

Three Forks Preserve Land Management Plan



Policy Date: March 30, 2022

Table of Contents

Introduction	4
Purpose	5
Property History	6
Completed Projects by Previous Landowners	7
Property and Previous Landowner’s Resources	8
Soils	9
Habitat and Land Use Types	10
Forest Habitat	
Cover Crops	
Wildlife habitat Preservation	
Residential Native Landscaping	
Driveway and Entry Road	
Inventory	11
Trees and Shrubs	
Invasive Species	
Planted Forbs	
Planted Trees and Shrubs	
Objectives and Goals	13
Preserve the Environment Best Management Practices on the property	
Preservation of the no-mow commitment of the property	
Preserving native species	
Preserve the Three Forks Preserve educational story	
Biodiversity	
Plant Biodiversity	
Animal Biodiversity	
Genetic Diversity Preservation	
Species Inventories and Study	
Invasive Species Management	
Invasive Plant Species	
Invasive Animal Species	
Minimizing Impacts	
Forest Management	
Trails	
Threats to Natural Resources	19
Hydrology	
Overgrazing	
Losing Buffers from Outside Properties	
Opportunities	21

Partnerships and Land Expansion	
Land Legacy Exploration and Documentation	
Maps	22
Soil Maps	
Topographical Maps	
Current Aerial Map	
National Wetland Inventory Map	
Historical Aerial Maps (2020-2004, 2001, 2000, 1998, 1997, 1994, 1985, 1976, 1974, 1962, 1956, 1941, and 1936)	
1866 Hamilton County Historical Map	
Original Land Purchase Map	
Final DNR Classified Forest with Exclusion Area Map	41
Final DNR Classified Forest Application	42

Introduction

Hamilton County Parks and Recreation Department's (HCPR) natural resource staff was tasked with creating a Land Management Plan for Three Forks Preserve after the donation of the property which took place on December 30, 2021.

Three Forks Preserve was donated by Mark and Nancy Jungemann family. The property consists of 12.4 acres and is located at 2020 W. 136th St., Carmel, IN 46033. It is east of Towne Road and west of Ditch Rd. The property includes one residential home with several outdoor amenities. It sits within the Williams Creek Watershed. It includes one residential property, approximately ½ mile trail, and several other landscape amenities. The property's inclusion into the HCPR parks system will add to our passive park opportunities for patrons and provide educational focus on ecological sustainability practices the donors have instituted, adopted, and installed over the years.

The property is in the Central till Plains natural region which typically feature large, flat, or gently sloping areas with consist of limestone deposits. The property is flat and consists of Brookston silty clay loam (Br, poorly drained, 0-2% slopes) and Crosby silt loam (CrA, somewhat poorly drained, 0-2% slopes, fine-loamy subsoil).

Purpose

The purpose of the land management plan is to identify the natural resource stewardship goals of the property. Our focus will be on species diversity, forest health, and invasive species management. Continued stewardship that employs the conservation strategies that model ecologically minded best management practices around a residential home for park visitors is the overall goal of this property. The previous property owners and current caretakers have gone to great lengths to minimize their carbon footprint, maintain the property's diversity, and live within nature as opposed to outside of it. The property has been allowed in several areas to revert to its pre-settlement habitat and yet includes a beautiful home, native landscaping, and some traditional American homestead values. Coexistence with the natural habitat, forethought regarding minimizing activities that impact the natural resources, and the ability to model the strategies needed for ecologically principled landscaping make this property unique to the Hamilton County Park and Recreation Department's offerings. The land management plan seeks to contribute to the integrity of ecological coexistence that has been practiced on the property.

Property History

Based on available historical maps and aerial photos, what is now the Three Forks Preserve property was initially purchased in two sections by George Annis and Zachariah Ousley from the United States Land Grant Office. In the 1866 Historical Map of Hamilton County, the land was split between two owners, J. Roberts and M. Gilbert. Neither of the historical maps indicates there was a homestead placed on the current property. There is an access path or road that cut across east to the northwest in the northern third of the property that shows up in 1941 and remains visible into 1956. It has been speculated that the presence of “overmature” oaks and old fencing indicate that the woodland was once used as a livestock pasture. The access path and scattering of large trees suggests that the property was part of a bigger farm operated by adjacent landowner.

The first home built on the property was sometime around 1962 and was in the northeast corner of the lot and was placed along the path/road mentioned above. After the home was built, the access to the property shifted to the entrance drive off 136th street. This first home was razed in 2019 by the Jungemann family, and the family has worked on habitat restoration by planting an assortment of trees, wildflowers, forb, and grasses in its footprint. The current home on the property was built in 2004 for 2 million dollars by Rick and Karen Bennett. R.W. Lewis was the builder, and Donald R. Scott was the architect. Aside from the homesteads on the property, the site has maintained a decent amount of forested habitat through the historical records available. Aerial photos show the least amount of forest in 1941 and gradual reforestation starting from about 1956. Several mature growth trees are scattered through the property based on aerial images. The remaining habitat consists of second-growth forests.

The Jungemann family has devoted much attention to habitat restoration and natural resource-based coexistence strategies since purchasing the property in 2019. They have replaced traditional landscaping around their home with native plants, removed all turf grass requiring regular mowing, removed dead trees, employed composting on-site, installed non-carbon energy sources like solar panels, and have removed invasive species on the property.

Completed Projects by Previous Landowners

This list of projects was provided by Mark Jungemann and have taken place on the property its purchase in 2019.

Facility Projects:

- Added new Conservatory
- Installed solar energy system with PowerWalls
- Added new patio, landscaping, and fire pit at gate
- Removed old house at 2010 W. 136th St.
- Added new HVAC system for master bedroom and Conservatory
- Added Azek railing on exterior
- Installed active water management system in crawlspace
- Installed new pool fence and concrete
- Added wine cellar, vapor barrier, insulation, and environmental controls
- Insulated attic with spray foam and blown in insulation
- Added new Mitsubishi HVAC system to saloon
- Installed alarm system and installed wireless communication
- Built and installed potting benches in greenhouse

Land Management Projects:

- Added native landscaping for Conservatory
- Aerated and slice seeded backyard with no-mow grass
- Built and installed tree protectors for 1-acre lot
- Removed 200 dead ash tree and began forest restoration
- Installed active forest drainage system with pumps and to storm sewer
- Paved driveway
- Installed new backyard fencing
- Built compost piles
- Built gravel road past wood chip pile
- Built tree protectors from 6' fence
- Chipped scrap wood pile
- Chipped scrap wood pile for compost
- Cleared debris from Area 1 for planting trees
- Completed conduit through forest
- Completed waterline to greenhouse
- Maintenance mowing of wildflowers in backlot
- Cut wood stakes for planting of 300 trees
- Dug and installed trail sump pumps
- Gathered sticks and logs from forest floor for habitat
- Installed culverts with #57 gravel
- Installed garden fencing
- Installed trail gravel on north and south trails
- Installed trail gravel to sump pumps
- Installed wood trail to greenhouse

Laid driveway conduit, wood chips and soil
Loaded gravel on new trail
Marked property boundaries
Mounded dirt and planted Eastern Red Cedars
Mowed and covered side of driveway with black plastic for grass kill
Planted 300 White Pine, Norway Spruce, Black Cherry
Planted 400 trees including Pecan, hickories, silver maple, pin oak
Planted cover crop on one-acre plot
Planted cover crops along driveway West and planted ground cover
Planted native wildflowers in center island
Planted wildflowers seeds
Prepared pollinator garden site along driveway
Prepared wildflower site near greenhouse
Pulled spruce and pines from side yard
Removed vinca roots in landscape beds and planted native grasses
Removed cattle fence from woodlot
Removed invasive from forest – round 1
Removed invasive from forest – round 2
Repaired area by fountains
Seeded side of circle driveway with clover
Solarized west of cover crop along driveway
Spray liquid Humate on solarized areas
Spread woodchips on trails – 3000 ft.
Trimmed weeds in center island wildflower plot

Property and Previous Landowner's Resources

Tractor Time with Time Episodes

Clearing A Trail!! Tractors and Chainsaws!

<https://www.youtube.com/watch?v=seihRxmV66U>

Loading Logs!! Deere 1025R / 2038R Forks vs. Grapple

https://www.youtube.com/watch?v=X_hPrP1V00

From Logs to Hardwood Floor! Deere 3033R and B Wise Ultimate Dump Trailer

<https://www.youtube.com/watch?v=bIYItoXPxBQ>

Tractor Tree Removal

<https://www.youtube.com/watch?v=uyoloC88I9s>

Trail Blazin' !!!

<https://www.youtube.com/watch?v=HqIeCxlDim4>

Property's website: <https://threeforkspreserve.org>

Soils

Two major soil types occur on the Three Forks Preserve property. Soil type is an essential component of property management as it will predict conditions that are inherently present and will influence the natural drainage characteristics of the property.

Brookston Series

The Brookston series consists of very deep, poorly drained soils formed in as much as 51 cm (20 inches) of silty material and the underlying loamy till in depressions on till plains and moraines. Slope ranges from 0 to 3 percent. Mean annual precipitation is about 889 mm (35 inches), and mean annual temperature is about 10.0 degrees C (50 degrees F). They are poorly drained. The depth to the top of an apparent seasonal high-water table ranges from 15 cm (0.5 foot) above the surface to 30 cm (1 foot) below the surface for some time in normal years. The potential for surface runoff is negligible to low. Saturated hydraulic conductivity is moderately high. Permeability is moderate in the subsoil and moderately slow in the underlying material. The native, pre-settlement vegetation is deciduous forest, marsh grasses, and sedges.

Crosby Series

Crosby Series consists of very deep, somewhat poorly drained soils that are moderately deep to dense till. Crosby soils formed in as much as 56 cm (22 inches) of loess or other silty material and in the underlying loamy till. They are on till plains. Slope ranges from 0 to 6 percent. Mean annual precipitation is about 1016 mm (40 inches), and mean annual temperature is about 10.6 degrees C (51 degrees F). Crosby soil is somewhat poorly drained. The depth to the top of a perched seasonal high-water table ranges from 15 to 61 cm (0.5 to 2.0 feet) during the winter and spring in normal years. The potential for surface runoff is low or medium. Saturated hydraulic conductivity is moderately low or moderately high in and above the argillic horizon and low or moderately low below the argillic horizon. Permeability is moderate or moderately slow in and above the argillic horizon and slow or very slow below the argillic horizon. The native, pre-settlement vegetation is deciduous forest.

Habitat and Land Use Types

With the 12.4 acres of the Three Forks Preserve are several types of habitat and land use types.

Forest Habitat

The majority of the property consists of hardwood deciduous. The forest includes several old growth, mature oak, and hickory species that have likely grown on the property for at least 100 years. These old-growth trees indicate that extensive commercially minded logging did not occur on the property. The forest is intermixed with second-growth forest that filled in after the first homestead was built on the property around 1962. The soils retain seasonal water, and the ground can be moist, especially after rain events. At least 300 trees have been planted on the property to add to the forest habitat and bolster tree diversity.

