



## Hemlock Ridge Forest Project Design Document

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## INSTRUCTIONS

*Project Operators must complete and submit this Project Design Document (PDD) to request credits. City Forest Credits (CFC) then reviews this PDD as part of the validation process along with all other required project documents. An approved third-party verifier then does an independent check of all documents and compliance with the Protocol known as verification.*

*The Protocol Requirements at the end of this document are a list of eligibility requirements for informational purposes which are also found in more detail in the CFC Tree Preservation Protocol Version 12.40, dated February 22, 2023.*

*Project Operators should enter data and supporting attachments starting on page 3 under Project Overview where you find “[Enter text here]” as thoroughly as possible and provide numbered attachments for maps and other documentation (ex: 1 – Regional Map). Keep all instructions in the document.*

*Below is a list of documents that are needed to complete a successful project:*

- *Geospatial Location Map*
- *Regional Map*
- *Project Area Map*
- *Proof of Land Ownership or Agreement to Transfer Credits*
- *Preservation Commitment*
- *Land Use Regulations*
- *Land Use/Zoning Map*
- *Overlay Zones or Restrictions*
- *Threat of Loss Demonstration*
- *Attestation of No Double Counting and No Net Harm*
- *Attestation of Additionality*
- *Carbon Quantification Calculator*
- *Plot Sampling Map (if relevant)*
- *Sampling Raw Data*
- *Carbon Biomass calculations*
- *i-Tree Eco file*
- *Forest Composition*
- *Co-Benefit Quantification Calculator*
- *iTree Canopy Report*
- *Social Impacts*



## PROJECT OVERVIEW

**Project Name:** Hemlock Ridge Forest

**Project Number:** 047

**Project Type:** Preservation Project (under the Tree Preservation Protocol – version 12.40, dated February 22, 2023)

**Credit Commencement Date:** December 20, 2022

**Project Location:** Concord and Leroy Townships, Lake County, Ohio

**Project Operator Name:** Western Reserve Land Conservancy

**Project Operator Contact Information:** Sarah Blakely, Grants Manager

Email: [sblakely@wrlandconservancy.org](mailto:sblakely@wrlandconservancy.org)

Phone: 440-528-4168

### **Project Description:**

*Describe overall project details and goals as summarized in application. Include information about where the Project is located, Project Area acreage and other relevant background. If the Project Area is part of a larger program or preservation effort, include one sentence with more information (2 paragraphs).*

The Hemlock Ridge Forest preservation project consists of an approximately 222.8-acre Project Area that is part of a 338-acre property. The majority of the property is forested, and the Project Area represents the portion of the forest where trees are at risk of being harvested and converted to another land use which includes the developable area and the portion of the floodplain in Concord Township, but excludes the steep forested slopes, forested wetlands, riparian buffer, and the portion of the floodplain in Leroy Township. Project Operator, Western Reserve Land Conservancy, is partnering with the landowner, Lake Metroparks, to preserve 222.8 acres of threatened forest as part of a larger preservation effort to benefit wildlife habitat, water quality, green space access and connection, and provide carbon sequestration.

Located along a major interstate, the Project Area is at high-risk of conversion for residential and commercial development. It provides a critical buffer for over a mile of the Grand River, a State-designated Wild River. Surrounding land use consists of I-90 to the south, the Grand River to the north with residential lots on the opposite bank, and a mix of residential and commercial developments and protected forest to the east and west. The property is located in two townships, Concord and Leroy Townships and is zoned to allow for residential or business development. In Concord Township, no permit is needed to clear trees in the floodplain. Prior to this acquisition, the Property was being maintained by the landowner with the intention of one day developing it as a residential subdivision. The Project Area's forest stands consist of mixed hardwood species dominated by maple, tulip tree, sassafras, and oak. With frontage along a mile of the State Scenic Grand River, this tract of land is strategically located to protect high-quality, regionally significant resources and connect more than 4,500 acres of other parks and preserved lands.

Carbon credits will provide a critical revenue source for the long-term preservation of Hemlock Ridge Forest. Western Reserve Land Conservancy began discussion with City Forest Credits before acquiring the property in 2020, with the intent to register the carbon project and record a conservation easement protecting the forest in perpetuity. Erie Land Resources LLC (ELR LLC), an Ohio limited

liability company of which Western Reserve Land Conservancy is the sole member, purchased the Property from a bankruptcy auction in 2020 to temporarily secure it from development or logging. ELR LLC assumed considerable risk acquiring the property without a guarantee of a conservation organization being able to quickly purchase and protect this unique property. When considering the feasibility of going at-risk to preserve the Property and its high-quality forest, the carbon credit potential was a contributing factor in the approval decisions to purchase the property without a clear funding path. Lake Metroparks and the Land Conservancy partnered to secure funding for the Metroparks’ eventual acquisition of the property in December 2022 with a conservation easement also recorded in December 2022. The Hemlock Ridge Forest is now owned and managed by Lake Metroparks and protected by a conservation easement held and stewarded by Western Reserve Land Conservancy. The Metroparks has agreed to the Land Conservancy’s retention of the carbon credit rights as documented in the deed restrictions.

## DEFINING THE PROJECT AREA (Section 1.3 and 1.4)

### Project Area Location

*Describe the city, town, or jurisdiction where the Project is located. State which urban location criteria is met from Protocol Section 1.3.*

The project is located in Concord and Leroy Townships, Lake County, Ohio and is adjacent to the Cleveland Urban Area per the Census Bureau map, meeting the urban area criterion under Protocol Section 1.3A of being along the boundary of an Urban Area as defined by the US Census Bureau. The parcels directly adjacent to the Project Area across the Grand River are included in the Cleveland Urban Area.

The project is also located within a planning area for a metropolitan planning agency or entity, Northeast Ohio Areawide Coordinating Agency (NOACA), thus also meeting Protocol Section 1.3D of being within the boundary of a regional metropolitan planning agency. NOACA was formed under Section 307.15 through 307.19, 307.85, and 713.21 through 713.24 under the Revised Code of the State of Ohio and encompasses Cuyahoga, Geauga, Lake, Lorain, and Medina Counties. The NOACA Code of Regulations [can be found here](#).

Address: Property Centroid: 41.705984, -81.188184  
Parcel Number(s): 07-A-027-0-00-009-0 and 08-A-009-0-00-005-0

- Attachment A – Hemlock Ridge Location Eligibility Map

### Project Area Parcel Information

*List parcel(s) in the Project Area.*

Municipality	Parcel Number	Notes <i>Include total acres and acres included in Project Area</i>
Concord Township	08-A-009-0-00-005-0	113.18 acres

		<i>Portion of parcel included – 88.3 acres</i>
Leroy Township	07-A-027-0-00-009-0	224.82 acres <i>Portion of parcel included – 134.5 acres</i>
	<b>Total Project Area</b>	222.8 acres

### **Project Area Maps**

*Provide three maps of the Project Area that illustrate the location: geospatial location, regional, and detailed. Maps should include project title, relevant urban or town boundaries, defined Project Area, and legend.*

- Geospatial Location Map  
*Show the boundaries of the Project Area in a KML, KMZ, or shapefile format*  
Attachment B - Hemlock Ridge Geospatial Location Map  
Attachment C – Hemlock Ridge Project Area Shapefiles: includes ineligible 30-acre reserved recreation area within the Project Area because the exact location is not yet decided.
- Regional Map  
*Show where the Project Area is located in relation to the state and/or region*  
Attachment D - Hemlock Ridge Regional-Scale Map
- Detailed map of Project Area  
*Show the Project Area and parcel boundaries.*  
Attachment E - Hemlock Ridge Project Area Map

### **OWNERSHIP OR ELIGIBILITY TO RECEIVE POTENTIAL CREDITS (Section 1.5)**

*Project Operator must demonstrate ownership of potential credits or eligibility to receive potential credits. If Project Operator is the landowner, attach a deed showing ownership and explanation of when the property was acquired. If the Project Operator is not the landowner, provide the Agreement between Project Operator and landowner authorizing Project Operator to execute this project.*

#### **Name of landowner of Project Area and explanation**

Hemlock Ridge was purchased by Lake Metroparks in December 2022 with assistance by Western Reserve Land Conservancy for preservation purposes. Lake Metroparks owns the entire 222.8-acre Project Area. The property, including the Project Area, was acquired by Erie Land Resources, LLC (ELR LLC), an Ohio limited liability company of which Western Reserve Land Conservancy is the sole member, from a bankruptcy auction in 2020 to temporarily secure it from development or logging.

ELR LLC then sold the property to Lake Metroparks. In paragraph three of the deed of transfer between ELR LLC and Lake Metroparks (Attachment F), publicly recorded on December 20, 2022, ELR LLC retained the carbon credit rights associated with the entire standing forest, now and in the future, with the

exception of 30 forested acres reserved for recreation-associated development under the Preservation Commitment (described in more detail in the Preservation Commitment Section below).

ELR LLC, as the owner of the carbon credit rights to the Project Area, has signed an Agreement to Transfer Potential Credits with the Project Operator, Western Reserve Land Conservancy, see Attachment G.

- Attachment F - Hemlock Ridge Deed
- Attachment G - Agreement to Transfer Potential Credits

## PROJECT DURATION (Section 2.2)

*Project Operator commits to the 40- or 100-year project duration requirement through a signed Project Implementation Agreement with City Forest Credits and agrees to the statement below.*

Project Operator has committed to the 40-year project duration and signed a Project Implementation Agreement with City Forest Credits on August 16, 2023.

## PRESERVATION COMMITMENT (Section 4.1)

*Describe the Preservation Commitment terms and attach a complete copy of the recorded document. If Project Area does not have the same boundaries as Preservation Commitment, please state the reasons why.*

**Preservation Term:** Perpetuity

**Date recorded:** December 20, 2022

**Preservation Commitment Explanation:** Lake Metroparks purchased the 338-acre Hemlock Ridge Forest property in December 2022. After the property was secured, Lake Metroparks entered into a conservation easement with Western Reserve Land Conservancy to steward the property and protect the trees from removal. The conservation easement that protects the trees was signed December 19, 2022 and recorded on December 20, 2022. The Preservation Commitment aligns with the goals and objectives set forth in the Protocol.

Specific language in the conservation easement to protect the trees and carbon stock:

- Section B.1(d) on page 6: “Tree Removal. Grantor reserves the right to remove (i) from anywhere on the Protected Property dead, downed (by natural causes), significantly diseased or materially damaged trees and tress that pose a danger to human life or neighboring properties, and (ii) trees from areas within which existing trails are being widened or new trails created (as provided in subsection 4(c)); **provided, however, that any such removal** does not materially impair significant conservation interests and **has no more than a negligible or de minimis impact on biomass and carbon stock.**” (emphasis added)
- Section B.4(f) on page 8: “Habitat Disturbance. Except as otherwise permitted in this Grant, Grantor shall not cut down, remove, or destroy trees or other plants.”

Section B.2(b) of the easement reserves the right to create recreation-related “Future Improvements” over an area not exceeding 30 acres of the property. The exact language is as follows: “construct and maintain non-residential structures and associated improvements typically used in parks, such as, but not limited to, pavilions, parking areas, roads for access to parking areas and for management and maintenance activities, restroom facilities, impervious trails, fencing, landscaping and lawns, observation platforms, bridges and associated signage” with the restriction that the impacted area cannot exceed 30 acres. To be conservative, 30 acres have been excluded from the overall Project Area for carbon quantification, so while the Project Area is 222.8 acres, the credited area is 192.8 acres.

Attachment H – Hemlock Ridge Conservation Easement

**DEMONSTRATION OF THREAT OF LOSS (Section 4.2, 4.3, and 4.4)**

*Demonstrating the Threat of Loss is shown in several ways: land use designation that allows a non-forest use, overlay zones, existing restrictions, and one of three conditions that illustrate pressure to convert the Project Area to a non-forest use.*

**Land use designation**

*Describe the land use designation, including what types of non-forest use it allows. Attach a copy of the relevant land use designations, which may include development regulations such as zoning ordinances. Include a map depicting the designation of the relevant municipality, with the Project Area boundaries clearly indicated on the map.*

The Project Area spans two parcels within two townships and three zoning districts. As designated by Concord and Leroy Townships in Lake County, Ohio, all upland areas allow for either residential or business development and tree removal, and the floodplain within Concord Township allows for tree removal while the floodplain with Leroy Township does not allow for tree removal.

**Concord Township Zoning:**

There are two stands within the Concord Township portion of the Project Area totaling 88.3 acres where tree removal is allowed. Both stands are zoned as R4 Residential which allows for removal of trees. The upland portion of approximately 74.6 acres allows for development and tree removal. While development is not permitted in the floodplain portion of approximately 13.7 acres, tree removal without a permit or approval is permitted.

**Leroy Township Zoning:**

There are also two stands within the Leroy Township portion of the Project Area totaling 134.5 acres where development and tree removal are allowed. The floodplain within Leroy Township has been excluded from the Project Area because tree removal is not allowed. The largest portion of approximately 106.5 acres is zoned R2 Residential and allows for development and tree removal. The smaller stand of approximately 28 acres is zoned B2 Special Interchange and allows for business development and tree removal.

Township	Zoning (Overlay)	Acreage
Concord Township	R4 Residential	74.6

	R4 Residential (Floodplain)	13.7
	Subtotal	88.3
Leroy Township	R2 Residential	106.5
	B2 Special Interchange	28
	Subtotal	134.5
	<b>Total</b>	<b>222.8</b>

Attachment I – Hemlock Ridge Zoning Map  
Attachment J – Hemlock Ridge Zoning Documentation

**Overlay zones or other restrictions**

*Describe any overlay zones that prohibit development or forest clearance such as critical areas, wetlands, or steep slopes and their protection buffers. Describe any legal encumbrances or other pre-existing tree/forest restrictions that may have hindered removal of the Project Trees (in the pre-Preservation Commitment condition). If present, attach a copy of the applicable restriction and a map depicting the overlay boundaries, with the Project Area boundaries clearly indicated on the map.*

The larger conservation property contains critical areas including floodplain, steep slopes, wetlands, streams, and the associated protected riparian and wetland buffers. It also contains several non-forest areas including primitive roads and mown areas. All of the critical areas and non-forest areas have been excluded from the creditable Project Area. The total area excluded from the Project Area is approximately 115.2 acres.

While neither Leroy Township or Concord Township define steep slopes, sloped areas of greater than 15% were excluded from the Project Area. The floodplain within Leroy Township is located within the FEMA Floodplain and was excluded from the Project Area following reviews of the Riparian Setback Guidance and communication with the Leroy Township Zoning Inspector. Leroy Township regulations require “Where the one hundred year flood plain is wider than the minimum riparian setback on either or both sides of a designated watercourse, the minimum riparian setback shall be extended to include the outermost boundary of the one hundred year flood plain as delineated on the flood hazard boundary map(s) for the affected area provided by FEMA” (31.1.3C3). The regulations also require that “Except as otherwise provided in this Regulation, riparian setbacks shall be preserved in their natural state” (31.1.3C2). The floodplain within Concord Township is not protected by zoning regulations. Confirmation from Lake County Soil and Water and the Zoning Inspector for Concord Township verified that trees can be removed in the floodplain without a permit. See Attachment J – Hemlock Ridge Zoning Documentation for regulations and local confirmation communications.

Leroy township has a riparian setback ordinance of 50 feet for Class III streams and 25 feet for lesser streams. A 50-foot setback was used to buffer the streams in the Project Area in Leroy township. In Concord township a minimum of 25 feet of all watercourses draining an area less than one square mile is required. All the streams on the concord township project area drain less than a one-mile area, so a 25-foot setback was used. Concord township also requires a 50-foot buffer for Category 3 wetlands. There is a 0.56-acre wetland within the Project Area. While the wetland has not be categorized, a 50-foot buffer was left out of the creditable area.

Attachment J – Hemlock Ridge Zoning Documentation  
Attachment K – Hemlock Ridge Overlay Map

**Threat of loss demonstration (Section 4.4 A, B, or C)**

*Describe one of the three threat of loss conditions that are applicable prior to the Preservation Commitment. Provide supporting evidence such as maps, sale or assessed value documentation, or appraisal information.*

- A) *Developed or improved uses surrounding at least 30% of perimeter of Project Area*
  - *A map depicting the Project Area with parcel boundaries, perimeter of developed or improved uses, and calculation of the border with these uses*
- B) *Sold, conveyed, or assessed in past three years at value greater than \$8K/acre for bare land*
  - *A settlement statement, assessor statement, or other evidence of land transaction*
- C) *Fair market value higher after conversion to a non-forested use*
  - *A “highest and best use” study from a state certified general real estate appraiser stating that the Project Area Would have a fair market value after conversion to a non-forested “highest and best use” greater than the fair market value after preservation]*

The Project Area meets conditions A for threat of loss. The Project Area is surrounded on over 60% of the perimeter by non-forest, developed, or improved uses. The property is surrounded by residential lots and an interstate.

Attachment L – Hemlock Ridge Perimeter Development Map

**ATTESTATION OF NO DOUBLE COUNTING OF CREDITS AND NO NET HARM (Section 5)**

*Complete and attach the following attestation: Attestation of No Double Counting of Credits and Attestation of No Net Harm. Provide any additional notes as relevant. Provide a map that includes both the Project Area and the closest registered urban forest Preservation Project based on the registered urban forest preservation database KML/Shapefile provided by CFC to demonstrate that the Project does not overlap with any existing urban forest carbon projects.*

Project Operator has mapped the Project Area against the registered urban forest preservation project database and determined that there is no overlap of Project Area with any registered urban forest preservation carbon project.

Project Operator has signed the Attestation of No Double Counting of Credits and No Net Harm on September 21, 2023.

