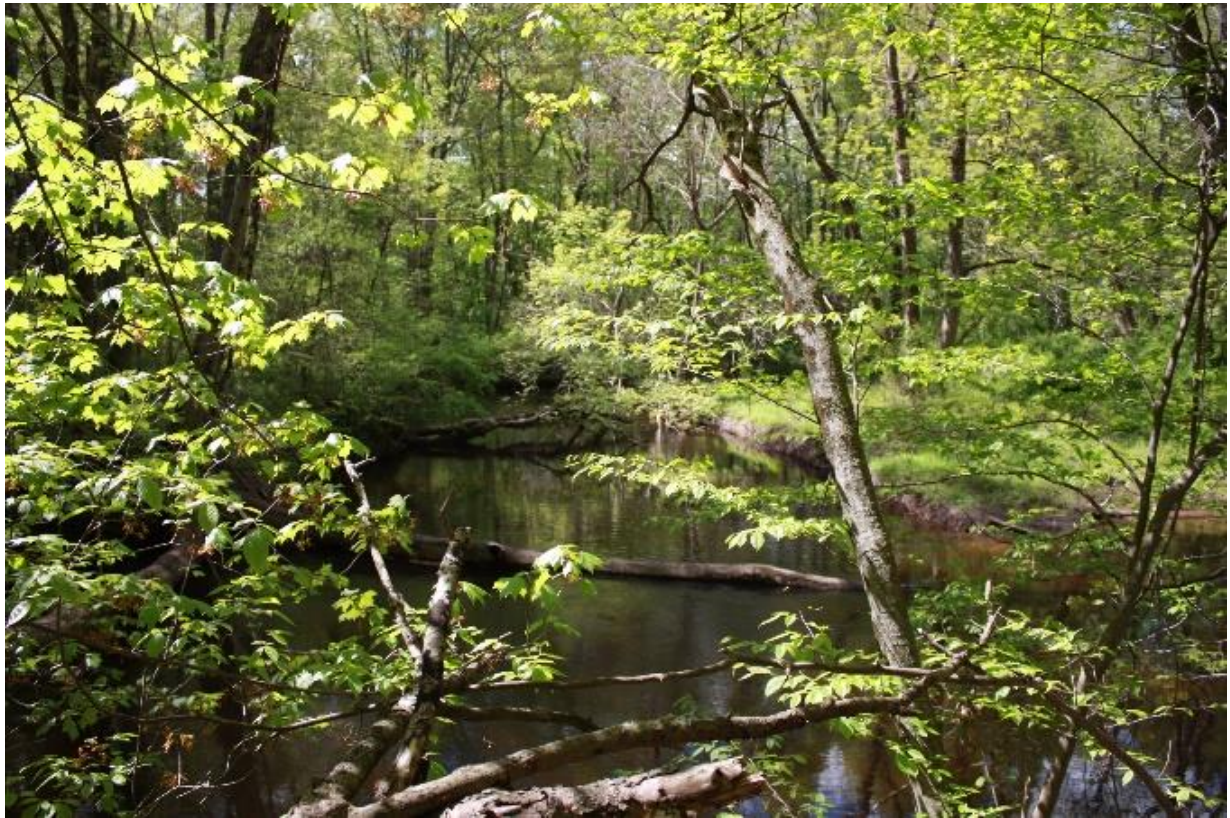
Growth Management Principles #1 and #4 of the CT State Plan of Conservation and Development do not support residential, commercial, or light industrial development of the site. Growth Management Principle #3 would support a pedestrian or bicycle path; however, environmental damage, habitat fragmentation, and security concerns should be considered.

Next Steps

- A more extensive wildlife study is necessary to determine if there are state listed species on site.
- A more extensive study of the vegetation is recommended.
- If construction of a trail or greenway is desired, any new connections should thoroughly evaluate any potential short- and long-term impacts resulting from such development.
- It is recommended that any proposed development of this site also consider alternatives for the similar redevelopment or infill of existing vacant, underperforming, or previously disturbed sites in the surrounding area.
- Work closely with the North Central Conservation District in any future planning.



Forest on site



Confluence of Beamans Brook and Wash Brook, which forms the North Branch Park River



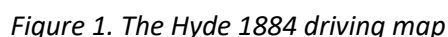
Pond on the site

Report by Vikki Reski, ASLA, Ironwood Community Partners, Inc.

National Park Service defines a cultural landscape as a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values.

The early settlers in Bloomfield found good farmland soils. In the spirit of self-sufficiency, land was cleared for farming. Henry Stiles, in *History of Ancient Windsor*, writes that Edward Messenger and his son-in-law, Peter Mills, were the first pioneers who settled on this “good ground,” that became known, first, as “Messenger Farms.” In 1700, Bloomfield becomes Wintonbury Parish. The 27 residents found the winters so difficult in 1734 that they could not travel the six miles to the Mother Church in Windsor. They petitioned for “winter privileges,” and when granted, 76 people held church services from November to May on their own. Among the petitioners were: Peter Mills, Daniel Mills, Solomon Clark, Zebulon Hoskins, Abel Gillet, John Hubbard, Moses Cadwell, Nath’l Cook, Alex Hoskins, Anthony Hoskins and Thomas Rowel (Rowley).

The Hyde 1884 driving map indicates two homes along Goodman Street—a 1795 Amos Gillette, Sr. house and a 1798 Joab Loomis house. Cottage Grove Road was originally named Gillette Road as many family homes were built along the road.



Gillette was sometimes spelled Gillet, and sometimes Gillett. After the 1850s, the family consistently used the original French spelling, Gillette. The Gillet's were a prominent family in the Congregational Church, the social center of Bloomfield. Amos Gillett built the 1820 house and Grist Mill. It was said he owned all the property from the mill road almost to the rail tracks. In the late 1800's the Eddy family bought the farm. 'On Tunxis Trails' noted that the land is often still referred to as the Eddy Farm. In the 2008 article 'Gillet or Gillett or Gillette?' 2008, Ralph Schmoll noted 'Francis was the most well-known Gillette in local and state history. He was a farmer, educator, temperance advocate and political figure.' Francis built the 1834 National Register trap rock house in Bloomfield noted for being a station in the Underground Railroad.

Schmoll states, "Francis Gillet (now Gillette) who, recalling the flowering meadows of his father's farm came up with the name Bloomfield when Wintonbury was incorporated as a town in 1834." Francis's son, William, was encouraged by Samuel Clemens, also known as Mark Twain, to follow his dream of becoming a successful playwright and actor known for his role as Sherlock Holmes. William built the Gillette Castle on the Connecticut River.

Goodman Street was named for the family who owned a farm on Cottage Grove Road and built a house in 1795 at 31 Goodman Street. During the industrial revolution, trains improved the connections between people and communities. The driving map notes the rail station at the southern end of Goodman Street. Near the Cottage Grove Railway Station, Mr. Beauford ran a 10-room hotel, being described in New York City area papers as being "In the country, right on the train route. Private bathing for men and women." Dennis A. Hubbs, September 2013. By the end of the 1970s, the railway station and all the other homes on Goodman Street were either burned or torn down.



Figure 2. Hotel on Goodman Street

The second site hike followed Goodman Street and power lines to the rail crossing. There are utilities along the gravel road and the road is used for access to the holding ponds for commercial development to the east. A wooden cattle loading platform is still standing at the Goodman Road rail crossing, remnants of the Bercowetz's Copaco meat packing company. The aerial photos show Goodman Street crossing to the west side of tracks leading to an area of occupation in the high ground near a Pond in the south-central part of the site (see Figure 8, 9, and 10).

Vegetation

Bloomfield's landscape, as in many parts of the state and country, has changed over time. Connecticut was almost completely deforested in the 19th century. By 1820, only 25 percent of Connecticut was forested. The forest cover in Connecticut has rebounded since the deforestation in 1820; more recently forest cover in Connecticut again shows trends downward. Figures 8, 9, and 10 aerial photos illustrate of the forest cover change on the University of Hartford's Bloomfield site.

“Between 1985 and 2010 Connecticut lost 6.5% of its forestland. In Bloomfield’s forest cover in 1985 was 38% and in 2010 it decreased to 32%. In 2010 59% of Connecticut was in Forest. (USDA Forest Service) “Forested areas provide absorption and natural pollutant processing for rainfall and surface waters. Overall forest cover is tied to watershed health. Forests also provide carbon storage and wildlife habitat.” Connecticut's Changing Landscape, UConn Clear 1985-2010 Connecticut's Changing Landscape is a project at the University of Connecticut Center for Land Use Education and Research that uses remotely sensed imagery to track changes over the 25-year period from 1985-2010. <http://clear.uconn.edu/projects/landscape/download.htm>

During three site visits in June, the tree cover through most of the site was observed to be a new growth forest with the occasional larger tree, not unlike farm fields returning to forest land.

Three areas of slightly higher elevation are out of the wetland soils. The pine trees near Cottage Grove Road indicate the presence of drier soil conditions. Some invasive plants were noted in the wooded areas but for the most part the wooded area was walkable open woodland. A more extensive study of the vegetation is recommended.

Soil

On University of Hartford Bloomfield site, NRCS soil mapping show prime and state significant farm soil with the exception of the Beaman Brook, Wash Brook and North Park River corridors. Town of Bloomfield wetland soil map shows that a significant portion of the site is composed of wetland soils. The topography indicates higher land, but the site does not have significant slope except in the immediate stream corridors. The southwest corner of the site has elevations of 73’ along the park river to 104’ in 180’, a 17% slope.

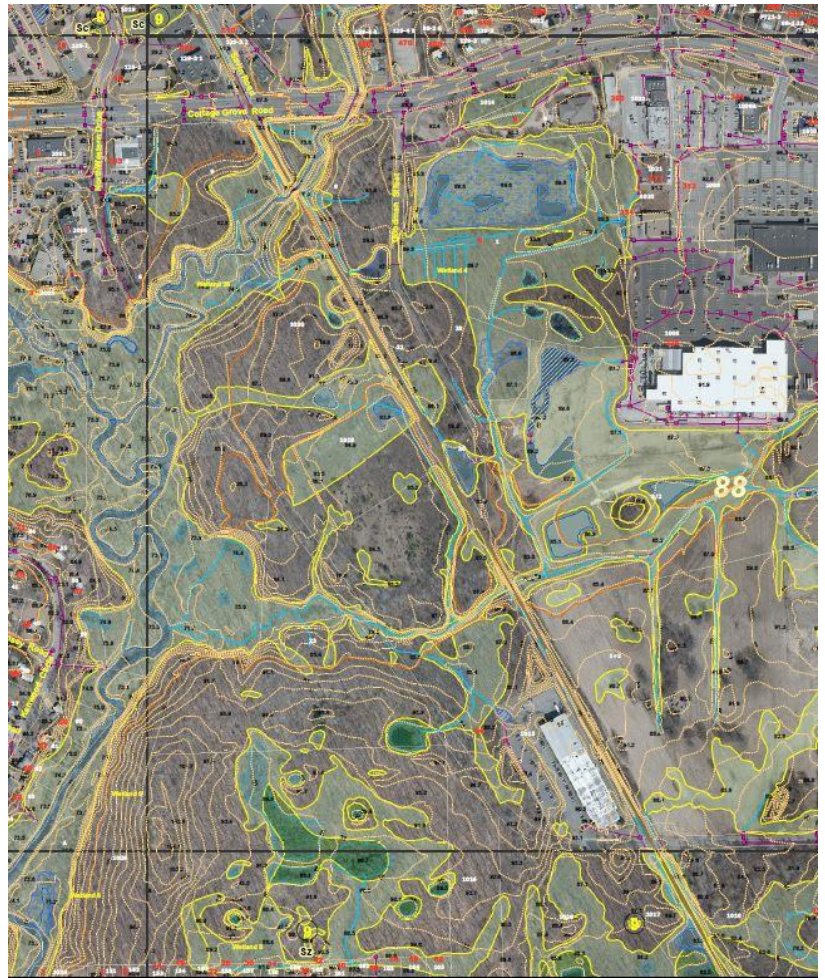


Figure 3. Site map from the Town of Bloomfield

‘Agriculture dominated the Connecticut landscape for much of the past 200 years. With the rise of modern suburbia and creation of industry-sized farming concerns in other states, the amount of land devoted to farming has been steadily decreasing.’ Bloomfield in 1985 had 15% of the land in Agricultural Fields and in 2010 only 8% ‘Additionally 22% of state agricultural soils were covered over between 1985 and 2010 causing productive farmland to be lost. (Connecticut’s Changing Landscape, UConn Clear 1985-2010)

The 1934 aerial photo (Figure 8) of the University of Hartford’s Bloomfield land shows the farming on the property as well as with most of the abutting neighbors. The area looks like the rural outskirts of a farming community. The 1965 aerial (Figure 10) shows the commercial developments to the east of Goodman Road.

Water

The North Branch of the Park River is formed by the confluence of Beamans Brook and Tumbledown Brook which occurs on the interior of this property. Bloomfield, Hartford and West Hartford comprise over 97% of the watershed. The Park River has gone by several names, the Little River, the Mill River and the Hog River. Development patterns often started along rivers and the cultural history of Hartford is reflected in changes occurring along the Park River. Refer to the 'Baseline Watershed Assessment\NBPR Baseline Assessment Report by Fuss and O'Neill, July 2010.

The construction of four flood retention reservoirs played a large role in the development of Bloomfield. The reservoirs were built in the early 1960's in response to severe flooding in 1955 and to protect Hartford's Park River conduits from being overwhelmed by flooding. All streams flowing out of these reservoirs eventually drain into the North Park River through the University of Hartford's property. FEMA the majority of the flood flow at significance of the North Park River property is elevation 84.

‘Riparian corridors are environmentally important areas that provide stream stability, pollutant removal, and critical habitat for both aquatic and terrestrial wildlife. Research indicates that forested riparian areas are an important factor in maintaining stream health, and that riparian restoration can have a positive impact on water quality.’ The UConn clear maps note a 300-foot riparian corridor along watercourses. Connecticut’s Changing Landscape, UConn Clear 1985-2010

‘The North Branch Park River still retains sizeable natural areas along its banks as it flows from its headwaters into Hartford. Naturally regional, watersheds are a comprehensive ecological area that can be measured by a community that values clean water quality within the North Branch Park River. The linear nature of rivers also provides tangible linkages for collaboration among property owners within the watershed’s sub-basins.’
Baseline Watershed Assessment\NBPR Baseline Assessment Report, Fuss and O’Neill, July 2010

During the first site visit in June, the environmental review team hiked from Tobey Road to a pond and on to the convergence of the North Park River and drainage channel taking the commercial building overflow to



Figure 4. FEMA flood zone map

the east. See the green line in Figure 6. The overflow stream showed signs of bank destabilization. Several ponds/vernal pools were noted.

Fauna and Natural Diversity Areas

The DEEP map of Natural Diversity Areas tracks location of status of endangered threaten and special concern species in Connecticut. The presence of species on Talcott Mountain and in the flood retention areas indicates additional study on the 138-acre site is warranted. The 'Baseline Watershed Assessment\NBPR Baseline Assessment Report by Fuss and O'Neill, July 2010 notes an extensive list of birds and amphibians in the watershed without being site specific in Appendix B. The site visits noted deer paths and the presence of ponds and vernal pools.

Adjacencies

The University of Hartford's Bloomfield property is bordered by different zones. The west and south boundaries have residential Zone R 15 abutting. A significant amount of land to the east is zoned industrial. The Cottage Grove Road corridor has commercial development. The Copaco shopping center provides retail services to the surrounding region. Stop & Shop is a large grocery store in the complex. Financial and medical services are available near the Goodman Cottage Grove intersection in Capaco and along the corridor. Bloomfield Town Center is about 1 mile from the Goodman Cottage Grove intersection, Campus under a mile and 1 91 is 3 miles along Cottage grove Road. There are bus routes on Cottage Grove Road.

The last hike on the property traveled the paper road linking the Tobey Road at Cottage Grove Road to Tobey Road at the south eastern side of the site. The hike was through and upland wooded area and ended at a stream crossing only 15 minutes into the hike. The Town mapping shows significant wetland and stream crossing along the paper road route.

East Coast Greenway (ECG)

The East Coast Greenway connects 15 states, 450 cities and towns, and 3,000 miles of people-powered trails from Maine to Florida —the country's longest biking and walking route. The route through Bloomfield is currently being planned. Options near the University of Hartford Bloomfield property to connect University of Hartford to the East Coast Greenway are shown on the map.

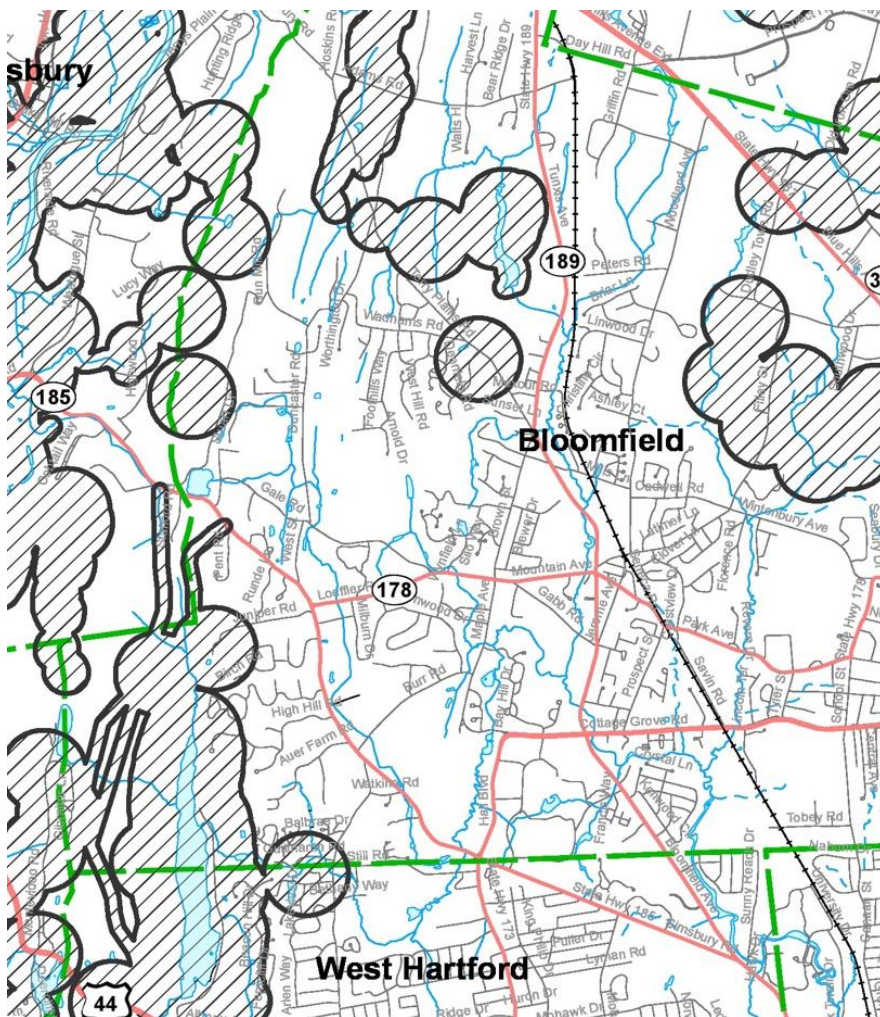


Figure 5. Natural Diversity Database Areas Map

Red - Current East Coast Greenway route

- Connects south of campus at Plainfield Street

Yellow - Alternate route A-West side of Rail

- Improves connection to U of H, Challenges in wetland crossing

Amber - Alternate route B-Goodman route

- Improves connection to U of H, Less wetland/ flood way crossings, Uses existing gravel road and historic rail crossing

Green - 1st and 3rd site visit

Rail transportation has been historically an important element in connecting community. The North Park River riparian corridor connects the region environmentally. The East Coast Greenway could have a closer connection to the property thus opening the opportunity to have best practices highlighted on a cultural and environmental educational trail.