Cover Crops

Property stewards, the Jungemann family, have planted a few areas in cover crops and other wildlife seed mixes. These areas are located along the drive and the approximately two-acre old homestead.

Wildlife Habitat Preservation

Several wildlife-specific practices have been used on the property. These include brush piles and allowing standing deadwood in some sections for wildlife and nesting bird species. Also, milkweed has been planted specifically along the entrance road for monarch butterflies and other milkweed-dependent species.

Residential Native Landscaping

The property stewards have converted their traditional turfgrass lawn to a no-mow, native plant landscaping. This has included removing non-native ornamental trees and shrubs, removing invasive ground cover like *Vinca minor* (Periwinkle), removing turf grass, planting low-growing natives, and expanding the natural habitat around the home and the entry of the property.

Driveway and Entry road

Removal of turfgrass and planting cover crops, milkweed, and other native plants now line the drive and entryway to the home. These improvements have further reduced mowing and provided more habitat that adds to the forested land that is primarily found within the property.

Inventory

Ongoing inventories will be conducted on the property by Hamilton County Parks and Recreation Department staff to amass a complete list of the property's biodiversity annually. These inventories could also include other professionals with more specific expertise, including botanists, herpetologists, and birdwatchers. HCPR has had its natural resources professionals on-site to look at habitat components, hydrology, invasive species management, and trail layout several times in 2021. Previous property stewards have had DNR Forestry professionals on-site to assess the forest health. Native species and habitat plantings have taken place on the property, resulting in the addition of flora diversity. The inventory provided in this land management plan includes these factors that are known to date.

Trees and Shrubs

American basswood	<i>Tilia americana</i>
Shagbark hickory	<i>Carya ovata</i>
Bitternut hickory	<i>Carya cordiformis</i>
Northern red oak	<i>Quercus rubra</i>
Pin Oak	<i>Quercus palustris</i>
Bur oak	<i>Quercus macrocarpa</i>
American beech	<i>Fagus grandifolia</i>
Sugar maple	<i>Acer saccharum</i>
Silver maple	<i>Acer saccharinum</i>
Ohio buckeye	<i>Aesculus glabra</i>
Musclewood	<i>Carpinus caroliniana</i>
PawPaw	<i>Asimina triloba</i>
Black walnut	<i>Juglans nigra</i>
Black Cherry	<i>Prunus serotina</i>
Northern Hackberry	<i>Celtis occidentalis</i>
Tulip tree	<i>Liriodendron tulipifera</i>
Spicebush	<i>Lindera benzoin</i>
Ash tree species (200 trees have been removed due to Emerald Ash Borer)	

Invasive Species

Oriental bittersweet	<i>Celastrus orbiculatus*</i>
Asian honeysuckle	<i>Lonicera spp*</i>
Multiflora rose	<i>Rosa multiflora*</i>
Autumn olive	<i>Elaeagnus umbellata*</i>
Wintercreeper	<i>Euonymus fortune*</i>
Callery pear	<i>Pyrus calleryana*</i>
White mulberry	<i>Morus alba*</i>

Planted Forbs

Purple Coneflower	<i>Echinacea purpurea</i>
Scarlet Flax	<i>Linum grandiflorum</i> *
Annual Candytuft	<i>Iberis amara</i> *
Dwarf Blue Cornflower	<i>Centaurea cyanus</i> *
Lance-leaved coreopsis	<i>Coreopsis lanceolata</i>
Annual baby's breath	<i>Gypsophila elegans</i> *
Indian Blanket	<i>Gaillardia pulchella</i>
'Alaska' Shasta Daisy	<i>Leucanthemum × superbum</i> *
Purple Prairie Clover	<i>Dalea purpurea</i>
Mixed Corn Poppy	<i>Papaver rhoeas</i> *
Clasping Coneflower	<i>Dracopis amplexicaulis</i>
Black-eyed Susan	<i>Rudbeckia hirta</i>
Prairie Coneflower	<i>Ratibida columnifera</i>
Plains Coreopsis	<i>Coreopsis tinctoria</i>
Common Milkweed	<i>Asclepias syriaca</i>
Clover	<i>Trifolium</i> spp. (red and white clover are non-native) *

Planted Trees and Shrubs

White Pine	<i>Pinus strobus</i>
Norway Spruce	<i>Picea abies</i> *
Black Cherry	<i>Prunus serotina</i>
Pecan	<i>Carya illinoensis</i>
Hickory spp.	<i>Carya</i> spp.
Silver Maple	<i>Acer saccharinum</i>
Pin Oak	<i>Quercus palustris</i>
Eastern Redcedar	<i>Juniperus virginiana</i>

* Indicates non-native species to North America

Objectives and Goals

In this section the objective and goals for the land management of Three Forks Preserve will be outlined.

1. Preserve the Environmental plant Best Management Practices on the property

This objective focuses on preserving the activities used on the property from the most recent property owners and the forested nature of the property that was largely protected from timber harvest and development.

a. Preservation of the no-mow commitment of the property

This property is a model of how people can use native plants to enhance landscape features, reduce reliance on mowing, and increase the tranquility and biodiversity of a property. Turf will not be added to this property, and there should be no regular mowing of the property aside from natural species maintenance necessary to maintain desired habitats.

b. Preserving native species

Mindful planting at the Three Forks Preserve must be maintained. Landscape planting must be native to Indiana. Before being introduced at this property, all potential plant species must be approved by a natural resource professional with HCPR. Likewise, whether dead or alive, all plant material must not be brought into the Three Forks Preserve without approval. This material can containment the site with weed seed that could create unintended damage. Plant material includes but is not limited to cut landscape brush (i.e. topped grasses), decorative landscaping and holiday décor intended for outside, and dead woody species.

c. Preserve the Three Forks Preserve educational story

Critical to the land management policy is the educational story of the property that will be shared with the public. This story includes the motivation of previous landowners which strived for ecological sustainability on the site, their inspiration, motivation, and the techniques used on the property. The property's story will guide the stewardship of HCPR both in the short and long term. The land management goals will evolve as HCPR works with past landowners, stewards, and community experts; however, HCRP should work to preserve the property's legacy aspects that tell the park and the donator's story.

2. Biodiversity and Native Plant communities

a. Plant Biodiversity

Factors impacting the Three Forks Preserve must include a component of our commitment to preserving and increasing the site's biodiversity. When considering management choices, the focus must be given to using plant inventories, including species percentage inventories. This can include but is not limited to tree health assessments, trail expansion, infrastructure repair, and infrastructure additions. Native species with low diversity amounts on the property will be prioritized over species with higher populations when possible. Species added to the property will, when possible and consistent with the habitat, increase species diversity and wildlife benefits of the property and thereby provide even more education for using native species in and around houses.

b. Animal Biodiversity

Promoting animal diversity will be necessary for various reasons. First and most important, animal diversity is a sign of environmental health and directly reflects a property's carrying capacity. The more native plants on a site, the more wildlife this site can be suitable for. Producers, consumers, and decomposers are all vital to the ecosystem's overall health. Having apex predators like coyotes, owls, foxes, bobcats, hawks, and other top-level predators will help the property not be outbalanced by secondary consumers and producers like rabbits, deer, raccoons, and opossums. This balance is essential for the property's health, the suburban neighbors, and community overall. Monitoring "nuisance wildlife" will be critical. Properly containing trash and other debris on the property and discouraging animal habituation is critical. We must model positive interactions through suitable best management practices first and then deal with individual negative animal behavior on a case-by-case basis. Stewards of the property should also first evaluate our impact on unwanted animal behavior and remedy those issues first. This can include better containment or waste or food, proper maintenance of facilities when animals gain access, better roosting and nesting boxes, non-invasive deterrents like predator models, stickers, or windsocks, and other techniques. When more invasive management is warranted for sick or aggressive wildlife, trapping can be done humanely and should be advised by the natural resource professionals of HCPR. Relocation should be considered if possible and legal. Animals requiring rehabilitation should be brought to the attention of the natural resource professionals of HCPR so that licensed professionals can assess their needs and provide care.

c. Genetic Diversity Preservation

Three Forks Preserve has outstanding genetic plant diversity currently. Few hybrid tree species have been added to the property, and most of the forested area is native and genetically rich. It will be important that any species added to this property are straight native species. Cultivars and hybrids are typically genetic clones and therefore don't resist disease like straight species.

They also can degrade the high-quality remanent forested landscape of the property. Some elements still exist on Three Forks Preserve that provide a glimpse into what pre-settlement central Indiana looked like, and HCPR wants this element preserved. Retaining straight native species is one element of that preservation.

3. Species Inventories and Study

Ongoing inventories at the property is vital for our ability to protect sensitive species and habitat, increase the property's biodiversity, gauge non-native species threats, model native plant use benefits to larger audiences, and track the outcomes of our commitment and efforts. Plant inventories may be done seasonally for the first several years by HCPR staff and then, at the minimum, biannually thereafter. Seasonal inventories will identify any trees and shrubs not currently listed and other herbaceous species throughout the year. Focus should be paid to the various habitat and land uses listed in this report. Other inventories that may be conducted include migratory bird surveys, breeding bird inventories, winter bird inventories, herpetological surveys, insect tracking, and mammal lists.

4. Invasive Species Management

a. Invasive Plant Species

Invasive species pose one of the greatest natural resource threats to Three Forks Preserve. Ongoing attention, people power, and resources need to be devoted to invasive species management at this property. Three Forks Preserve's education story relies on its native biodiversity, concert with native, and appreciation of the beauty of native species over ornamentals. Most of the invasive species currently present threatening the park and future species have been brought to America as ornamental species. Our objective is to support our native species as an alternative to the traditional and often ecologically dangerous ornamental species. Allowing the property to fill in with invasive species would degrade the natural resources of the site and impact the powerful narrative and model of this property. The threat of invasive species will forever be an issue at this property due to the high level of suburban land use surrounding it. Likely, invasive species not typically encountered in other parks could first show signs of naturalizing at Three Forks Preserve. Therefore, property managers need to stay vigilant for changes within the property. Management staff should use resources like EDDsMap to report new naturalized species on the site and integrate invasive species management with HCPR invasive species tracking software when removing them on the property.

b. Invasive Animal Species

Invasive species are not limited to plants, and therefore HCPR managers and property stewards must look for insect and animal invasive species as well. This is particularly true for invasive insect species, which can devastate the biodiversity and overall health of the property. Emerald Ash Borer has unfortunately demonstrated the impacts insects can have on forest stands. This 12.4 acre wooded lot lost approximately 200 ash trees to EAB based on the estimations of the previous owner. Chinese spotted lanternflies, spongy moths (formerly named Gypsy moth), and Asian long-horned beetles pose a real threat to this property as examples. If an invasive insect species is verified through positive identification, the natural resources professionals must be consulted on possible treatments.