Attachment M- Hemlock Ridge Attestation of No Double Counting and No Net Harm  
Attachment N – Hemlock Ridge No Double Counting Map



## ADDITIONALITY (Section 6)

*Additionality is demonstrated by the Project in several ways, as described in the City Forest Credits Standard Section 4.9.1 and Tree Preservation Protocol.*

Project Operator demonstrates that additionality was met through the following:

- Prior to this project, the trees in the Project Area were not protected via easement or recorded encumbrance or in a protected zoning status that preserves the trees
  - See Demonstration of Threat of Loss section above
- The land use designation/zoning in the Project Area must currently allow for a non-forest use
  - See Demonstration of Threat of Loss section above
- The trees in the Project Area face some threat risk of removal or conversion out of forest
  - See Demonstration of Threat of Loss section above
- The Project Operator records in the public land records an easement, covenant, or deed restriction specifically protecting the trees for the project duration of 40 years or 100 years (40 or 100 years depending on the Protocol version)
  - See Preservation Commitment section above

Taken together, the above elements allow crediting only for unprotected trees at risk of removal, which are then protected by a Project action of preservation, providing additional avoided GHG emissions.

Additionality is also embedded in the quantification methodology. Projects cannot receive credits for trees that would have remained had development occurred, nor can they receive soil carbon credits for soil that would have been undisturbed had development occurred. Leakage is prevented by a deduction for displaced development in Protocol Section 11.4.

Project Operator has signed an Attestation of Additionality on September 21, 2023.

Attachment O- Hemlock Ridge Attestation of Additionality

## CARBON QUANTIFICATION DOCUMENTATION (Section 11)

*Follow detailed instructions in the Protocol for conducting quantification and use the Carbon Quantification Calculator to show calculations. CFC will provide the Carbon Quantification Calculator and Forest Composition Report Template. Ensure that your requested credit issuance schedule (issuance dates) is accurate and complete in the calculator. Project Operators should describe and appropriately reflect in their carbon quantification any and all planned future activities that may affect the percent canopy or carbon stocking.*

### Summary numbers from Carbon Quantification Calculator

Project Area (total acres)	<b>222.8</b>
Credited Project Area (creditable acres, excludes 30-acre "future improvements")	<b>192.8</b>
Does carbon quantification use stratification (yes or no)	<b>No</b>
Accounting Stock (tCO <sub>2</sub> e)	<b>51,104</b>
On-site avoided biomass emissions (tCO <sub>2</sub> e)	<b>40,883</b>
On-site avoided soil carbon emissions (tCO <sub>2</sub> e)	<b>11,337</b>



Deduction for displaced biomass emissions (tCO <sub>2</sub> e)	<b>7,482</b>
Deduction for displaced soil emissions (tCO <sub>2</sub> e)	<b>3,435</b>
Credits from avoided biomass emissions (tCO <sub>2</sub> e)	<b>33,402</b>
Credits from avoided soil emissions (tCO <sub>2</sub> e)	<b>7,902</b>
Total credits from avoided biomass and soil emissions (tCO <sub>2</sub> e)	<b>41,303</b>
Credits attributed to the project (tCO <sub>2</sub> e), excluding future growth	<b>41,303</b>
Contribution to Registry Reversal Pool Account	<b>4,130</b>
<b>Total credits to be issued to the Project Operator (tCO<sub>2</sub>e)</b> <i>(excluding future growth)</i>	<b>37,173</b>

**GHG Assertion:**

Project Operator asserts that the Project results in GHG emissions mitigation of 37,173 tons CO<sub>2</sub>e issued to the project.

**Approach to quantifying carbon**

*Describe the forest conditions and general approach used to quantify carbon (e.g., 11.1.B with full inventory, i-Tree Eco plots, other). Attach the Carbon Quantification Calculator.*

To quantify carbon, Western Reserve Land Conservancy hired Davey Resource Group (DRG) to complete an on-site plot sample inventory to determine carbon stock. DRG conducted a sample forest assessment to the standards set in CFC Tree Preservation Protocol Section 11.1.B. The sample established 24 plots sized 1/10<sup>th</sup>-acre. Within each plot, each live tree was inventoried that was at 5 inches in diameter. Species, diameter, and overall tree condition were recorded for each tree. DRG used i-Tree Eco to input the sample data to determine carbon storage. The CFC Carbon Calculator was used for quantification for subsequent steps 11.2, 11.4, and 11.5.

The Preservation Commitment reserved up to 30 acres for recreation-related development (referred to as “future improvements” in the easement), though the precise extent and location of the future improvements area within the 222.8 Project Area is not known. To be conservative, only 192.8 of the 222.8 acres were credited in the carbon quantification.

- Attachment P – Hemlock Ridge Carbon Quantification Spreadsheet
- Attachment Q – Hemlock Ridge Forest Carbon Biomass
- Attachment R – Hemlock Ridge Plot Location Map
- Attachment S – Hemlock Ridge i-Tree Eco Raw Data
- Attachment T – Hemlock Ridge i-Tree Eco Source File

**Accounting Stock Measurement Method**

*Provide an overview to describe quantification methods, including which method was used to determine the accounting stock.*

DRG completed a sample inventory using randomized 1/10<sup>th</sup>-acre plots, following section 11.1.B in the CFC Tree Preservation Protocol. DRG used i-Tree Eco to determine the accounting stock and used a standard error of 6%.

Carbon quantification is based on the 24 sample plots. The metric tons of Carbon is 17,147.35. The standard error is 1,040.10 metric tons, or 6.07%.

Biomass tC/ac = (metric tons of carbon – standard error)/project area acres = (17,147.35-1,040.10)/222.8= 72.29(cell B11 on Attachment P).

### **Plot Sampling Map and Raw Data**

*If sampling was utilized to estimate the carbon stock, include the map of plot sample locations and raw data collected.*

For quantification method 11.1.B, sampling was utilized to estimate the carbon stock.

- Attachment R - Hemlock Ridge Plot Location Map
- Attachment T - Hemlock Ridge i-Tree Eco Source File

### **Carbon Biomass Calculations**

*Include calculations used to determine the biomass in the Project Area. Attach i-Tree Eco file if i-Tree was used to calculate the carbon biomass.*

Biomass tC/ac = (metric tons of carbon – standard error)/project area acres = (17,147.35-1,040.1)/222.8= 72.29(cell B11 on Attachment O).

- Attachment Q – Hemlock Ridge Forest Carbon Biomass
- Attachment T – Hemlock Ridge i-Tree Eco Source File

### **Stratification**

*If stratification is used, maps of strata and stratum definitions. If not used, list not applicable.*

Carbon estimates were calculated by iTree Eco from a sample inventory of the Project Area, divided into sampling areas by municipal location and historic land use contributing to forest age. Because of steps taken to ensure the sample inventory was representative of the entire Project Area, for individual stands with the Project Area, DRG recommended using the same average Biomass tC/ac for each stand that is described in the project design document, so no stratification was used for carbon quantification.

The Project Area was divided into six sampling areas. The subdividing helped to account for variability within the Project Area and ensured that the sample is representative of the entire site.

Stand 1: Concord Township – Mixed land use history

Stand 2: Concord Township – Extant forest in the 1970s

Stand 3: Concord Township – Agricultural use in the 1970s

Stand 4: Leroy Township – Agricultural use in the 1970s

Stand 5: Leroy Township - Extant forest in the 1970s

Stand 6: Leroy Township - Floodplain

- Attachment Q –Hemlock Ridge Forest Carbon Biomass

### **Forest Composition**

*Summarize the forest composition and attach the Forest Composition Report.*

Per 11.1.B, a sample inventor was conducted on trees over 5 inches in diameter at breast height. An Urban Forester within DRG inventoried trees within the Project Area – noting genus or species identification, crown condition, and diameter at breast height – to accurately identify forest composition. The main species in Hemlock Ridge Forest include red maple (*Acer rubrum*) at 21%, Tulip tree (*Liriodendron tulipifera*) at 16.7%, and Sassafras (*Sassafras albidum*), at 14.2%.

- Attachment U – Hemlock Ridge Forest Composition Report

### **Area Expected to Remain in Trees after Potential Development (11.2)**

*Describe the land use designation, any restrictions, and the method used to determine the area expected to remain in trees after potential development (fraction at risk of removal). If residential land use, follow 11.2.B. and provide the calculation showing which percentage of accounting stock at risk of removal is appropriate to include.*

The fraction of biomass at risk differs by zoning district and ranges from 69.15%-90% based on minimum acre size per unit. The Project Area is zoned for residential (R4 - Concord Township, R2 -Leroy Township), which allows for residential development, and business (B2 Special Interchange – Leroy Township), which allows for business development.

Because the precise location of the excluded 30-acre recreation-related “future improvements” area is not known, fraction at risk was calculated over the entire 222.8-acre area. Given the nature of the planned improvements (e.g., pavilions, parking areas, roads, restroom facilities, impervious trails, fencing, landscaping and lawns, observation platforms, etc.), it is a reasonable assumption that these improvements would be spread across the entire property, rather than concentrated within any one particular portion of the property (and therefore within a single zoning category), and thus that the ratio of fraction at risk would hold true even after the exclusion of the 30 acres.

Given the zoning requirements stipulated through Concord and Leroy Townships zoning, residential lots must be a minimum of 1 to 3 acres. Depending on configuration, the 194.8 acres of the Project Area zoned residential could accommodate approximately 122 residential lots with the addition of public roads and necessary infrastructure, further risking biomass removal and increasing the percentage of impervious surface.

The method outlined in Protocol Section 11.2.B.ii was used to calculate the percent avoided biomass emissions. The Project Area was sub-divided by zoning to determine how many acres could be cleared according to the relevant zoning regulations. Calculations are described in detail in the Fraction at Risk Calculation Spreadsheet. In the table below, the total potentially cleared acres is listed as N/A when the fraction at risk of tree removal calculated per 11.2.B.ii was greater 90%.

Zoning	Number of Acres	Allowed Number of Dwellings	Total Potentially Cleared Acres	Fraction At Risk of Tree Removal
Concord R-4	88.3	87	N/A	90%
Leroy R-2	106.5	35	73.65	69.15%

For the 28 acres of Project Area zoned B2 Special Interchange, Section 11.2.A in the Preservation Protocol allows for 90% of the Accounting Stock on commercial and other primarily non-residential zones to be counted as “Avoided Biomass Emissions”. Required landscaping for commercial lots under the Leroy Township Screening and Landscaping Regulations is minimal (one tree per 50 feet of property line that would require screening), and thus would be encompassed within the 10% of estimated tree retention under the Protocol allowance. Therefore, the 90% Protocol allowance was used.

Zoning	Number of Acres	Fraction At Risk of Tree Removal
Leroy B-2 Special Interchange	28	90%

The total potentially cleared acres across the Project Area is 178.32 acres, encompassing 79.47 acres for zoning Concord R-4 (90% of 88.3 acres), 73.65 acres for zoning Leroy R-2 (69.15% of 106.5 acres), and 25.2 acres for zoning Leroy B-2 (90% of 28 acres). Thus 80% of the Project Area is at risk of tree removal. Calculations can be viewed in detail in Attachment V Hemlock Ridge Fraction at Risk Calculations.

**Quantification of Soil Carbon - Existing Impervious Area and Impervious Limits (11.4)**

*The Project may claim avoidance of emissions from soil carbon caused by conversion of soils to impervious surfaces. Describe applicable land use designation and development rules, any restrictions, existing impervious area and maximum fraction impervious cover.*

The Project Area is zoned for residential (R4 - Concord Township, R2 -Leroy Township), which allows for residential development, and business (B2 Special Interchange – Leroy Township), which allows for business development. As with the fraction at risk, the ratio of impervious surface avoided was calculated for the entire 222.8 acres, under the assumption that the 30-acre improvements would be spread across the entire property and thus that the ratio calculated over 222.8 acres would be a reasonable approximation even after the 30 acres were excluded.

Zoning regulations for R-4 and R-2 do not specifically limit impervious surface area. In Concord Township, 13.7 acres are located in the 100-year floodplain, so while trees can be cleared as was confirmed by the Concord Township Zoning Inspector, development is not allowed. Section 11.4 of the protocol allows for 50% of the Project area in a residential zone to be eligible for conversion. Based on these factors, for 181.1 acres of the Project Area zoned residential (74.6 total acres in Concord Township and 106.5 total acres in LeRoy Township), 50% is eligible for conversion to impervious surface, and for 13.7 acres in Concord Twp of the Project Area zoned residential, 0% is eligible for conversion to impervious surface.

Per 11.4.A., 90% of the Project Area is allowable in a commercial zone as eligible for conversion, but zoning regulation for Leroy Township B-2 limits impervious surface area to 70% of the parcel area. Thus, for the 28 acres of the Project Area zoned business, 70% is eligible for conversion to impervious surface.

The overall weighted average of the entire Project Area is 49% avoided conversion to impervious surface.

Zoning - Stand	Total Acres	Maximum Impervious Surface per Zoning	Fraction at Risk of Impervious Surface
Concord R-4	74.6	N/A	50%
Concord R-4 Floodplain	13.7	0%	0%
Leroy R-2	106.5	N/A	50%
Leroy B-2 Special Interchange	28.0	70%	70%

- Attachment V Hemlock Ridge Fraction at Risk Calculations

### Future Planned Project Activities

*Describe future activities that may affect the percent canopy or carbon stocking in any way. Describe maintenance and stewardship activities that could improve the carbon stock.*

The Project Area is protected in perpetuity through a conservation easement and deed restriction. As a part of a larger preserve that will eventually be open to the public, a 30-acre floating area set aside for future improvements was included in the conservation easement, so 30 acres have been excluded from the Project Area to account for the possible impact to carbon stock. The property will be monitored annually by Western Reserve Land Conservancy staff to ensure its natural resources (including mature forest) are upheld to standards identified in conservation restrictions.

### CO-BENEFITS QUANTIFICATION DOCUMENTATION (Section 11.5)

*Summarize co-benefit quantification per year and provide supporting documentation. CFC will provide a Co-Benefits Quantification calculator for quantifying rainfall interception, reduction of certain air compounds, and energy savings.*

<b>Ecosystem Services</b>	<b>Resource Units</b>	<b>Value</b>
Rainfall Interception (m3/yr)	109,630.2	\$231,715.02
Air Quality (t/yr)	7.6014	\$18,755.49
Cooling – Electricity (kWh/yr)	331,252	\$46,408.46
Heating – Natural Gas (kBtu/yr)	13,687,740	\$191,440.73
<b>Grand Total (\$/yr)</b>		<b>\$488,319.70</b>

Co-benefits were quantified using CFC’s Co-Benefits Quantification Calculator. These ecosystem services represent values in avoided costs of \$488,319.70 annually and \$19,532,788 over 40 years.

Attachment W: Hemlock Ridge CoBenefit Calculator

### Canopy Cover

*i-Tree Canopy report was completed to quantify the cobenefits. Include the results below.*

The Project Area was entered into i-Tree Canopy to estimate forest cover, and 222 randomized data points were overlaid on satellite imagery to determine percent of canopy cover. It was determined the Project Area has 95% tree canopy cover.

Attachment X: Hemlock Ridge iTree Canopy Report

## SOCIAL IMPACTS (Section 12)

*Project Operators shall use the Carbon Project Social Impacts template to evaluate how their Project aligns with the UN Sustainable Development Goals (SDGs). CFC will provide the template. Summarize the three to five main SDGs attributed to this Project.*

### Good Health and Well-Being

The Project Area is located along a major interstate, and the trees protected for the Hemlock Ridge Forest Preservation project will continue to screen pollutants from this highly-trafficked road. Protecting the forest that is upland from streams and the Grand River will reduce stormwater runoff and protect the water resources from pollutants.

### Sustainable Cities and Communities

The property is near the City of Painesville and will provide increased access for outdoor recreation. The addition of this new green space will also provide access to the adjacent properties owned and managed by Lake Metroparks that are currently not accessible. Protecting the habitat will reduce air pollutants that reach the Grand River, buffer the high-volume road that runs along the southern boundary of the property, and provide shade for the streams that run through the property to the Grand River.

### Life Below Water

The Project Area is located along a major interstate and the trees provide a buffer between the high-traffic road and the Grand River, a critical tributary to Lake Erie. The Grand River is along the northern boundary of the property, and the steep slopes on the property will be protected from erosion by protecting the forest habitat. Without protection, development of the site would impact water quality of the streams, wetlands, and Grand River that are protected by existing resources. This section of the Grand River is known to contain threatened and endangered mussels, and protection of the habitat buffering the river will protect habitat and water quality for these and other aquatic species.

Attachment Y: Hemlock Ridge Social Impacts

## MONITORING AND REPORTING (Section 8)

*Throughout the Project Duration, the Project Operator must report on tree conditions across the Project Area.*

### **Monitoring Reports**

*Monitoring reports are due every three years determined by the date of the verification report. For example, if the verification report is dated January 1, 2023, the first report will be due by January 1, 2026 and every three years thereafter for the duration of the project. CFC will provide a list of dates to Project Operator after the first verification report is approved. Project Operators must submit reports in writing*

*and must attest to the accuracy of the reports. The reports must contain any changes in eligibility status of the Project Operator and any significant tree loss. The information includes updates to land ownership, changes to project design, changes in implementation or management and changes in tree or canopy loss. The reports must be accompanied by some form of telemetry or imaging that captures tree canopy, such as Google Earth, aerial imagery, or LiDAR. The reports must estimate any loss of stored carbon stock or soil disturbance in the Project Area.*

**Monitoring Plans**

*Describe your monitoring plans. If Project Operator plans to claim credits for future growth, describe methods that will be used to quantify future growth.*

As part of this Project, the Project Area have been encumbered with a Conservation Easement, held by Western Reserve Land Conservancy. The Conservation Easement will preserve the current forest and tree canopy and safeguard the Project Area from future threats of timber harvesting. There are no specific locations planned for future activities within the boundaries of the Project Area, but 30 acres have been removed from the Project Area for quantification to account for allowed future improvement impact. Additionally, Western Reserve Land Conservancy will reserve the right to quantify the future growth of the Project Trees.