Conclusions

The environmental history of the site especially in terms of settlement and development of Bloomfield and Hartford is not unlike stories reflecting overall changes in the landscape. The 'Water' has been a key factor in the history in early settlement in Bloomfield. The historical stories and figures are unique as represented above. The North Branch of the Park River also has a unique history reaching into abutting communities. The Hartford Park River Story is well-covered in the Baseline Assessment of the North Branch Park River Study and is not focused on in this study. What is apparent in the assessment is rivers like the Park River are connecting elements of manmade and ecologic systems.

Many public and private institutions currently front the above ground portion of the Park River. Improved upstream infrastructure could positively impact the campuses downstream in West Hartford and Hartford. The University of Hartford Bloomfield East Coast Greenway connection through this property could serve as a model of best practices.

Buildable land on the 138-acre site is constrained by wetland setbacks and floodway. The cost of infrastructure to gain access to higher ground is an important consideration in any development of the property. The PLR zoned south west could be accessed through Portage Road and Northbrook for housing.

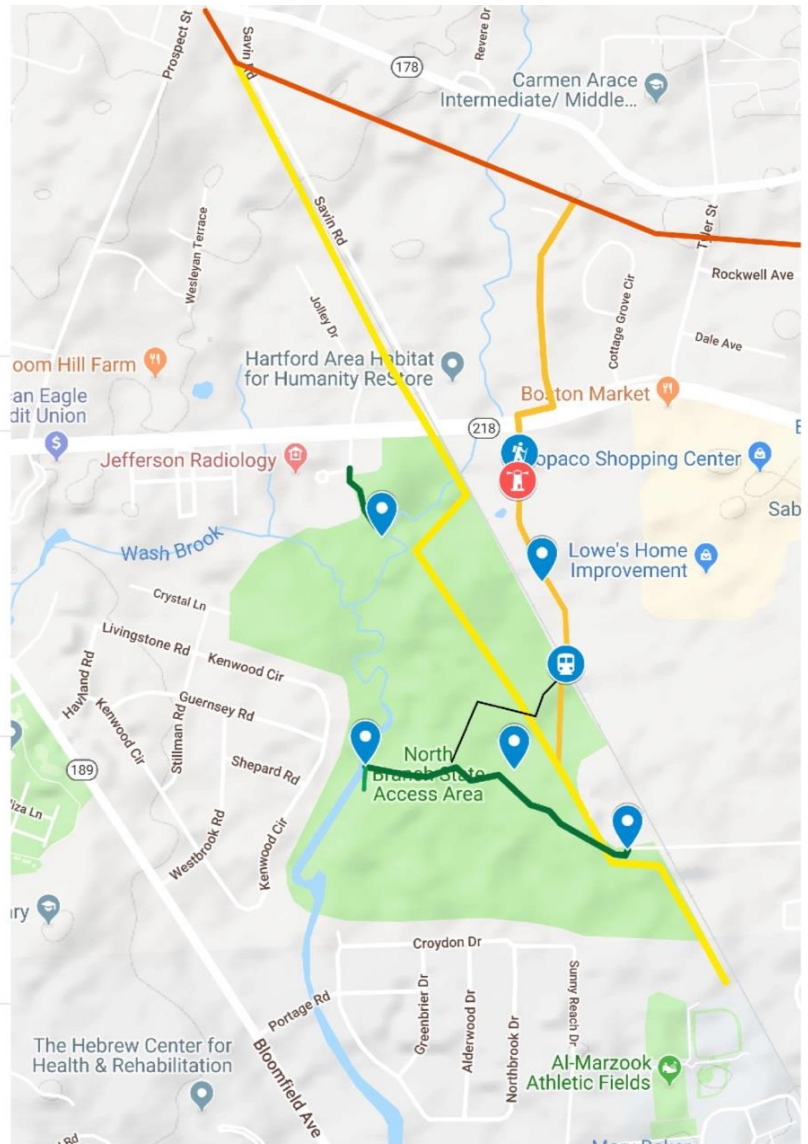


Figure 6. Map of East Coast Greenway route and site visit route

Smaller parcels nearer Cottage Grove Road could also be studied for commercial or as an entrance to University of Hartford. The East Coast Greenway offers alternate transportation and access possibilities.

- An opportunity to create a U-Hart North Campus entrance direct from Cottage Grove Road at the Goodman St. connector. The property fronting Cottage Grove support a Welcome Center, Information Center or an ECG Stop.
- Challenge- Add a necessary RR crossing @ the former Station / Cattle Unload platform.
- An opportunity to develop Housing in the SW corner of property. The PLR Zone allows for Multi-family Cluster housing preserving designated open space. A ROW exists from Croydon Drive.
- An opportunity - 'ECG' links U-H students to services in Bloomfield Town Center and along Cottage Grove. The Cottage Grove/Goodman Street intersection is only one mile from campus and a mile from the Town Center. Students would have safe passage for biking, roller blading, skateboards and pedestrian traffic.
- An opportunity- Extend U-Hart Recreation, Sport fields in the SE corner of the property
- Challenge - Extending Tobey Rd. northward to Northeast Dr. involves many wetland crossings and Stream Bridges.
- An opportunity for significant watershed, historical and environmental education. There are learning opportunities in art, natural sciences such as ecology and geography, engineering, and sustainability.
- Challenge developing a team to oversee, fund and coordinate planning and construction (public/private partnership)

UNIVERSITY OF HARTFORD LAND IN BLOOMFIELD



Figure 7. Parcel outlines of the University of Hartford property in Bloomfield

The EPA has noted the Northeastern climate is experiencing noticeable changes that are expected to increase in the future. Changes include a warming trend, frequency, intensity and length of heat waves, the amount and frequency of heavy precipitation events, and the increase in rainfall.

The Town of Bloomfield is in the process of becoming certified as a sustainable community. West Hartford and Hartford received the certification last year. Actions in the certification process deal with mitigation of the effects of climate change such as Well-Stewarded Land and Natural Resources, Dynamic and Resilient Planning, Access Climate Vulnerability, Diverse Transportation Systems and Smart Commuting. The

proximity of the site to a university and nearby other cultural campuses in Hartford offer unique opportunities for collaboration on sustainable community solutions in a watershed.

Ironwood would like to thank Wintonbury Historical Society for their collection of maps and historical data.



Figure 8. Historical aerial imagery of the site from 1934

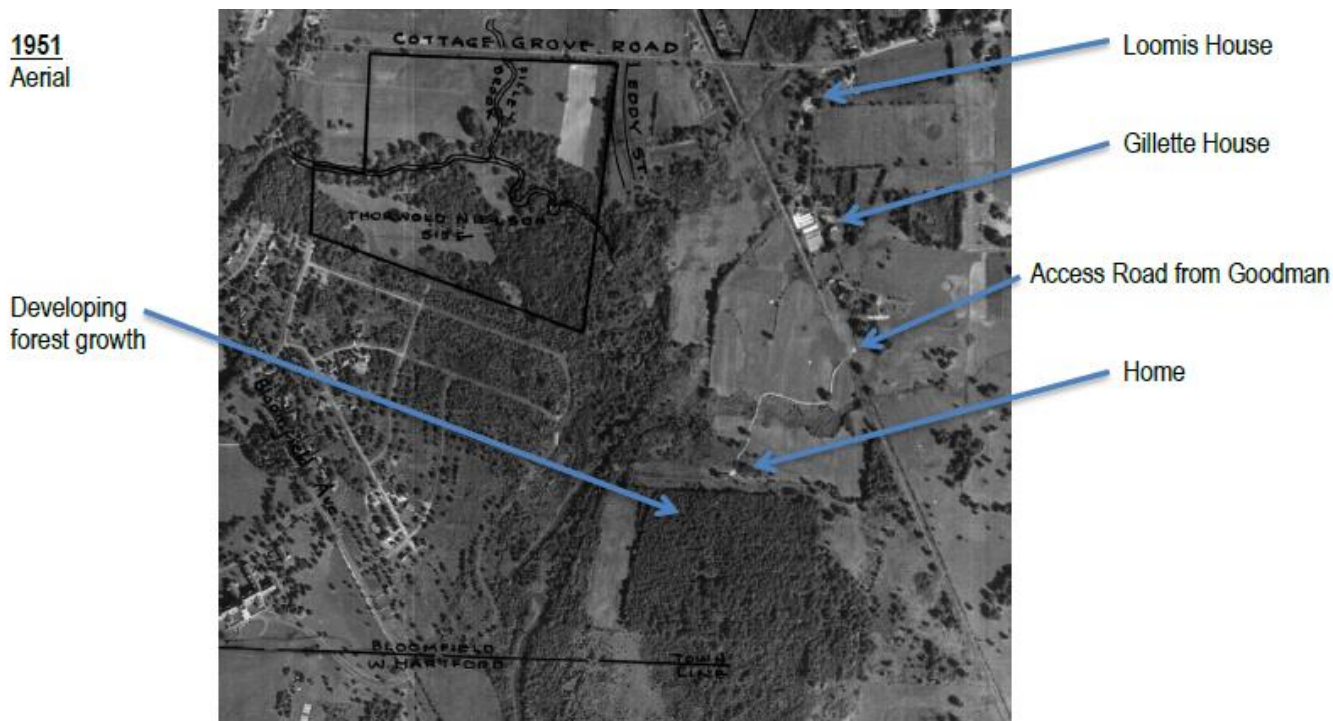


Figure 9. Historical aerial imagery of the site from 1951

1965

Winter Aerial

New development replacing farm fields

Cottage Grove

Pond along Goodman Street

Industrial Development along tracks

Bercowetz Cattle rail connection

House



Figure 10. Historical aerial imagery of the site from 1965

Topography and Geology

Report by Randy Steinen, Geologist, Emeritus Professor -- University of Connecticut

Summary

The most important geologic event that affects the potential land use of the University of Hartford's "north campus zone" occurred relatively recently in geologic time. During the gradual end of the last Ice Age, a glacial meltwater lake occupied parts the Connecticut River Valley for almost 4000 years (Antevs, 1928; Ashley, 1972). Beginning about 18,300 years ago (Stone and others, 2005), the lake occupied the Hartford region for about 2500 years (Stone and others, 2015). Clay rich sediment settled to the bottom of the glacial lake. The clay lake-bottom strata underlie most of the north campus parcels and results in poorly drained soils and extensive wetlands. The wetland areas are flood-prone and regulated; they are not developable. The only potentially developable area is an elongate hill of about 18 acres on the southwestern corner of the parcels.

Topography

The north campus zone of the University of Hartford is mostly low-lying land with elevations between 80-100 feet above sea level. Lower elevations are found along the North branch of the Park River which flows along the western border of the parcels, reaching an elevation of less than 80 feet near the southwest corner of the parcels. The highest spot is adjacent to the river in the southwest corner, reaching an elevation of 105 feet.

Slopes on the parcels are low to very locally moderate. The steepest slopes are on the eastern banks of the Park River at the southwest corner of the parcel. There the river under-cuts the bank causing an approximately 10-15-foot erosional scarp.

Geology

Bedrock was not seen during field observations and reportedly is not exposed on any of the parcels (Cushman, 1963). Bedrock crops out along the riverbanks closer to the main campus (see Figure 11). Bedrock consists of the Portland formation, which is a sedimentary rock that was deposited around 200 million years ago (Jurassic Period). The formation consists of reddish-brown beds of sandstone and siltstone. They were deposited by streams and in ephemeral lakes in a down-dropped (faulted) low area during generally semi-arid climates. Dinosaurs likely roamed the area and footprints have been found in similar rocks elsewhere in the valley.

The bedrock surface is exposed locally in the channel of the Park River adjacent to the "academic zone" of campus. It slopes northward under glacial sediments and is greater than 100 feet below the surface near the shopping area south of Cottage Grove Avenue (USGS, 1972, I-784c and d).

Surficial material consists of glacial and postglacial unconsolidated sediments that cover the rock surface over the entire north campus zone (Figure 12). These sediments have three principal origins: glacial till, post-glacial meltwater lake beds, and post-lake wind-blown sand.

The soils developed in the south-western area suggest possible glacial meltwater stream deposits as well, but stream deposits were not identified during our site visit and were not observed by previous workers.

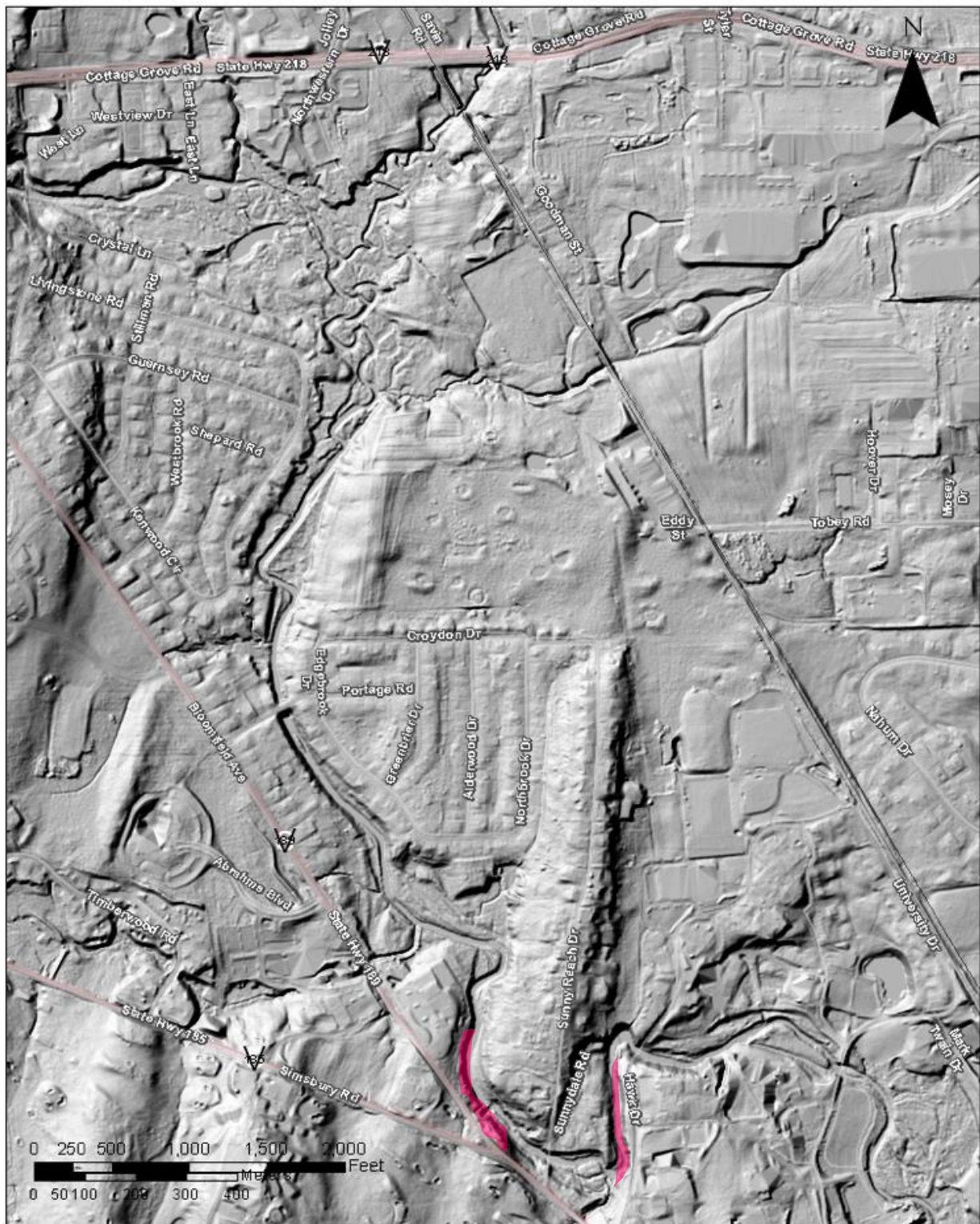


Figure 11. Hillshaded digital elevation model (DEM) of north campus zone. Academic campus in lower left of DEM. Cottage Grove Road along the top boundary. The North branch of the Park River enters the DEM just south of the NW corner. Note circular structures (pingos) in flat are near center of DEM and high ground (mapped as glacial till by Stone and others, 2005; see Figure 2) just to west of the pingos. Bedrock outcrops shown in red.

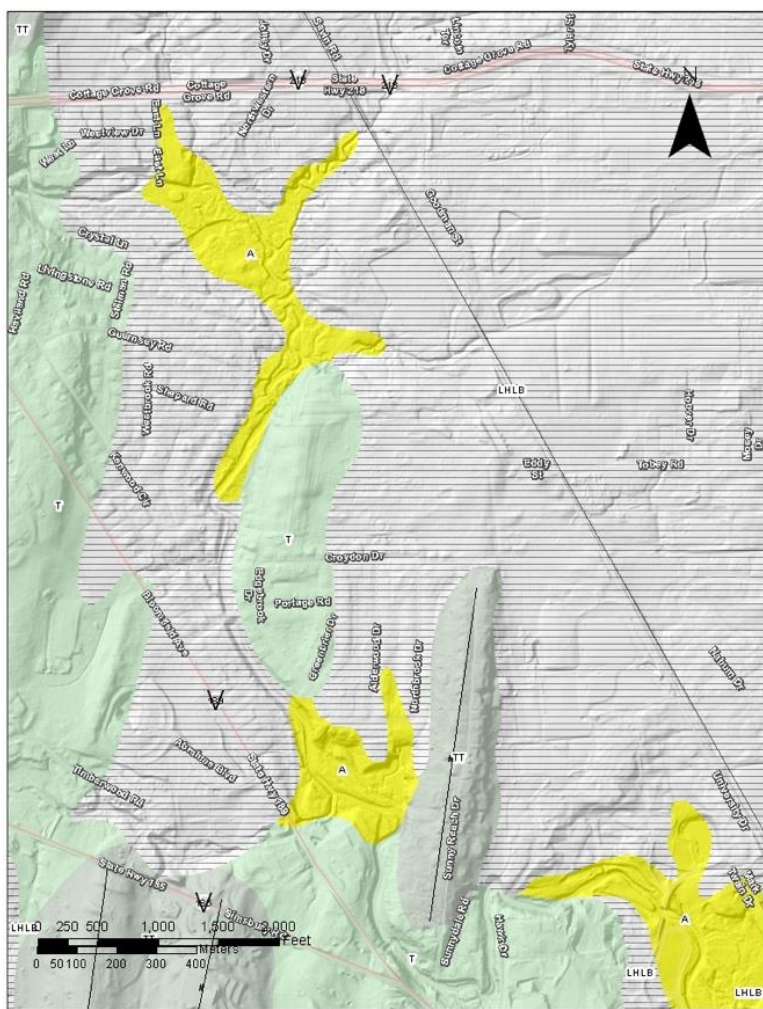


Figure 12. Surficial geology (Quaternary geology; after Stone and others, 2005) of the north campus zone and surrounding area. Ruled area (gray, LHLB) is underlain by clay rich deposits of Lake Hitchcock. Green area underlain by glacial till (T) and greenish-gray area underlain by thick glacial till (TT); yellow area with modern alluvium (A). Thick glacial till deposit interpreted as a drumlin by Stone and others (2005; long axis of drumlin interpreted to indicate direction of flow of glacier when it was last active).

Glacial till consists of unsorted debris (Figure 13) deposited beneath the glacier and partially sorted debris left behind when the glacial ice melted. Rocks (possibly as large as boulders), sand and mud may be indiscriminately deposited under the glacier. Similar debris is left behind when the glacier melts, but the meltwater may remove some of the mud component resulting in partial sorting. Deposits left by the glacier are referred to as glacial till, or just till. Till was deposited during the last Ice Age between ~30,000 to 20,000 years ago. Till likely overlies bedrock over all of the area but is only exposed at the surface in a low elongate hill in the southwest corner of the parcels.