5. Minimizing Impacts

A critical land management goal is to minimize, reduce, and avoid unnecessary impacts on the site's ecosystem when maintenance is required. Equipment from backhoes, cars, trucks, and even mowers through sensitive habitat and plant communities can create scars on the land that are visible and impactful for decades. Ruts create deep depressions in the soil where water can collect and change the site's hydrology. Soil compaction is also a problem when heavy equipment is used off trails, especially on properties like Three Forks Preserve due to the site's soil characteristics. Equipment can also be a transportation mechanism for the movement of invasive seeds that can then take hold in the property they are used. Washing of equipment in designated containment areas offsite can minimize this accidental spread and should be used when heavy equipment is used on this site. For these reasons, heavy equipment should be carefully evaluated before work is done, and extreme care should be given not to damage the ecosystem of the site, especially if the equipment is to be used off designated trails. If heavy equipment is needed, HCPR and property stewards should meet to evaluate their potential damage and long-term impacts and provide alternatives. If alternatives are not possible, the team should devote time to problem-solving solutions or adjust long-term infrastructure designs like trails, rain gardens, and other best management practices that could better utilize damaged forested land.

6. Forest Management

Balancing forest management is a goal at Three Forks Preserve. The most recent landowner has consulted with DNR's Forester and received advice on the overall health and species within the forest. Expert consultation with DNR and other forestry experts is encouraged in the future for the property. This advice should be coupled with consultation from other ecological experts as it will also be valuable to the property. Forestry professional focus on mast-bearing species, undesirable native species, tree straightness, light availability, and overall forest age and is typically provided with logging objectives at the heart of their training and advice. HCPR objectives will be to manage the forest through primarily

natural events instead of heavily managing with techniques like selective cutting the forest for timber valued trees. A broader, ecological approach is recommended for the site. This will include some traditional forestry-styled management techniques coupled with ones that consider the forest's natural succession into a mature woodlot that encourages maples, American beech, and their associates.

The property stewards have removed many dead and dying trees in the woodlot over the last few years. It will be essential to continue to monitor the site for tree mortality to assess better the forest's health and reasons for tree death. Decaying trees, both standing and lying on the forest floor, is normal and necessary for all types of plants and wildlife.

It will be important to consider whether removal of dead and dying trees at Three Forks Preserve is necessary or should be reserved for specific circumstances. Removal of this material is not necessarily needed and can often create more damage using equipment to the surrounding ecosystem. For the last decade or so, HCPR has been leaving trees that have fallen or needed to be felled in place so that nature's last biological phase is allowed, decomposition. This process is a natural and needed component of a healthy ecosystem. The DNR Nature Preserves division practices the HCPR model for deadwood on their properties and do not allow the removal of dead and dying trees. Trees that fall across paths on Nature Preserve sites can be cut in the sections covering the trail and are then placed nearby in the wooded area. They are not allowed to be completely removed from the property unless they are invasive or impacting the desired habitat goal, for example

We recommended a blended approach where dead and dying trees are left in place for Three Forks Preserve in most circumstances; however, stewards of the property should work with HCPR natural resources professionals and other consultants on individual tree decisions. Trees that pose a danger to people or structures must be assessed and safely felled.

This site is great potential habitat for the Indiana Bat and other endangered and threatened mammal species. No tree removal should take place from April 15 to August 1 and woody vegetation during breeding seasons for various wildlife must be considered before a vegetation is purposely felled or removed.

7. Trails

The trail on the property were constructed with commercial geotextile roadway fabric on the bottom, with layered #2 large gravel and #22 small gravel, and then topped with wood chips. The trail is approximately five to six feet in width and circles the outside edge of the property. The trail is approximately ½ mile in length. Regular trail maintenance will be important and will be coordinated with HCPR and property stewards. Trees larger than what can be moved by hand that

fall and block trail should be cut in the section that blocks the path. The wood can be placed outside the trail or used by property caretakers or department. Chipped material for trail additions can be from non-native species on the property. Trail expansion should only be added through areas that will not impact health trees or other plant communities.

The current wood-chipped trail is sufficient currently for this property at this time. The slow drainage of the soil on the site and the thick chipped wood of the trail could work against the site's natural hydrology and trap moisture inside the trail. This could add to oversaturation for the trees inside the trail parameter. HCPR recommends that, as the chipped wood decomposes or trail improvements are needed, future material be added so that it's level or slightly below ground level. Evaluations on more trail drainage could be useful and may include the installation of natural stone bridges or culvert pipe drains. Future trail improvements include covering the trail with an ADA-approved substrate like crushed limestone. There are currently ADA accessible paths, including the entry drive and estate pavement for those with mobility limitations.

Threats to Natural Resources

In this section we will list and explore the threats to the Natural Resources of the Three Forks Preserve.

1. Hydrology

The property's tendency to hold water and slow draining soil complex create issues HCPR and property caretakers need to monitor. The most recent landowners have installed sump pumps to remove water from the property. This management practice should be monitored and altered as deemed necessary. HCPR staff should monitor the fluctuation of the water level, its impact, and whether the water should be managed with current methods or improved methods. Any water management techniques will impact plant communities both acutely and long term.

The land around the property has changed and is likely adding to the water on the property. More surface water has likely found its way to the site with increased turf grass, rooftops, and pavement from the suburban neighbors. As the forest has matured, sunlight useful to aid in drying out the ground has decreased. Tree species will react to both available sunlight and higher moisture level. The native species that are more suitable for wet, wooded soils include spicebush, pawpaw, and maples. It's been noted from DNR Forestry professionals that these species have increased. These species are not undesirable, however. We should monitor shifting species as the property evolves. Three Forks Preserve may evolve into more of a wooded wetland and climax beech-maple forest. This habitat is equally desirable, though it could be argued doesn't match the initial story of the property. Hydrology impacts all of this, and our management strategies must balance water management, impact on planting communities in management, and the recreation and aesthetics values of the park.

2. Overgrazing

White-tailed deer are frequent visitors to the property. Their presence should be encouraged but can also be damaging due to overgrazing of the herbaceous plant layer. Typically, white-tailed deer won't eat invasive species but favor the native, desirable species. These animals, especially as herd size increases, can significantly change the plant community dynamic of the site. Plant inventories that include populations totals are recommended for herbaceous species on the site so that monitoring can be done. We recommend, if this issue is identified, that this be coupled with deer head counts seasonally and trail cameras on the property to track their population. We recommend not encouraging deer on the property through artificial means like salt licks and feeding stations, this could include bird feeding stations. We also recommend encouraging natural food chains that include apex predators like coyotes and bobcats. If it is determined that we have a significant overgrazing issue in the park that is causing decreased

plant biodiversity we recommend adding exclusive fencing to protect plants or sections of sensitive plant communities within the park.

3. Losing Buffers from Outside Properties

Currently, Three Forks Preserve has some natural buffers to the east and west. These natural plant communities are wooded and compliment the site's natural resources. Because they sit on either side of the property, they provide an important buffer for the property. If we lose them or significant impacts occur to them, it will drastically change the park's dynamics. It would impact the threat of invasive species, overgrazing, increased hydrology, and tree loss due to lack of windbreaks. A recommendation is to work with the adjacent landowners to provide stewardship leadership and open dialog.

Opportunities

In this section we will list and explore the opportunities to the Natural Resources of the Three Forks Preserve.

1. Partnerships and Land Expansion

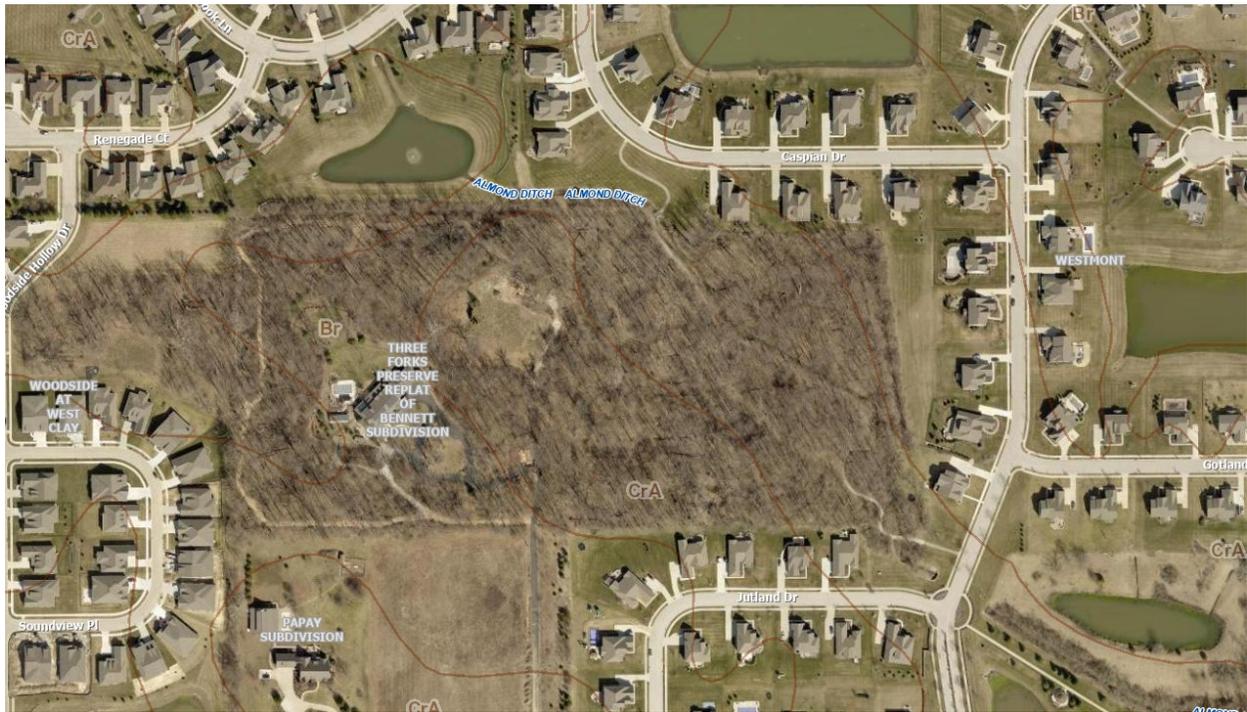
The forested areas on the east and west side of the property are important to the ecological health of Three Forks Preserve. They also could provide expanded passive recreation opportunities for park visitors. Working with the two Homeowner Associations that own these properties is highly recommended. Partnering with them on invasive species management, providing expertise on long management, providing community programs and education for their residents on best management practices and ecology, and having a positive open dialog with adjacent landowners and the HOA's is imperative. If these partnerships evolve into the opportunity to acquire more land and add to the property, those opportunities should be made a high priority.