Western Reserve Land Conservancy is an accredited land trust and has a professional team dedicated to the stewardship of its easements. Staff members will visit the Hemlock Ridge Forest annually, walking the Project Area and property in their entirety to ensure that the tenets of the Conservation Easement are being upheld and to resolve any issues with encroachment or non-permitted activities on-site. Western Reserve Land Conservancy will submit triennial monitoring reports for the Project duration as specified in the Preservation Protocol. Western Reserve Land Conservancy has demonstrated its ability to serve in this capacity, having conserved more than 70,000 acres in 21 different Ohio watersheds and holding conservation easements on over 900 properties, each of which are monitored annually.

**PROJECT OPERATOR SIGNATURE**

Signed on December 7 in 2023, by Alex Czayka Chief Conservation Officer, for Western Reserve Land Conservancy.



Signature

\_\_\_Alex Czayka\_\_\_  
Printed Name

\_\_\_440-528-4180\_\_\_  
Phone

\_\_\_aczayka@wrlandconservancy.org\_\_\_  
Email

## ATTACHMENTS

*Update the attachments list as appropriate for your project.*

- A Hemlock Ridge Location Eligibility Map
- B Hemlock Ridge Geospatial Location Map
- C Hemlock Ridge Project Area Shapefiles
- D Hemlock Ridge Regional-Scale Map
- E Hemlock Ridge Project Area Map
- F Hemlock Ridge Deed
- G Agreement to Transfer Potential Credits
- H Hemlock Ridge Conservation Easement
- I Hemlock Ridge Zoning Map
- J Hemlock Ridge Zoning Documentation
- K Hemlock Ridge Overlay Map
- L Hemlock Ridge Perimeter Development Map
- M Hemlock Ridge Attestation of No Double Counting and No Net Harm
- N Hemlock Ridge No Double Counting Map
- O Hemlock Ridge Attestation of Additionality
- P Hemlock Ridge Carbon Quantification Spreadsheet
- Q Hemlock Ridge Forest Carbon Biomass
- R Hemlock Ridge Plot Location Map
- S Hemlock Ridge i-Tree Eco Raw Data
- T Hemlock Ridge i-Tree Eco Source File
- U Hemlock Ridge Forest Composition Report
- V Hemlock Ridge Fraction at Risk Calculations
- W Hemlock Ridge CoBenefit Calculator
- X Hemlock Ridge iTree Canopy Report
- Y Hemlock Ridge Social Impacts



## PROTOCOL REQUIREMENTS

### **Project Operator (Section 1.1)**

Identify a Project Operator for the project. This is the entity or governmental body who takes responsibility for the project for the 40-year duration.

### **Project Duration and Project Implementation Agreement (Section 1.2, 2.2)**

Project Operator must commit to a 40-year duration and sign a Project Implementation Agreement. This is a 40-year agreement between the Project Operator and City Forest Credits (the “Registry”) for an urban forest carbon project.

### **Location Eligibility (Section 1.3)**

Projects must be located in or along the boundary of at least one of the following criteria:

- A. “Urban Area” per Census Bureau maps; see <https://www.census.gov/geographies/reference-maps/2010/geo/2010-census-urban-areas.html>
- B. The boundary of any incorporated city or town created under the law of its state;
- C. The boundary of any unincorporated city, town, or unincorporated urban area created or designated under the law of its state;
- D. The boundary of any regional metropolitan planning agency or council established by legislative action or public charter. Examples include the Metropolitan Area Planning Council in Boston, the Chicago Municipal Planning Agency, the Capital Area Council of Governments (CAPCOG) in the Austin area, and the Southeastern Michigan Council of Governments (SEMCOG)
- E. The boundary of land owned, designated, and used by a municipal or quasi-municipal entity for source water or watershed protection. Examples include Seattle City Light South Fork Tolt River Municipal Watershed (8,399 acres owned and managed by the City and closed to public access);
- F. A transportation, power transmission, or utility right of way, provided the right of way begins, ends, or passes through some portion of A through D.

### **Ownership or Right to Receive Credits Eligibility (Section 1.5)**

Project Operator must demonstrate ownership of property and eligibility to receive potential credits by meeting one of the following:

- A. Own the land and potential credits upon which the Project trees are located; or
- B. Own an easement or equivalent property interest for a public right of way within which Project trees are located and accept ownership of those Project trees by assuming responsibility for maintenance and liability for them; or
- C. Have a written and signed agreement from the landowner, granting ownership to the Project Operator of any credits for carbon storage, other greenhouse gas benefits, and other co-benefits delivered by Project trees on that landowner’s land. If the Project Area is on private property, the agreements in this sub-section must be recorded in the public records in the county where the property is located. The recordation requirement can be satisfied if the agreements specified in this sub-section are contained in a recorded easement, covenant, or deed restriction on the property.

### **Demonstrate Tree Preservation (Section 4.1)**

The Project Operator must show that the trees in the Project Area are preserved from removal by a recorded easement, covenant, or deed restriction (referred to hereafter as “Recorded Encumbrance”) with a term of at least 40 years. This action is referred to as the “Preservation Commitment.” This Recorded Encumbrance must be recorded not later than 12 months after Registry approval of the Project’s Application.

#### **Demonstrate Threat of Loss (Section 4.2, 4.3, and 4.4):**

The Project Operator must show that prior to the Preservation Commitment:

- Project trees were not preserved from removal through a Recorded Encumbrance or other prohibitions on their removal,
- The Project Area was:
  - In a land use designation that allowed for at least one non-forest use. Non-forest uses include industrial, commercial, transportation, residential, agricultural, or resource other than forest, as well as non-forest park, recreation, or open space uses.
  - Is not in an overlay zone that prohibits all development. Examples include critical areas or wetland designations.
- The Project Area met one of the following conditions:
  - Surrounded on at least 30% of its perimeter by non-forest, developed or improved uses, or
  - Sold, conveyed, or had assessed value within three years of preservation for greater than \$8,000 average price per acre for the bare land, or
  - Would have a fair market value after conversion to a non-forested “highest and best use” greater than the fair market value after preservation in subsection 4.1, as stated in a “highest and best use” study from a state certified general real estate appraiser in good standing

#### **Additionality (Section 6)**

Additionality is ensured through the following:

- Prior to the start of the project, the trees in the Project Area are not protected via easement or recorded encumbrance or in a protected zoning status that preserves the trees.
- The zoning in the Project Area must currently allow for a non-forest use
- The trees in the Project Area face a threat or risk of removal or conversion out of forest
- The Project Operator records in the public land records an easement, covenant, or deed restriction specifically protecting the trees for the project duration of 40 years or 100 years (40 or 100 years depending on the protocol version)

#### **Quantification for Credits (Section 11)**

The full Protocol describes the following steps for carbon stock and soil carbon quantification in detail:

1. Stored carbon stock present in Project Area (Section 11.1)  
Estimate the biomass stock present and adjust for uncertainty to calculate the “Accounting Stock”. This can be done using the US Forest Service General Technical Report NE-343 tables, on-site inventory of some live trees with i-Tree methods and tools, or an on-site forest inventory
2. Areas expected to remain in trees after potential development (Section 11.2)

Calculate the fraction of the Accounting Stock that likely would be emitted as a result of development, to calculate “Avoided Biomass Emissions”

3. Quantification of soil carbon (Section 11.3)  
Calculate “Avoided Soil Carbon Emissions” caused by conversion of soils to impervious surfaces in the Project Area
4. Deduction for displaced development (Section 11.4)  
Apply the deductions in Section 11.5 and Appendix B to Biomass and Soil Carbon calculations to adjust for development and emissions that would be displaced by the preservation of the Project Area (leakage deductions). This will reduce the creditable tonnes of Avoided Biomass Emissions and Avoided Soil Carbon Emissions to adjust for displaced development
5. Quantify Co-Benefits (Section 11.5)  
The Project Operator will calculate co-benefits separately from CO<sub>2</sub>(e). The Registry will supply a spreadsheet template based on their climate zone, and will provide values for rainfall interception, reductions of air compounds, and energy savings.
6. Claiming additional credit for growth (Section 11.6)  
The Project Operator may elect to also account for ongoing growth of trees within the Project Area after Project Commencement

### **Social Impacts (Section 12)**

The Project Operator will describe how the Project impacts contribute towards achievement of the global UN Sustainable Development Goals (SDGs). The Registry will supply a template to evaluate how the Project aligns with the SDGs.

### **Attestation of No Net Harm and No Double Counting (Section 5)**

The Project Operator will sign an attestation that no project shall cause net harm and no project shall seek credits on trees, properties, or projects that have already received credits.

### **Validation and Verification by Third-Party Verifiers (Section 13)**

Project compliance and quantification must be verified by a third-party Validation and Verification Body approved by the Registry.

### **Issuance of Credits to Project Operator (Section 7)**

Ex-post credits are issued after the biomass is protected via a recorded encumbrance protecting the trees. Issuance is phased or staged over one and five years at the equivalent of 50 acres of crediting per year. This staged issuance reflects the likely staging of development over time if the Project Area were to have been developed.

After validation and verification, the Registry issues credits to the Project Operator based on the Project Area size:

- 50 acres or less: all credits are issued after validation and verification
- Greater than 50 but less than 200 acres: credits are issued in the equivalent of 50 acres per year
- Greater than 200 acres: credits are issued in equal amounts over five years

**Credits for Reversal Pool Account (Section 7.3):**

The Registry will issue 90% of Project credits earned and requested and will hold 10% in the Registry's Reversal Pool Account.

**Understand Reversals (Section 9)**

If the Project Area loses credited carbon stock, the Project Operator must return or compensate for those credits if the tree loss is due to intentional acts or gross negligence of Project Operator. If tree loss is due to fire, pests, or other acts of god (i.e., not due to the Project Operator's intentional acts or gross negligence), the Registry covers the reversed credits from its Reversal Pool Account of credits held back from all projects.

**Monitoring and Reporting (Section 8)**

The Project Operator must submit a report every three years for the project duration. The reports must be accompanied by some form of telemetry or imaging that captures tree canopy, such as Google Earth, aerial imagery, or LiDAR. The reports must estimate any loss of stored carbon stock or soil disturbance in the Project Area.

## **Attachments**

[Agreement to Transfer Credits](#)

[Deed](#)

[Project Area Maps](#)

[Regional Area Map](#)

[Preservation Commitment](#)

[Zoning Maps](#)

[Zoning Description\(s\)](#)

[Threat of Loss Demonstration](#)

[Attestation of No Double Counting and No Net Harm](#)

[Attestation of Additionality](#)

[Carbon Quantification Tool & Forest Carbon Biomass](#)

[Tree Inventory](#)

[Tree Characteristics Chart\(s\)](#)

[iTree Canopy Report](#)

[Cobenefit Calculator](#)

[Social Impacts](#)

**Agreement to Transfer Credits**

**Osborne-Vrooman Forest Preservation Project**  
**Agreement to Transfer Potential Credits**

This Agreement to Transfer Potential Credits (“**Agreement**”) is entered in to this 16<sup>th</sup> day of December, 2022 (the “**Effective Date**”) by Erie Land Resources LLC (the “**Landowner**”) and Western Reserve Land Conservancy, an Ohio nonprofit corporation (“**WRLC**”), whose mission is to provide the people of our region with essential natural assets through land conservation and restoration and who has undertaken a tree preservation and carbon crediting project (“**Tree and Carbon Project**”) on the Property of Landowner (the “**Property**”).

**1. Purpose and Intent**

WRLC and Landowner desire to generate funds for this Tree and Carbon Project by allowing WRLC to develop potential carbon and environmental credits that it can attempt to sell. The Landowner will receive the benefits of the tree preservation and maintenance in this project at little to no cost to the Landowner.

These potential carbon or environmental credits or offsets include amounts of carbon dioxide stored, storm water run-off reductions, energy savings, fish habitat, and air quality benefits arising from the planting and growth of trees in the Tree and Carbon Project (“**Carbon+ Credits**”). The Carbon+ Credits will be developed using the protocols and registry of City Forest Credits, a non-profit organization (“**CFC**”).

**2. Rights Granted**

Landowner grants WRLC the title and rights to any and all Carbon+ Credits developed from the Tree and Carbon Project during the term of this agreement, including rights to register with CFC, and develop and sell the Carbon+ Credits.

**3. Subject Lands**

The Property specified in Exhibit A.

**4. Obligations of Landowner**

Landowner shall not cut, harvest, or damage trees in the Tree and Carbon Project except in cases of emergency involving fire or flooding or to mitigate hazard if trees are identified as a hazard by a certified arborist.

**5. Obligations of Western Reserve Land Conservancy**

WRLC will pay all costs and assume all responsibilities for the development and sale of Carbon+ Credits from the Tree and Carbon Project.

**6. Landowner Representations**

Landowner represents that it has authority to enter into this agreement, and that the Property is free from any liens, claims, encumbrances, tenancies, restrictions, or easements that would prevent or interfere with the rights to Carbon+ Credits granted under this Agreement.

**7. Western Reserve Land Conservancy Representations**

WRLC represents that it has either begun the Tree and Carbon Project or is prepared to act as the project operator for the Tree and Carbon Project.



**8. Default**

If either party is in default of this agreement, the other party may notify the defaulting party of the specific nature of the default. The defaulting party has 30 days from the date of notice to correct the default. If the default is not corrected in 30 days, the non-defaulting party may cancel this agreement. Notice of cancellation shall be delivered in writing to the current contact address of the defaulting party.

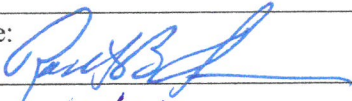
**9. Term of Agreement and Option to Renew**

This Agreement shall remain in force for 40 years after the Effective Date of the Agreement. WRLC may renew this Agreement for a second 40-year term if it delivers written notice of renewal to Landowner at least 90 days prior to the expiration of this Agreement.

**10. Governing Law**

This agreement shall be construed and enforced in accordance with the laws of the State of Ohio.

**11. Parties**

Western Reserve Land Conservancy		Landowner: Erie Land Resources LLC	
Name: Robert B. Owen		Name:	Alex M. Czayka
Title: Assistant Secretary		Title:	Manager
Address: 3850 Chagrin River Road, Moreland Hills, OH 44022		Address:	P.O. Box 252, Chesterland, OH 44026
Phone: 440-528-4150		Phone:	440-528-4150
Email: rowen@wrlandconservancy.org		Email:	aczayka@wrlandconservancy.org
Signature: 		Signature:	
Date: 10/3/23		Date:	10/23/23



**EXHIBIT A**

**LEGAL DESCRIPTION  
338.0009 ACRE REMAINDER  
LAKE METROPARKS**

Situated in the Townships of Concord and Leroy, County of Lake and State of Ohio, known as being part of Original Township Lot 18, Tract 1 in Township 10 North, Range VIII West, Within Concord Twp. And Original Lots 63, 64, 78, 79 & 80 in Township 10 North, Range VII West, within Leroy Twp. Of the Connecticut Western Reserve, Further being part of land conveyed to Erie Land Resources, LLC in Lake County Document No. 2022R027797, PPN: 07A-027-009 & PPN: 08A-009-005;

Beginning at a Monument Box with 1 inch iron pin found in the centerline of Vrooman Road (C.R.-227) - 60 feet and varies wide, being South 03°21'19" East, 819.05 feet southerly, along said centerline from its intersection with U.S. Route 90 as shown in ODOT plan LAK-1-16.55 and centerline plat M-34 in Lake County Plat Records;

Thence North 03°21'19" West, along said centerline of Vrooman Road, 1167.17 feet to its intersection of the Northwesterly Limited Access line of U.S. 90);

Thence South 83°38'55" West, along said Limited Access Line, 50.07 feet to its intersection with the Westerly sideline of said Vrooman Road, witness a 5/8 inch iron pin found 1.24' South;

The following six (6) courses are along said Northwesterly Limited Access line of U.S. Rte. 90;

Thence South 83°38'55" West, 104.01 feet, to a 5/8 Inch iron pin set (LDC, Inc.) at a point 365 feet left at station 609+52 of the centerline of U.S. Rte.90;

Thence South 32°09'40" West, 593.26 feet to a 5/8 Inch iron pin set (LDC, Inc.) at a point 181 feet left at station 603+88 of the centerline of U.S. Rte.90;

Thence South 49°12'07" West, 532.69 feet to a 5/8 inch iron pin set (LDC, Inc.) at a point 171.45 feet left at station 598+55.40 of the centerline of U.S. Rte.90 and the PRINCIPAL PLACE OF BEGINNING;

**LEGAL DESCRIPTION  
338.0009 ACRE REMAINDER  
LAKE METROPARKS  
PAGE 2**

- COURSE I** Thence continuing South 49°12'07" West, passing through a 5/8 inch iron pin found (LDC, Inc.) at 683.12 feet, a total distance of 1195.59 feet to a 5/8 inch iron pin set (LDC, Inc.) at a point 150 feet left at station 586+60 of the centerline of U.S. Rte.90;
- COURSE II** Thence South 78°01'52" West, 124.35 feet to a 5/8 Inch iron pin set (LDC, Inc.) at a point 208 feet left at station 585+50 of the centerline of U.S. Rte.90;
- COURSE III** Thence South 47°56'20" West, passing through a 5/8 inch iron pin found (LDC, Inc.) at 679.68 feet, a total distance of 1451.16 feet to a 5/8 Inch iron pin found (LDC, Inc.) at a point 150 feet left at station 571+00 of the centerline of U.S. Rte.90;
- COURSE IV** Thence South 50°13'46" West, passing through a 5/8 inch iron pin found (LDC, Inc.) at 2451.75 feet, a total distance of 2945.00 feet to the southeasterly corner of land conveyed to Lake Metroparks in deed recorded in Volume 684, Page 316 of Lake County Deed Records (PPN: 08A-009-006), witness a 5/8 Inch iron pin found (LDC, Inc.), 1.03' S. at a point 150 feet left at station 541+55 of the centerline of U.S. Rte.90;
- COURSE V** Thence North 17°19'10" West, along the Easterly line of said "Metroparks", 448.32 feet to a 5/8 inch iron pin found (LDC, Inc.) at an angle point therein;
- COURSE VI** Thence North 00°53'40" West, continuing along the Easterly line of said "Metroparks", passing through a 5/8 inch iron pins found (LDC, Inc.) at 1944.97 feet and 2544.58 feet, a total distance of 2901.66 feet to a point in the centerline of the Grand River and the Southeasterly lines of Painesville Township and land conveyed to William A. Bingham, Tr., in Volume 802, Page 965 of Lake County Deed Records (PPN: 11A-001-002);