The Ice Age ended when global climates warmed. Because southern areas receive more intense sunlight, they are warmer than northern areas. The warming therefore preceded from south to north. Glacial ice melted about 18,300 years ago in the Hartford area, but not until 17,500 years north of Springfield. As the northward melting occurred, glacial lakes formed in front of the melting ice masses (Stone and others, 2015). A lake, referred to as glacial Lake Hitchcock, was impounded by till and also deltaic deposits in the Rocky Hill area. The extent of the lake varied over time depending on the position of the melting edge of the glacier and also the lake level but was about 10-20 km in an east west direction and several hundred km north to south. Sediment laden meltwater streams flowed into the lake, depositing sand and gravel on lake margin deltas and silt and clay onto the lake bottom. The University of Hartford parcels were near the western margin of the lake but received lake-bottom deposits. During summer seasons silty sediments flooded over the lake bottom, but during winter clay settled out of the water. Thus, annual couplets, referred to as varves, of coarse and fine sediments were deposited that allow researchers to determine passage time similar to the way tree rings allow an interpreted chronology. It is from annual varve counts that allow determination of the length of time the lakes existed.

Clay layers are 25-50 feet thick over most of the local area but are greater than 100 feet in the northeast near Copaco Shopping Center (Langer in USGS, 1972). Clay is porous but highly impermeable and where present results in poorly drained soils and swampy conditions. Thus, most of the area is too wet to develop.

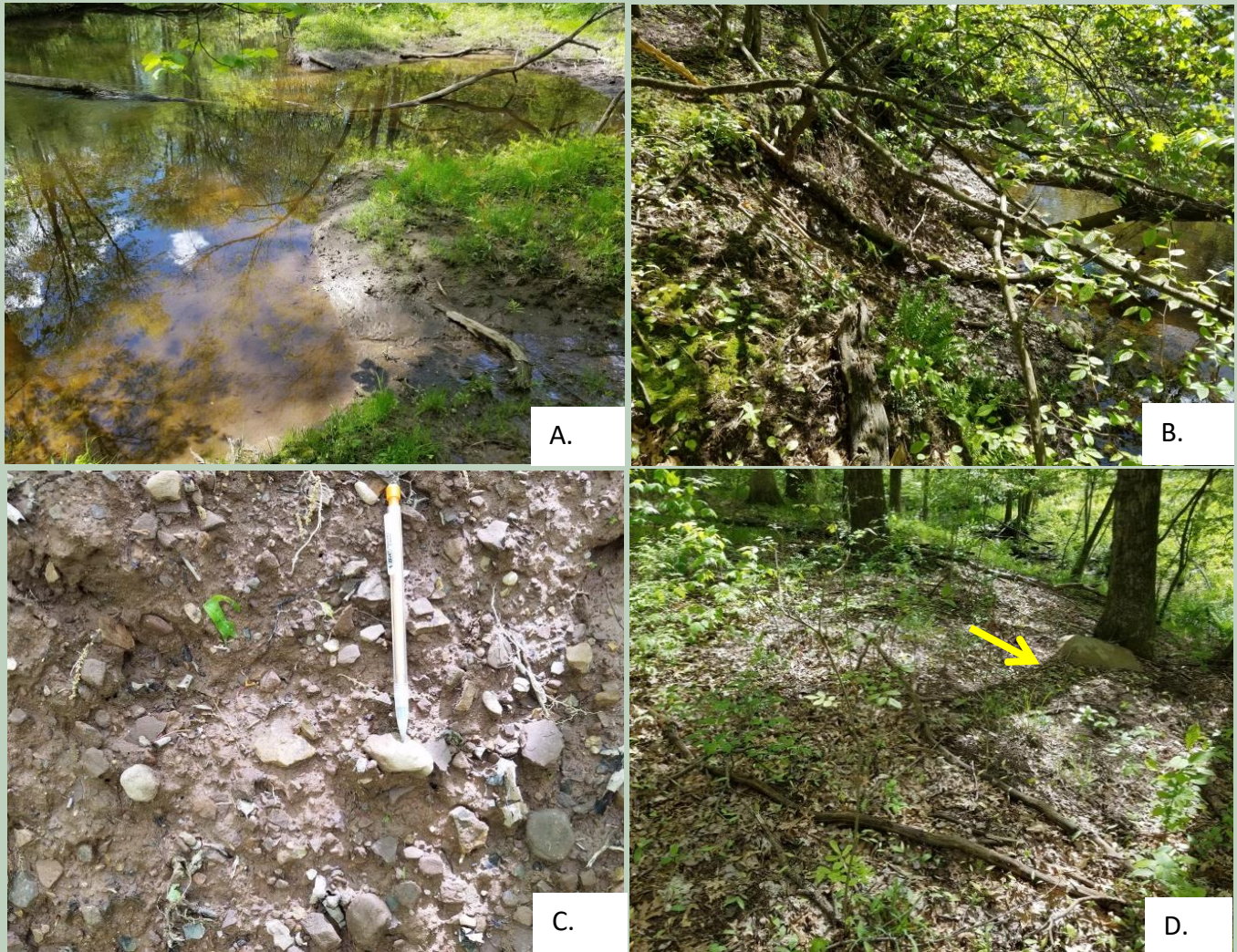


Figure 13. A. Park River channel at southwestern corner of the parcel, north of till shown on Stone et al., 2005. Note that river bed and bank consist mainly of mud and fine sand where river traverses Lake Hitchcock deposits. B. Park River where it cuts into till. Note that river bed and bank contain abundant sand and cobbles eroded from the adjacent cut into the till. C. Till exposed in tree-throw. Note complete lack of sorting and that clasts are both angular and rounded. Pencil about 7 cm in length. D. Small glacial erratic composed of basalt on surface of till deposit in southwest corner of parcels. Erratic is approximately 0.5 m in length. (Photos taken by Randy Steinen)

Several unusual circular depressions are visible in the middle of the southern wet area (Figure 11). Each area is several tens of feet across and has a discontinuous raised rim several inches higher than surrounding areas. These appear to be structures referred to as “pingos” (Stone and Ashley, 1992; Hugo and Geiss, 2007; Stone and others, 2015). These were formed by semi-permanent ice bodies that formed in the sediment after the lake drained.

After Lake Hitchcock drained from the area, catabatic winds (Thorson and Schile, 1994) flowing around the southern edge of the remaining ice blew silt and fine-grained sand from exposed deltaic surfaces and till covered uplands. An eolian mantle covers large areas of New England. In some places the eolian sediment accumulated into large sand dunes. Eolian silt was found overlying the clay beds in the slightly higher central part of the parcel (Figure 14). It was likewise found overlying till in the southwestern part of the area.



Figure 14. Slightly higher area north of pingos in Figure 11 that is underlain by wind-blown silt. Slightly higher land feature may be a low sand-dune. (Photos taken by Randy Steinen)

Hydrology

No data are available to determine hydrologic characteristics of the bedrock but because of the clay layer local recharge to the bedrock aquifer is limited. Regional subsurface flow is probably eastward toward the Connecticut River lowlands. The clay layer produces perched local water tables over most of the parcels. Water flow in the perched water tables follows local topographic gradients.



Figure 15. Team members on site

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Surficial Geology and Soils

Report by Christopher Allan, Professional Soil and Wetland Scientist, LANDTECH

Surficial Geology

The landforms and surficial deposits of the University of Hartford parcels in Bloomfield are mainly related to the effects of glaciation. Three types of glacial deposits are found within the study area. Glacial Lake Hitchcock lake bottom sediments make up the majority of the study area, while glaciofluvial deposits of sand, and glacial till deposits are found in the southwestern portion of the area. Post-glacial deposits of floodplain alluvium are also found along the margins of North Branch Park River and Beaman's Brook.

The fine-grained lacustrine sediments found throughout much of the site were deposited within Glacial Lake Hitchcock, which once occupied most of the Connecticut River Valley north of Rocky Hill. The lake formed behind a terminal [moraine](#) deposit of rock and soil at Rocky Hill that blocked up the [Connecticut River](#), creating the long, narrow lake. The lake is thought to have existed for approximately 3,000 years. The lake was fed by streams in tributary valleys to the lakes which carried loads of sediments. The coarser sediments being deposited in deltas near the inlets and finer sediments being deposited in deeper portions of the lake. The lake bottom deposits within the study are identified as "fines" (very fine sand, silt, and clay). They are composed of well-sorted, thin layers of alternating silt and clay, or thicker layers of very fine sand and silt. Very fine sand commonly occurs at the surface and grades downward into rhythmically bedded silt and clay varves.

Glaciofluvial materials has been transported by moving water from melting ice. The material is usually rounded, well sorted sands and gravels. It has very high air and water movement throughout, but very low available water making it very droughty. These materials are important for ground water and aquifer recharge.

Glacial ice-laid deposits were derived directly from the ice and consist of nonsorted, generally nonstratified mixtures of grain-sizes ranging from clay to large boulders. The matrix of most tills is predominantly sand and silt, and boulders can be sparse to abundant. The site's till deposits are confined to a small area in the southwest corner of the property and are characterized as "thin till". These are areas where till is generally less than 10-15 feet thick and includes areas of bedrock outcrop where till is absent. It consists predominantly of upper till; loose to moderately compact, generally sandy, and commonly stony material; and a more compact finer-grained lodgement facies deposited subglacially. In general, the upper till derived from the red Mesozoic sedimentary rocks of the central lowland of Connecticut are finer-grained, more compact, less stony and have fewer surface boulders than upper till derived from crystalline rocks of the eastern and western highlands

Postglacial deposits refer to those surficial materials that were emplaced by various processes after the melt back of the last ice sheet. The subject site's postglacial deposits are floodplain alluvium consisting of sand, gravel, silt, minor clay, and some organic material. Along smaller streams, texture of alluvium is commonly variably both laterally and vertically, but overall texture is often similar to adjacent glacial materials. Thickness is commonly less than 2m (6ft). Alluvium within the project area overlies the silty-clayey lake-bottom deposits.

Soils

Soil is defined as the unconsolidated mineral or organic material at the earth's surface that, in contrast to the underlying parent material, have been altered by the interactions of climate, relief, and living organisms over time. The Soil Survey of the State of Connecticut identifies named soil series that have major horizons that are similar in composition, thickness and arrangement. The soil series descriptions can be used to determine the suitability and potential for specific uses such as buildings, on-site sewage disposal, agriculture, etc.

The appended soil map shows the general location of soil map units. The site's dominant soil map units are described below.



Figure 16. Chris Allan extracting a soil sample

Upland Soils

The majority of the site's upland soils are found within the glacial lake bed sediments and thin till ridges and hills. The seasonally high groundwater table and slow soil permeability are the main limitations to development associated with these soils.

Elmridge fine sandy loam (28A, 28B) – covers a large portion of upland areas within the project area. This soil consists of very deep, moderately well drained soils formed in loamy over clayey sediments. They are nearly level to moderately steep soils on glacial lacustrine and marine terraces, and on lake plains. Slope ranges from 0 to 8 percent. Saturated hydraulic conductivity is high in the upper loamy horizons and low to moderately high in the underlying clayey horizons. Elmridge soils have a seasonal high water table. The seasonal high water table is the main limitation for buildings with basements and lawns and landscaping. The seasonal high water table and slow percolation are the main limitations for septic tank absorption fields. Frost action is the main limitation for local roads and streets. Providing a coarse grained subgrade to frost depth will reduce these limitations

Brancroft silt loam (25A, 25B) - consists of very deep, moderately well drained soils formed in silty and clayey glacial lacustrine deposits. They are nearly level to moderately steep soils on slightly elevated positions on lacustrine terraces. Slope ranges from 0 to 8 percent. Saturated hydraulic conductivity is moderately low or moderately high in the surface layer and upper part of the subsoil, low to moderately high in the lower subsoil, and very low in the substratum. Brancroft soils have a seasonal high water table. The seasonal high water

table is the main limitation for buildings with basements and lawns and landscaping. The seasonal high water table and slow percolation are the main limitations for septic tank absorption fields. Low strength and frost action are the main limitations for local roads and streets. Providing a coarse grained subgrade to frost depth will reduce these limitations.

Windsor loamy sand (36B) - consists of very deep, excessively drained soils formed in sandy outwash or eolian deposits. They are nearly level through very steep soils on glaciofluvial landforms. Slope ranges from 3 to 8 percent. Saturated hydraulic conductivity is high or very high. This soil has few limitations for buildings with basements and local roads and streets. Droughtiness is the main limitation for lawns and landscaping. Lawns need watering in the summer. Poor filtering is the main limitation for septic tank absorption fields. There is a hazard of groundwater pollution because the rapidly permeable substratum does not adequately filter effluent.

Agawam fine sandy loam (29A) - consists of very deep, well drained soils formed in sandy, water deposited materials. They are level to steep soils on outwash plains and high stream terraces. Slope ranges from 0 to 3 percent. Saturated hydraulic conductivity is moderately high or high in the upper solum and high or very high in the lower solum and substratum. This soil has few limitations for buildings with basements and lawns and landscaping. Poor filtering is the main limitation for septic tank absorption fields. There is a hazard of groundwater pollution because the rapidly permeable substratum does not adequately filter effluent. This soil has few limitations for local roads and streets.

Rainbow silt loam (43B) - consists of moderately well drained loamy soils formed in silty mantled lodgement till. The soils are very deep to bedrock and moderately deep to a densic contact (hardpan). They are nearly level to strongly sloping soils on till plains, hills and drumlins. Slope ranges from 3 to 8 percent. Saturated hydraulic conductivity is moderately high or high in the surface layer and subsoil, and low to moderately high in the dense substratum. Rainbow soils have a seasonal high water table. The seasonal high water table is the main limitation for buildings with basements and lawns and landscaping. The seasonal high water table and slow percolation are the main limitations for septic tank absorption fields. Frost action is the main limitation for local roads and streets. Providing a coarse grained subgrade to frost depth will reduce this limitation.

Udorthents, smoothed (308) - consists of areas from which soil material has been excavated, deposited, graded or otherwise mixed. Most areas have been graded to a smoothed surface. Areas are dominantly on uplands but are in almost every landscape position. Slopes are smooth or irregular and are dominantly 0 to 5 percent.

Wetland Soils

The site's wetland soils are found scattered throughout the glacio-lacustrine deposits and along the site's watercourses. Some of the wetlands formed in the lakebed sediments are found within small landscape depressions that are ponded for extended periods and are likely vernal pools capable of supporting breeding amphibians. Several vernal pools were identified in the southern portion of the site during the site evaluation.

Scitico, Maybid and Shaker soils (9) - consist of very deep, poorly drained soils formed in silty and clayey sediments. They are nearly level to very gently sloping soils in low-lying positions of glacio-lacustrine and marine terraces. Slope ranges from 0 to 5 percent. Permeability is moderate or moderately slow in the surface layer, moderately slow or slow in the upper part of the subsoil, slow or very slow in the lower part of the subsoil, and very slow in the substratum. The seasonal high water table is the main limitation for buildings with basements, lawns and landscaping, and septic tank adsorption fields. Ponding is also a limitation in areas of Maybid soils. Slow percolation is also a limitation for septic tank adsorption fields. Seasonal high water table and frost action are the main limitations for local roads and streets. Ponding and low strength are also limitations in areas of Maybid soils.



Figure 17. Deer print in wetland area

Limerick and Lim soils (107) - consists of very deep, poorly drained soils on flood plains. They formed in loamy alluvium. Saturated hydraulic conductivity is moderately high or high. Slope ranges from 0 through 3 percent. Flooding and the seasonal high water table are the main limitations for buildings with basements, lawns and landscaping, and septic tank absorption fields. Poor filtering is also a limitation for septic tank absorption fields in areas of Lim soils. There is a hazard of groundwater pollution because the rapidly permeable substratum does not adequately filter effluent. Flooding, potential frost action, and the seasonal high water table are the main limitations for local roads and streets.



Figure 18. Vernal pool on site

Fluvaquents-Udifuvents complex, frequently flooded (109) - This is composed of many soils along narrow stream channels. Fluvaquents are located in lower, wetter areas while Udifuvents are in slightly higher, better drained areas of the map unit. These soils flood frequently, resulting in both erosion and deposition. Texture is variable. Flooding and wetness hazards make this soil unsuitable for development uses.

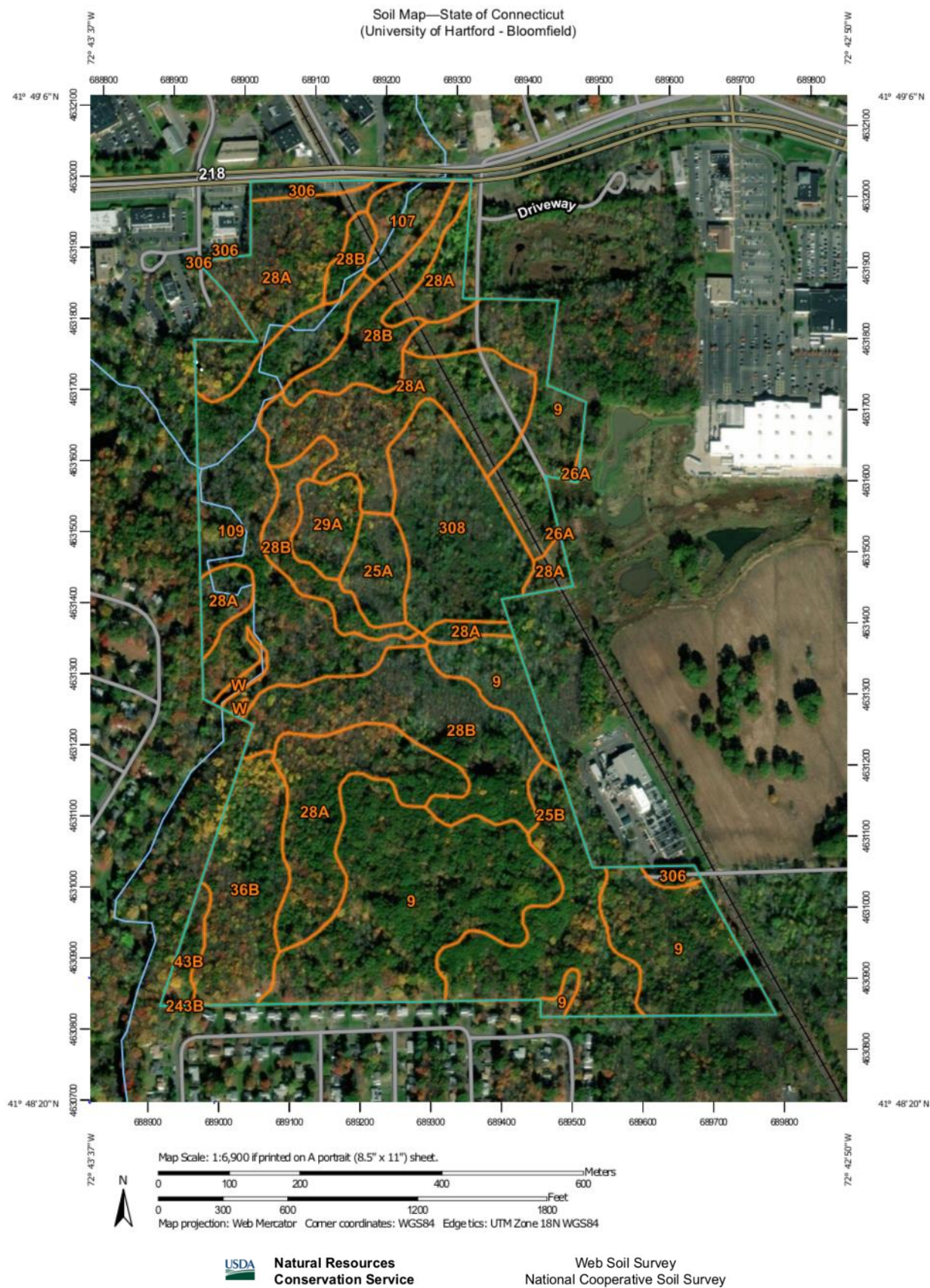






















































Figure 19. NRCS soil map of the site

MAP LEGEND

	Area of Interest (AOI)		Spill Area
	Area of Interest (AOI)		Stony Spot
	Soils		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Water Features
	Blowout		Streams and Canals
	Borrow Pit		Transportation
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Background
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 18, Dec 6, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 27, 2016—Oct 30, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
9	Scitico, Shaker, and Maybid soils	38.2	25.8%
25A	Brancroft silt loam, 0 to 3 percent slopes	2.8	1.9%
25B	Brancroft silt loam, 3 to 8 percent slopes	10.2	6.9%
26A	Berlin silt loam, 0 to 3 percent slopes	0.1	0.0%
28A	Elmridge fine sandy loam, 0 to 3 percent slopes	33.0	22.3%
28B	Elmridge fine sandy loam, 3 to 8 percent slopes	21.1	14.2%
29A	Agawam fine sandy loam, 0 to 3 percent slopes	2.7	1.8%
36B	Windsor loamy sand, 3 to 8 percent slopes	8.4	5.7%
43B	Rainbow silt loam, 3 to 8 percent slopes	1.3	0.9%
107	Limerick and Lim soils	2.5	1.7%
109	Fluvaquents-Udifuvents complex, frequently flooded	15.6	10.5%
236B	Windsor-Urban land complex, 0 to 8 percent slopes	0.0	0.0%
243B	Rainbow-Urban land complex, 0 to 8 percent slopes	0.0	0.0%
306	Udorthents-Urban land complex	1.4	0.9%
308	Udorthents, smoothed	10.5	7.1%
W	Water	0.5	0.3%
Totals for Area of Interest		148.2	100.0%

Herpetological Assessment

Report by Dennis P. Quinn, CT Herp Consultant

A herpetological site assessment of the 138-acre property owned by the University of Hartford in Bloomfield Connecticut was conducted by Dennis Quinn and Jani Quinn on Friday, August 9th between 9AM and 1PM totaling 4 survey hours and 8 person hours. Survey methods consisted of visual encounter, call and cover object surveys. A total of 8 amphibian and reptile species were documented during the survey effort including two vernal pool obligate species, the wood frog (*Rana sylvatica*) and spotted salamander (*Ambystoma maculatum*). The habitat consisted of a network of forested wetlands interspersed with vernal pools surrounded by upland forest. The northern boundary of the parcel contains Wash Brook and Beamans Brook and their confluence with the North Branch of the Park River. Although situated in a highly urbanized area, the habitats in the interior of the parcel were relatively undisturbed and suitable for a variety of listed amphibians and reptiles including the blue-spotted salamander Complex (*Ambystoma laterale*), spotted turtle (*Clemmys guttata*), wood turtle (*Glyptemys insculpta*), eastern box turtle (*Terrapene .c carolina*) and eastern ribbon snake (*Thamnophis sauritus*). A large number of red-backed salamanders (*Plethodon cinereus*) were observed, an indication of a healthy forest ecosystem. The property edges were however inundated with invasive plants and worms and as a result mostly void of duff, which is extremely important for a healthy forest ecosystem. Lower densities of amphibians and reptiles were observed in these areas, including red-backed salamanders which rely heavily on duff to provide cover, foraging opportunity, thermal regulation and prevent desiccation. Prior to developing conceptual site development plans, I would recommend more extensive herpetological inventories, specifically targeting potential state-listed species that may occur on this parcel and a more in-depth evaluation of the vernal pools, associated wetlands and vernal pool obligate species.