2. Land Legacy Exploration and documentation

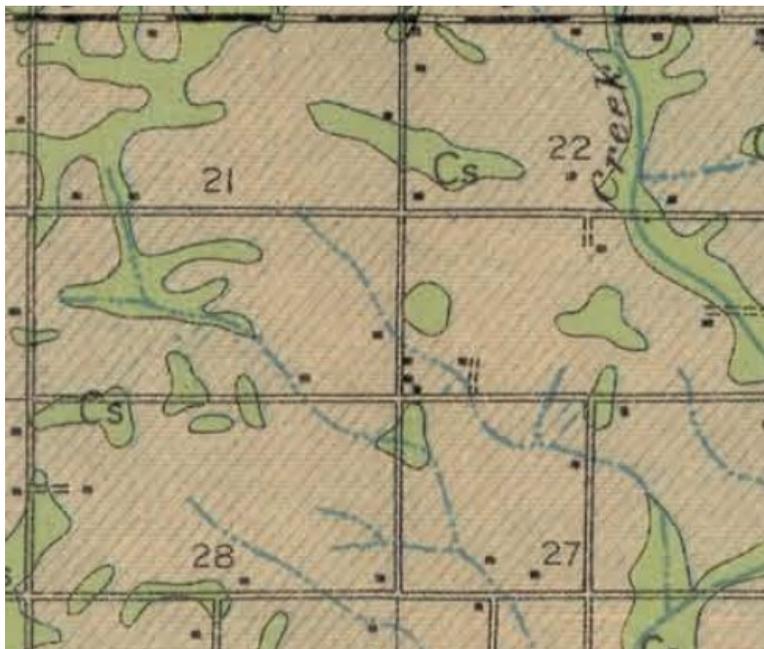
We must work with the previous landowners to develop the story of this property. The inspiration, process, and resources that drove the current coexistence model on the property are vital to the land management goals of the property and the educational story of the property. This model will be imperative to rely to visitors and other program patrons about ecological sustainability. Successes, failures, and lessons learned will be an important narrative to future generations. The ingenuity and forethought regarding the best management practices the Jungemann family used need to be documented in creative and lasting way so that HCPR can share their journey and forward-thinking to the community. Their gift to HCPR and the county must be preserved through their voice, visual aid, and story. Likewise, more research into the property's past is needed to shape land management goals and the property's story overall. More research regarding previous landowners and adjacent landowners will help to shape the property's management and story.