The following twenty two (22) courses are along the centerline of the Grand River;

**LEGAL DESCRIPTION  
338.0009 ACRE REMAINDER  
LAKE METROPARKS  
PAGE 3**

- COURSE VII (1) Thence North 62°21'30" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 186.21 feet to an angle point therein;**
- COURSE VIII (2) Thence North 37°22'25" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 125.49 feet to an angle point therein;**
- COURSE IX (3) Thence North 14°21'56" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 418.33 feet to an angle point therein;**
- COURSE X (4) Thence North 47°36'29" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 207.53 feet to an angle point therein;**
- COURSE XI (5) Thence North 57°12'15" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 263.10 feet to an angle point therein;**
- COURSE XII (6) Thence North 78°51'28" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 252.07 feet to an angle point therein;**
- COURSE XIII (7) Thence South 85°44'20" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 326.39 feet to an angle point therein;**
- COURSE XIV (8) Thence North 70°45'09" East, and along said Southeasterly lines of "Bingham" and Painesville Twp. and the Southeasterly lines of Perry Township and land conveyed to Barbara J. Denner in Doc. #2020R031374 (PPN: 03A-001A-008), 231.55 feet to an angle point therein;**
- COURSE XV (9) Thence North 51°42'17" East, and along said Southeasterly lines of "Denner" and Perry Twp. and the Southeasterly line of land conveyed to Joylon & Hilary A. Bixler in Doc. #2000R043260 (PPN: 03A-001-001), 267.96 feet to an angle point therein;**
- COURSE XVI (10) Thence North 28°57'33" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 361.61 feet to an angle point therein;**
- COURSE XVII (11) Thence North 33°12'01" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 684.36 feet to an angle point therein;**
- COURSE XVIII (12) Thence North 45°58'41" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 113.39 feet to an angle point therein;**

**LEGAL DESCRIPTION  
338.0009 ACRE REMAINDER  
LAKE METROPARKS  
PAGE 4**

- COURSE XIX (13) Thence North 75°38'52" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 132.01 feet to an angle point therein;**
- COURSE XX (14) Thence South 49°14'22" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 248.55 feet to an angle point therein;**
- COURSE XXI (15) Thence South 56°09'40" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 183.16 feet to an angle point therein;**
- COURSE XXII (16) Thence South 84°02'50" East, and along said Southeasterly line of Perry Twp. And the Southerly line of land conveyed to Larry G. & Doris A. Sarvis in Document No. 2000R046238 (PPN: 03A-001-002), 139.02 feet to an angle point therein;**
- COURSE XXIII (17) Thence North 72°16'59" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 146.62 feet to an angle point therein;**
- COURSE XXIV (18) Thence North 58°28'35" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 165.63 feet to an angle point therein;**
- COURSE XXV (19) Thence North 42°38'10" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 168.31 feet to an angle point therein;**
- COURSE XXVI (20) Thence North 25°27'43" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 414.28 feet to an angle point therein;**
- COURSE XXVII (21) Thence North 07°37'28" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 235.00 feet to an angle point therein;**
- COURSE XXVIII (22) Thence North 16°21'50" West, and along said Southeasterly lines of "Sarvis" and Perry Twp., 206.56 feet to the Southwest corner of land conveyed to Margaret Zukowski in Document No. 2020R019058 (PPN: 07A-034-004) and the Southerly line of Original Lot 10;**
- COURSE XXIX Thence North 88°39'30" East, along said Southerly lines of Lot 10 and "Zukowski", passing through a 5/8 inch iron pin set (LDC, Inc.) at 100.00 feet a total distance of, 411.48 feet to a 5/8 inch iron pin found (LDC, Inc.) at the Northwest corner of land conveyed to Craig F. Healey in Document No. 2019R013757 (PPN: 07A-034-004);**

LEGAL DESCRIPTION  
338.0009 ACRE REMAINDER  
LAKE METROPARKS  
PAGE 5

- COURSE XXX Thence South 02°07'32" East, along the Westerly line of "Healey", and the Westerly line of land conveyed to ROVO Holdings, LLC in Document No. 2008R013110 (PPN: 07A-034-014), 781.30 feet to a 5/8 inch iron pin found at the Southwest corner of said "ROVO";
- COURSE XXXI Thence North 88°08'21" East, along the Southerly line of "ROVO", 365.18 feet to a 5/8 inch iron pin found (LDC, Inc.) at the Northwesterly corner of land conveyed to Ralph H. & Mirie R. Hosler in Volume 400, Page 805 of Lake County Deed Records (PPN: 07A-034-011);
- COURSE XXXII Thence South 03°21'19" East, along the Westerly line of "Hosler", 149.94 feet to a 5/8 inch iron pin found (LDC, Inc.) at the Southwesterly corner thereof;
- COURSE XXXII Thence North 88°08'14" East, along the Southerly line of "Hosler", 1020.48 feet to a 5/8 inch iron pin found in the Westerly sideline of said Vrooman Road;
- COURSE XXXIV Thence South 03°21'19" East, along said sideline, 243.00 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXV Thence South 88°08'14" West, 700.88 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXVI Thence South 01°51'46" East, 440.01 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXVII Thence South 44°02'55" East, 525.76 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXVIII Thence South 32°09'40" West, 339.12 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXIX Thence South 49°12'07" West, 455.45 feet to a 5/8 inch iron pin set (LDC, Inc.);

OCTOBER 13, 2022  
LEGAL DESCRIPTION  
338.0009 ACRE REMAINDER  
LAKE METROPARKS  
PAGE 6

**COURSE XL**            **Thence South 40°47'53" East, 60.00 feet to the PRINCIPAL PLACE OF BEGINNING and containing 338.0009 acres (14,723,321 sq.ft.) of land. OF WHICH 224.8203 acres (9,793,172 sq.ft.) lie within Leroy Township and 113.1806 acres (4,930,149 sq.ft.) lie within Concord Township. As calculated and described based on previous surveys done in 2002 & 2008 by LDC, Inc. in May 2022 by William C. Vondra Jr., P.S. 7478 of LDC, Inc. bearings refer to Ohio North NAD 83 (2011), Geoid 12B, ODOT VRS Network, be the same, more or less, but subject to all legal highways and easements of record.**

**The Intent is to describe the remaining lands of PPN: 07A-027-009 and PPN: 08A-009-005 after a 12.1090 Acre Split.**

Deed



DocId:10030202

Tx:40094009

RECORD NUMBER:

**2022R033198**

RECORDED:

12/20/2022 01:54:11 PM

BECKY LYNCH, RECORDER

LAKE COUNTY OHIO

REC FEE: 82.00

TOTAL PAGES: 8

This conveyance has been examined and the Grantor has complied with section 319.202 of the Revised Code.

Transfer # 487277

Transfer Fee \$ 5.00

Conveyance Fee \$ -

Filed with the office of Christopher A. Galloway

Date 12/20/2022 By MAP

**LIMITED WARRANTY DEED**

**KNOW ALL MEN BY THESE PRESENTS** that **ERIE LAND RESOURCES LLC** (“Grantor”), an Ohio limited liability company, claiming title by or through an instrument recorded at Instrument No. 2022R030507 of Lake County Records, for good and valuable consideration received to its full satisfaction from **LAKE METROPARKS** (“Grantee”), does hereby give, grant and convey, with limited warranty covenants, to **Grantee**, its successors and assigns, the premises described in Exhibit A attached hereto (the “Premises”).

County Permanent Parcel Numbers: 07-A-027-0-00-009-0 and 08-A-009-0-00-005-0

**TO HAVE AND TO HOLD** said Premises, together with all easements and appurtenances thereunto belonging, unto Grantee, its successors and assigns forever. And said Grantor covenants with Grantee, its successors and assigns, that (a) Grantor is lawfully seized in fee simple of said Premises, subject to (i) building and zoning ordinances; (ii) taxes and assessments, both general and special, which are a lien but not yet due and payable; and (iii) those restrictions, covenants, conditions and easements of record in the Lake County Records at the time of this conveyance, and (b) Grantor shall warrant and defend same to said Grantee, its successors and assigns, forever, against the lawful claims and demands of all persons, claiming by, through or under Grantor, but against none other.

**Subject further**, to Grantor’s retention and reservation of any and all rights to the carbon credit value associated with the standing forest, now and in the future, contained within the boundaries of the Premises. Grantor’s reservation herein shall apply to all but an unspecified 30 acres of the 338-acres



Premises and Grantor's interest in the carbon credit value associated with the standing forest shall be preserved in perpetuity by and through the terms of the Grant of Conservation Easement and Covenant for Stewardship Fees recorded contemporaneously with this Deed.

IN WITNESS WHEREOF, Grantor has executed this Deed this 19<sup>th</sup> day of December, 2022.

GRANTOR:

ERIE LAND RESOURCES LLC

By: *Alex M. Czayka*  
Alex M. Czayka  
Its: Manager

STATE OF OHIO            )  
                                          )  
COUNTY OF CUYAHOGA    )        SS:

The foregoing instrument was acknowledged before me, without the administration of an oath or affirmation to the signer, this 19<sup>th</sup> day of December, 2022 by Alex M. Czayka, Manager of Erie Land Resources LLC, an Ohio limited liability company, on behalf of the company.

**OHIO REAL TITLE**  
166863

*Krista Futrel*  
Notary Public

This instrument prepared by:  
Robert B. Owen, Esq.  
Western Reserve Land Conservancy  
3850 Chagrin River Road  
Moreland Hills, Ohio 44022



**KRISTA FUTREL**  
**NOTARY PUBLIC**  
**FOR THE**  
**STATE OF OHIO**  
**My Commission Expires**  
**July 2, 2023**

EXHIBIT A

LEGAL DESCRIPTION  
338.0009 ACRE REMAINDER  
LAKE METROPARKS

Situated in the Townships of Concord and Leroy, County of Lake and State of Ohio, known as being part of Original Township Lot 18, Tract 1 in Township 10 North, Range VIII West, Within Concord Twp. And Original Lots 63, 64, 78, 79 & 80 in Township 10 North, Range VII West, within Leroy Twp. Of the Connecticut Western Reserve, Further being part of land conveyed to Erie Land Resources, LLC in Lake County Document No. 2022R027797, PPN: 07A-027-009 & PPN: 08A-009-005;

Beginning at a Monument Box with 1 inch iron pin found in the centerline of Vrooman Road (C.R.-227) - 60 feet and varies wide, being South 03°21'19" East, 819.05 feet southerly, along said centerline from its intersection with U.S. Route 90 as shown in ODOT plan LAK-1-16.55 and centerline plat M-34 in Lake County Plat Records;

Thence North 03°21'19" West, along said centerline of Vrooman Road, 1167.17 feet to its intersection of the Northwesterly Limited Access line of U.S. 90);

Thence South 83°38'55" West, along said Limited Access Line, 50.07 feet to its intersection with the Westerly sideline of said Vrooman Road, witness a 5/8 inch iron pin found 1.24' South;

The following six (6) courses are along said Northwesterly Limited Access line of U.S. Rte. 90;

Thence South 83°38'55" West, 104.01 feet, to a 5/8 Inch iron pin set (LDC, Inc.) at a point 365 feet left at station 609+52 of the centerline of U.S. Rte.90;

Thence South 32°09'40" West, 593.26 feet to a 5/8 Inch iron pin set (LDC, Inc.) at a point 181 feet left at station 603+88 of the centerline of U.S. Rte.90;

Thence South 49°12'07" West, 532.69 feet to a 5/8 inch iron pin set (LDC, Inc.) at a point 171.45 feet left at station 598+55.40 of the centerline of U.S. Rte.90 and the PRINCIPAL PLACE OF BEGINNING;

LEGAL DESCRIPTION  
338.0009 ACRE REMAINDER  
LAKE METROPARKS  
PAGE 2

- COURSE I Thence continuing South 49°12'07" West, passing through a 5/8 inch iron pin found (LDC, Inc.) at 683.12 feet, a total distance of 1195.59 feet to a 5/8 inch iron pin set (LDC, Inc.) at a point 150 feet left at station 586+60 of the centerline of U.S. Rte.90;
- COURSE II Thence South 78°01'52" West, 124.35 feet to a 5/8 Inch iron pin set (LDC, Inc.) at a point 208 feet left at station 585+50 of the centerline of U.S. Rte.90;
- COURSE III Thence South 47°56'20" West, passing through a 5/8 inch iron pin found (LDC, Inc.) at 679.68 feet, a total distance of 1451.16 feet to a 5/8 Inch iron pin found (LDC, Inc.) at a point 150 feet left at station 571+00 of the centerline of U.S. Rte.90;
- COURSE IV Thence South 50°13'46" West, passing through a 5/8 inch iron pin found (LDC, Inc.) at 2451.75 feet, a total distance of 2945.00 feet to the southeasterly corner of land conveyed to Lake Metroparks in deed recorded in Volume 684, Page 316 of Lake County Deed Records (PPN: 08A-009-006), witness a 5/8 Inch iron pin found (LDC, Inc.), 1.03' S. at a point 150 feet left at station 541+55 of the centerline of U.S. Rte.90;
- COURSE V Thence North 17°19'10" West, along the Easterly line of said "Metroparks", 448.32 feet to a 5/8 inch iron pin found (LDC, Inc.) at an angle point therein;
- COURSE VI Thence North 00°53'40" West, continuing along the Easterly line of said "Metroparks", passing through a 5/8 inch iron pins found (LDC, Inc.) at 1944.97 feet and 2544.58 feet, a total distance of 2901.66 feet to a point in the centerline of the Grand River and the Southeasterly lines of Painesville Township and land conveyed to William A. Bingham, Tr., in Volume 802, Page 965 of Lake County Deed Records (PPN: 11A-001-002);

The following twenty two (22) courses are along the centerline of the Grand River;

LEGAL DESCRIPTION  
338.0009 ACRE REMAINDER  
LAKE METROPARKS  
PAGE 3

- COURSE VII (1) Thence North 62°21'30" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 186.21 feet to an angle point therein;
- COURSE VIII (2) Thence North 37°22'25" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 125.49 feet to an angle point therein;
- COURSE IX (3) Thence North 14°21'56" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 418.33 feet to an angle point therein;
- COURSE X (4) Thence North 47°36'29" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 207.53 feet to an angle point therein;
- COURSE XI (5) Thence North 57°12'15" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 263.10 feet to an angle point therein;
- COURSE XII (6) Thence North 78°51'28" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 252.07 feet to an angle point therein;
- COURSE XIII (7) Thence South 85°44'20" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 326.39 feet to an angle point therein;
- COURSE XIV (8) Thence North 70°45'09" East, and along said Southeasterly lines of "Bingham" and Painesville Twp. and the Southeasterly lines of Perry Township and land conveyed to Barbara J. Denner in Doc. #2020R031374 (PPN: 03A-001A-008), 231.55 feet to an angle point therein;
- COURSE XV (9) Thence North 51°42'17" East, and along said Southeasterly lines of "Denner" and Perry Twp. and the Southeasterly line of land conveyed to Joylon & Hilary A. Bixler in Doc. #2000R043260 (PPN: 03A-001-001), 267.96 feet to an angle point therein;
- COURSE XVI (10) Thence North 28°57'33" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 361.61 feet to an angle point therein;
- COURSE XVII (11) Thence North 33°12'01" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 684.36 feet to an angle point therein;
- COURSE XVIII (12) Thence North 45°58'41" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 113.39 feet to an angle point therein;

LEGAL DESCRIPTION  
338.0009 ACRE REMAINDER  
LAKE METROPARKS  
PAGE 4

- COURSE XIX (13) Thence North 75°38'52" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 132.01 feet to an angle point therein;
- COURSE XX (14) Thence South 49°14'22" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 248.55 feet to an angle point therein;
- COURSE XXI (15) Thence South 56°09'40" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 183.16 feet to an angle point therein;
- COURSE XXII (16) Thence South 84°02'50" East, and along said Southeasterly line of Perry Twp. And the Southerly line of land conveyed to Larry G. & Doris A. Sarvis in Document No. 2000R046238 (PPN: 03A-001-002), 139.02 feet to an angle point therein;
- COURSE XXIII (17) Thence North 72°16'59" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 146.62 feet to an angle point therein;
- COURSE XXIV (18) Thence North 58°28'35" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 165.63 feet to an angle point therein;
- COURSE XXV (19) Thence North 42°38'10" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 168.31 feet to an angle point therein;
- COURSE XXVI (20) Thence North 25°27'43" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 414.28 feet to an angle point therein;
- COURSE XXVII (21) Thence North, 07°37'28" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 235.00 feet to an angle point therein;
- COURSE XXVIII (22) Thence North 16°21'50" West, and along said Southeasterly lines of "Sarvis" and Perry Twp., 206.56 feet to the Southwest corner of land conveyed to Margaret Zukowski in Document No. 2020R019058 (PPN: 07A-034-004) and the Southerly line of Original Lot 10;
- COURSE XXIX Thence North 88°39'30" East, along said Southerly lines of Lot 10 and "Zukowski", passing through a 5/8 inch iron pin set (LDC, Inc.) at 100.00 feet a total distance of, 411.48 feet to a 5/8 inch iron pin found (LDC, Inc.) at the Northwest corner of land conveyed to Craig F. Healey in Document No. 2019R013757 (PPN: 07A-034-004);

LEGAL DESCRIPTION  
338.0009 ACRE REMAINDER  
LAKE METROPARKS  
PAGE 5

- COURSE XXX Thence South 02°07'32" East, along the Westerly line of "Healey", and the Westerly line of land conveyed to ROVO Holdings, LLC in Document No. 2008R013110 (PPN: 07A-034-014), 781.30 feet to a 5/8 inch iron pin found at the Southwest corner of said "ROVO";
- COURSE XXXI Thence North 88°08'21" East, along the Southerly line of "ROVO", 365.18 feet to a 5/8 inch iron pin found (LDC, Inc.) at the Northwesterly corner of land conveyed to Ralph H. & Mirie R. Hosler in Volume 400, Page 805 of Lake County Deed Records (PPN: 07A-034-011);
- COURSE XXXII Thence South 03°21'19" East, along the Westerly line of "Hosler", 149.94 feet to a 5/8 inch iron pin found (LDC, Inc.) at the Southwesterly corner thereof;
- COURSE XXXII Thence North 88°08'14" East, along the Southerly line of "Hosler", 1020.48 feet to a 5/8 inch iron pin found in the Westerly sideline of said Vrooman Road;
- COURSE XXXIV Thence South 03°21'19" East, along said sideline, 243.00 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXV Thence South 88°08'14" West, 700.88 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXVI Thence South 01°51'46" East, 440.01 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXVII Thence South 44°02'55" East, 525.76 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXVIII Thence South 32°09'40" West, 339.12 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXIX Thence South 49°12'07" West, 455.45 feet to a 5/8 inch iron pin set (LDC, Inc.);

OCTOBER 13, 2022  
LEGAL DESCRIPTION  
338.0009 ACRE REMAINDER  
LAKE METROPARKS  
PAGE 6

COURSE XL Thence South 40°47'53" East, 60.00 feet to the PRINCIPAL PLACE OF BEGINNING and containing 338.0009 acres (14,723,321 sq.ft.) of land. OF WHICH 224.8203 acres (9,793,172 sq.ft.) lie within Leroy Township and 113.1806 acres (4,930,149 sq.ft.) lie within Concord Township. As calculated and described based on previous surveys done in 2002 & 2008 by LDC, Inc. in May 2022 by William C. Vondra Jr., P.S. 7478 of LDC, Inc. bearings refer to Ohio North NAD 83 (2011), Geoid 12B, ODOT VRS Network, be the same, more or less, but subject to all legal highways and easements of record.