Comprehensive List of Species Encountered:

- American Bullfrog – *Rana catesbeiana*
- Green Frog – *Rana clamitans*
- Spring Peeper – *Pseudacris crucifer*
- Wood Frog – *Rana sylvatica*
- Spotted Salamander – *Ambystoma maculatum*
- Red-backed Salamander – *Plethodon cinereus*
- Painted Turtle – *Chrysemys picta*
- Eastern Garter Snake – *Thamnophis sirtalis*



Figure 20. Four of the species encountered on site:

1. Wood Frog
2. Red-Backed Salamander
3. Eastern Garter Snake
4. Painted Turtle

(Photos taken from the CT Herpetology Website-maintained by Dennis Quinn)

Floodplains

Report by Diane Ifkovic, CT Department of Energy and Environmental Protection

Summary

The Town of Bloomfield participates in the National Flood Insurance Program (NFIP) and is required to regulate construction in special flood hazard areas (100-year floodplains) through local floodplain regulations and the state building code. Significant portions of the site are designated 100-year floodplains which would require particular construction criteria. Compensatory storage and equal conveyance would also be required for any encroachment in 100-year floodplains. Additionally, if state or federal funds are utilized for any portion of the development, a state flood management certification would be required that may require higher regulatory standards.

National Flood Insurance Program (NFIP)

The Town of Bloomfield (Community Number 090122) entered the regular phase of the National Flood Insurance Program (NFIP) on August 15, 1977. By voluntarily participating in the NFIP, the municipality assures the federal government that it will regulate floodplain development to the minimum program standards by enacting and enforcing local floodplain regulations. The Federal Emergency Management Agency (FEMA) provides flood maps to identify special flood hazard areas (100-year floodplains) and federally regulated flood insurance to residents.

Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS)

The site is located on three adjoining FEMA Flood Insurance Rate Maps (FIRM), Panel Numbers 09003C0353F, 09003C0361F, and 09003C0362F, Hartford County, Connecticut, September 26, 2008. The property lies within the confluence areas of Filley Brook, Beamans Brook, Wash Brook and the North Branch of the Park River. Detailed hydraulic and hydrologic data utilized by FEMA to develop the FIRM are compiled in the Flood Insurance Study (FIS) for Hartford County, Connecticut, May 16, 2017, Volumes 1-11.

The Town of Bloomfield is located in the northwest portion of Hartford County, Connecticut. It is bordered by the Town of Windsor to the east, the Town of East Granby to the north, the Towns of Simsbury and Avon to the west, and the City of Hartford and Town of West Hartford to the south. Wash Brook begins in the central portion of Bloomfield and flows south where it joins Beamans Brook. At this point, Wash Brook and Beamans Brook join to become the North Branch of the Park River before leaving Bloomfield at the southern corporate limit with West Hartford. Filley Brook flows south to its confluence with Wash Brook.

Local Floodplain Ordinance

The NFIP requirements are contained in Bloomfield's Zoning Regulations, Article 5 Special Zones, Section 5.1 Floodplain Management Overlay District (FMOD). The regulations designate the town engineer as the designated local floodplain administrator. Current regulations meet the minimum NFIP requirements. The regulations also include additional state requirements for compensatory storage and equal conveyance.

State Building Code

Effective October 1, 2018, the Office of the State Building Inspector (OSBI) amended the current state building code to adopt the 2015 International Residential Code (IRC) and 2015 International Building Code (IBC). The adoption of the 2015 IRC made changes to the elevation requirement for new construction and substantially improved structures in 100-year floodplains. The 2015 IRC, Chapter 3, Section R322, Flood-Resistant Construction can be found at: <https://codes.iccsafe.org/public/document/toc/553/>. Section R322.2 and

R322.3 contains the elevation requirements for special flood hazard areas. For inland AE and A Zones, the lowest floor elevated to Base Flood Elevation (BFE) plus 1 foot. For non-residential structures in the floodplain, the 2015 IBC refers to ASCE 24 Flood Resistant Design and Construction for elevation requirements based on the type of structure.

State Funded Projects in the Floodplain

The Flood Management Certification (FMC), a program administered by the Connecticut Department of Energy and Environmental Protection (CTDEEP) which requires approval of a certification, or an exemption from such approval, for all State activities or actions in or affecting floodplains or natural or man-made storm drainage facilities. Such activities or actions include, without limitation: a) any structure, obstruction or encroachment proposed for emplacement within the floodplain area; b) any proposal for site development which increases peak runoff rates; c) any grant or loan which affects land use, land use planning or the disposal of state properties in floodplains; or d) any program regulating flood flows within the floodplain.

Any state activity, state funds supporting an activity, or federal funds administered by a state agency that supports a state or municipal activity, where the project site is located in a FEMA-mapped 100-year or 500-year annual chance flood zone are subject to this certification process and must certify to the DEEP that certain statutory and regulatory requirements have been met. These requirements always are equal to, but often exceed, NFIP minimum standards depending on the activity. An “Activity” and “Critical activity” are defined in state statute as:

“Activity” means any proposed state action in a floodplain or any proposed state action that impacts natural or man-made storm drainage facilities that are located on property that the commissioner determines to be controlled by the state;

“Critical activity” means any activity, including, but not limited to, the treatment, storage and disposal of hazardous waste and the siting of hospitals, housing for the elderly, schools or residences, in the .2 percent floodplain in which the commissioner determines that a slight chance of flooding is too great;

An “Activity” must be mitigated or elevated to at least to the 100-year floodplain elevation and a “Critical activity” must be mitigated up to or elevated above the 500-year floodplain elevation. Additionally, no increase in “intensity of use” in the floodplain is allowed without going through an exemption request demonstrating that the project is “in the public interest” and that the project “will not injure persons or damage property in the area of the project”. In making a decision to approve or reject a state agency's FMC, the DEEP must consider whether the proposed activity is consistent with state standards and criteria for preventing flood hazards to human life, health or property and with the provisions of the National Flood Insurance Program (NFIP) and municipal floodplain regulations; does not adversely affect fish populations or fish passage; and does not promote intensive use and development of flood prone areas.

Additionally, the recently enacted Public Act 18-82, An Act Concerning Climate Change Planning and Resiliency (June 2018), integrates sea level change projections determined by Connecticut Institute for Resilience and Climate Adaptation (CIRCA) into the state's coastal management and flood management laws and statutes, and amending the definitions in Chapter 476A, Floodplain Management (CGS 25-68(b) through 25-68(o)) to incorporate freeboard directly into the definition of floodproofing:

(6) "Flood-proofing" means any combination of structural or nonstructural additions, changes or adjustments which reduce or eliminate flood damage to real estate or improved real property, to water and sanitary facilities, and to structures and their contents, including, but not limited to, for properties within the coastal boundary, as established pursuant to subsection (b) of section 22a-94, not less than an additional two feet of freeboard above base flood and any additional freeboard necessary to account for the most recent sea level change scenario updated pursuant to subsection (b) of section 25-68o, as amended by this act.

References

Flood Insurance Rate Map, Panel Numbers 09003C0353F, 09003C0361F, 09003C0362F, Hartford County, Connecticut, September 26, 2008.

Flood Insurance Study, Hartford County, Connecticut, Volumes 1-11, May 16, 2017.

Observed Flooding on University of Hartford Campus



Figure 21. Flooding of the University of Hartford parking lot with river on right (Photo taken from the NPS report)

A 2018 National Park Service (NPS) report called *North Branch Park River A Multi-Use Path Feasibility Study* shows flooding to be a problem by the University of Hartford. In the study, the NPS observed flooding that occurred after a significant rain event. "On April 16, 2018 Hartford County received 2.5" of rain over a 16-hour time span. The ground was already somewhat saturated from the spring thaw. The USGS gauge that afternoon when the river was observed read 9.51 feet, which was a flow of 1090 cfs." Photos in the NPS report show flooding into the University of Hartford parking lot. With an increase of severe storms expected, it can be anticipated that flooding will worsen, and should be considered in the planning process.

FIRM
FLOOD INSURANCE RATE MAP
HARTFORD COUNTY,
CONNECTICUT
(ALL JURISDICTIONS)

PANEL 353 OF 675

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
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ALBLOOMFIELD, TOWN OF F 090122 0353

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
09003C0353F

EFFECTIVE DATE:
SEPTEMBER 26, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.sc.fema.gov



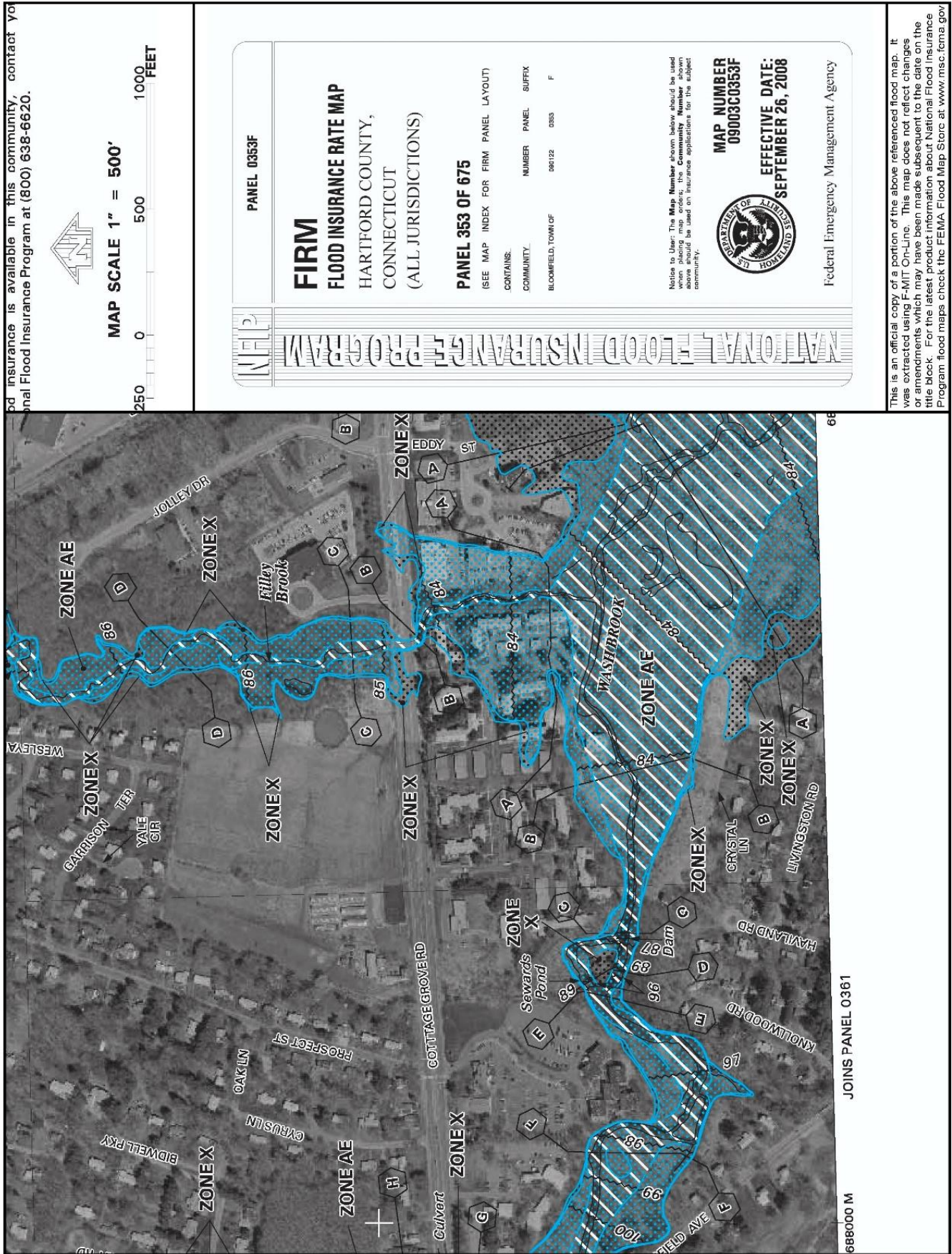


Figure 23. Flood Insurance Rate Map- Part B

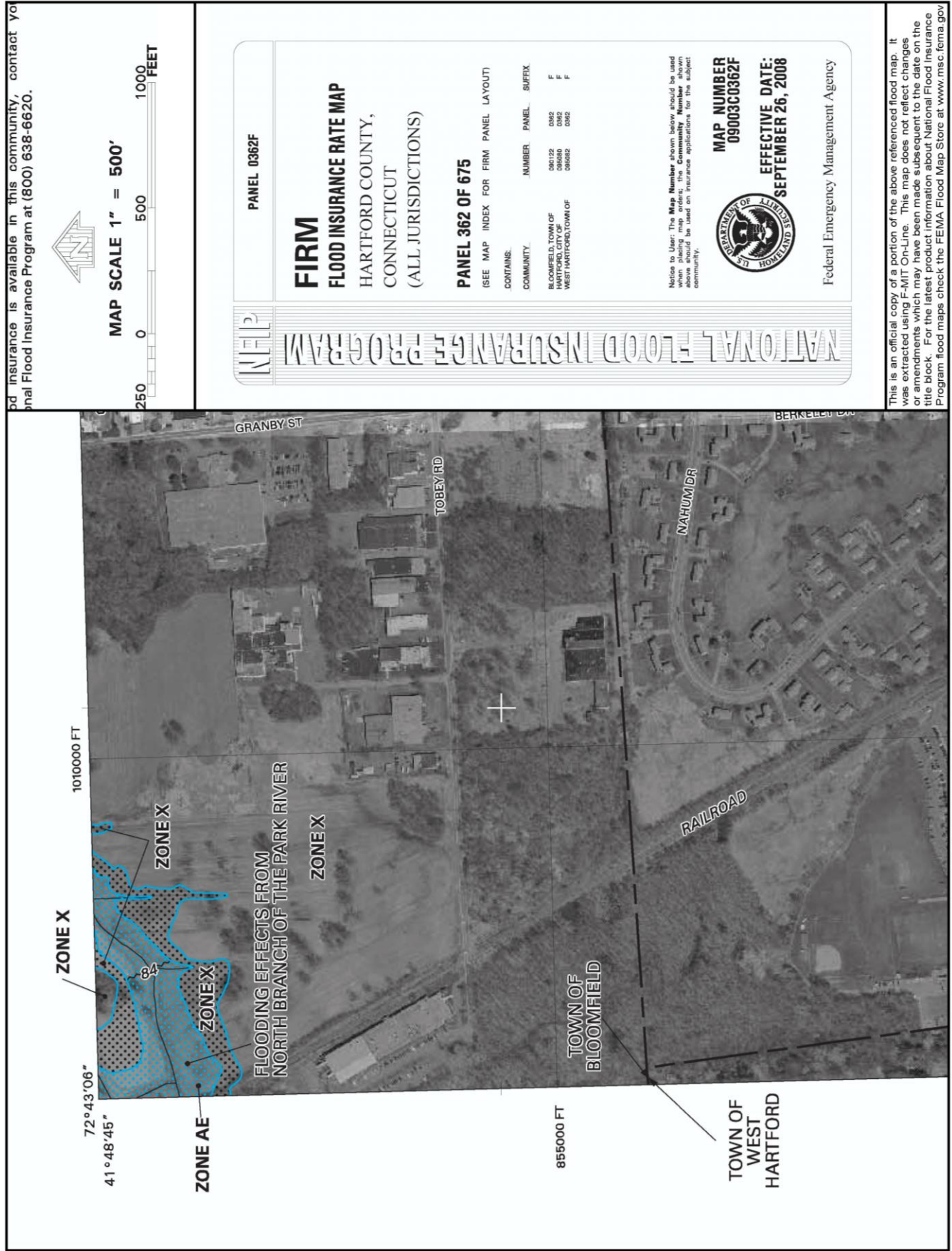


Figure 25. Flood Insurance Rate Map- Part D

Connecticut State Plan of Conservation and Development

Report by Matthew Pafford, CT Office of Policy and Management

Connecticut State Plan of Conservation and Development

The State Plan of Conservation and Development (State C&D Plan) is a tool developed and maintained by the Office of Policy and Management and approved by the General Assembly. It is intended to help guide land use decisions in Connecticut and is organized around six, broad Growth Management Principles (GMP), each containing a number of more specific policies.

The Project

This project, as presented, seeks to determine possible uses for a block of undeveloped property owned by the University of Hartford, extending to the north of its developed footprint. As described prior to and during the day of the field review, potential uses under consideration include: development for residential, commercial, light industrial; passive or active recreation opportunities; and/or additional University athletic fields. There is also a desire to improve connectivity with other destinations across the surrounding area, specifically the East Coast Greenway, Weaver High School, and Willow Creek housing complex (currently under development).

Development

A common theme throughout the State C&D Plan, and as illustrated in this policy from Growth Management Policy (GMP) #1, is to prioritize redevelopment of already impacted areas, before expanding into undeveloped areas:

FOCUS on infill development and redevelopment opportunities in areas with existing infrastructure, such as in city or town centers, which are at an appropriate scale and density for the particular area;

GMP 1 would not seem to support residential, commercial, or light industrial development of the site, given the availability of underutilized parcels already served by existing infrastructure in the surrounding area, any of which might be better equipped to absorb additional development.