Maps

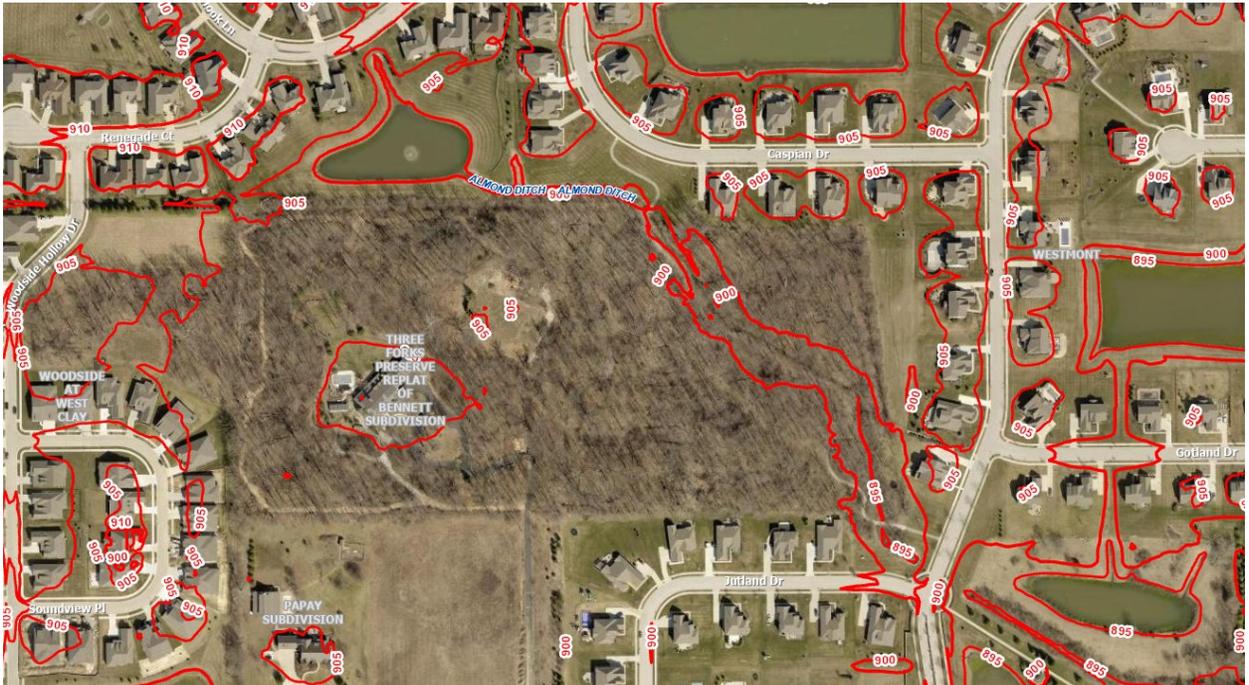
Soil map



1912 Soils Map



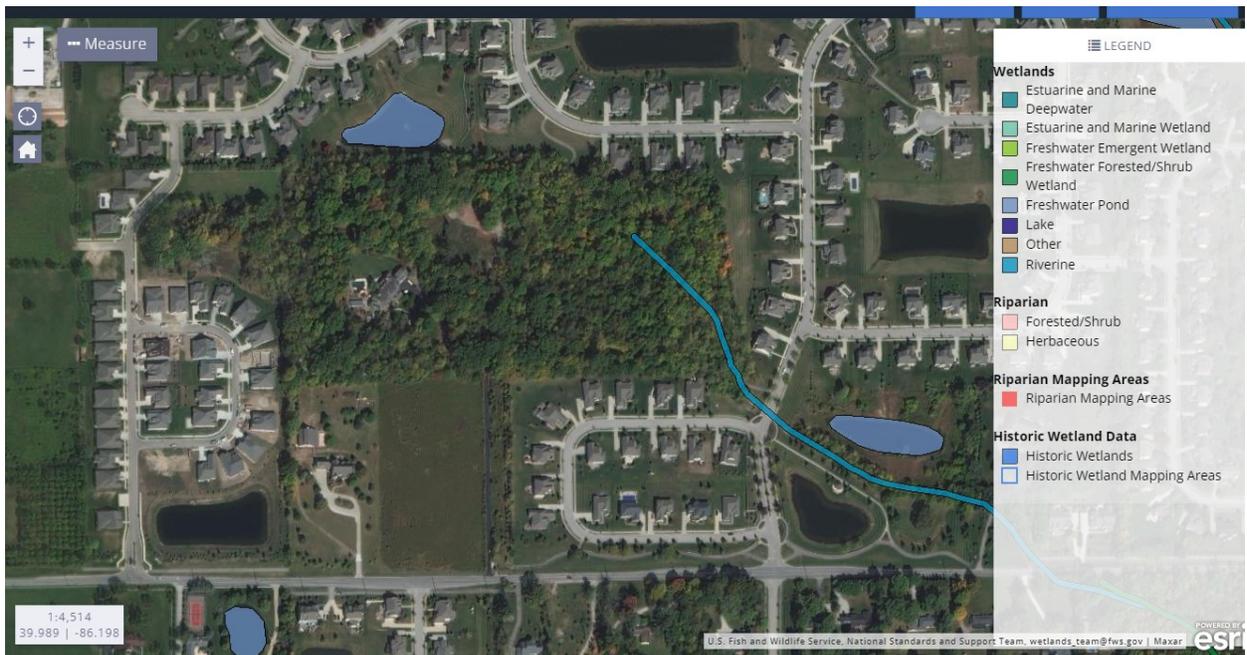
Topographical maps



2021 Aerial Map



National Wetlands Inventory Map

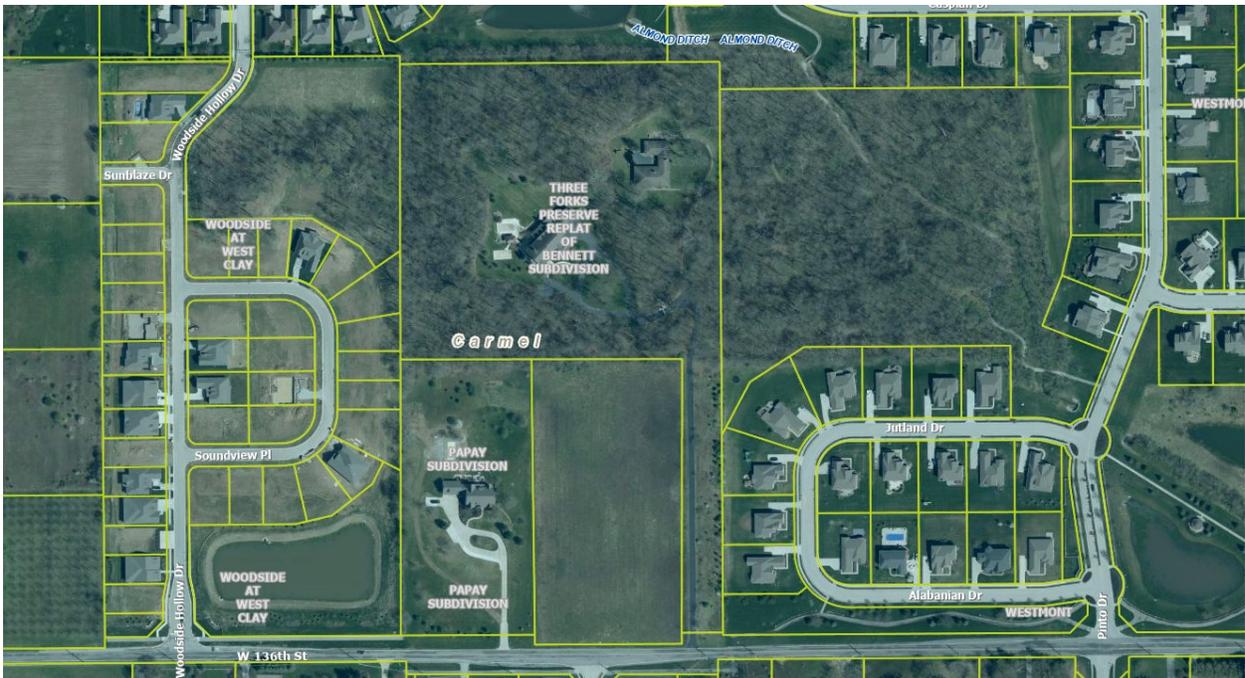


Historical Aerial Maps

2020



2019



2018



2017



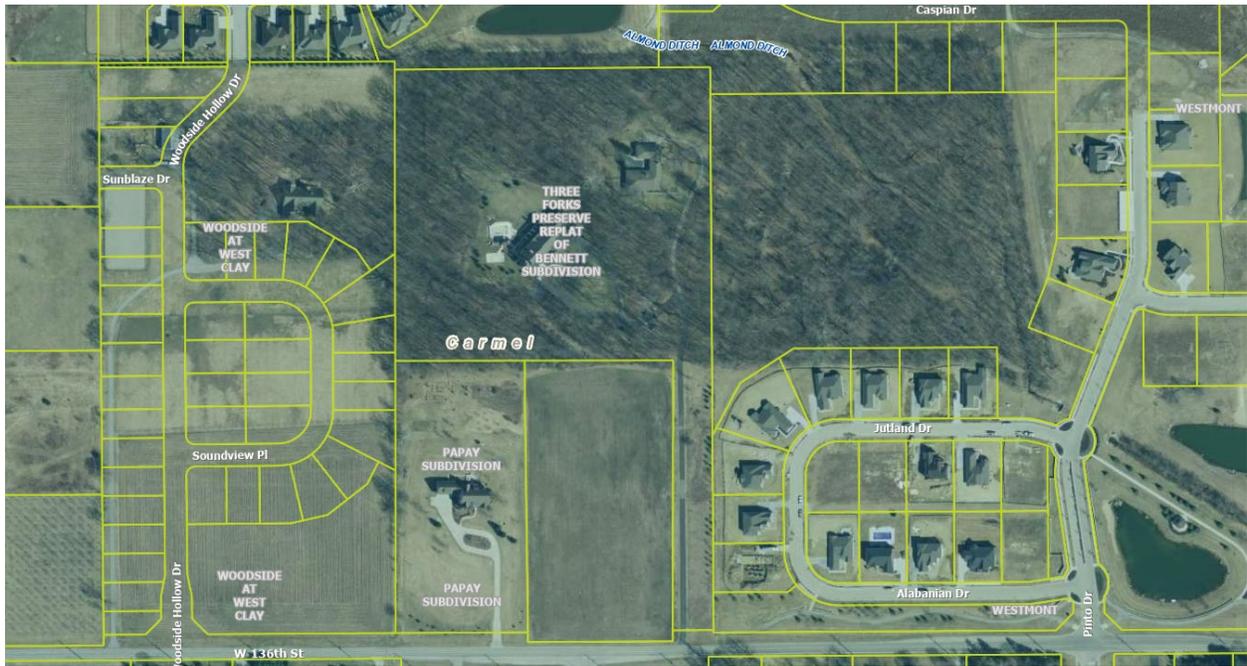
2016



2015



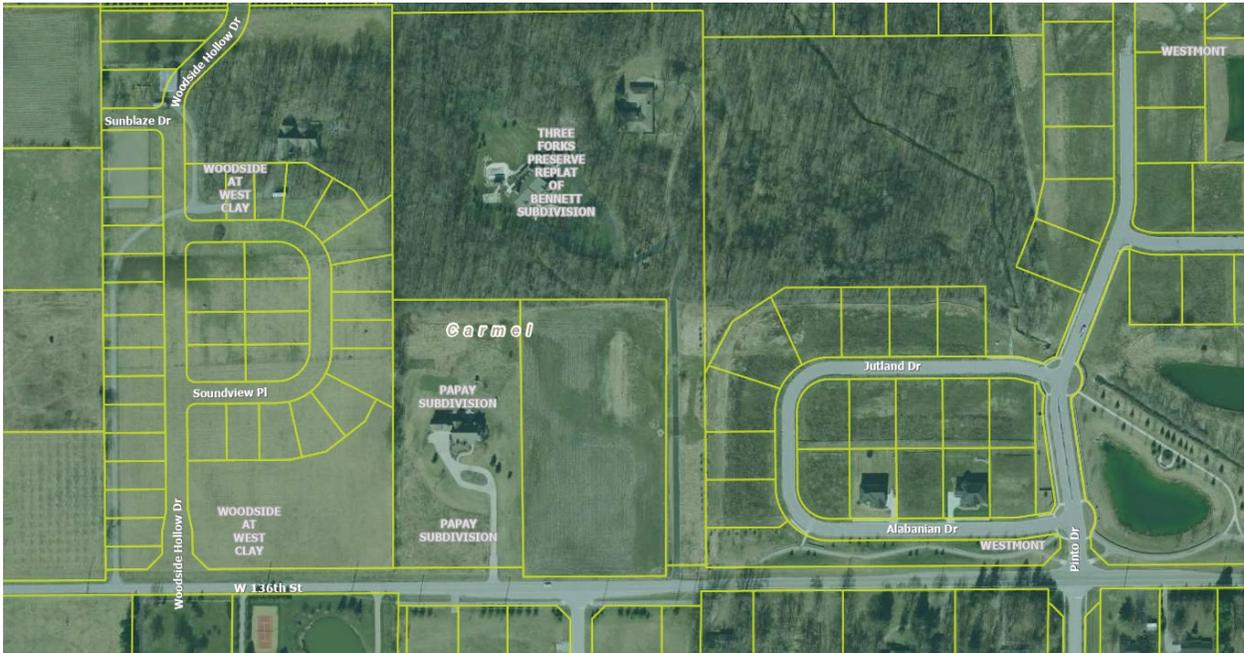
2014



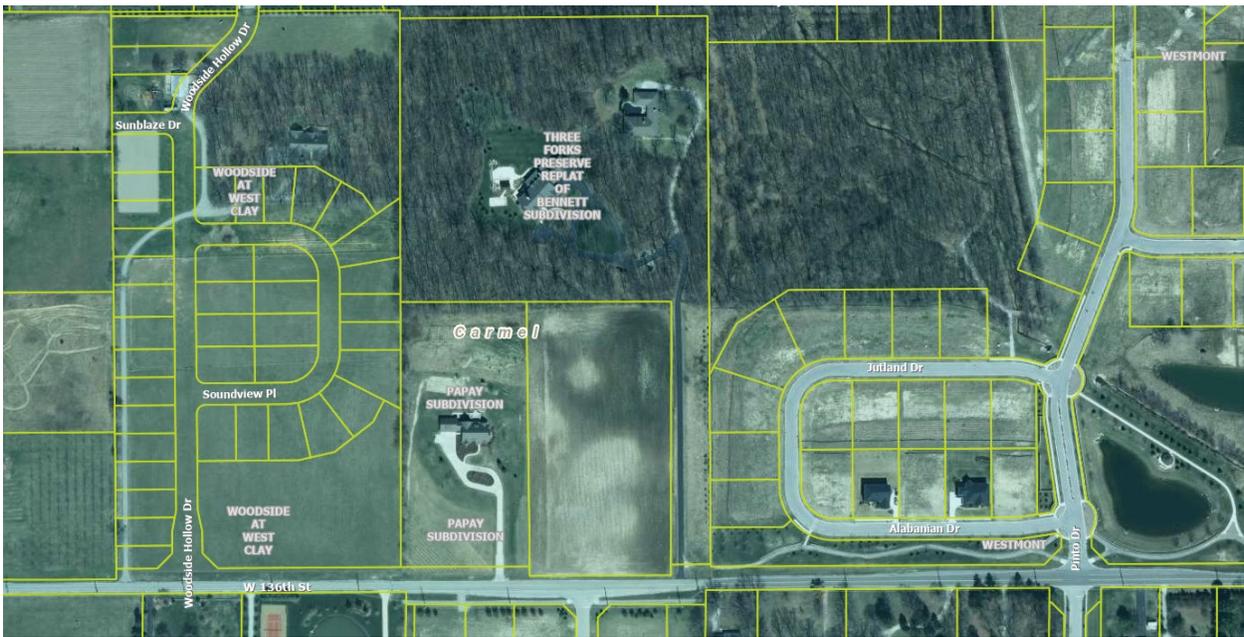
2013



2012



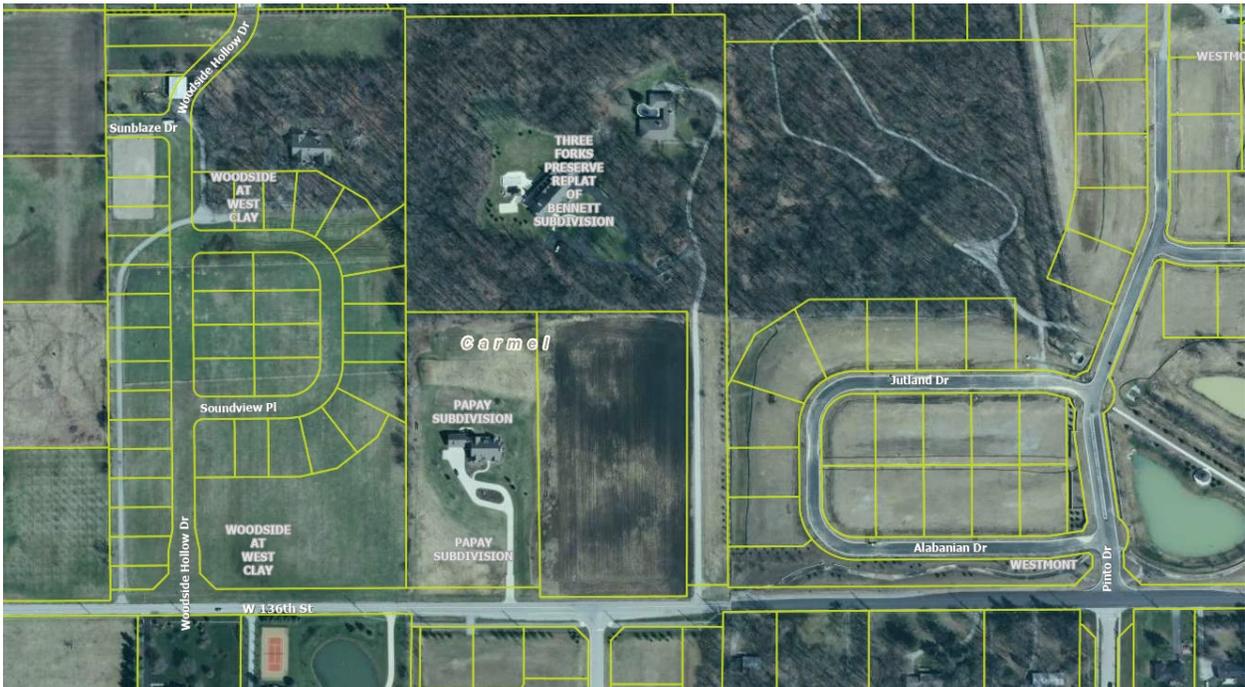
2011



2010



2009



2008



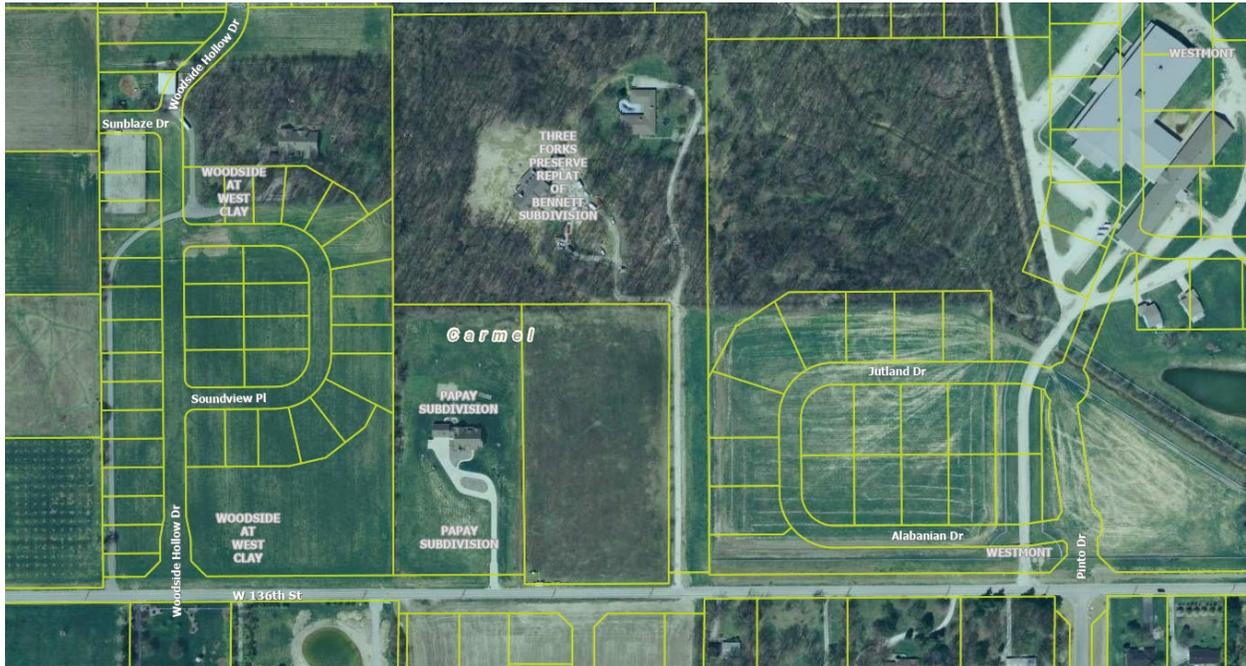
2007



2006



2005



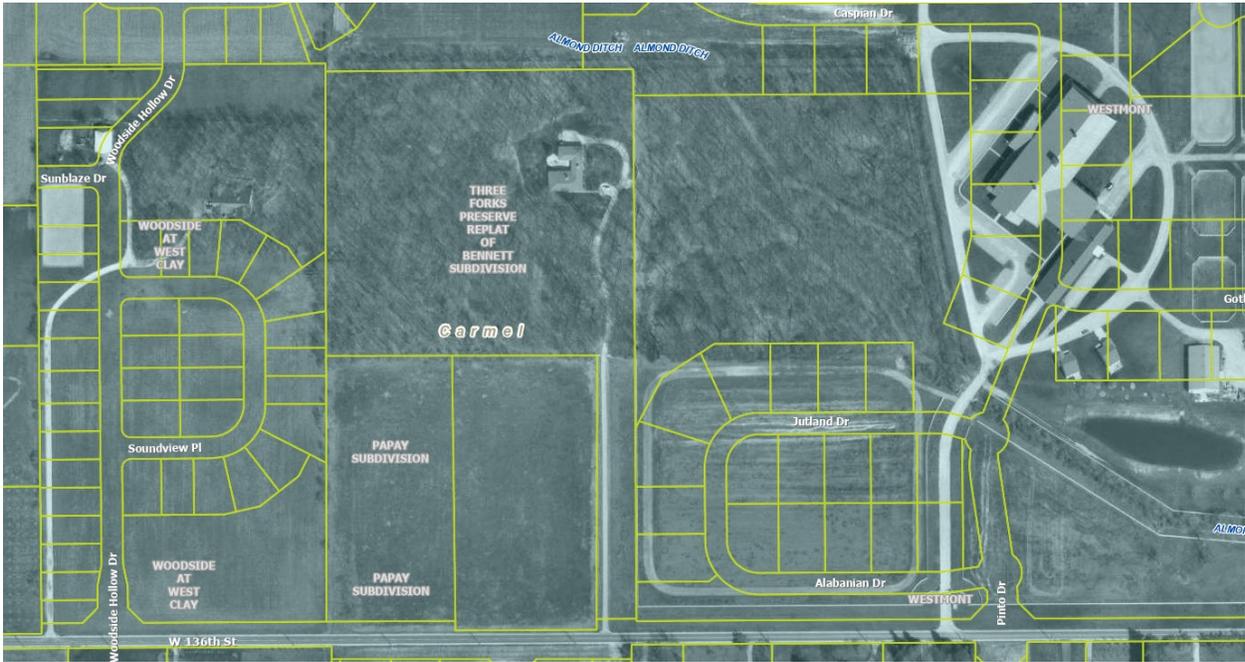
2004



2001



2000



1998



1997



1994



1985



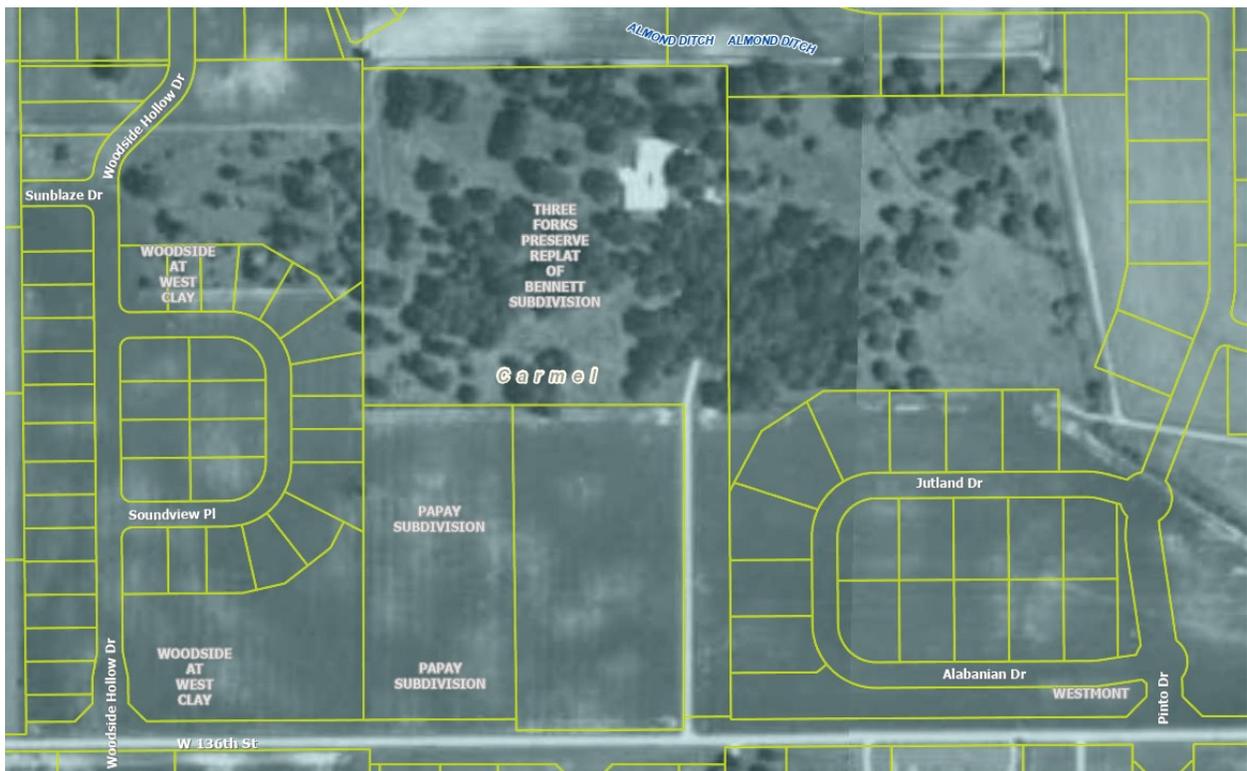
1976



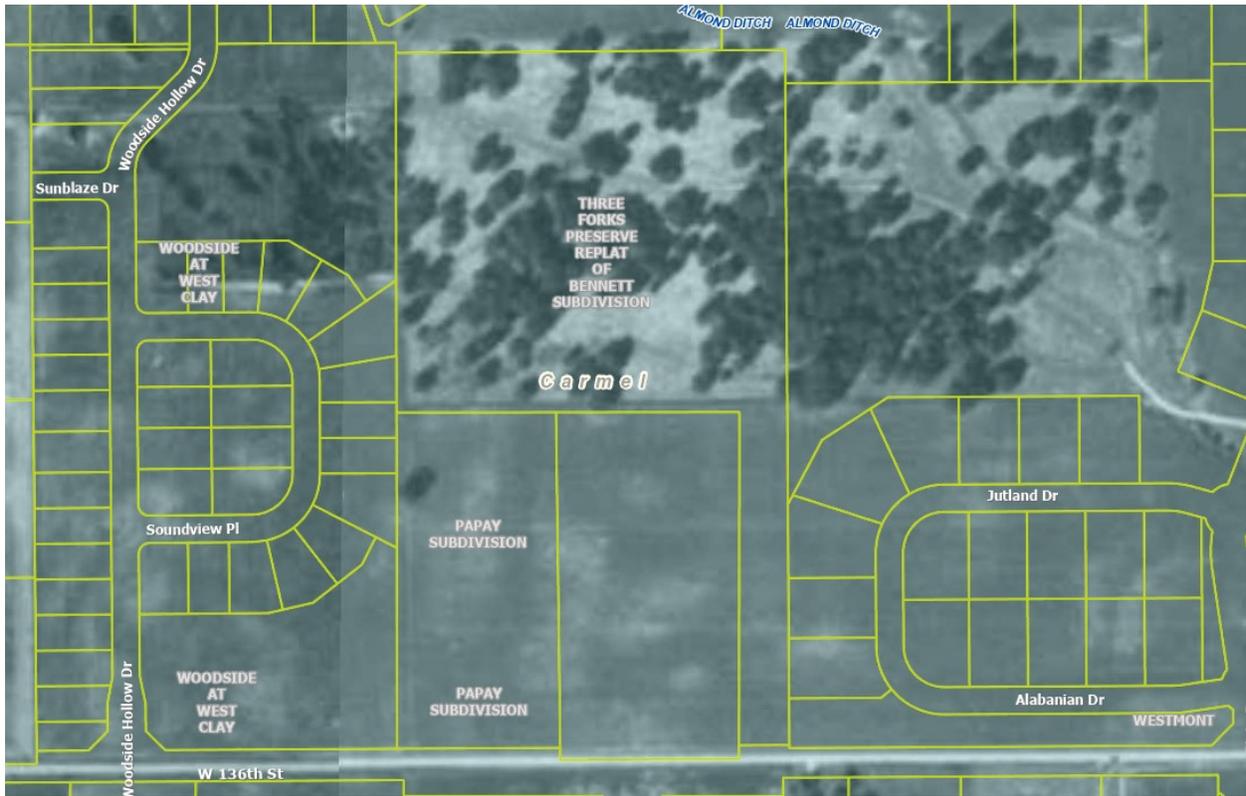
1974



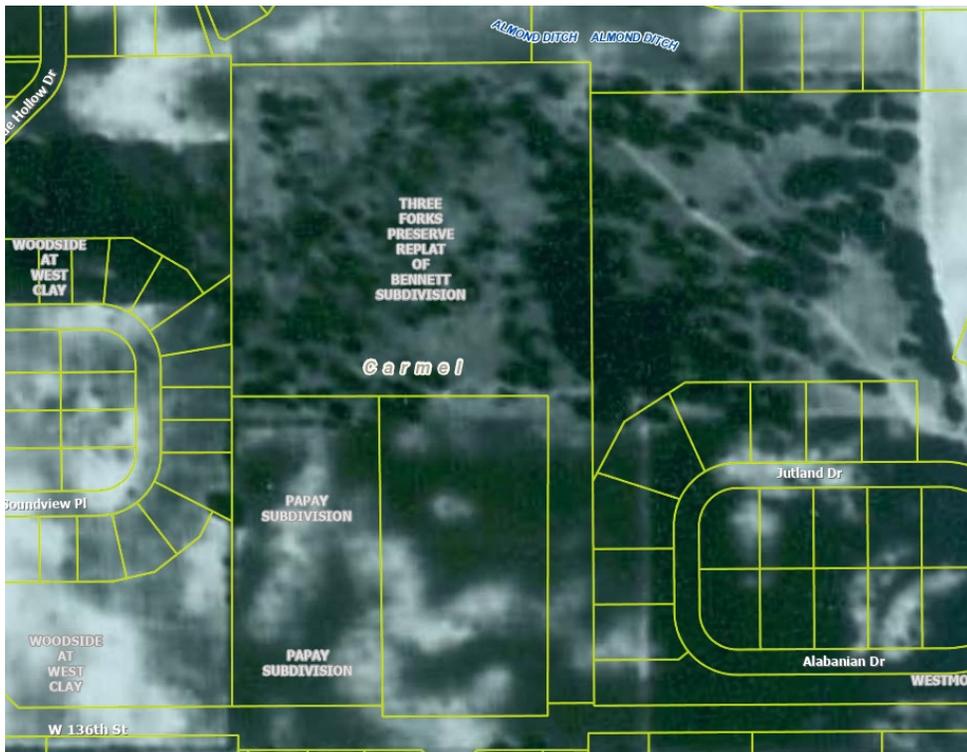
1962

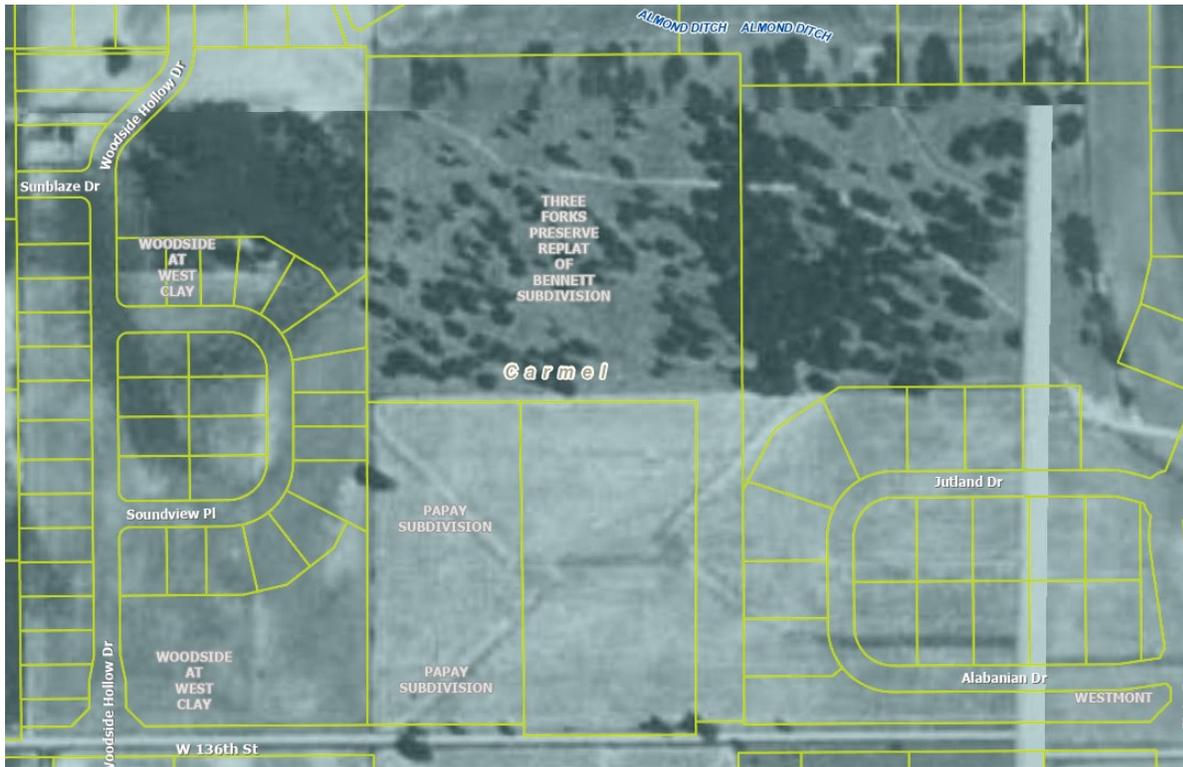


1956



1941



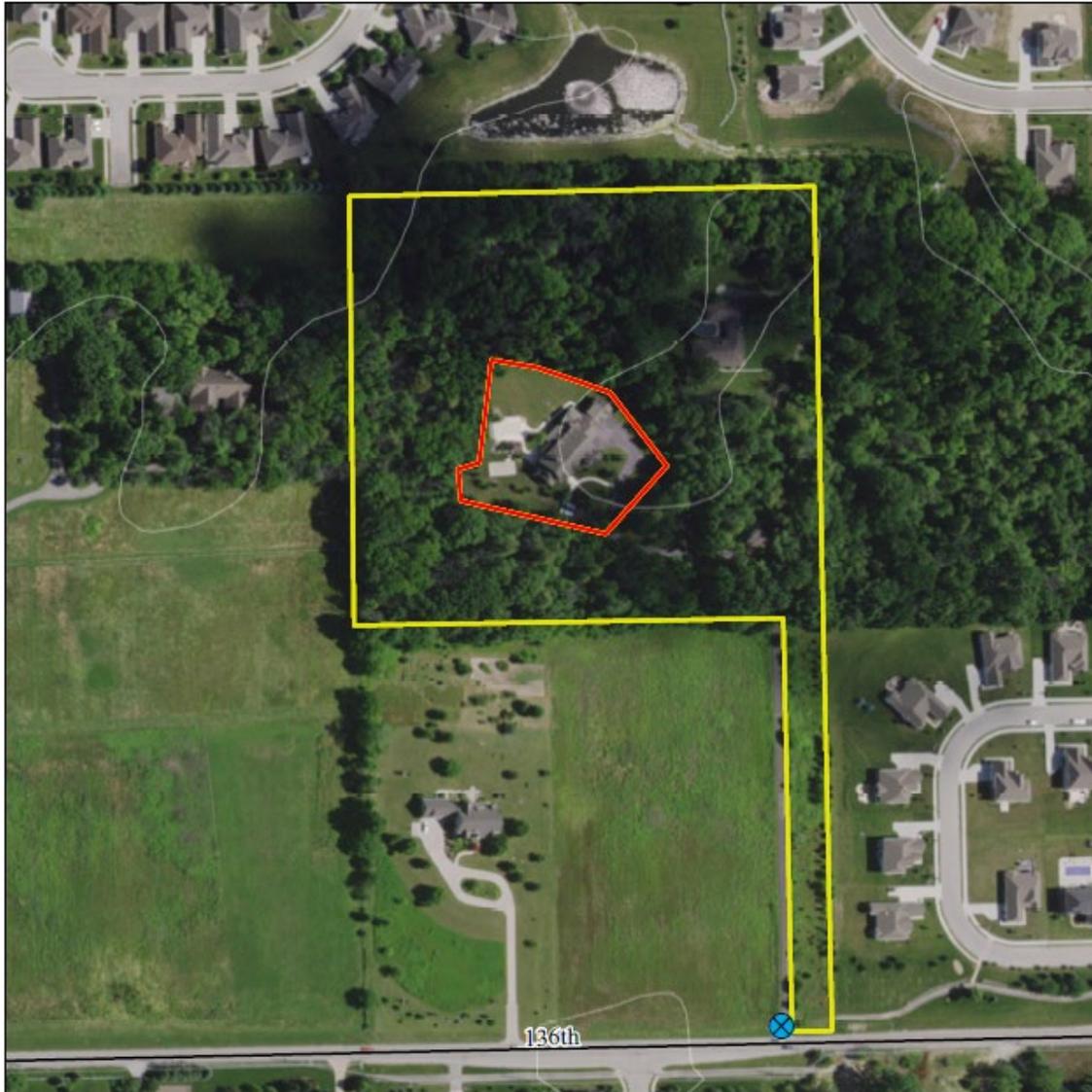


Final DNR Classified Forest with Exclusion Area Map



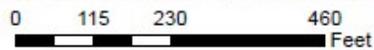
Mark Jungemann
Hamilton County
Clay Township
Section 21, T18N, R3E

Prepared By:
Zach Musser
District Forester
Date: 10/30/2019



Legend

-  Potential Classified Area