The Intent is to describe the remaining lands of PPN: 07A-027-009 and PPN: 08A-009-005 after a 12.1090 Acre Split.

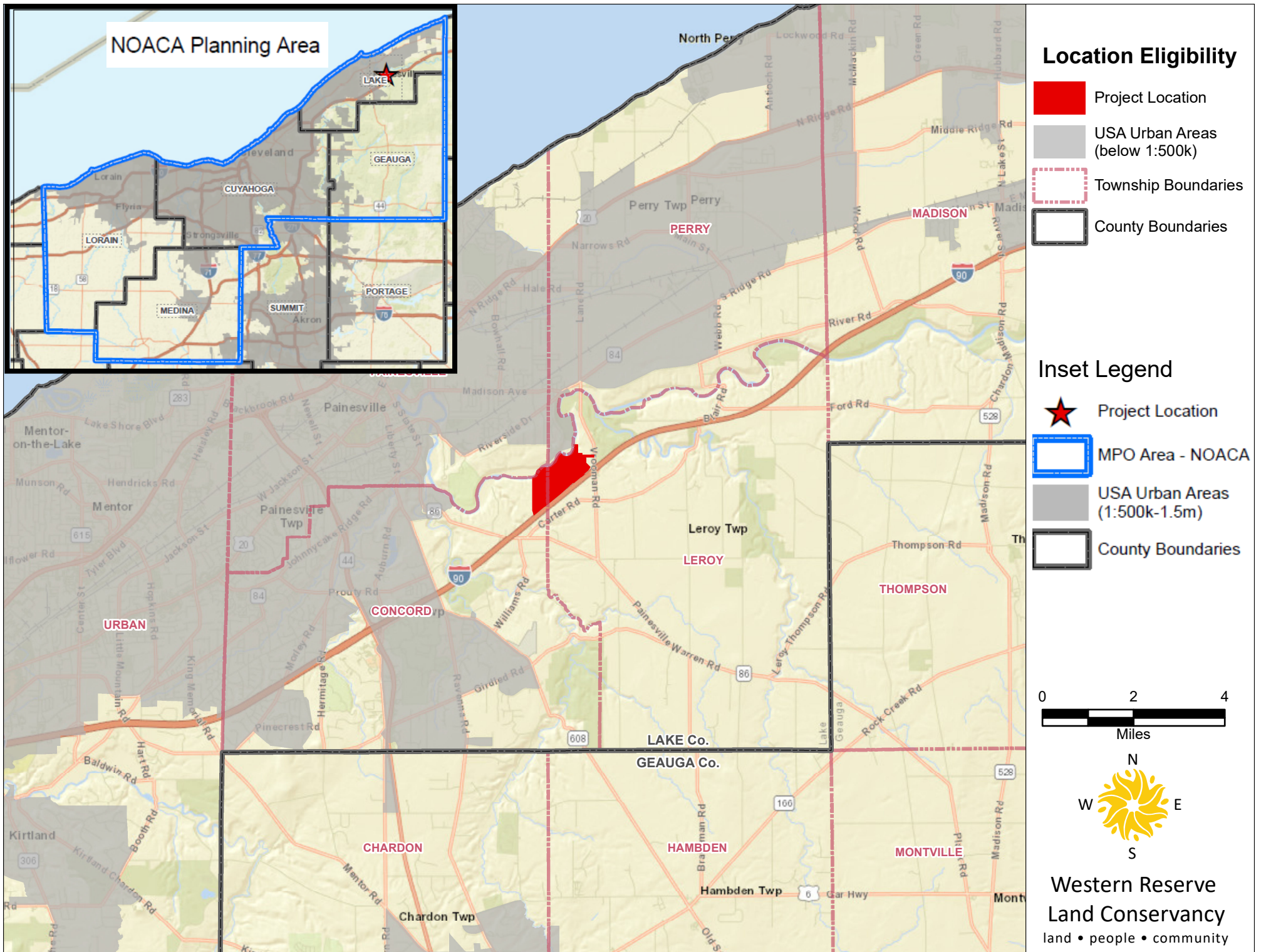
Description Approved

Reviewed By: CRB Date: 12/20/2022

Lake County Engineer's Tax Map Dept.





# Project Area Maps









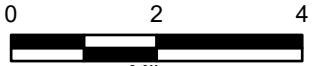
**NOACA Planning Area**

**Location Eligibility**

-  Project Location
-  USA Urban Areas (below 1:500k)
-  Township Boundaries
-  County Boundaries

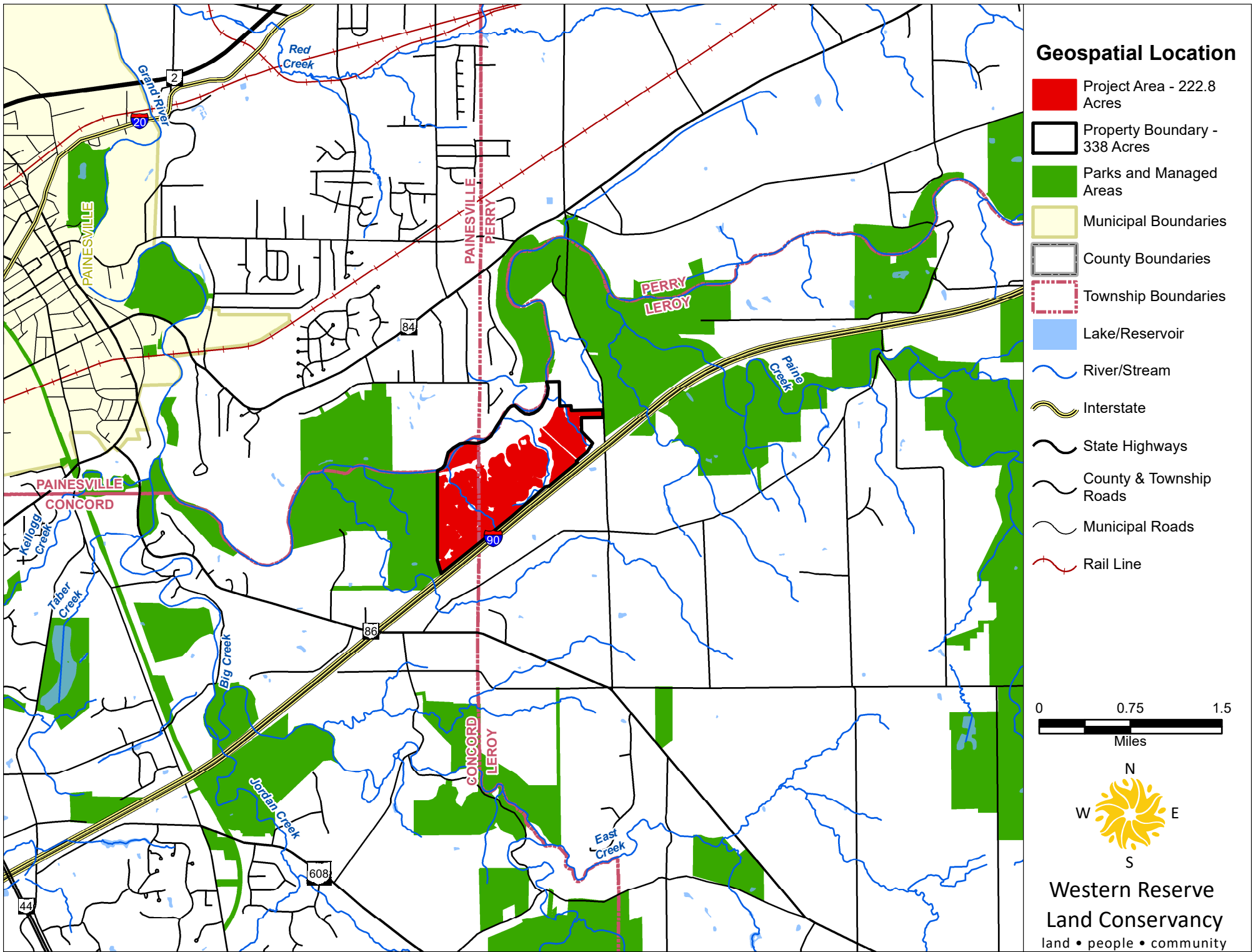
**Inset Legend**

-  Project Location
-  MPO Area - NOACA
-  USA Urban Areas (1:500k-1.5m)
-  County Boundaries

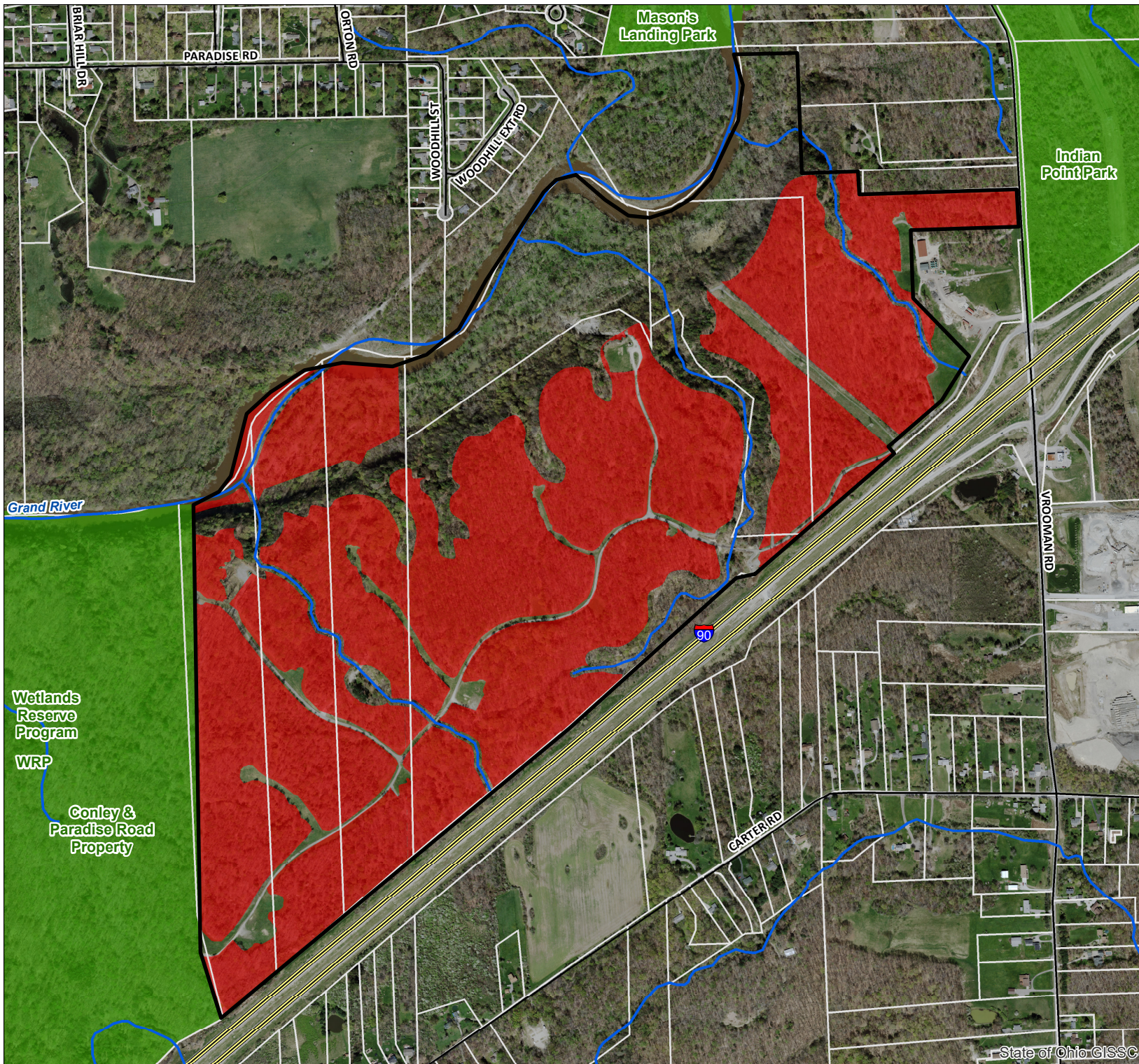


**Western Reserve  
Land Conservancy**  
land • people • community








Path: X:\Projects\1\_PROTECTED\_PROPERTIES\Osborne\_Vrooman\_LAKE\CarbonCredits\OsborneVrooman\_20231114\_CFCRegionalScale.mxd 11/14/2023 sj  
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

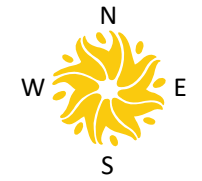
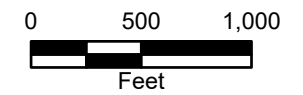






## Project Area

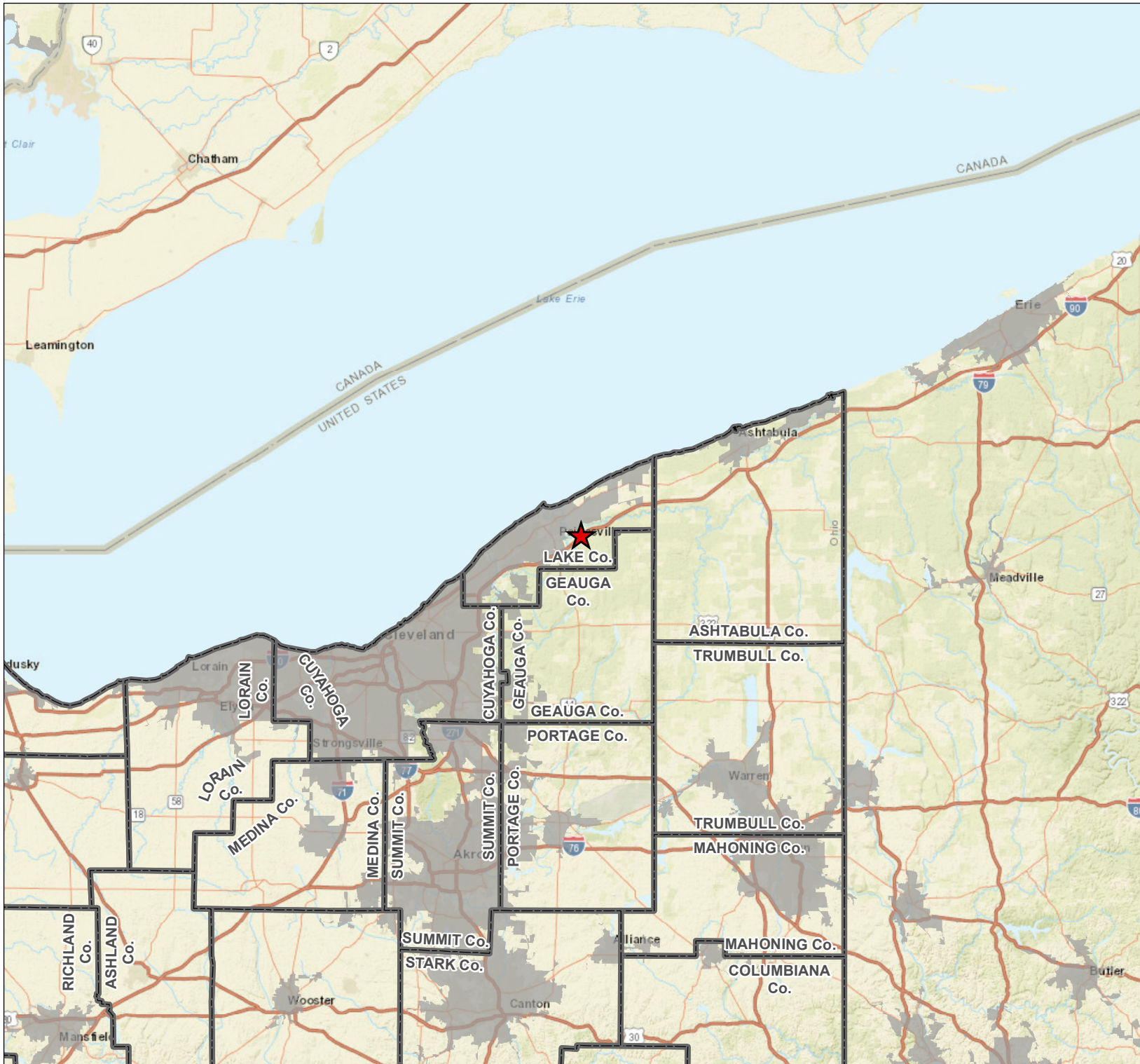
-  Property Boundary - 338 Acres
-  Project Area - 222.8 Acres
-  Parcels
-  Parks and Managed Areas
-  River/Stream
-  Interstate
-  County & Township Roads






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**Regional Area Map**



## Regional Scale

-  Project Location
-  USA Urban Areas (1:500k-1.5m)
-  County Boundaries



**Western Reserve**  
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## Preservation Commitment

96



DocId:10030205  
Tx:40094009

This conveyance has been examined and the Grantor has complied with section 319.202 of the Revised Code.