In addition to State C&D Policies regarding infill versus new development, much of the site is covered by wetlands. The degree of wetlands on the site and potential limitations to development will likely be addressed in detail by other members of the Review Team. However, I will broadly point out that State C&D Plan policies generally discourage development that would adversely impacts important ecological functions, as illustrated in this policy from GMP #4:

SEEK TO ACHIEVE no-net-loss of wetlands through development planning that: 1) avoids wetlands, whenever possible; 2) minimizes intrusions into wetlands when impacts are unavoidable; 3) mitigates any resulting impacts through wetland enhancement or creation; and 4) encourages ongoing maintenance of functional wetlands and buffer areas.

GMP #4 also includes a policy promoting collaboration amongst organizations to preserve and manage areas of ecological value:

ENCOURAGE collaborative ventures with municipalities, private non-profit land conservation organizations and other entities to provide a system of appropriately preserved and managed natural areas and resources that allow for a diversity of well-functioning habitats and the sustainable use of resources;

Further study may be necessary to determine if the subject property is a priority for conservation, and if so, may require additional collaboration with the Town of Bloomfield.

On top of the limitations imposed by an abundance of wet soils, this site is also hampered by limited accessibility. Potential access points appear to be limited to: one on either end of Croydon Dr; an undeveloped access way connecting Tobey Rd and Cottage Grove Rd; a potential connection through the University's existing athletic fields; and University-owned parcels directly adjacent to Cottage Drive. Each of these access points present unique challenges that would need to be evaluated in context with the type and intensity of any proposed development.

Given the property limitations and State C&D Plan policies discussed herein, it is recommended that any proposed development of this site also consider alternatives for the similar redevelopment or infill of existing vacant, underperforming, or previously disturbed sites in the surrounding area.

One type of development that was discussed during the site walk that could be appropriate is that of additional athletic facilities - presuming this occurs within the University's existing development footprint and/or in proximity to the existing sports fields. Keeping in line with prior comments, the University should first consider opportunities to make better use of space within its existing development footprint, in order to reduce campus sprawl and the need to expand its infrastructure obligations, before expanding outward.

Regardless of the type of development being proposed, any expansion of development or infrastructure should also include a thorough consideration of long-term maintenance burdens, as illustrated in this policy from GMP #1:

PERFORM a thorough a life-cycle cost analysis to identify potential cost burdens beyond the initial capital investment for any proposed action involving the expansion of infrastructure beyond the current limits of the existing or planned service area for the particular form(s) of infrastructure, except when necessary to address immediate public health or safety concerns;

Connectivity

The State C&D Plan generally supports efforts to improve connectivity, particularly pedestrian-scale connections. GMP #3 includes this:

ENCOURAGE a network of pedestrian and bicycle paths and greenways that provide convenient inter- and intra-town access, including access to the regional public transportation network;

In addition to providing recreational opportunities, pathways and greenways can provide valuable and reliable connections between nearby places, adding value to the broader transportation network. Establishing connections between the University and other nearby business, neighborhoods, shopping centers, and trails can also help ensure a more long-term interest in improving and maintaining such

connections. As with other forms of development, it is important to remain cognizant of the additional maintenance burdens associated with the creation of any new infrastructure.

During the site walk, the property showed signs of existing recreational uses, such as hiking, hunting and/or target shooting, and mountain biking. While these uses appeared to be limited, any improvements to site access – whether intended for passive or active recreation – can intensify or change informal land uses.

In addition to the maintenance obligations associated with new infrastructure and the intensification of use, there are other indirect impacts that should also be considered, such as environmental damage, habitat fragmentation, and security concerns. Although the State C&D Plan generally supports improved access to recreational opportunities and better pedestrian connectivity in developed areas, any new connections should thoroughly evaluate any potential short- and long-term impacts resulting from such development.

Other - Griffin Line

The Griffin Line is a short line railroad operating from Hartford northwest through Bloomfield and ending in Windsor. It currently operates limited freight service under the control of the Central New England Railroad (CNZR). Its tracks run adjacent to the University of Hartford and the subject property and present a considerable barrier between the University and the neighborhoods to the east. Currently, most eastbound University traffic must travel south and cross the tracks at Plainfield Street.

There have been sporadic attempts over the last few decades to revive the rail line for passenger service between Windsor and Hartford, with stops at the University and other prominent locations along the way. Some proposals indicate a desire to expand service to Bradley Airport. Significant investment would be needed to make the 8.7 mile stretch of rail capable of supporting passenger service.

This Office of Legislative Research Report from 2003 indicated that, at the time, the Griffin Line project is still active, but was not considered a priority for ConnDOT:

<https://www.cga.ct.gov/PS98/rpt%5Colr%5Chtm/98-R-0311.htm>

In 2009, the ConnDOT unsuccessfully submitted a TIGER Grant Application seeking federal funding for these improvements, and for improvements to another similar track running from South Windsor, through East Windsor and Enfield, to the Massachusetts border:

http://www.ct.gov/recovery/lib/recovery/certification/transportation/tiger/central_new_england_rr_tiger_grant.pdf

Although the Griffin Line passenger rail project is still technically active, there is little to suggest than any expansion of use, particularly passenger rail, is likely to occur in the near-term.

Planning Considerations

Report by Lynne Pike DiSanto, AICP, Principal Planner and Policy Analyst, Capitol Region Council of Governments, and Roger Krahn, P.E., Principal Transportation Planner/Engineer, Capitol Region Council of Governments

Location/Site Description

The 138-acre site, located in south central Bloomfield, is owned by the University of Hartford and is currently undeveloped. On its southeast side, the site abuts the City of Hartford and on its southwest side, the site abuts a residentially developed street, Croydon Drive. The abutting land in the City of Hartford are other lands owned by the University which are developed for college uses. The abutting properties along Croydon Drive are contiguous with a residential neighborhood in West Hartford. On its west side, the site abuts a residential neighborhood along Kenwood Circle in Bloomfield and land owned by the State of Connecticut along Wash Brook. To the east, the site abuts Goodman Street and several industrially zoned properties including the Alstom Power, Inc. and undeveloped land owned by Amcap Copaco II, LLC. and Back 40, LLC. To the north, the site abuts commercially developed land along Cottage Grove Road and Northwestern Drive.

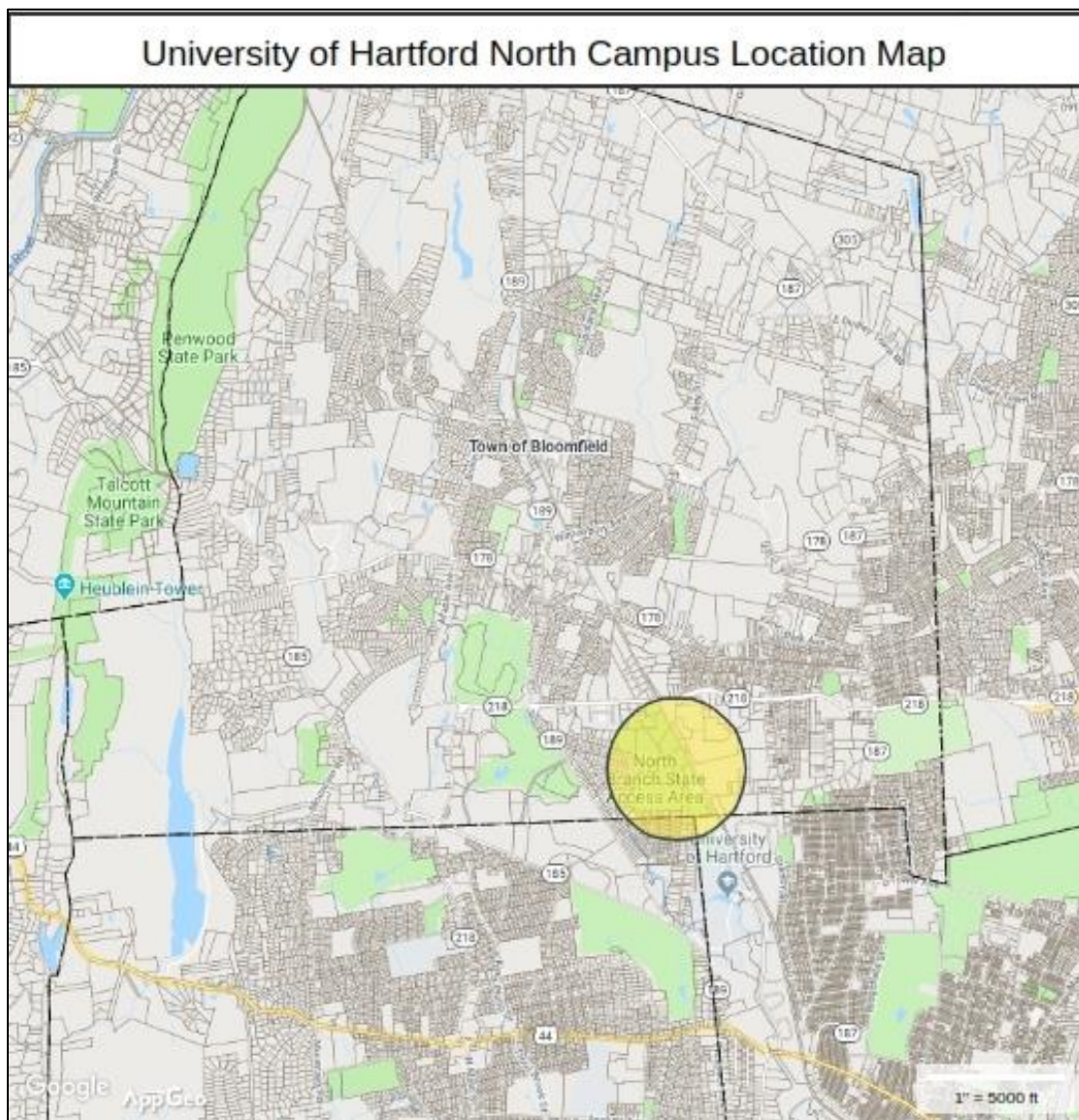


Figure 26. Site location map

Much of the site contains wetlands and flood zones. According to the University of Hartford's 2009 Facilities Master Plan, there are only about 25 acres of developable land with the University's land holdings in Bloomfield (known as the North Campus). The Master Plan points out, however, that the wetlands areas provide a valuable setting for environmental education and habitat protection.

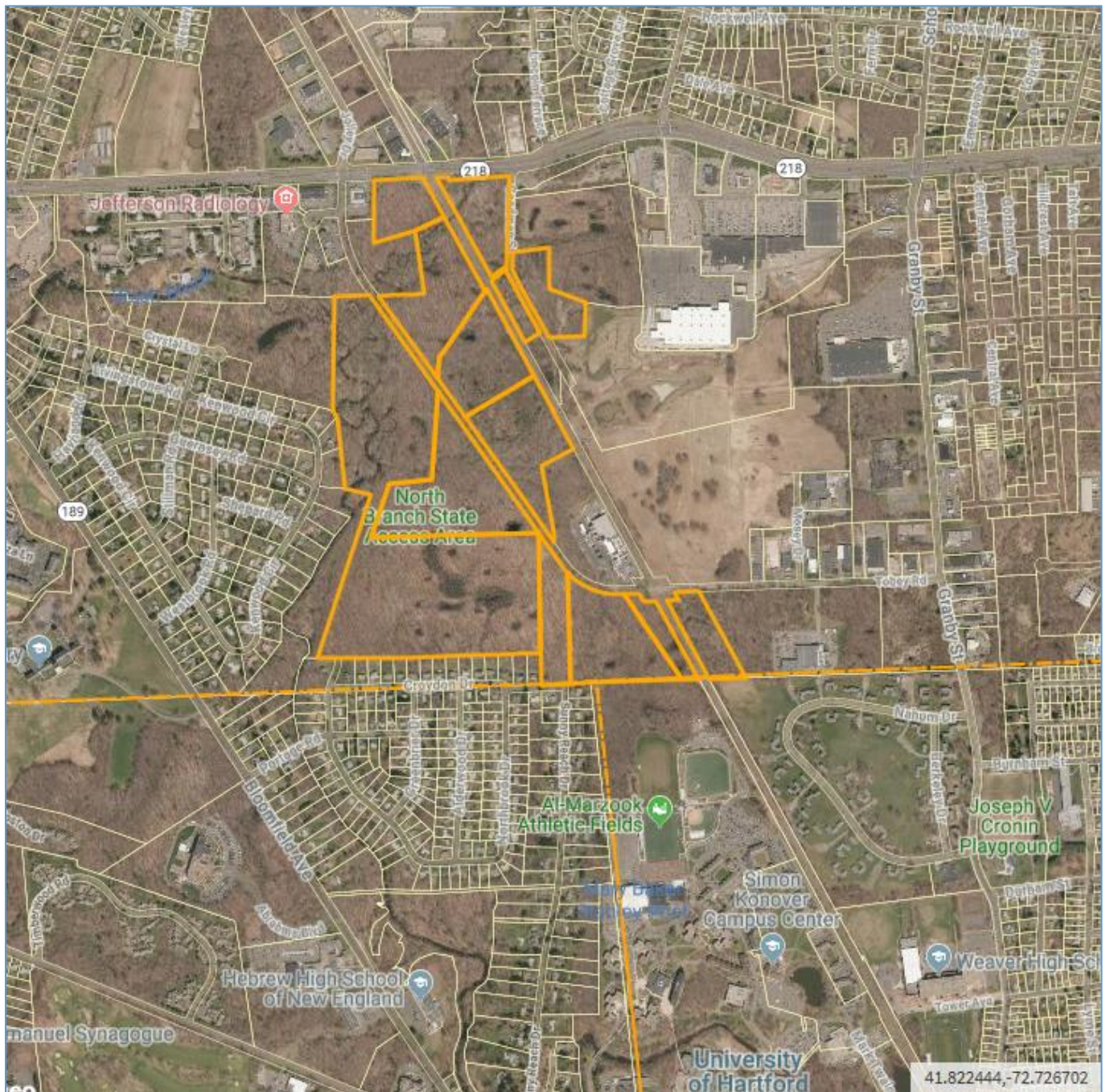


Figure 27. University of Hartford's north campus zone parcel outlines

The site consists of fourteen parcels in the Town of Bloomfield with addresses on Eddy Street, Northwestern Drive, Cottage Grove Road, Tobey Road and Goodman Street:

Property ID	Property Address
88-9	COTTAGE GROVE RD
88-6	NORTHWESTERN DR
88-1030	EDDY ST
88-31	GOODMAN ST
88-30	GOODMAN ST
88-28	GOODMAN ST
88-8	COTTAGE GROVE RD
88-1018	EDDY ST
88-23	EDDY ST
88-1029	EDDY ST
55-1016B	EDDY ST
55-1016A	TOBEY RD
55-1017	TOBEY RD
55-1018	TOBEY RD

(From CRCOG WebGIS and Parcel Viewer (07/12/19))

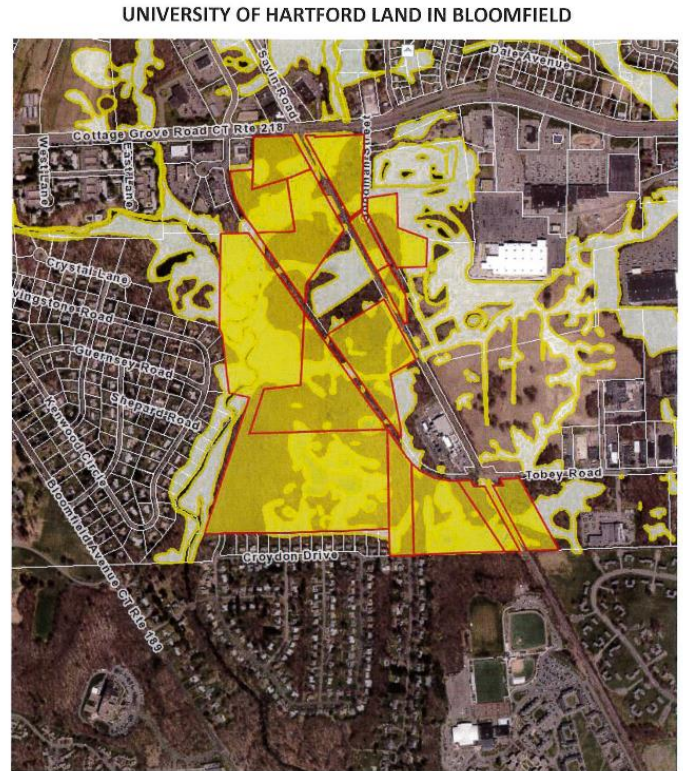


Figure 28. Parcel's owned by the University of Hartford outlined in red

Built Environment & Future Infrastructure Context

Street Network: The North Campus site is abutted by Cottage Grove Road (State Route 218) along the north boundary of the site. Cottage Grove Road is classified as a principal arterial, and provides two travel lanes in each direction, with separate left turn lanes, separated by a grassed median. The Griffin Line railroad crosses Cottage Grove Road with a signalized railroad grade crossing utilizing an overhead structure for flashing lights. Northwestern Drive, a Town of Bloomfield local road, provides north-south access with one travel lane in each direction to several professional/medical office buildings at the north end of the tract. Northwestern Drive intersects Cottage Grove Road approximately 700' west of the Griffin Line railroad crossing and terminates with a cul-de-sac approximately 500' south of Cottage Grove Road. Tobey Road is a two-lane Town of Bloomfield local road, providing east-west access to the southeastern portion of the land tract. Tobey Road crosses the Griffin Line railroad with an unsignalized grade crossing and terminates with a cul-de-sac approximately 300' west of the railroad crossing. Eddy Street, a Town of Bloomfield "paper street," bisects the site diagonally between Tobey Road and Northwestern Drive. The site is also abutted to the west by undeveloped land owned by the State of Connecticut which has frontage along Kenwood Circle near the intersection of Guernsey Road. On the south side of the site, as shown on CRCOG's GIS, right-of way extends north from Edgebrook Drive at the western end of Croydon Drive to the site. Also, on the southern side of the site, parcel 55-1016A (1016 Tobey Road) abuts the right of way of Sunny Reach Drive at the eastern end of Croydon Drive.

Rail: The site is bisected by the Griffin Line, a currently active freight rail line running from Hartford's Union Station north to the Day Hill Road area in Windsor. The Griffin Line has been considered in the past for development of both a light rail system which could provide passenger service between the City of Hartford and Bradley Airport as well as a busway. Plans for both the light rail and busway have been stalled and are not being actively pursued currently.

Transit: CT *transit* provides daily transit service in the vicinity of the site along several local routes. Routes 76 and 50 provide service between Bloomfield and Hartford along Cottage Grove Road with stops at the Copaco Center. Route 74 provides service from the Wintonbury area to downtown Hartford with a stop at Copaco Center and at Granby and Burnham Streets in Hartford. Route 56 provides service between Bloomfield Center and Hartford along Bloomfield Avenue with service to the University of Hartford. Route 153 provides service to West Hartford along Cottage Grove Road and Bloomfield Avenue with a stop at the University of Hartford. Route 92 provides service from Copaco Center to the Buckland Hills retail area in Manchester. (See Figure 29.)

Griffin Line

The Griffin Line, an abandoned freight rail line connecting Union Station in Hartford and Bloomfield, received considerable attention from the mid-1970s to the 1990s. In the 1970s, there was a proposal to run buses specially equipped to operate on both rails and the road. In its 1991 Statewide Transit System Plan, DOT identified the Griffin Line as one of two possible "transitways" in the Hartford area. (The other was the rail corridor between Cromwell and Hartford.) DOT believed the Griffin Line transitway could ultimately link downtown Hartford with Bradley Airport. Service in these transitways might involve either buses or light rail. DOT concluded that further analysis was needed to decide which approach would be more feasible.

The Greater Hartford Transit District, the Capitol Region Council of Governments, and much of Hartford's business community embraced the idea of light rail service on the Griffin line during the 1990s. They promoted the idea through, among other things, arranging for a feasibility analysis and a federally required major investment study. The latter is a required step in the process of identifying and advancing transportation improvements seeking federal funding. Partial funding for preliminary engineering and the environmental impact statement for the proposed project was secured through a congressional appropriation.