-  Exclusion Area - 1.2 Acres
-  Entry Point



1:2,677

1 inch = 223.055556 feet



All Boundaries Are Approximated

(Original Map Scale)

10.45 Acres

Final DNR Classified Forest Application

REVIEWED BY HAMILTON COUNTY AUDITOR'S OFFICE
 14 day of November 2019
 25.00
 (5)

2019057464 MISC \$25.00
 11/14/2019 02:14:17P 5 PGS
 Jennifer Hayden
 HAMILTON County Recorder IN
 Recorded as Presented



APPLICATION FOR CLASSIFICATION
 State Form 19883 (R4 / 3-17)

Department of Natural Resources
 Division of Forestry
 402 West Washington Street, Room W296
 Indianapolis, IN 46204

APPLICATION FOR THE CLASSIFICATION OF LAND AS FOREST LAND AND WILDLANDS INDIANA CODE 6-1.1-6		
I/We, <u>Jungemann, Mark E & Nancy D h&w</u>		
<i>(Please print name(s) of legal owner(s))</i>		
do hereby make application to have classified as a FOREST LAND and/or WILDLAND, subject to the provisions of an Act approved March 10, 1921, as amended, entitled "An Act to encourage timber production and to protect watersheds by classifying certain land as forest lands; and prescribing a method of appraising lands thus classified for purposes of taxation". Further, I have reviewed the management plan; it meets my objectives, and I will implement the required plan.		
Name of landowner <i>(printed or typed)</i> Mark E Jungemann	Name of landowner <i>(printed or typed)</i> Nancy D Jungemann	Name of landowner <i>(printed or typed)</i>
Signature of landowner <i>Mark E Jungemann</i>	Signature of landowner <i>Nancy D Jungemann</i>	Signature of landowner
Address of landowner <i>(street and number, city, state, and ZIP code)</i> 2020 W 136 th St, Carmel, IN 46032	Address of landowner <i>(street and number, city, state, and ZIP code)</i> 2020 W 136 th St, Carmel, IN 46032	Address of landowner <i>(street and number, city, state, and ZIP code)</i>
Telephone number 317-316-6969	Telephone number 317-850-2780	Telephone number
E-mail address markjungemann@gmail.com	E-mail address njungemann@gmail.com	E-mail address
<input checked="" type="checkbox"/> New Application <input type="checkbox"/> Revised Application: <input type="checkbox"/> Split <input type="checkbox"/> Partial Withdrawal <input type="checkbox"/> Addition		
Date of Original Application: <u>11/14/19</u> ; Document Number/Book & Page: _____ The revised application assumes the effective date of the original application.		