Transfer # EASEMENT

Transfer Fee \$ \_\_\_\_\_

Conveyance Fee \$ \_\_\_\_\_

Filed with the office of Christopher A. Galloway

Date 12/20/2022 by MAE

RECORD NUMBER:  
**2022R033201**  
RECORDED:  
12/20/2022 01:54:14 PM  
BECKY LYNCH, RECORDER  
LAKE COUNTY OHIO  
REC FEE: 786.00  
TOTAL PAGES: 96

**GRANT OF CONSERVATION EASEMENT  
AND  
COVENANT FOR STEWARDSHIP FEES**

96

This Grant of Conservation Easement and Covenant for Stewardship Fees (this “Grant” or this “Conservation Easement”) is made by Lake Metroparks (“Grantor”), a park district formed under the authority of Chapter 1545 of the Ohio Revised Code, to Western Reserve Land Conservancy (“Grantee”), an Ohio nonprofit corporation.

**WITNESSETH:**

**WHEREAS**, Grantor is the owner in fee simple of two (2) parcels of real property aggregating approximately 338.0009 acres in area, located on Vrooman Road in Leroy and Concord Townships, Lake County, Ohio (the “Protected Property”), known as all of permanent parcel numbers 07-A-027-0-00-009-0 and 08-A-009-0-00-005-0, legally described in Exhibit A and further described and depicted in a Baseline Documentation Report designated Exhibit B, with the Property Identification map of Exhibit B depicting the Protected Property in crosshatch, both of which exhibits are attached hereto and made a part hereof; and

**WHEREAS**, the Protected Property possesses significant scenic, natural, and open space values (collectively, the “Conservation Values”) of great importance to Grantor, Grantee, to the residents of Leroy and Concord Townships, Lake County, and to the State of Ohio; and

**WHEREAS**, Grantor applied for and has received a grant from the State of Ohio, acting by and through the Director of the Ohio Public Works Commission (“OPWC”), pursuant to Ohio Revised Code §164.20 et seq. (the “Funds”); and in connection with Grantor’s application for the Funds, Grantor proposed to use the Funds for open space acquisition to protect and enhance riparian corridors, as set forth more specifically in its application; and

**WHEREAS**, as a condition to Grantor's receipt of the Funds, Grantor has agreed to restrict the use of the Protected Property as set forth in this Conservation Easement, with the intent that such restrictions run with the land; and

**WHEREAS**, Grantor and Grantee agree that the Baseline Documentation Report provides an accurate representation of the Protected Property and the Conservation Values as of the effective date of this Grant and that it is intended to serve as an objective information baseline for monitoring compliance with the terms of this Grant; and

**WHEREAS**, the Protected Property is located within Grantee's service area and has substantial value as a scenic, natural, and educational resource in its present state as a natural, scenic, and open area, constituting a natural habitat for plants and wildlife; and

**WHEREAS**, the Protected Property is located adjacent to two (2) properties that are permanently protected by Grantee totaling approximately 151 acres, and two managed parks/preserves totaling 910 acres, thereby creating a significant opportunity to connect those properties and the Protected Property to establish a corridor of preserved properties in this area of recent high development pressure; and

**WHEREAS**, the Protected Property contains approximately 12,814 linear feet of tributaries to the Grand River and approximately 5,561 linear feet of the Grand River; and

**WHEREAS**, the Protected Property contains a variety of tree species, including but not limited to, Ash, American basswood, American beech, yellow birch, Ohio buckeye, catalpa, black cherry, eastern cottonwood, cucumbertree, eastern hemlock, pignut hickory, shagbark hickory, American hornbeam, black locust, black maple, red maple, sugar maple, chestnut, oak, chinquapin oak, red oak, white oak, pawpaw, white pine, sassafras, sycamore, tuliptree, black tupelo, black walnut and black willow; and

**WHEREAS**, the Protected Property also contains other plant species such as, flat topped aster, New England aster, rough avens, yellow avens, bluestem broomsedge, Christmas fern, intermediate fern, lady fern, marginal wood fern, New York fern, ostrich fern, sensitive fern, spinulose wood fern, forget-me-not, bluestem goldenrod, grass-leaved goldenrod, gray goldenrod, wrinkle-leaved goldenrod, zig-zag goldenrod, deer-tongue grass, wild indigo, Jack-in-the-pulpit, Virginia knotweed, lizard's tail, great blue lobelia, sharp-wing monkeyflower, common mullein, moth mullein, Canada wood nettle, false nettle, Pennsylvania pellitory, hop sedge, shallow sedge, three-way sedge, white snakeroot, Joe Pye weed, allow-leaved tearthumb, blue vervain, white vervain, American water horehound, wingstem, woolgrass, spicebush, arrowwood viburnum, mapleleaf viburnum; and

**WHEREAS**, the Protected Property possesses over 5,700 linear feet of scenic and open space views along Interstate 90 and Vrooman Road in Concord and Leroy Townships; and



**WHEREAS**, there are situated on the Protected Property an existing driveway and parking area, power transmission towers and associated lines, trails, and three existing oil and gas wells with associated equipment and infrastructure (the “**Existing Improvements**”) as described and depicted in Exhibit B; and

**WHEREAS**, Grantee is a charitable organization referred to in Section 5301.69 of the Ohio Revised Code (“**ORC**”) and Section 501(c)(3) of the Internal Revenue Code of 1986 (“**IRC**”), as amended, and the regulations promulgated thereunder, and is authorized to acquire conservation easements in accordance with the provisions of ORC Section 5301.69(B); and

**WHEREAS**, Grantee is a “qualified organization,” as that term is defined in IRC Section 170(h); and

**WHEREAS**, Grantor and Grantee recognize the aforesaid Conservation Values of the Protected Property in its present state, and have, by the conveyance and acceptance of this Conservation Easement, respectively, the common purpose of (a) conserving and protecting the Protected Property in perpetuity as natural habitat for plants and wildlife, (b) providing long-term benefits to the citizens of Leroy and Concord Townships, Ohio and Lake County by operating the Protected Property as a Passive Use Public Park (as hereinafter defined), and (c) preventing the use or development of the Protected Property contrary to the mission of Grantor’s park board to preserve, conserve and protect the natural features of Lake County, Ohio (the “**Park District Mission**”); and

**WHEREAS**, “**Passive Use Public Park**” means a park that is operated for Passive Park Uses, as distinguished from active uses; and

**WHEREAS**, “Passive Park Uses” excludes active recreational uses that require the installation of manicured fields, courts and impervious surfaces, such as sports fields, tennis courts, golf courses and motor vehicle tracks, but includes uses and management practices which (a) maintain and enhance environmental quality, (b) provide sanctuary for native plants and animals, (c) avoid significant degradation of soils, wildlife, plant habitats and water quality by use of vegetative buffers along streams and wetlands, and (d) limit physical alteration of the Protected Property to creation and maintenance of trails (including those used for walking and mountain biking) and to the Future Improvements and to those activities not otherwise restricted by subparagraph 4(c); and

**WHEREAS**, “ecological, scientific, educational, and aesthetic value,” “natural, scenic and open condition” and “natural values” as used herein shall, without limiting the generality of the terms, mean a condition that is no less natural than the condition of the Protected Property at the time of this Grant, meaning that native plants and wildlife are permitted to exist in a relatively natural state; and

**WHEREAS**, Grantor and Grantee intend that this Conservation Easement shall be a “conservation easement” as defined in ORC Section 5301.67; and

**WHEREAS**, Grantee is willing to accept this Conservation Easement subject to the reservations and to the terms, conditions and obligations set out herein; and

**WHEREAS**, consistent with IRC regulations Section 1.170A-14(c) requiring Grantee to have a commitment to protect the Conservation Purposes (as defined below) and the resources to enforce the restrictions contained in this Grant, (a) Grantee's obligation under this Conservation Easement entails a commitment to defend the ecological, scientific, educational and aesthetic value, the natural, scenic and open condition, and natural values of the Protected Property; (b) significant costs are necessary to carry out this commitment; and (c) accordingly, Grantor and Grantee have reached agreement on the payment by Grantor of a stewardship fee, payable in the event Grantor sells the Property, as described in paragraph 18 below.

**NOW, THEREFORE**, for and in consideration of the premises and the foregoing recitations, and other good and valuable consideration in hand paid, and in further consideration of the mutual promises, covenants, terms, conditions and restrictions hereinafter set forth, with the intention of making an absolute and unconditional gift, Grantor does hereby grant, give, and convey unto Grantee its successors and assigns, in perpetuity, a Conservation Easement of the nature and character and to the extent hereinafter set forth, over the Protected Property, for the purposes of preserving, protecting, and maintaining the Protected Property pursuant to the Park District Mission as scenic, natural, and open areas, and as habitat for plants and wildlife and as a Passive Use Public Park, and together with the right of visual access to and views of the Protected Property in its scenic, natural and predominately undeveloped wooded and open condition. Grantor will neither perform, nor knowingly allow others to perform, any act on or affecting the Protected Property that is inconsistent with the covenants contained herein. Grantor authorizes Grantee to enforce these covenants in the manner described in this Grant.

**A. PURPOSES FOR WHICH THIS CONSERVATION EASEMENT IS GRANTED:**

This Conservation Easement is granted for the purposes (the "**Conservation Purposes**") of the (a) protection of a relatively natural habitat of fish, wildlife or plants, or similar ecosystems, (b) preservation of open space, trees and forest land, together with the right of visual access to and a view of the Protected Property by the general public in its scenic, relatively natural and predominantly undeveloped, wooded and open condition, which will yield a significant public benefit, and (c) use of the Protected Property as a Passive Use Public Park in order to preserve and foster outdoor recreation and education of the general public.

**B. TERMS, CONDITIONS, AND RESTRICTIONS OF THIS CONSERVATION EASEMENT:**

**1. General Reserved Rights.**

- (a) Ordinary Rights and Privileges of Ownership. Grantor reserves all ordinary rights and privileges of ownership, including the right to sell and lease the Protected Property and the right to implement generally acceptable improved forest management practices, as well as the right to continue the use of the Protected Property for all purposes consistent with the Conservation Purposes not destructive of Conservation Values, and not expressly prohibited or conditioned hereunder; provided that nothing contained in this Conservation Easement shall relieve Grantor of any obligation with respect to the Protected Property or restrictions on the use of the Protected Property imposed by law. Grantor reserves the right to engage in all acts or uses on the Protected Property that are not prohibited by governmental statute or regulation, are not expressly prohibited or conditioned herein, and are not inconsistent with the Conservation Purposes. Notwithstanding Grantor's reservation of the ordinary rights and privileges of ownership discussed within this paragraph 2(a), pursuant to the reservation contained in that certain Limited Warranty Deed recorded as Instrument Number 2022033198 of Lake County Records, Grantor does not own and therefore cannot exercise any ordinary right of ownership or privilege with respect to the carbon biomass and offset credits created therefrom on the Protected Property, whether existing at the time of this Grant or located thereon at any time in the future, including specifically but not limited to the right to sell carbon offset credits associated with the Protected Property.
- (b) Use of Fertilizers and Herbicides. Grantor reserves the right to use natural and chemical fertilizers and herbicide controls on the Protected Property; provided such use is in compliance with all applicable federal, state and local statutes and regulations, but only to the extent such use does not have an adverse impact on the Conservation Values of the Protected Property and is otherwise consistent with the Conservation Purposes.
- (c) Tree Planting. Grantor reserves the right to plant anywhere on the Protected Property a diversity of native or non-invasive species of trees, shrubs and herbaceous plant materials in a manner that does not have an adverse impact on the Conservation Values of the Protected Property and is otherwise consistent with the Conservation Purposes. Provided, also, the Grantor will not introduce into the Protected Property any plant species as defined or listed as noxious or detrimental to wildlife by local, state, or

federal land or wildlife agencies. The Grantor may reseed disturbed areas with high quality, certified weed-free seed that is commonly used and that is acceptable to the natural resource agencies in the State of Ohio.

- (d) Tree Removal. Grantor reserves the right to remove (i) from anywhere on the Protected Property dead, downed (by natural causes), significantly diseased or materially damaged trees and trees that pose a danger to human life or neighboring properties, and (ii) trees from areas within which existing trails are being widened or new trails created (as provided in subsection 4(c)); provided, however, that any such removal does not materially impair significant conservation interests and has no more than a negligible or de minimis impact on biomass and carbon stock.

2. **Major Reserved Rights**.

- (a) Existing Improvements. Notwithstanding anything to the contrary contained in this Grant, Grantor and Grantee agree that the Existing Improvements may continue to be improved, maintained, repaired and replaced in their present location on the Protected Property.
- (b) Future Improvements. Notwithstanding anything to the contrary contained in this Grant, Grantor and Grantee agree that non-residential structures and associated improvements typically used in parks, such as, but not limited to, pavilions, parking areas, roads for access to parking areas and for management and maintenance activities, restroom facilities, impervious trails, fencing, landscaping and lawns, observation platforms, bridges and associated signage (collectively, the “**Future Improvements**”), may be constructed and thereafter maintained (including mowing of the lawns), remodeled or expanded on the Protected Property by Grantor; provided that tree removal for purposes of the construction, maintenance, remodeling, expansion or replacement of Future Improvements shall not exceed a total of thirty (30) acres. It being the intended purpose of this 30-acre limitation to maximize the capture of carbon dioxide resulting from the preservation of trees and the carbon offsets created therefrom. Additionally, Future Improvements may be constructed, maintained, remodeled, expanded and replaced in all locations on the Protected Property where no tree removal is necessary in order to do so.
- (c) Restoration Activities. Grantor reserves the right, notwithstanding any provision to the contrary in this Grant, to engage in restoration and other long term management activities consistent with and as necessary to further the purposes of Grantor’s Natural Resource Management Plan that was prepared for the purposes of the Clean Ohio

Greenspace Conservation Fund application and may be periodically updated; provided that such restoration and long term management activities are not detrimental to water quality, significant natural habitats, or the scenic qualities of the Protected Property and are otherwise consistent with the Conservation Purposes and Conservation Values.

3. **Notice of Exercise of Reserved Rights.** As required by IRC regulations Section 1.170A-14(g)(5)(ii), Grantor agrees to notify Grantee, in writing, before exercising any Major Reserved Right reserved by Grantor in paragraph 2 of this Grant, which shall be subject to Grantee's approval or withholding of approval pursuant to paragraph 7, below.

4. **Use Restrictions.**

(a) **Structures; Signs.**

(i) **Structures.** Except for the Existing Improvements and the Future Improvements, and except as may otherwise be provided in this Grant, no residential, commercial, governmental or industrial structures, including, but not limited to, buildings, outbuildings, communication towers, asphalt, concrete or other impermeable surfaces, camping accommodations, mobile homes, and fences, shall be hereafter erected or placed on the Protected Property.

(ii) **Signs.** Except as may otherwise be provided in this Grant, no signs, billboards or advertising of any kind shall be erected or placed on the Protected Property, except signs which are reasonably consistent with the use and operation of the Protected Property as a passive use public park and whose placement, number and design do not significantly diminish the scenic character of the Protected Property, including signs that (A) state the name and address of the Protected Property; (B) state the fact that the Protected Property is protected by this Conservation Easement; (C) facilitate directions; (D) promote educational activities; (E) post the Protected Property to control unauthorized entry or use; (F) identify sources of funding as required by such sources and (G) identify safety hazards. Nothing contained herein shall prohibit short-term, temporary signs, advocating or opposing political causes or candidates, provided that such signs are installed within a reasonable time period prior to political elections and removed immediately after same.

(b) **Waste Disposal.** Except for leaves, mulch, wood chips and other similar materials typically used in the creation of compost (collectively, the "**Compost Materials**") generated on the Protected Property or for Compost Materials brought onto and used



exclusively on the Protected Property for landscaping purposes in a manner compatible with the Conservation Purposes, there shall be no (i) dumping of Compost Materials or of soil, trash, garbage, waste, or other unsightly or offensive material; (ii) placement of underground storage tanks; or (iii) application, storage, or placement of raw, untreated municipal, commercial or industrial sewage sludge or liquid generated from such sources on the Protected Property.