DOT opposed advancing the light rail proposal ahead of other regional needs it considered a higher priority. It determined that the light rail service would not attract sufficient riders or reduce commuting time enough to justify its costs. Moreover, the project would have faced a number of technical problems, including bridges with insufficient clearance to readily accommodate a light rail system. DOT indicated it would not support including the project in the region's long-range transportation plan, necessary to receive federal funding for the project. Largely as a result of DOT's opposition, further work on the proposal was suspended.

Source: OLR Research Report, 2010-R-0189, Light Rail Systems, by Kevin E. McCarthy, Principal Analyst, April 16, 2010.

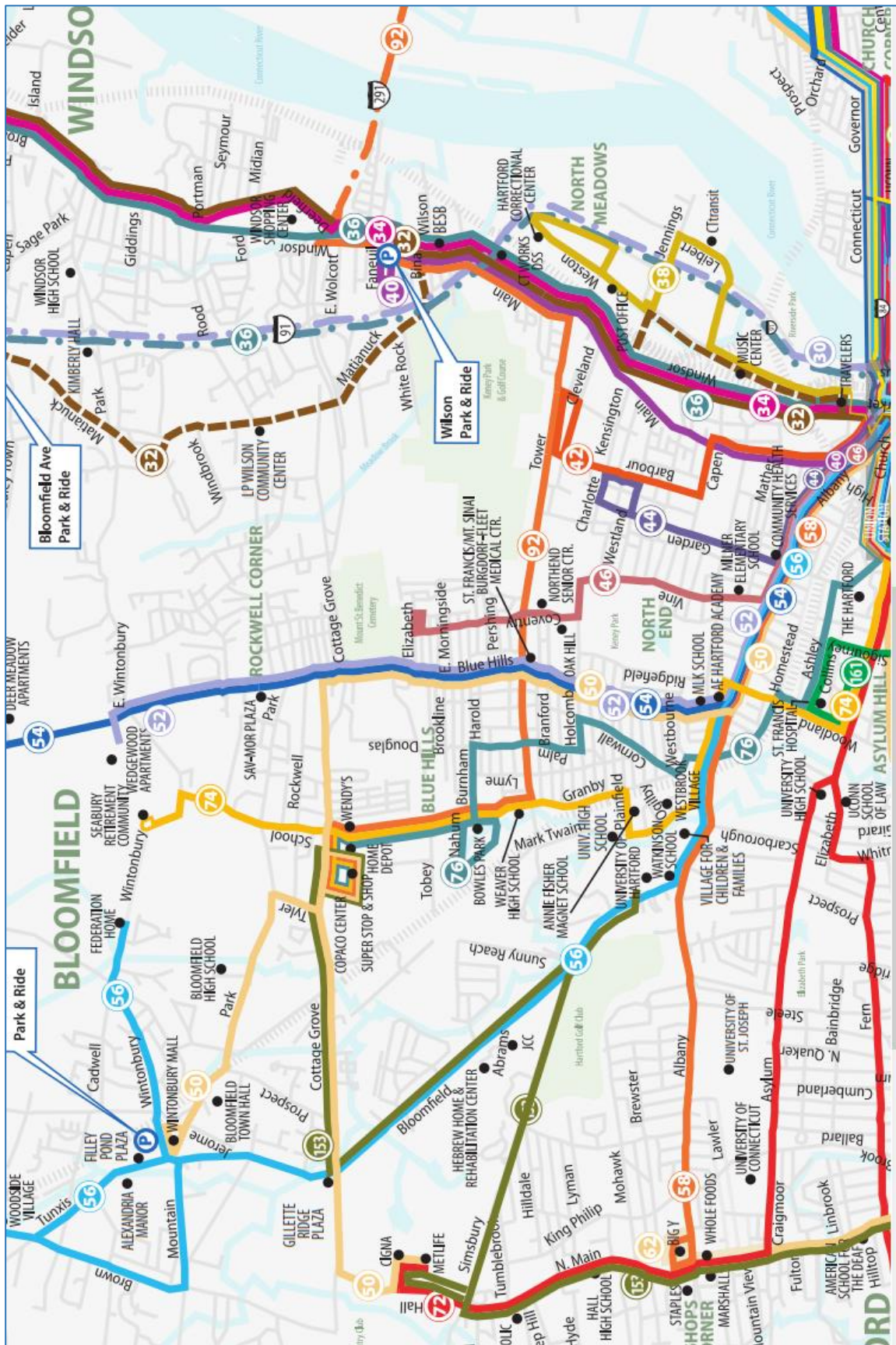


Figure 29. CT transit map

East Coast Greenway Route

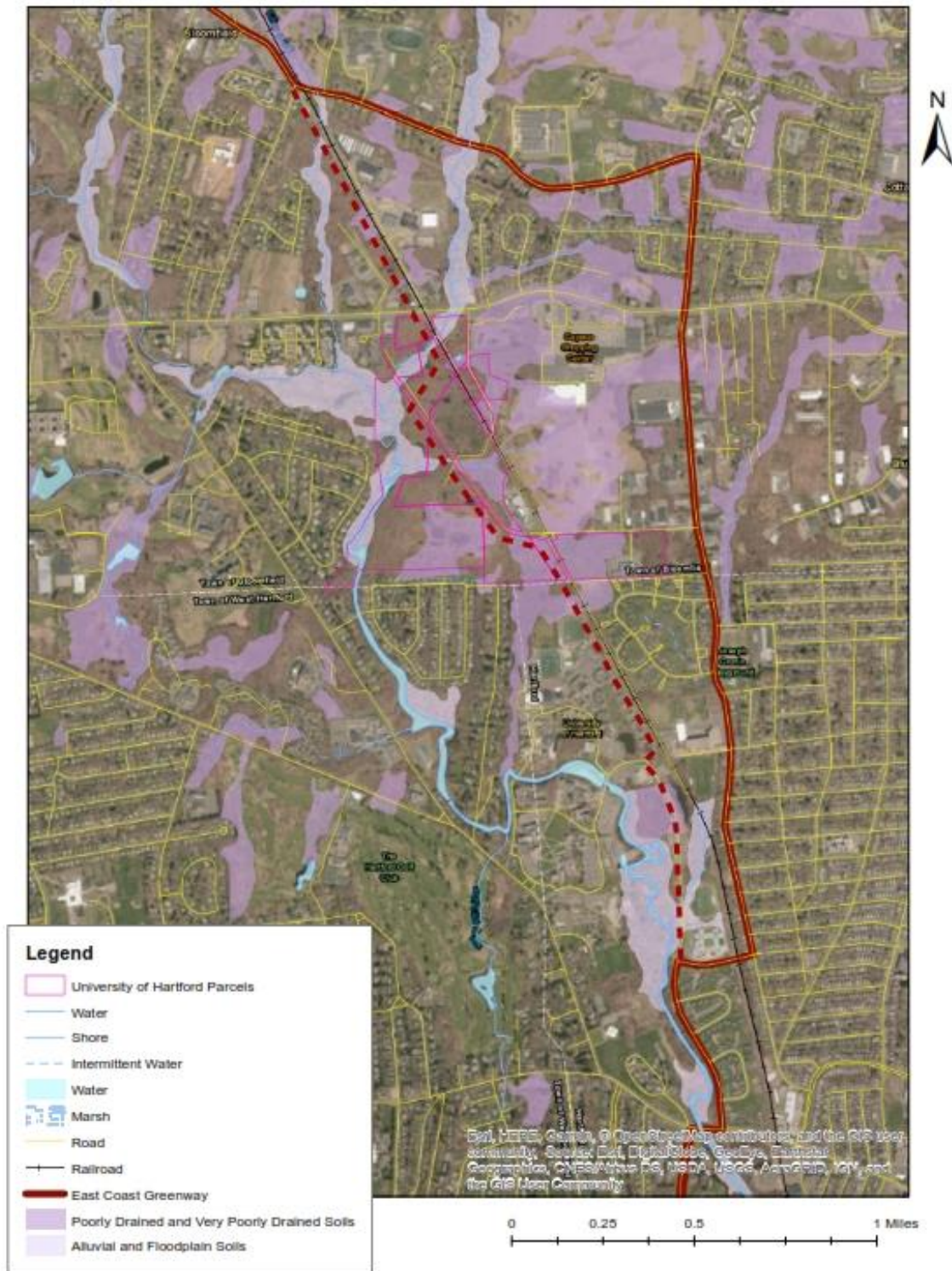
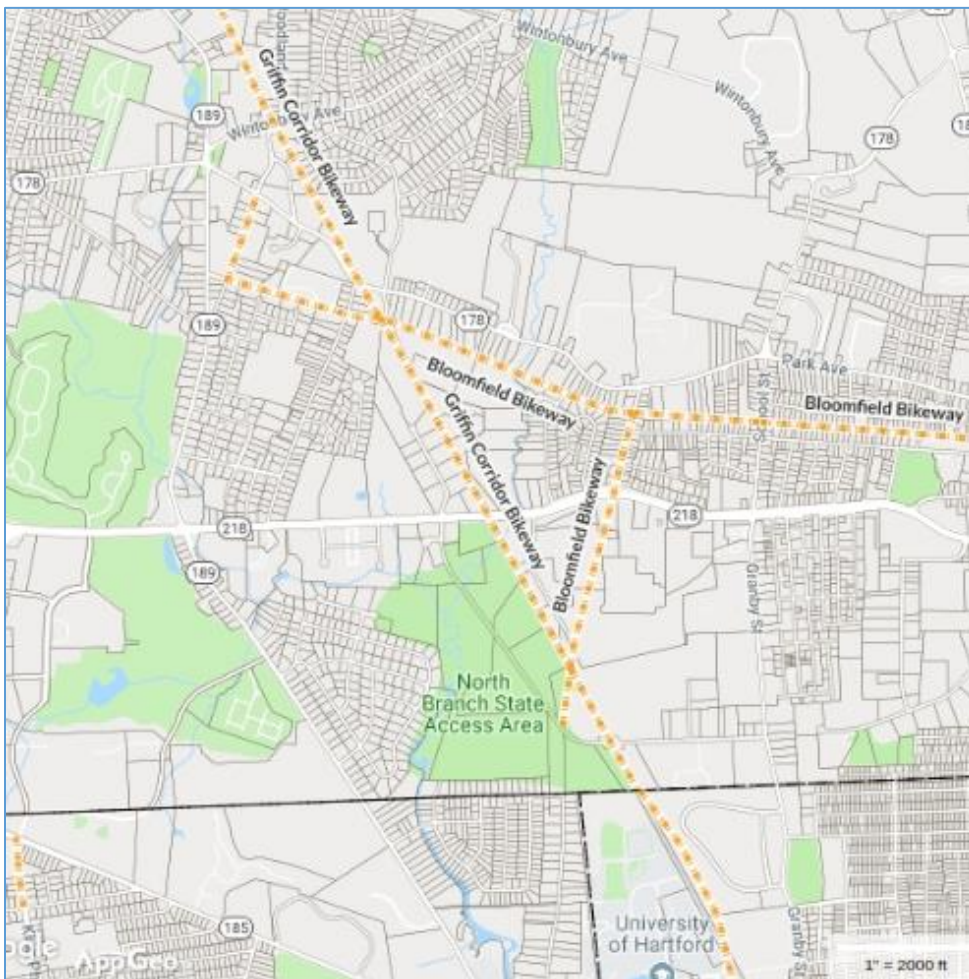


Figure 30. Current East Coast Greenway route and example future route

Bikeways: The East Coast Greenway currently is routed through Bloomfield along Granby Street from the Hartford town line north to Park Avenue where it proceeds westward as shown in Figure 30.

CRCOG's GIS shows two planned bikeways on the vicinity of the site: the Griffin Corridor Bikeway and the Bloomfield Bikeway. The Griffin Corridor Bikeway abuts several parcels on the northern side of the site and traverses a parcel on the southern side of the site where it continues into Hartford. The Bloomfield Bikeway terminates at its southern end at the paper street extension of Tobey Road just north of several of the site's southern parcels. (See Figure 31.)



Link the Two Interregional Greenways

A general route for linking the Charter Oak Greenway and the Farmington Canal Heritage Greenway has been identified which will traverse downtown Hartford, travel in a northwesterly direction, generally following the North Branch of the Park River Corridor, to Bloomfield. In Bloomfield, the trail will follow the Griffin rail corridor (an active freight line), and then follow a power line corridor to the Village of Tariffville in Simsbury. From Tariffville, the trail will follow the Farmington River to the Canal Greenway.

Figure 31. CRCOG's plan to link two interregional greenways

CRCOG's regional transportation plan, Metropolitan Transportation Plan 2019- 2045, includes the planning for the Griffin Rail Corridor Greenway as an ongoing Complete Streets project which will link the Charter Oak Greenway and the Farmington Canal Heritage Greenway. (See side bar.)

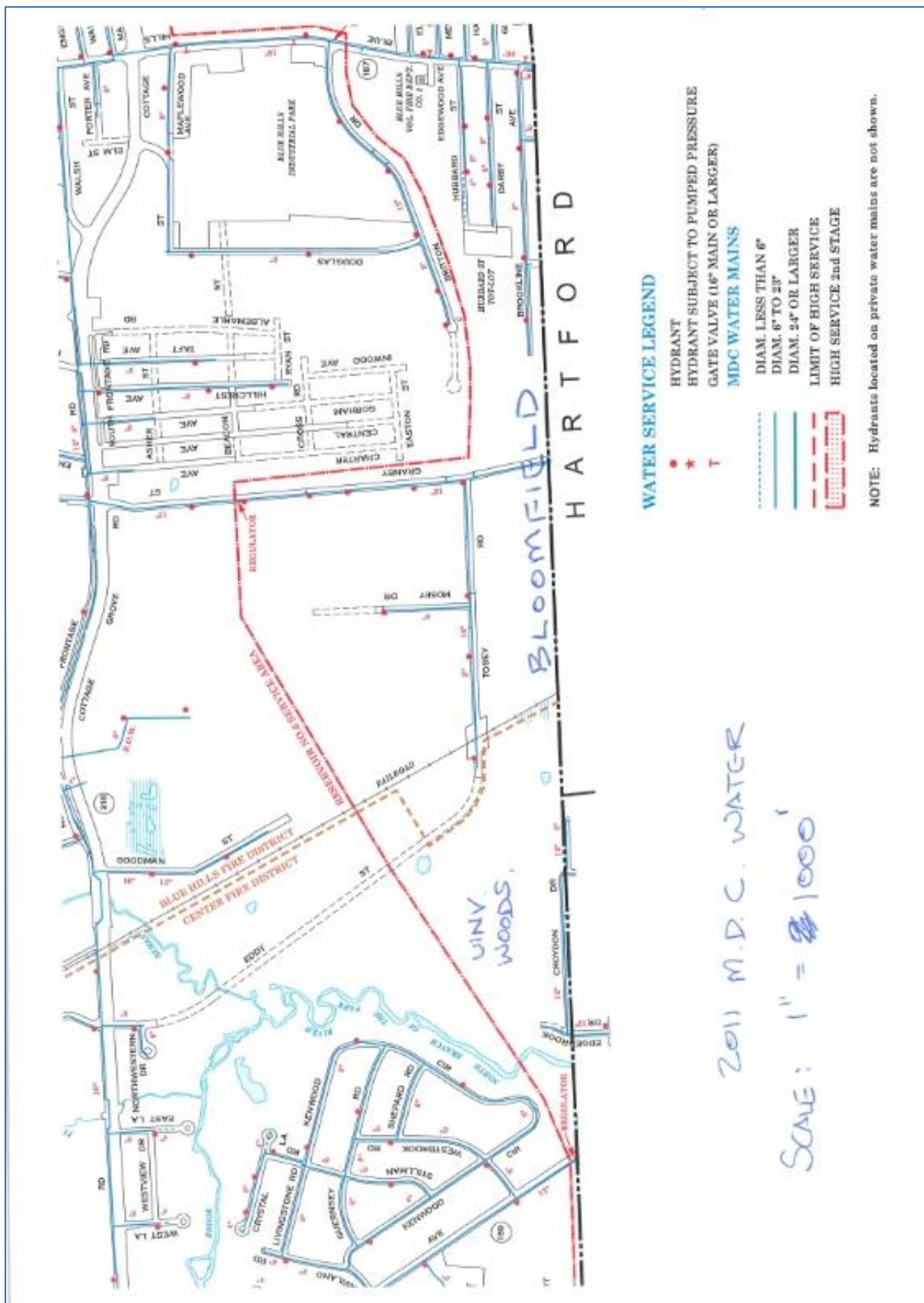
Utilities: Utility services are generally available in the vicinity of the site. Google Satellite images show utility poles running along the Griffin Line. (See Figure 32.) Natural gas service through Connecticut Natural Gas (CNG) is available nearby along Kenwood Circle, Tobey Road and Northwestern Drive.



Figure 32. Aerial imagery showing utility poles along the Griffin Line

The Town's Plan of Conservation and Development identifies the site as an area where both public water and sewer service should be provided. According to MDC¹ mapping provided by the Town of Bloomfield, public water service extends along Goodman Street as well as to other streets bordering the site. (See Figure 33.) MDC Sanitary Sewer mapping shows the Beeman Brook Trunk Sewer, Bloomfield Trunk Sewer and other smaller sewer lines extending through the site. (See Figure 33.)

¹ The Metropolitan District Commission (MDC) is the Greater Hartford area's water and sewer authority and provides water and sewer services to the Town of Bloomfield.



Local POCD & Zoning Context

Parcels on the east side of the site are zoned IND-1 (or I-1) from Eddy Street (the paper street) to Goodman Street. The I-1 zone is a general industry zone designated as areas suitable for warehousing, secondary processing and packaging and fabricating of finished goods and equipment with related outdoor storage and retail sales. Parcels on the southwestern side of the site (portions of 1029, 23 and 1016B Eddy Street, and 1016A Tobey Road) are zoned PLR (Planned Luxury Residential). The PLR district allows a limited range of multi-family housing types and is governed by a master plan. The maximum number of dwelling units permitted is four per acre but, under certain circumstances, up to six units per acre may be permitted. Parcels on the west side of the site north of the PLR district are primarily zoned R-15 Residential. R-15 zones permit single family dwelling units on lots of at least 15,000 square feet or duplex dwelling units on lots of at least 20,000 s.f. Various other uses are allowed in the R-15 zone by special permit including colleges, public and private schools, houses of worship, cemeteries, golf courses, nursing homes, and certain municipal uses among others. Small portions of the site abutting the Kenwood Circle neighborhood are zoned R-20. (See Figure 34.)

The PLR zone was approved in 1992 along with a special permit and site plan for the development of 192 housing units. In 1994, the Town Plan and Zoning Commission voided the Special Permit and Site Plan approvals but left the PLR zoning in place. The application for the zone change to PLR was referred to CRCOG in 1991 which commented that, “Abutting zones in Hartford and West Hartford do not appear to present future land use conflicts with this proposed zone change.”