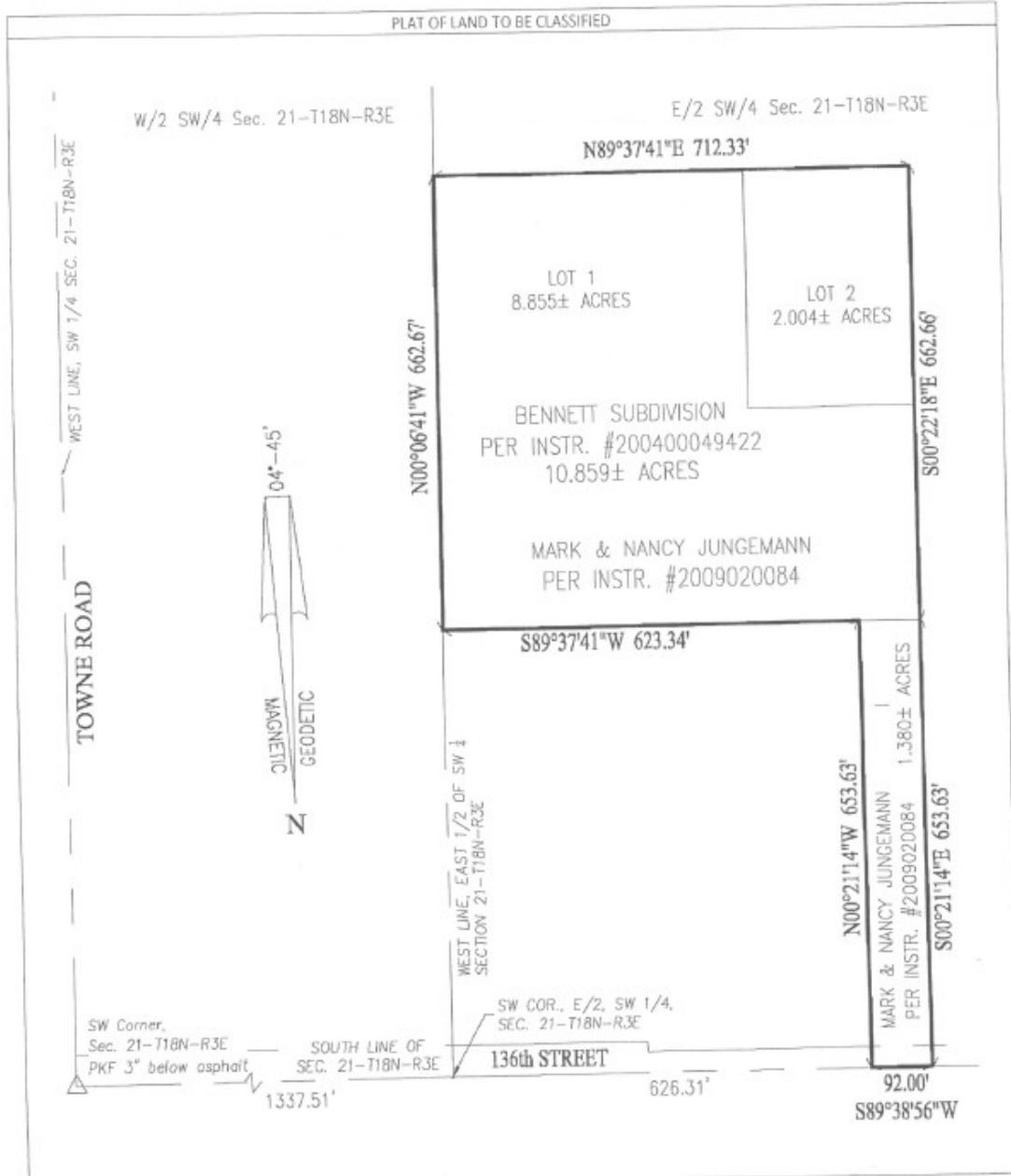
REPORT OF DESCRIPTION AND PLAT PREPARER
Part of State Form 19883 (R4 / 3-17)

The preparer must describe the land to be classified in a metes and bounds description or by other means allowed by the Natural Resources Commission. This description may come from a deed if an entire property is being entered, or it may be scaled from an aerial photo provided that the description is tied to a known point of reference such as an established section corner, or it may be taken from an actual on-the-ground survey. Each contiguous tract shall contain at least ten (10) acres of any shape at least 50' in width and its acreage stated at the conclusion of each tract description. The total acreage of all tracts being submitted as a single classification shall be stated at the end of all the individual descriptions. Additional pages may be added if the description(s) will not fit on the application.

Being a registered land surveyor in the State of Indiana or other qualified individual as determined by rule of the Natural Resources Commission, I do hereby certify that the annexed is a true plat and that the description of land mentioned in this application to the State Forester of the Department of Natural Resources, State of Indiana, to be classified as forest land and/or wildland under the provisions of the Act approved March 10, 1921, as amended, as determined from an (check one box)
 actual survey, aerial photograph, or other method allowed by the Natural Resources Commission

_____ (other method used)

Name of preparer (printed) Karen Sutton	City, state and ZIP code 10505 N. College Ave. Indianapolis, In. 46260
Signature of preparer <i>Karen Sutton</i>	
Telephone number of preparer 317-846-6611	E-mail address of preparer suttonk@weihe.net
Registered land surveyors complete the following:	
Surveyor's registration number LS21200013	



Acreage 12.240+/- Acres GROSS 12.176+/- ACRES NET MINUS RIGHT OF WAY	Scale 1" = 200'	County HAMILTON	Name of applicant Jungemann, Mark E & Nancy D h&w
---	--------------------	--------------------	--

Part of State Form 19883 (R4 / 3-17)

LEGAL DESCRIPTION OF LAND TO BE CLASSIFIED (narrative)

LOTS 1 AND 2 IN BENNETT SUBDIVISION AS RECORDED IN INSTRUMENT NUMBER 200400049422 IN THE OFFICE OF THE RECORDER OF HAMILTON COUNTY, INDIANA, TOGETHER WITH PROPERTY RECORDED IN INSTRUMENT NUMBER 2009020084, MORE PARTICULARLY DESCRIBED AS:

COMMENCING AT THE SOUTHWEST CORNER OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 21, TOWNSHIP 18 NORTH, RANGE 3 EAST, THENCE ALONG THE SOUTH LINE OF SAID SECTION 21 NORTH 89 DEGREES 38 MINUTES 56 SECONDS EAST (BEARINGS ARE INDIANA STATE PLANE COORDINATE SYSTEM EAST ZONE) 626.31 FEET TO THE POINT OF BEGINNING; THENCE NORTH 00 DEGREES 21 MINUTES 14 SECONDS WEST 653.63 FEET TO A REBAR WITH A PLASTIC CAP STAMPED 'WEIHE ENGR 0012', (HEREINAFTER REFERRED TO AS A REBAR); THENCE SOUTH 89 DEGREES 37 MINUTES 41 SECONDS WEST 623.34 FEET TO THE WEST LINE OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SAID SECTION 21, SAID POINT BEING WITNESSED BY AN IRON PIPE LOCATED 1.03 FEET NORTH AND 1.27 FEET EAST; THENCE ALONG SAID WEST LINE NORTH 00 DEGREES 06 MINUTES 41 SECONDS WEST 662.67 FEET TO A REBAR; THENCE NORTH 89 DEGREES 37 MINUTES 41 SECONDS EAST 712.33 FEET TO A REBAR; THENCE SOUTH 00 DEGREES 22 MINUTES 18 SECONDS EAST 662.66 FEET TO A REBAR; THENCE SOUTH 00 DEGREES 21 MINUTES 14 SECONDS EAST 653.63 FEET TO THE SOUTH LINE OF SAID SECTION 21; THENCE SOUTH 89 DEGREES 38 MINUTES 56 SECONDS WEST TO THE POINT OF BEGINNING, CONTAINING 12.240 ACRES, MORE OR LESS (533,166 SQ. FT.).

SUBJECT TO THE RIGHT OF WAY OF WEST 136TH STREET.

County Parcel Number(s)

17-09-21-00-18-001.000

REPORT OF APPRAISEMENT

Part of State Form 19883 (R4 / 3-17)

Name of owner	Section	Township	Range
Mark & Nancy Jungemann	21	18 North	3 East
I, <u>Robin L Ward</u> , County Assessor of <u>Hamilton</u> County, Indiana acknowledge that this land (described in this application) is entering the tax roll as Classified Forest and Wildland at the current program assessed value.			
Name of County Assessor (printed or typed)	Signature of County Assessor	Date signed (month, day, year)	
Robin L Ward	<u>Robin L. Ward</u>	11-14-2019	

REPORT OF STATE FORESTER

Part of State Form 19883 (R4 / 3-17)

This is to certify that I or my deputy, <u>Zach Musser</u> , have/has examined the forest plantation, native forest, or wildland and believe the land now complies with the provisions of the law. Furthermore, I have approved the management plan for the area being entered into the Classified Forest and Wildlands Program.		
Name of State Forester or Deputy (printed or typed)	Signature of State Forester or Deputy	Date signed (month, day, year)
Zach Musser	<u>Zach Musser</u>	11/14/2019

SEND COMPLETED AND RECORDED APPLICATION TO: Zach Musser, District Forester 15508 W 700 N Medaryville, IN 47957 219-843-4827 zmusser@dnr.in.gov	I affirm, under the penalties for perjury, that I have taken reasonable care to redact each social security number in the document, unless required by law. <u>Mark E Jungemann</u>		
	Form completed by the following.		
	Name (printed or typed)	Signature	Date (month, day, year)
	Zach Musser	<u>Zach Musser</u>	11/14/2019

PREPARED BY: Mark E Jungemann

Guidelines for the program are found here

https://www.in.gov/dnr/forestry/files/fo-ICFCG_Umbrella_plan.pdf