- (c) Filling or Excavation. Except as may otherwise be provided in this Grant, there shall be no fillings, excavations, construction of roads or other changes in the general topography of the Protected Property in any manner except the maintenance of existing and permitted low-impact, pervious trails or access roads (including placement of culverts and bridges associated with such trails or roads) and that caused by the forces of nature; provided, however, that existing trails may be widened and new trails may be created so long as they do not exceed ten feet in width, they are not covered with impervious materials and any tree removal involved in such widening or creation is restricted exclusively to the trail corridors. For purposes of this Grant, impervious materials shall not include gravel, limestone, crushed asphalt, mulch chips and similar materials customarily used for trail construction. All trails and access roads will be limited in scope and all trails and access roads will be installed and maintained using best management practices to prevent soil erosion and other impacts on the Protected Property. It shall be expressly understood that the permitted trails described in this subparagraph 4(c) may be utilized for non-motorized vehicle activity (i.e. mountain biking) and temporary trail improvements associated therewith. Notwithstanding any permissions granted within this subparagraph 4(c), all activities shall be conducted in a manner that is not detrimental to water quality, significant natural habitats, or the scenic qualities of the Protected Property and shall be otherwise consistent with the Conservation Purposes and the Conservation Values.
- (d) Mining. Pursuant to IRC Section 170(h)(5)(B), there shall be no surface mining permitted on the Protected Property.
- (e) Oil and Gas Exploration. Except as otherwise may be permitted in this Grant, there shall be no drilling for oil, gas or similar substances from the Protected Property.
- (f) Habitat Disturbance. Except as otherwise permitted in this Grant, Grantor shall not cut down, remove or destroy trees or other plants.
- (g) Power Lines or Communications Towers. Except for utility lines necessary for structures, uses and activities permitted on the Protected Property and as may be

permitted by utility easements of record at the time of this Grant, there shall be no power transmission lines or communications towers erected on the Protected Property and no interests in the Protected Property shall be granted for such purpose.

- (h) Manipulation of Water Courses. There shall be no manipulation or alteration of natural water courses, marshes, or other water bodies or activities or uses detrimental to water quality; provided that existing lakes, dams and ponds, if any, on the Protected Property may be maintained, repaired, replaced and expanded. The Protected Property includes all water and water rights, ditches and ditch rights, springs and spring rights, reservoir and storage rights, wells and groundwater rights, and other rights in and to the use of water historically used on or otherwise appurtenant to the Protected Property (collectively, the “**Water Rights**”). Grantor shall not transfer, encumber, sell, lease or otherwise separate the Water Rights from the Protected Property or change the historic use of the Water Rights without the consent of Grantee. Grantor shall not abandon or allow the abandonment of, by action or inaction, any of the Water Rights without the consent of Grantee.
- (i) Limitation on Motor Vehicles. No motorized vehicles shall be operated on the Protected Property except in the confines of the driveways and parking areas included in the Existing Improvements and Future Improvements and for pickup trucks, tractors, and non-recreational all-terrain vehicles that are used in connection with construction, maintenance, monitoring and management activities. Any permitted use of motorized vehicles on the Protected Property shall be in such a manner so as not to cause rutting or other damage to the surface of the Protected Property that could create a potential for erosion or contribute to other adverse impacts to the Conservation Values.
- (j) Density Yield; Transfer of Development Rights. The acreage constituting the Protected Property shall not be taken into consideration and may not be used when calculating the lot area, building density, lot coverage, open space, or natural resource use for any future development of any property. Grantor may not transfer (whether or not for compensation) any development rights encumbered or extinguished by this Grant.
- (k) Subdivision. Except as may be otherwise provided in this Grant, the parcels presently constituting the Protected Property shall not be divided and any transfer of the Protected Property must include all parcels.

- (l) Commercial Recreational Use. Except for those uses considered “*de minimis*” according to the provisions of IRC Section 2031(c)(8)(B), there shall be no commercial recreational use of the Protected Property.
5. **Real Property Interest**. This Conservation Easement constitutes a real property interest immediately vested in Grantee binding upon Grantor and Grantee, their respective agents, personnel, representatives, heirs, assigns, and all other successors to them in interest, and shall continue as a servitude running in perpetuity with the Protected Property.
6. **Right to Enter and Inspect**. Grantee, or its duly authorized representatives, may enter the Protected Property at all reasonable times, after not less than 24 hours written or telephone notice, for the purposes of inspecting the Protected Property in order to further the objectives of and determine compliance with the terms of this Conservation Easement; provided that no such notice need be given prior to Grantee entering the Protected Property under emergency circumstances. For the purpose of this provision, “emergency circumstances” shall mean that Grantee has a good-faith basis to believe that a violation of this Conservation Easement is occurring or is imminent.
7. **Grantee’s Approval and Withholding of Approval**. When Grantee’s approval is required, Grantee shall grant or withhold its approval in writing within sixty (60) days of receipt of Grantor’s written request therefor. In the case of withholding of approval, Grantee shall notify Grantor in writing with reasonable specificity of the reasons for withholding of Approval, and the conditions, if any, on which approval might otherwise be given.
- (a) Approval by Grantee of Certain Uses or Activities. Grantor’s exercise of the Major Reserved Rights under paragraph 2 of this Conservation Easement shall be subject to the prior approval of Grantee. Grantor shall request such approval in writing and shall include therewith information identifying the proposed activity and the reasons for the proposed activity with reasonable specificity. Grantee’s evaluation of the request shall generally take into account the criteria included at subparagraph 7(b), below, as they relate to the activity itself as well as to the site for the proposed activity, and Grantee’s approval shall not be unreasonably withheld.
- (b) Approval by Grantee of Sites. The exercise of the right to construct structures, improvements or other surface disturbing activity shall be subject to the prior approval by Grantee of the site for such proposed activity. Grantor shall request such approval in writing and shall include therewith information identifying the proposed site with reasonable specificity, evidencing conformity with the requirements of the applicable paragraphs under which the right is reserved hereunder, and, when applicable,



evidencing conformity with existing land use regulations. Grantee's approval, which shall not be unreasonably withheld, shall take into account the following criteria:

- (i) the extent to which use of the site for the proposed activity would impair the scenic qualities of the Protected Property that are visible from public roads;
- (ii) the extent to which use of the site for the proposed activity would destroy an important habitat or would have a material adverse effect on the movement of wildlife;
- (iii) the extent to which use of the site for the proposed activity would impair water quality;
- (iv) in the case of any proposal to build new structures or roads, the extent to which the scenic quality of the Protected Property may be adversely impacted;
- (v) the extent to which the proposed activity or use of the site for the proposed activity would otherwise significantly impair the Conservation Values.

Grantor and Grantee shall cooperate and shall act in good faith to arrive at agreement on suitable sites in connection with any determinations that are necessary to be made by them (either separately or jointly) under this paragraph 7. Notwithstanding the foregoing, Grantee's approval of a proposed site or activity shall be withheld if the site for the proposed activity would interfere with or impair the Conservation Values of the Protected Property.

- (c) Notice to Grantee. Following the receipt of Grantee's approval when required under subparagraph 7(a) or subparagraph 7(b), and not less than thirty (30) days prior to the commencement of any use or activity approved under subparagraph 7(a) or 7(b), Grantor agrees to notify Grantee in writing of the intention to exercise such right. The notice shall describe the nature, scope, location, timetable, and any other material aspect of the proposed activity in sufficient detail to permit Grantee to monitor such activity. When such information was not provided to Grantee under the requirements of subparagraph 7(b), the notice shall also include information evidencing the conformity of such activity with the requirements of the applicable paragraphs under which the right is reserved hereunder, and, when applicable, evidencing conformity with existing land use regulations. At Grantee's sole discretion, Grantee may permit commencement of the activity less than thirty (30) days after receiving Grantor's written notice. Nothing in this paragraph shall diminish or limit Grantor's obligations under paragraph 17, with respect to Grantor's written notice to Grantee concerning a transfer of any interest in all or a portion of the Protected Property.

(d) Breach. Failure to secure such approval or give such notice as may be required by this paragraph 7 shall be a material breach of this Conservation Easement notwithstanding any other provision of this Conservation Easement and shall entitle Grantee to such rights or remedies as may be available under this Conservation Easement.

8. Grantee's Remedies. In the event of a violation of the terms of this Conservation Easement, Grantee shall give written notice to Grantor of such violation and demand corrective action sufficient to cure the violation and, if the violation involves damage to the Protected Property resulting from any use or activity inconsistent with the Conservation Purposes, to restore the portion of the Protected Property so damaged. If Grantor fails to cure the violation within 30 days after receipt of notice thereof from Grantee, or if the violation cannot reasonably be cured within a 30-day period, Grantor fails to begin curing such violation within the 30-day period or, once having commenced a cure, fails to continue diligently to cure such violation until finally cured, Grantee may bring an action at law or in equity in a court of competent jurisdiction to enforce the terms of this Conservation Easement, to enjoin the violation by way of temporary or permanent injunction, to recover from Grantor any damages to which it may be entitled for violation of the terms of this Conservation Easement or damage to any of the Conservation Values arising from such violation, including damages for diminished environmental values, and to require the restoration of the Protected Property to the condition that existed prior to any such damage, without limiting Grantor's liability therefor. Grantee, in its sole discretion, may apply any damages recovered to the cost of undertaking any corrective action on the Protected Property. If Grantee, in its reasonable discretion, determines that circumstances require its immediate action to prevent or mitigate significant damage to the Conservation Values of the Protected Property, Grantee may pursue its remedies under this paragraph upon giving notice to Grantor of such circumstances but without waiting for the period provided for cure to expire. Grantee's rights under this paragraph apply equally in the event of either actual or threatened violation of the terms of this Conservation Easement. Grantee's remedies described in this paragraph apply to violations caused directly by Grantor or by third persons, whether or not claiming by, through or under Grantor, and shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity. Grantee does not waive or forfeit the right to take action as may be necessary to ensure compliance with the terms, conditions and purposes of this Conservation Easement by prior failure to act. Any costs incurred by Grantee in enforcing the terms of this Conservation Easement, including, without limitation, costs of suit and attorneys' fees, and any costs of

restoration necessitated by the violation of the terms of this Conservation Easement shall be borne by Grantor.

9. **Upkeep and Maintenance.** Grantor shall be solely responsible for the upkeep and maintenance of the Protected Property to the extent required by law. Grantee shall have no obligation for the upkeep or maintenance of the Protected Property.
10. **Liability and Indemnification; Insurance.** Grantor and Grantee acknowledge and agree that Grantor retains the fee simple ownership of the Protected Property and therefore Grantor controls day-to-day activities on, and access to, the Protected Property, except for Grantee's limited rights to monitor the condition of the Conservation Values and to enforce the terms of this Conservation Easement. Grantor therefore agrees that general liability for risks, damages, injuries, claims or costs arising by virtue of Grantor's continued ownership, use, and control of the Protected Property shall remain with Grantor as a normal and customary incident of the right of property ownership. Grantor shall keep the Protected Property insured with comprehensive general liability insurance in reasonable amounts against claims for personal injury, death and property damage, cause Grantee to be named as an additional insured on such insurance policies, and provide evidence of such insurance to Grantee as of the effective date of this Conservation Easement and periodically thereafter as such insurance coverage is renewed or replaced. Such evidence shall be in the form of a certificate of insurance which (a) indicates that Grantee is an additional insured; and (b) requires written notice from the insurer to Grantee not less than 30 days before making a material change in or canceling such coverage.
11. **Taxes.** Grantor shall pay all taxes validly assessed and levied against the Protected Property, including any such taxes validly levied and assessed against this Conservation Easement by competent authorities, it being understood that no taxes are presently levied against conservation easements generally in the State of Ohio, or, to the knowledge of Grantor or Grantee, are such taxes contemplated by any taxing authority with jurisdiction over the Protected Property. At its option, Grantee may, but shall not be obligated to, discharge any tax lien (or other encumbrance) at any time levied or placed on the Protected Property should Grantor fail to do so. Before doing so, Grantee shall give Grantor notice of its intention to discharge any such tax lien or other encumbrance and Grantee shall not proceed unless Grantor has failed to discharge such tax lien or other encumbrance within 30 days after the giving of such notice. Grantor shall reimburse Grantee on demand for any payment so made.
12. **Incorporation in Subsequent Instruments.** In order to assure that the transferee of title to or a possessory interest in the Protected Property is aware of the existence of this Grant, Grantor

agrees that a reference to this Conservation Easement shall be incorporated in any subsequent deed, or other legal instrument, by which Grantor divests either the fee simple title to, or a possessory interest in, the Protected Property.

**13. Amendment; Discretionary Approval.**

- (a) Background. Grantee and Grantor recognize that future circumstances that are unforeseen at the time of this Grant may arise which make it beneficial or necessary to take certain action in order to ensure the continued protection of the Conservation Values of the Protected Property and to guaranty the perpetual nature of this Conservation Easement. Any such action, if determined to be beneficial or necessary, shall be in the form of either (i) an amendment, in the case of a permanent modification of the terms of this Conservation Easement, including but not by way of limitation, a clerical or technical correction or modification of a reserved right; or (ii) a discretionary approval, in the case of a temporary activity or impact relating to the maintenance or management of the Protected Property which does not require a permanent modification of the Conservation Easement terms. All amendments and discretionary approvals shall be subject to this paragraph 13. Nothing in this paragraph, however, shall require Grantor or Grantee to consult or negotiate regarding, or to agree to any amendment or discretionary approval.
- (b) Amendment. This Grant may be amended only with the written consent of Grantee and Grantor. Grantee shall not consent to any amendment of this Conservation Easement unless (i) Grantor submits a written request for amendment pursuant to Grantee's existing amendment policy and such amendment otherwise qualifies under Grantee's policy then in effect respecting conservation easement amendments; and (ii) the effect of such amendment is neutral with respect to or enhances the Conservation Purposes. Any such amendment shall be consistent with the purposes of this Grant and shall comply with IRC Sections 170(h) and 2031(c) and shall also be consistent with ORC Sections 5301.67 through 5301.70 and any regulations promulgated pursuant to such sections. Any such amendment shall be recorded in the Official Records of Lake County, Ohio. Grantor and Grantee may amend this Conservation Easement to be more restrictive to comply with the provisions of IRC Section 2031(c). Grantee shall require subordination of any mortgage as a condition of permitting any amendment to this Conservation Easement.
- (c) Discretionary Approval. Grantee's consent for activities otherwise prohibited under this Conservation Easement may be given under the following conditions and

circumstances. If, owing to unforeseen or changed circumstances, the performance of an activity prohibited under this Conservation Easement is deemed beneficial or necessary by Grantor, Grantor may request, and Grantee may in its sole discretion grant, permission for such activity without resorting to the formalities of Grantee's amendment policy and process, subject to the following limitations. Such request for Grantee's consent shall (i) be made, and Grantee shall consider and respond to such request in accordance with the provisions of paragraph 7, entitled "Grantee's Approval or Withholding of Approval"; and (ii) describe the proposed activity in sufficient detail to allow Grantee to evaluate the consistency of the proposed activity with the purpose of this Conservation Easement. Grantee may grant its consent only if it determines that (x) the performance of such activity is, in fact, beneficial or necessary; and (xi) such activity (A) does not violate the purpose of this Conservation Easement, and (B) results in an outcome that is neutral with respect to or enhances the Conservation Purposes of this Conservation Easement.

(d) General. Notwithstanding the foregoing, Grantee and Grantor shall have no power or right to agree to any activity that would (i) result in the extinguishment of this Conservation Easement; (ii) adversely affect the perpetual nature of this Conservation Easement; (iii) adversely affect the qualification of this Conservation Easement or the status of Grantee under any applicable laws, including IRC Sections 170(h) and 501(c)(3) and the laws of the State of Ohio; or (iv) result in either private benefit or inurement to any party. For purposes of this paragraph, the terms private benefit and inurement shall have the same meanings ascribed to them in IRC Section 501(c)(3) and associated Treasury Regulations.

14. Assignment. Grantee may transfer or assign all or less than all of Grantee's rights and obligations under this Conservation Easement if, in Grantee's opinion, the purposes of this Conservation Easement are better served by this Conservation Easement being held in the name of another organization or in the name of more than one organization which is a qualified organization at the time of transfer under IRC Section 170(h)(3) and the laws of the State of Ohio (especially ORC Section 5301.69), and is acceptable to Grantee. The selection of the transferee shall be made by the Board of Trustees of Grantee or if Grantee has ceased to exist, the statutory or court appointed successors of the last Board of Trustees of Grantee. As a condition of such transfer, Grantee shall require that the Conservation Purposes that this Conservation Easement is intended to advance continue to be carried out.



**15. Extinguishment.**

- (a) Limitation. If future circumstances render the purposes of this Conservation Easement impossible to accomplish, this Conservation Easement can only be terminated or extinguished, whether with respect to all or part of the Protected Property, by judicial proceedings in a local court of competent jurisdiction. Unless otherwise required by applicable law at the time, in the event of any sale of all or a portion of the Protected Property (or any other property received in connection with an exchange or involuntary conversion of the Protected Property) after such termination or extinguishment, and net of any costs or expenses associated with such sale, Grantor and Grantee shall divide the proceeds from such sale in accordance with their respective percentage interests in the fair market value of the Protected Property, as such percentage interests are determined under the provisions of subparagraph 15(b), adjusted, if necessary, to reflect a partial termination or extinguishment of this Conservation Easement. All such proceeds received by Grantee shall be used by Grantee in a manner consistent with the Conservation Purposes of this Conservation Easement.
- (b) Percentage Interests. For purposes of this paragraph 15, Grantor and Grantee stipulate that, as of the effective date of this Grant, this Conservation Easement and the restricted fee interest in the Protected Property each represent a percentage interest in the fair market value of the Protected Property. Such percentage interests shall be stipulated by the parties, based on the appraised value set forth in the appraisal prepared for Grantor immediately prior to Grantor's acquisition of the Protected Property, to be seventy-five percent (75%) held by Grantor and twenty-five percent (25%) held by Grantee. For purposes of this paragraph, the stipulated fair market value and the percentage interests of Grantor and Grantee in the fair market value of the Protected Property thereby determinable shall remain constant.