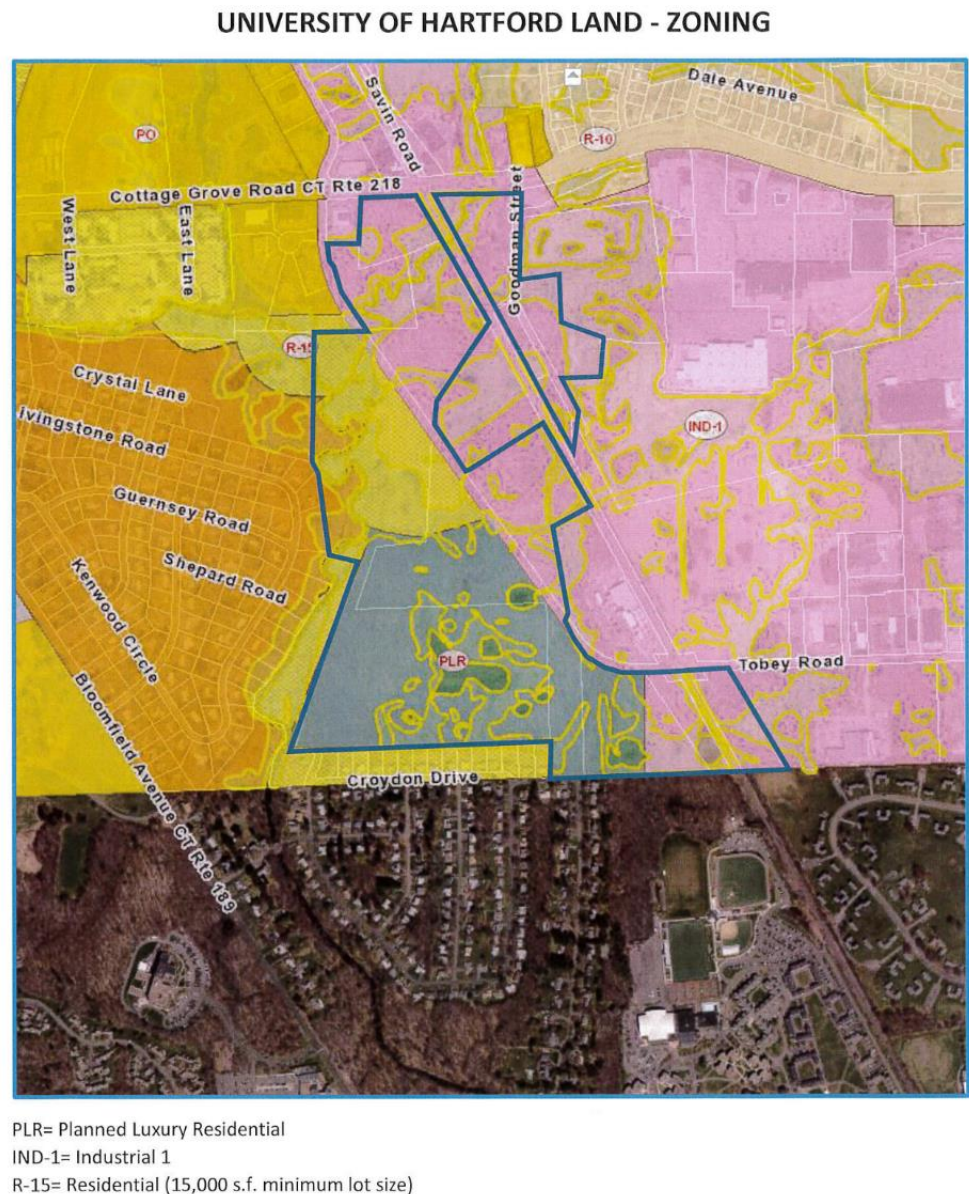


Figure 34. Site zoning map

The Town of Bloomfield adopted its Plan of Conservation and Development (POCD) in 2012. The Future Land Use Plan identifies the Copaco Shopping Center area as a Mixed-Use Node. As shown on the excerpt from the Future land Use Plan map below, University of Hartford lands to the east of Eddy Street (88-1030 and 88-1018 Eddy Street, 88-8 Cottage Grove Road, 88-4-1019 and 88-28 Goodman Street) are identified on the Plan as Industrial; land between Northwestern Drive and the Griffin Line (88-9 Cottage Grove Road and 88-6 Northwestern Drive) are identified as Open Space; lands to the west of Eddy Street are identified as Open Space (88-23 and 55-1016B Eddy Street and 55-1016A and 55-1017 Tobey Road), Steep Slopes/Wetland/Flood Zone (portions of 88-1029 Eddy Street), and Multifamily (portions of 88-1029 Eddy Street). The Multifamily designated lands generally correspond to nonwetlands areas on the southern portion of parcel 1029 Eddy Street as shown on the Town's Inland Wetlands and Watercourses Map.

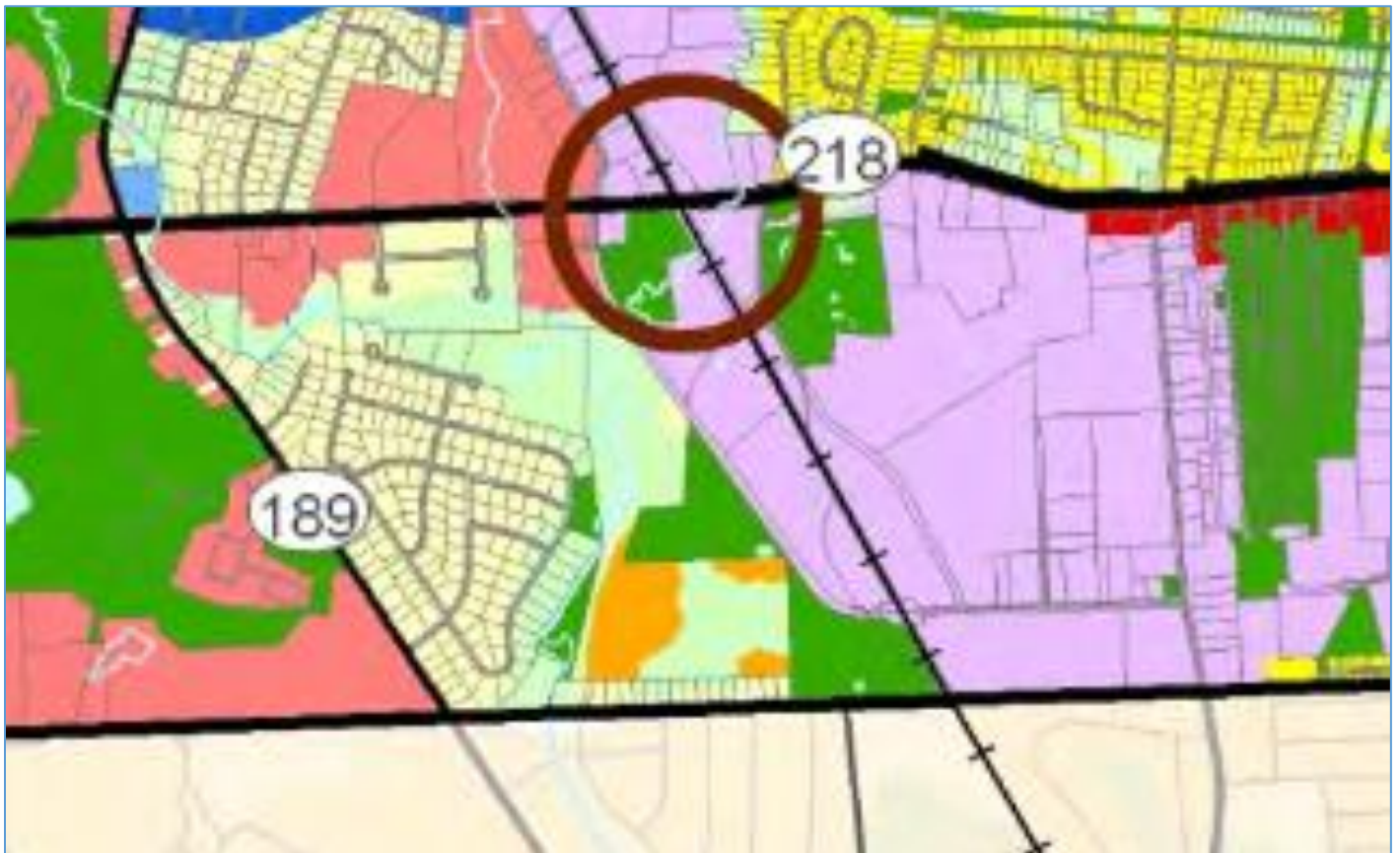


Figure 35. Town of Bloomfield future land use map

The POCD's Transportation Plan (Figure 36) shows the East Coast Greenway following the Griffin Line through town, and identifies a potential new road connection along the Griffin Line from Cottage Grove Road south to Hartford as well as a potential train station at the intersection of the Griffin Line and Cottage Grove Road. The plan also supports the development of passenger rail on the Griffin Line.

Bloomfield, CT



54 | Connecticut RC&D Environmental Review Team Program

Regional Land Use and POCD Context

The Capitol Region Plan of Conservation and Development, 2014 – 2024 is not a detailed land use plan, but rather a general guide for conservation and development in the Capitol Region. The Plan includes goals and policies and a Land Use Policy Map which provides guidance to CRCOG in its planning efforts as well to local planning commissions.

Parcels on the west side of the Griffin Line are shown on the Land Use Policy Map as predominately Priority Conservation Area and Middle Intensity Development Area - 2. Parcels to the east of the Griffin Line are shown as Higher Intensity Development Areas. (See Figure 37 and side bar.)

The Plan of Conservation and Development Land Use Policy Map represents a generalized land use plan for the Capitol Region. It reflects areas of existing development, existing preserved land, and establishes priority areas for the expansion and preservation of both. In general, the map presents the goals and policies established in the text of the Plan of Conservation and Development to encourage development in areas best suited to support it, and to preserve the important natural, historic, and cultural resources of the Capitol Region.

The Land Use Policy Map, along with the text of the Plan, is intended to provide general guidance to CRCOG, municipal, and state planning boards and others on land suitability for development or protection. CRCOG will use this policy map, along with the Economic Development Areas of Regional Significance Map and Conservation Focus Areas Map to support plans and proposals consistent with regional conservation and development policy.

Priority Conservation Areas are defined as: *Areas suitable for preservation which are those forested or wetland areas located at least 500' from development, that are not protected, and that contain at least one of the following five features: potential rare or threatened species; potential habitat area; aquifer protection area; prime farmland soil or that abut protected lands.*

Middle Intensity Development Area - 2 is defined as: *Primarily detached single family houses and/or neighborhood scale commercial establishments and/or industrial establishments surrounded by lawns and landscaped yards; Buildings 1 – 2 stories.*

Higher Intensity Development Areas are defined in the Plan as: *Consisting of shops and major commercial establishments sometimes mixed with townhouses, apartments and offices. The network of streets is tighter and there may be wide sidewalks for shoppers and walkers. Buildings may be close to the front lot line, attached, and have interesting facades. This category includes downtowns, major business corridors, urbanized neighborhoods, village centers and mixed-use development with multi-family housing and retail. Also encourages the preservation of existing higher intensity areas which already exhibit these characteristics. Buildings may be up to 3 – 4 stories or higher.*

The regional Land Use Policy Map also indicates that the portions of the site east of Eddy Street are within a Municipal Focus Area known as the Copaca Mixed-use Area. This Municipal Focus Area is roughly bounded by Granby Street to the east, the town line to the south and Cottage Grove Road to the north. The Plan states that the Town calls for encouraging a greater mix of uses and improving and enhancing pedestrian amenities in this area.

Given the significant areas of wetlands and floodplain on the site and the recognition of these areas in the regional POCD as Priority Conservation Areas, the Capitol Region Council of Governments (CRCOG) would likely recommend against intense development of much of the site due to its environmental sensitivity. Portions of the site which may be more suitable for development are shown on the regional map as on the southerly and easterly portions of the site.

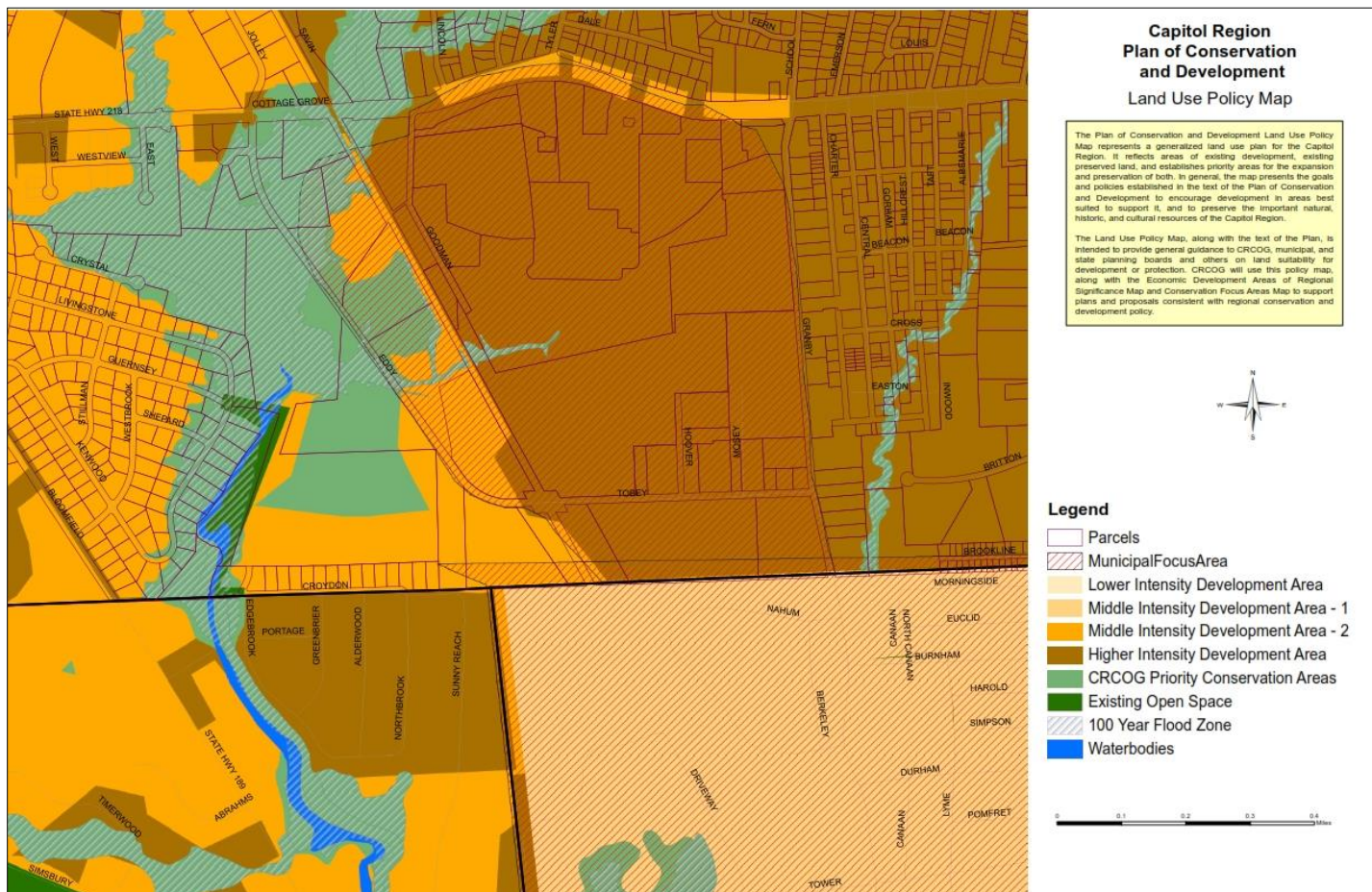


Figure 37. CROCOG Land Use Policy map

Regional Natural Hazard Mitigation Plan

The Town of Bloomfield is included in the multijurisdictional 2014-2019 Capitol Region Natural Hazard Mitigation Plan ([CRNHMP](#)). The Town Council adopted this plan on February 23, 2015. The 2014-2019 Plan expires on December 4, 2019. Bloomfield is also a participant in the 2019-2024 update to the CRNHMP. The 2019-2024 Plan received FEMA's preliminary approval (Approval Pending Adoption) on March 12, 2019. The Town of Bloomfield adopted the 2019-2024 Plan on May 28, 2019. FEMA's final approval of the 2019-2024 Plan is expected in the upcoming months.

The CRNHMP identifies flooding as a major concern for the community. The Wash Brook corridor was called out as a significant problem. The Wash Brook nearly bisects the town and meets the North Branch of the Park River near the northern edge of the site.

The 2019-2024 Plan proposes a number of projects and activities to be undertaken by the Town in the upcoming five years. Although there are no proposed mitigation actions in the Plan specific to the site, there are several mitigation actions which may have relevance to the site:

- Action # 10 - Develop a simple guide for property owners laying out whether or not they should remove debris from their streams and providing contacts for contractors that can assist them.
- Action # 16 - Complete a public campaign to educate property owners about the importance of maintaining and clearing debris from stream channels. The campaign should result in

permanently available educational materials, such as through links on the Town website. The campaign should consider the importance of large woody debris in streams to the health of the river habitat.

- Action #18 - Perform a town-wide drainage study to identify and prioritize stormwater drainage system improvement and replacement needs.
- Action #21 - Develop an ordinance related to maintenance of and removal of debris from stream channels on private property. The ordinance should consider the importance of large woody debris in streams to the health of the river habitat.

Regional Transportation Plan

The [CRCOG Metropolitan Transportation Plan 2019 -2045](#) (MTP) was approved by the CRCOG Policy Board on April 3, 2019. The MTP identifies how the Capitol Region, as the designated Metropolitan Planning Organization for the greater Hartford metropolitan area, will manage and operate a multi-modal transportation system (including transit, highway, bicycle, pedestrian, and accessible transportation) to meet the region's economic, transportation, development and sustainability goals, among others, within a planning horizon to 2045, within a fiscally constrained environment.

The MTP identifies planning for a greenway connection between the Charter Oak Greenway and the Farmington Heritage Greenway which would be routed along the Griffin Line as an Ongoing Complete Streets project.

Transportation Improvement Program

The Transportation Improvement Program (TIP) is the list of all federally funded projects in the Capitol Region. There are no projects on the TIP for federal fiscal years 2018-2021 that are in the vicinity of this tract. The Connecticut Department of Transportation Capital Plan 2019-2023 includes Project No. 11-0156 to replace Bridge No. 01489 carrying CT Route 178 (Park Avenue) over Beaman Brook. This bridge is located approximately 750' northeast of the tract along Beaman Brook and does not have a direct impact on the site.

Traffic Impacts/Site Access

There are several potential access points to the site although some may be constrained by wetlands or watercourses, neighborhood concerns, and difficulties in obtaining rail crossings. (See excerpts of the Town of Bloomfield's Inland Wetlands and Watercourses map showing the potential access points to the site on the following pages.)

From the North: Access to the site could be provided through Northwestern Drive but would require wetlands and stream crossings. A proposed roadway which could connect Northwestern Drive at the north

Goals of the MTP

The primary goals of the CRCOG 2019 Metropolitan Transportation Plan (MTP), also referred to as the region's Long-Range Transportation Plan, are:

- **Mobility and Access:** Identify key transportation investments and strategies to meet long-term (through 2045) access and mobility needs for the CRCOG Region
- **Performance-based Planning:** Incorporate a publicly transparent performance-based data-driven process for selecting and implementing investments
- **Innovative Funding:** Identify innovative funding mechanisms to help finance the region's important transportation priorities
- **Fiscally Constrained Priorities:** Develop a fiscally-constrained implementation plan for the region's priority transportation projects

end of the site to Tobey Road at the southeastern corner of the site, along the existing defined right of way corridor (Eddy Street), would require a new bridge or culvert system crossing Beaman Brook. The roadway and structure crossing would require the design of stormwater management systems and conveyance of the Beaman Brook waterway. All required state, local, and federal permits (e.g., Army Corps of Engineers, CT DEEP inland Wetlands and Watercourses, and CT DEEP Floodplain Management permits would need to be obtained.

Access to the site east of the Griffin Line could also be provided through Goodman Street but access to portions of the site west of the Griffin Line would require a rail crossing. (See Figure 38.)

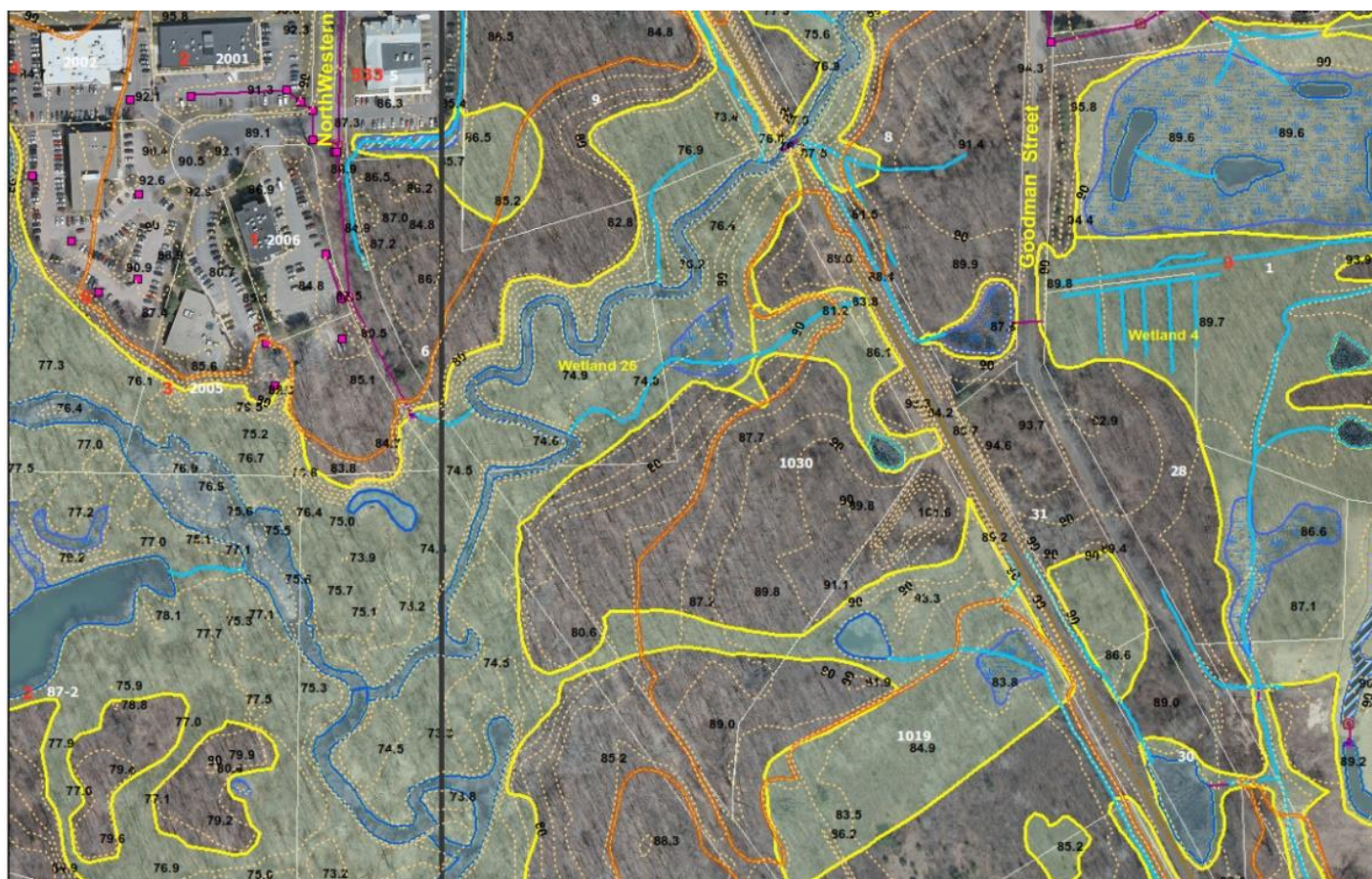


Figure 38. Site access from the North

From the South and Southeast: Access from Tobey Road along the mapped right of way of Eddy Street could be provided to the southern portions of the site and would avoid wetlands crossings for approximately 700 feet. Also, on the southern side of the site, the Town's wetlands map shows poorly drained soils on 1016A Tobey Road in the vicinity of the intersection of Sunny Reach Drive and Croydon Road as well as poorly drained and very poorly drained soils on 1016B Eddy Street and 1017 Tobey Road, two other parcels within the University of Hartford site which abut the athletic field complex of the University. (See Figure 39.)

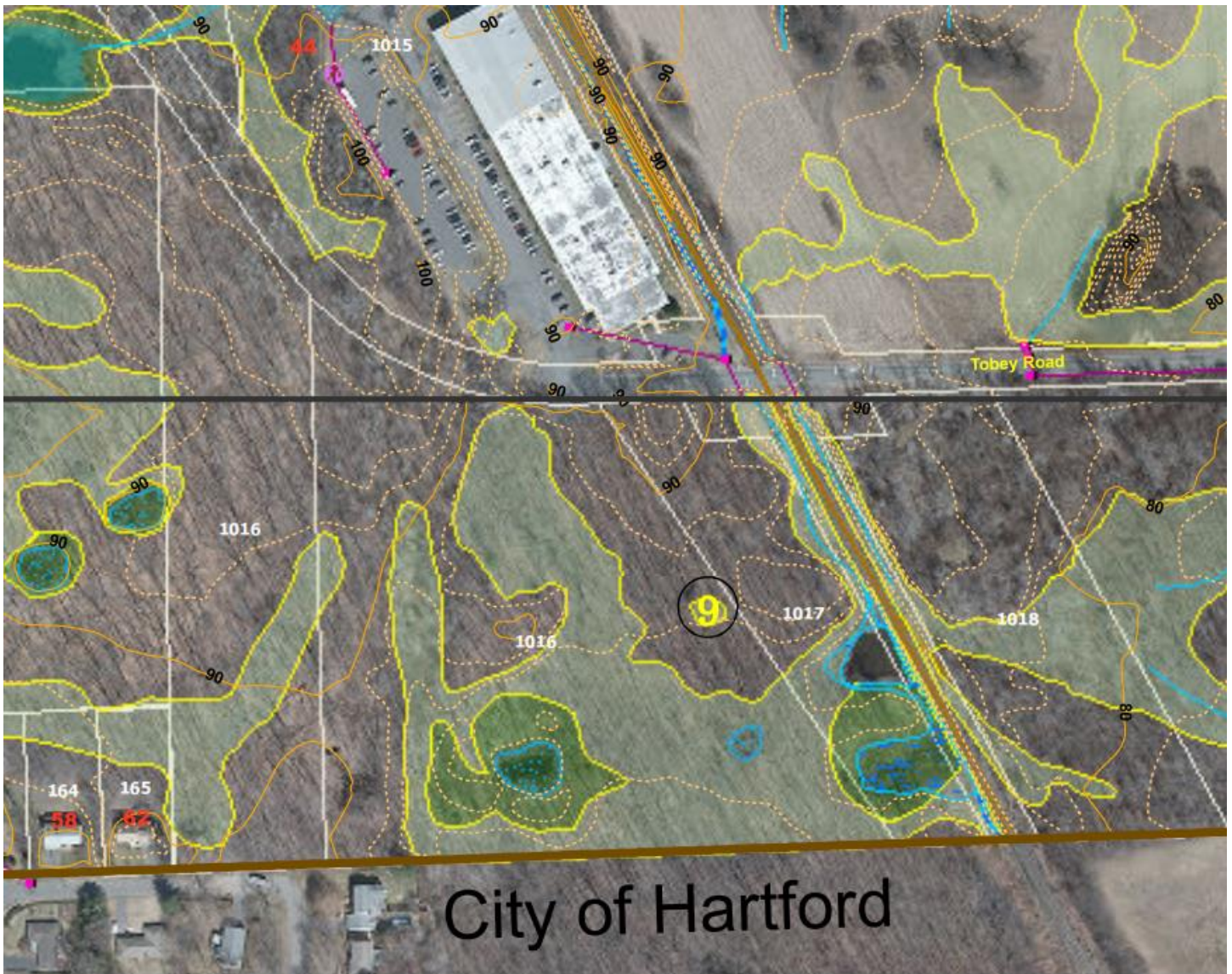


Figure 39. Site access from the South or Southeast

The University of Hartford’s 2009 Facilities Master Plan included discussions of the North Campus Zone which encompasses the Bloomfield parcels owned by the University. Figure 39 shows and discusses possible connections from Tobey Road to the interior of the site and to the main campus. As the Master Plan points out wetlands permits will likely be needed for these access routes. Additionally, an upgrade of the non-signalized railroad crossing would likely be needed.

2009 Facilities Master Plan

Master Plan

North Campus Zone

- ① **North Campus — Tobey Road Connection** The 1500'-road connection from the north athletics lot to Tobey Road will provide more convenient direct access to the north commercial areas of Bloomfield and beyond. The road alignment is delineated to negotiate through the existing wetland areas and minimize impacts. Wetland disturbance will be required and likely trigger state and federal agency permitting. To offset disturbances, it is anticipated that regulatory agencies will require mitigation in the form of replacement wetlands or similar measures. The increased campus traffic on Tobey Road will likely require an upgrade of the existing non-signalized Griffin Line railroad crossing to a signalized crossing.
- ② **North Campus Road Extension** The continuation of the campus drive from Tobey Road to the upland developable land area in the southwest corner of the North Campus will require 2500 feet of additional roadway.
- ③ **Developable Land Area** The North Campus road extension provides access to roughly 18 acres of upland (non-wetland) land area. The land provides a land bank for future development.
- ④ **Wetland and wetland buffer areas.**
- ⑤ **Additional Upland Land Area** Road extension to Cottage Grove Road will provide access to additional upland land area.



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UNIVERSITY OF HARTFORD FACILITIES MASTER PLAN

Figure 40. Page 42 of the University of Hartford 2009 Facilities Master Plan

From the Southwest: Access to the site on its southwest side (at parcel 1029 Eddy Street) from the right of way extending from the intersection of Croydon Street and Edgebrook Drive would avoid wetlands crossings. (See Figure 41.) The 1992 PLR Special Permit included the condition that access on Croydon Drive would be limited to emergency access with the use of grass pavers.

From the West: The University-owned parcels do not directly abut Kenwood Circle but rather abut land owned by the State of Connecticut along Kenwood Circle. Furthermore, access to the site on its west side from the Kenwood Circle neighborhood would be constrained by the need for wetlands and river crossings. (See Figure 42.)

OSTA Review

Depending upon what is proposed, potential development of this tract may be considered a Major Traffic Generators (MTG). Major Traffic Generators are regulated as to their traffic impact on the state highway system in Connecticut by the Office of the State Traffic Administration (OSTA), in accordance Sections 14-311 and 14-311c of the Connecticut General Statutes. An MTG is defined by Section 14-312-1 of the OSTA regulations as any development of 100,000 square feet or more of gross floor area or 200 or more parking spaces. The OSTA authority under these statutes applies to new MTGs as well as expansions or land use changes to those already in existence. The regulation of MTGs by the OSTA is accomplished via either an [Administrative Decision \(AD\)](#) or [certification process \(Certificate\)](#).



Figure 41. Site access from the Southwest



Figure 42. Site access from the West

Intersection and Safety Issues

According to a November 2017 Bloomfield Police Department report on Bloomfield Traffic Hot Spots, the following intersections in the vicinity of the site have unusually high incidence of motor vehicle accidents: Cottage Grove Road/Granby Street/School Street and Cottage Grove Road/Savin Road. (Savin Road parallels the Griffin line north of Cottage Grove Road.) Further from the site, other locations of intersections in Bloomfield identified as having unusually high incidence of motor vehicle accidents are: Blue Hills Avenue/Cottage Grove Road, Blue Hills Avenue/Rockwell Avenue, and Blue Hills Avenue/Old Windsor Road. Preliminary findings in 2019 being used in preparation of a draft CTDOT Regional Transportation Safety Plan for the Capitol Region, note that the stretch of Route 218 (Cottage Grove Road) from Northwestern Drive to Granby Street is one of Bloomfield's high priority locations for safety improvement intervention.

The UCONN Crash Data Repository shows the following number of crashes on Cottage Grove Road (Rte. 218) over the 4-year period from 2015 through 2018:

<u>Vicinity on Rte. 218</u>	<u># of Crashes</u>
Northwestern Hills	31
Griffin Line railroad crossing	40
Goodman Street	13
Granby Road	93

Increased traffic volumes resulting from potential development of the site will need to take into consideration the existing crash data and determine if additional safety improvements are warranted at intersections in the vicinity of the development site.

Railroad Grade Crossings:

Cottage Grove Road grade crossing: If site development also generates significant increased traffic volumes on Cottage Grove Road, then the need for potential improvements to the existing signalized intersection should be investigated.

Tobey Road grade crossing: Private crossings of railroads are governed by [Sec. 13b-292](#) of the Connecticut General Statutes which require approval of the crossing including requirements for traffic control measures by the Commissioner of Transportation.

Improvements to roadway network would likely include significant improvements to Tobey Road and require and engineering study to determine the appropriate traffic control system to be used at the Griffin Line roadway-rail grade crossing. The Tobey Road grade crossing number listed as 500842D by the US DOT Federal Railroad Administration. The proposed traffic devices chosen for the crossing would need to conform to the Manual of Traffic Control Devices. Among the site-specific factors typically considered in such studies are vehicular and pedestrian volumes, the frequency of trains and their speed, and sight lines at the crossing. The existing crossing is not signalized, with existing traffic devices consisting of stop signs, railroad cross bucks, and pavement markings.

East Coast Greenway Routing/Connectivity

Report by Bruce Donald, East Coast Greenway

Regarding the plans for a multi-use trail corridor along the University of Hartford's north property, the East Coast Greenway is very excited to fully endorse this initiative. It is important to note that both CTDOT and CTDEEP are specifically dedicated to closing the gaps in the ECG route in CT. As of this year the 200 miles of CT will be 50% completed. This adds to the importance of your piece of what we have been calling the "Hartford Connector".

Background

This project has a long history. Bill O'Neill a former Trustee of the ECGA told me in an email: "Fantastic! Brings back memories (approx. 27 years ago) of sitting at UHart with the administration and seeking ECG corridor serving UHart and beyond. At that time, the Griffin Line (rail corridor) was the likely route. At the same meeting, UHart offered one of their vans to serve as our sag wagon for the American/Canadian riders traveling from Manchester CT to Montreal."

Phase I from RT 189 to Day Hill Rd in Bloomfield is nearing completion. Phase I in Tariffville along RT 189 into town will break ground next year. Phase II in Tariffville from the Farmington Canal Heritage Trail down to the park is nearing 100% design. The FCHT is also nearing full completion by 2023.

Routing

As a practical matter the Griffin Line was always considered to be the potential route. Bloomfield asked for Recreational Trails funding in the last round to fund design of Phase II on the Griffin Line south, and I wanted to give them the design money, (I am the legislatively appointed Chair of the CT Greenways Council) but in consultation with CTDOT I was told to hold off as the CT Office of Rail could not take on the RR negotiations and federal permitting at this time. Still, CTDOT recognized that this is the obvious choice to connect the projects. There is another consideration as well, the Griffin Line is still (lightly) used. The corridor is very difficult to build trail beside and may require innovative (and expensive) solutions. Having said all of that we do support a connection going through the currently undeveloped north parcels. We do not believe that other options are any better connections to the Greenway.

I met with Hartford Mayor Murphy on 7/29 and talked about ECG routing. He was most interested in the railroad ROW coming down from Bloomfield. I will meet with Sandy Fry, Hartford Planner next Monday 8/12 to discuss Hartford's vision for this connection as well.

Finally, it is important to note that Hartford is building a substantial addition to the River Recapture Trail from the boathouse north along the Connecticut River to I-91 at Keeney Park. (See attached map) The intention is to connect to the Bridge and provide access to South Windsor and points north. That connection could include a trail west through the park (in yellow) to connect with Bloomfield's Town Center. We view this as a potential secondary trail that could create a fantastic loop trail but would not impede the progress of a southerly Hartford/Bloomfield connection.

In thinking about moving forward, the partnership between the University, Town, and ECGA is very important. Elected officials and staff at the Town level get much of the work done, while the University must plan for maximum positive outcomes for this project throughout the due diligence and feasibility phase through design. Finally, funding can then be set in place. All the while the ECGA stands ready to help with this process.

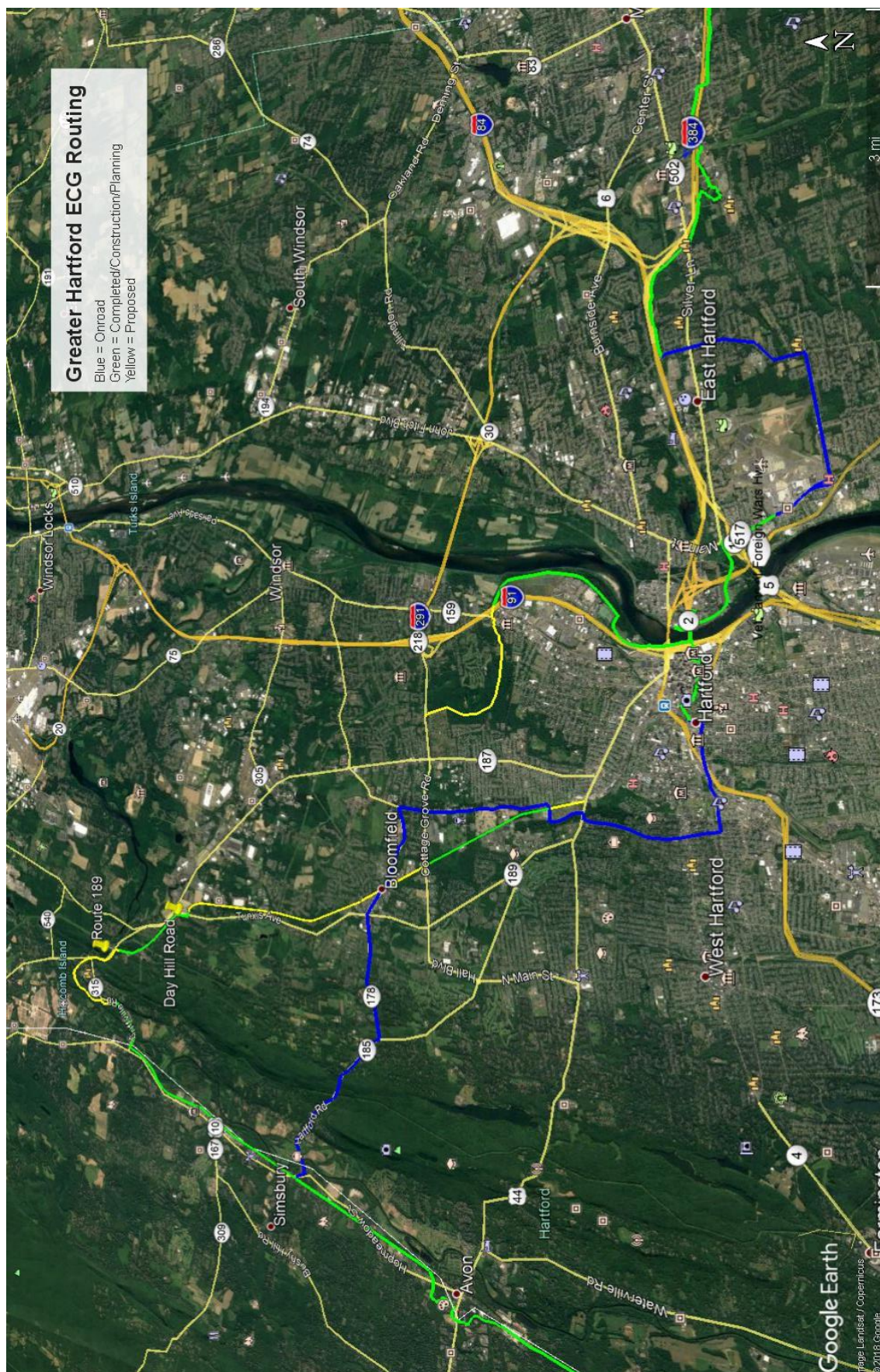



Figure 43. East Coast Greenway Routes

An aerial photograph of a dense, lush green forest, likely a deciduous woodland, with a variety of tree canopy colors ranging from deep green to lighter, yellowish-green. The text is centered over the middle of the image.

The Environmental Review Team (ERT) Program is reliant on volunteers who are experts in their field. The recommendations in this report are advisory only. The ERT program is partly funded by the Connecticut Department of Energy and Environmental Protection (CT DEEP) Passport to Parks Program. We are so grateful for our dedicated volunteers and partners.

Thank you!

- CT RC&D ERT Program Staff



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