- 16. Eminent Domain.** It is the intent of this Grant to convey to Grantee, its successors and assigns, such an interest in the Protected Property as is sufficient to discourage the exercise of the power of eminent domain by public utility and any other body or person. If all or any part of the Protected Property is taken, whether such taking involves the fee simple interest or a lesser interest, under the power of eminent domain by public, corporate, or other authority, or otherwise acquired by such authority through a purchase in lieu of a taking, Grantor and Grantee shall join in appropriate proceedings at the time of such taking to recover the full value of the interests in the Protected Property subject to the taking and all incidental or direct damages resulting from the taking. All expenses reasonably incurred by Grantor and Grantee

in connection with such taking shall be paid out of the recovered proceeds. Grantor and Grantee shall be respectively entitled to compensation from the balance of the recovered proceeds in conformity with the provisions of subparagraph 15(a) (with respect to the allocation of proceeds). Such allocation shall be absolute and shall not take into account or be modified based on the relative impact of the taking on the respective interests of the parties. The respective rights of Grantor and Grantee set forth in this paragraph 16 shall be in addition to, and not in limitation of, any rights they may have at common law.

17. **Notice of Proposed Transfer.** Grantor shall give Grantee notice of the proposed transfer of any interest in the Protected Property at least 20 days prior to such transfer.
18. **Stewardship Fee.** Grantor hereby covenants, promises, and agrees to pay, or to cause the closing agent in connection with the future transfer for value of all or less than all of the Protected Property to pay, to Grantee, or any successor having stewardship obligations pertaining to the Protected Property, at closing, a Stewardship Fee (the “Fee”) in an amount equal to ten percent (10%) of the full consideration paid, including that portion of such consideration attributable to improvements. In the event the Fee is not paid as provided herein, Grantee shall have the right to initiate proceedings to impose a lien on the Protected Property to secure the continuing obligation of Grantor and its successors in title to pay the Fee; provided that any lien securing payment of the Fee shall be subordinate to the lien of any first mortgage on the Protected Property. Such lien may be imposed, enforced and/or foreclosed in accordance with the laws of the State of Ohio.
19. **OPWC Provisions.** Notwithstanding anything to the contrary contained in this Conservation Easement, Grantor agrees as follows:
  - (a) The restrictions set forth in this Conservation Easement shall be perpetual and shall run with the Protected Property for the benefit of, and shall be enforceable by, OPWC. This Conservation Easement and the covenants and restrictions set forth herein shall not be amended, released, extinguished or otherwise modified without the prior written consent of OPWC, which consent may be withheld in its sole and absolute discretion.
  - (b) If Grantor, or its successors or assigns, as owner of the Protected Property, should fail to observe the covenants and restrictions set forth in this Conservation Easement, Grantor or its successors or assigns, as the case may be, shall pay to OPWC upon demand both 1) all Funds disbursed to Grantor, and 2) liquidated damages equal to one hundred percent (100%) of the amount of the Funds disbursed by OPWC together with interest accruing at the rate of six percent (6%) per annum from the date of Grantor’s receipt of the Funds. Grantor acknowledges that such sum is not intended as, and shall

not be deemed, a penalty, but is intended to compensate for damages suffered in the event a breach or violation of the terms of this Conservation Easement, the determination of which is not readily ascertainable. OPWC shall have the right to enforce, by any proceedings at law or in equity, all restrictions, conditions and covenants set forth in this Conservation Easement. Failure by OPWC to proceed with such enforcement shall in no event be deemed a waiver of the right to enforce at a later date the original violation or a subsequent violation.

- (c) Grantor and Grantee acknowledge that the Funds for this Conservation Easement are specific to Grantor and that OPWC's approval of Grantor's application for the Funds was made in reliance on Grantor's continued ownership and control of the Protected Property. Accordingly, Grantor shall not voluntarily or involuntarily sell, assign, transfer, lease, exchange, convey or otherwise encumber the Protected Property without the prior written consent of OPWC, which consent may be withheld in its sole and absolute discretion, and with notice to Grantee. If Grantor fails to observe this condition, Grantor shall pay to OPWC, upon demand, as liquidated damages, the amount set forth in paragraph 19(b) above.

20. **Separability.** Each provision of this Conservation Easement and the application thereof to the Protected Property are hereby declared to be independent of and severable from the remainder of this Conservation Easement. If any provision contained herein shall be held to be invalid or to be unenforceable or not to run with the land, such holding shall not affect the validity or enforceability of the remainder of this Conservation Easement.

21. **Notices.** Notices or other communications hereunder shall be in writing and shall be sent certified or by registered mail, return receipt requested, or by other national overnight courier company, or personal delivery. Notice shall be deemed given upon receipt or refusal to accept delivery. Each party may change from time to time their respective address for notice hereunder by like notice to the other parties. The notice addresses of the parties are as follows:

To Grantor: Lake Metroparks  
11211 Spear Road  
Concord, Ohio 44077  
Attention: Executive Director

To Grantee: Western Reserve Land Conservancy  
3850 Chagrin River Road  
Moreland Hills, OH 44022  
Attention: President or General Counsel



To OPWC: Ohio Public Works Commission  
65 East State Street, Suite 312  
Columbus, OH 43215  
Attention: Director

22. **Applicable Law.** This Conservation Easement shall be governed by, and construed in accordance with, the laws of the State of Ohio.
23. **Forbearance Not a Waiver.** Any forbearance by Grantee to exercise its rights under this Conservation Easement in the event of any violation of this Conservation Easement shall not be deemed or construed to be a waiver by Grantee of such violation or another violation of this Conservation Easement or of any of Grantee's rights under this Conservation Easement. No delay or omission by Grantee in the exercise of any right or remedy upon any breach shall impair such right or remedy or be construed as a waiver.
24. **Rules of Convenience.** For convenience, masculine pronouns used in this document include the feminine and neuter pronouns, and the singular tense includes the plural tense. Additionally, all references to either Grantor or Grantee include their respective personal representatives, heirs, successors, devisees and assigns unless otherwise noted. The captions in this Conservation Easement are for convenience only and are not intended by the parties to affect the meaning or interpretation of the terms thereof.
25. **Counterparts.** This Conservation Easement may be executed in multiple counterparts by Grantor and Grantee, each acting at different times and at separate locations, whether or not in the presence of each other, and any copy of this Conservation Easement to which the signatures of both Grantor and Grantee have been appended shall constitute an original hereof for all purposes, all such copies constituting one and the same original, and one of which shall constitute proof of the terms of this Conservation Easement without the necessity of producing any other original copy.
26. **Time of Essence.** Time is strictly of the essence in this Conservation Easement.
27. **Construction.** The parties acknowledge that each party has reviewed and revised this Conservation Easement and that the normal rule of construction that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Conservation Easement and any amendment or exhibit hereto.
28. **Entire Agreement; Recitals and Exhibits.** This Grant sets forth the entire agreement of the parties with respect to this Conservation Easement and supersedes all prior discussions, negotiations, understandings, or agreements relating to this Conservation Easement, all of which are merged herein. Any and all recitals in this Conservation Easement are agreed by the parties to be accurate, are incorporated into this Conservation Easement by this reference, and

shall constitute integral terms and conditions of this Grant. Any and all exhibits and addenda attached to and referred to in this Conservation Easement are hereby incorporated into this Easement as if fully set out in their entirety herein.

29. **Effective Date; Mortgage Subordination; Mechanics Liens.** Grantor and Grantee intend that the restrictions arising hereunder take effect on the day and year this Conservation Easement is recorded in the Official Records of Lake County, Ohio, after all required signatures have been affixed hereto. Grantor (a) shall cause any mortgage encumbering the Protected Property to be subordinated to this Grant effective as of the date this Grant is so recorded; and (b) hereby represents to Grantee that no material or labor has been furnished to or performed on the Protected Property within the last 90 days that has not been paid for in full. Grantee may re-record this instrument at any time as may be required to preserve its rights in this Conservation Easement.
30. **No Extinguishment Through Merger.** Grantor and Grantee herein agree that (a) this Conservation Easement shall not be extinguished through the doctrine of merger in whole or in part in view of the public interest in its enforcement, and (b) should all or a portion of the fee interest subject to this Conservation Easement and the Conservation Easement, itself, come to be owned by the same owner, such owner as promptly as practicable shall assign this Conservation Easement of record to another holder in conformity with the requirements of paragraphs 14 and 17 (entitled "Assignment" and "Notice of Proposed Transfer", respectively). The instrument of assignment shall refer to the provisions of this paragraph, and shall contain confirmatory language suitable to reimpose this Conservation Easement to the extent, if any, necessary to continue it in force.
31. **Termination of Rights and Obligations.** A party's rights and obligations under this Conservation Easement terminate upon transfer of that party's interest in this Conservation Easement or in the Protected Property, except that liability for acts or omissions occurring prior to such transfer shall survive transfer.
32. **Representations as to Authority.** Grantor hereby represents and warrants to Grantee that Grantor has the power to make this Grant and to carry out its obligations hereunder.

**TO HAVE AND TO HOLD**, unto and to the use of Grantee, its successors and assigns, forever. The covenants agreed to and the terms, conditions, restrictions, and purposes imposed as aforesaid shall be binding not only upon Grantor and Grantee, but also their respective agents, personal representatives, heirs and assigns, and all other successors to them in interest, and shall continue as a servitude running in perpetuity with the Protected Property.





## EXHIBIT A

### LEGAL DESCRIPTION 338.0009 ACRE REMAINDER LAKE METROPARKS

Situated in the Townships of Concord and Leroy, County of Lake and State of Ohio, known as being part of Original Township Lot 18, Tract 1 in Township 10 North, Range VIII West, Within Concord Twp. And Original Lots 63, 64, 78, 79 & 80 in Township 10 North, Range VII West, within Leroy Twp. Of the Connecticut Western Reserve, Further being part of land conveyed to Erie Land Resources, LLC in Lake County Document No. 2022R027797, PPN: 07A-027-009 & PPN: 08A-009-005;

Beginning at a Monument Box with 1 inch iron pin found in the centerline of Vrooman Road (C.R.-227) - 60 feet and varies wide, being South 03°21'19" East, 819.05 feet southerly, along said centerline from its intersection with U.S. Route 90 as shown in ODOT plan LAK-1-16.55 and centerline plat M-34 in Lake County Plat Records;

Thence North 03°21'19" West, along said centerline of Vrooman Road, 1167.17 feet to its intersection of the Northwesterly Limited Access line of U.S. 90);

Thence South 83°38'55" West, along said Limited Access Line, 50.07 feet to its intersection with the Westerly sideline of said Vrooman Road, witness a 5/8 inch iron pin found 1.24' South;

The following six (6) courses are along said Northwesterly Limited Access line of U.S. Rte. 90;

Thence South 83°38'55" West, 104.01 feet, to a 5/8 Inch iron pin set (LDC, Inc.) at a point 365 feet left at station 609+52 of the centerline of U.S. Rte.90;

Thence South 32°09'40" West, 593.26 feet to a 5/8 Inch iron pin set (LDC, Inc.) at a point 181 feet left at station 603+88 of the centerline of U.S. Rte.90;

Thence South 49°12'07" West, 532.69 feet to a 5/8 inch iron pin set (LDC, Inc.) at a point 171.45 feet left at station 598+55.40 of the centerline of U.S. Rte.90 and the PRINCIPAL PLACE OF BEGINNING;

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- COURSE I Thence continuing South 49°12'07" West, passing through a 5/8 inch iron pin found (LDC, Inc.) at 683.12 feet, a total distance of 1195.59 feet to a 5/8 inch iron pin set (LDC, Inc.) at a point 150 feet left at station 586+60 of the centerline of U.S. Rte.90;
- COURSE II Thence South 78°01'52" West, 124.35 feet to a 5/8 Inch iron pin set (LDC, Inc.) at a point 208 feet left at station 585+50 of the centerline of U.S. Rte.90;
- COURSE III Thence South 47°56'20" West, passing through a 5/8 inch iron pin found (LDC, Inc.) at 679.68 feet, a total distance of 1451.16 feet to a 5/8 Inch iron pin found (LDC, Inc.) at a point 150 feet left at station 571+00 of the centerline of U.S. Rte.90;
- COURSE IV Thence South 50°13'46" West, passing through a 5/8 inch iron pin found (LDC, Inc.) at 2451.75 feet, a total distance of 2945.00 feet to the southeasterly corner of land conveyed to Lake Metroparks in deed recorded in Volume 684, Page 316 of Lake County Deed Records (PPN: 08A-009-006), witness a 5/8 Inch iron pin found (LDC, Inc.), 1.03' S. at a point 150 feet left at station 541+55 of the centerline of U.S. Rte.90;
- COURSE V Thence North 17°19'10" West, along the Easterly line of said "Metroparks", 448.32 feet to a 5/8 inch iron pin found (LDC, Inc.) at an angle point therein;
- COURSE VI Thence North 00°53'40" West, continuing along the Easterly line of said "Metroparks", passing through a 5/8 inch iron pins found (LDC, Inc.) at 1944.97 feet and 2544.58 feet, a total distance of 2901.66 feet to a point in the centerline of the Grand River and the Southeasterly lines of Painesville Township and land conveyed to William A. Bingham, Tr., in Volume 802, Page 965 of Lake County Deed Records (PPN: 11A-001-002);

The following twenty two (22) courses are along the centerline of the Grand River;



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- COURSE VII (1) Thence North 62°21'30" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 186.21 feet to an angle point therein;
- COURSE VIII (2) Thence North 37°22'25" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 125.49 feet to an angle point therein;
- COURSE IX (3) Thence North 14°21'56" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 418.33 feet to an angle point therein;
- COURSE X (4) Thence North 47°36'29" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 207.53 feet to an angle point therein;
- COURSE XI (5) Thence North 57°12'15" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 263.10 feet to an angle point therein;
- COURSE XII (6) Thence North 78°51'28" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 252.07 feet to an angle point therein;
- COURSE XIII (7) Thence South 85°44'20" East, and along said Southeasterly lines of "Bingham" and Painesville Twp., 326.39 feet to an angle point therein;
- COURSE XIV (8) Thence North 70°45'09" East, and along said Southeasterly lines of "Bingham" and Painesville Twp. and the Southeasterly lines of Perry Township and land conveyed to Barbara J. Denner in Doc. #2020R031374 (PPN: 03A-001A-008), 231.55 feet to an angle point therein;
- COURSE XV (9) Thence North 51°42'17" East, and along said Southeasterly lines of "Denner" and Perry Twp. and the Southeasterly line of land conveyed to Joylon & Hilary A. Bixler in Doc. #2000R043260 (PPN: 03A-001-001), 267.96 feet to an angle point therein;
- COURSE XVI (10) Thence North 28°57'33" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 361.61 feet to an angle point therein;
- COURSE XVII (11) Thence North 33°12'01" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 684.36 feet to an angle point therein;
- COURSE XVIII (12) Thence North 45°58'41" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 113.39 feet to an angle point therein;

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- COURSE XIX (13) Thence North 75°38'52" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 132.01 feet to an angle point therein;
- COURSE XX (14) Thence South 49°14'22" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 248.55 feet to an angle point therein;
- COURSE XXI (15) Thence South 56°09'40" East, and along said Southeasterly lines of "Bixler" and Perry Twp., 183.16 feet to an angle point therein;
- COURSE XXII (16) Thence South 84°02'50" East, and along said Southeasterly line of Perry Twp. And the Southerly line of land conveyed to Larry G. & Doris A. Sarvis in Document No. 2000R046238 (PPN: 03A-001-002), 139.02 feet to an angle point therein;
- COURSE XXIII (17) Thence North 72°16'59" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 146.62 feet to an angle point therein;
- COURSE XXIV (18) Thence North 58°28'35" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 165.63 feet to an angle point therein;
- COURSE XXV (19) Thence North 42°38'10" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 168.31 feet to an angle point therein;
- COURSE XXVI (20) Thence North 25°27'43" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 414.28 feet to an angle point therein;
- COURSE XXVII (21) Thence North 07°37'28" East, and along said Southeasterly lines of "Sarvis" and Perry Twp., 235.00 feet to an angle point therein;
- COURSE XVIII (22) Thence North 16°21'50" West, and along said Southeasterly lines of "Sarvis" and Perry Twp., 206.56 feet to the Southwest corner of land conveyed to Margaret Zukowski in Document No. 2020R019058 (PPN: 07A-034-004) and the Southerly line of Original Lot 10;
- COURSE XXIX Thence North 88°39'30" East, along said Southerly lines of Lot 10 and "Zukowski", passing through a 5/8 inch iron pin set (LDC, Inc.) at 100.00 feet a total distance of, 411.48 feet to a 5/8 inch iron pin found (LDC, Inc.) at the Northwest corner of land conveyed to Craig F. Healey in Document No. 2019R013757 (PPN: 07A-034-004);



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- COURSE XXX Thence South 02°07'32" East, along the Westerly line of "Healey", and the Westerly line of land conveyed to ROVO Holdings, LLC in Document No. 2008R013110 (PPN: 07A-034-014), 781.30 feet to a 5/8 inch iron pin found at the Southwest corner of said "ROVO";
- COURSE XXXI Thence North 88°08'21" East, along the Southerly line of "ROVO", 365.18 feet to a 5/8 inch iron pin found (LDC, Inc.) at the Northwesterly corner of land conveyed to Ralph H. & Mirie R. Hosler in Volume 400, Page 805 of Lake County Deed Records (PPN: 07A-034-011);
- COURSE XXXII Thence South 03°21'19" East, along the Westerly line of "Hosler", 149.94 feet to a 5/8 inch iron pin found (LDC, Inc.) at the Southwesterly corner thereof;
- COURSE XXXII Thence North 88°08'14" East, along the Southerly line of "Hosler", 1020.48 feet to a 5/8 inch iron pin found in the Westerly sideline of said Vrooman Road;
- COURSE XXXIV Thence South 03°21'19" East, along said sideline, 243.00 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXV Thence South 88°08'14" West, 700.88 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXVI Thence South 01°51'46" East, 440.01 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXVII Thence South 44°02'55" East, 525.76 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXVIII Thence South 32°09'40" West, 339.12 feet to a 5/8 inch iron pin set (LDC, Inc.);
- COURSE XXXIX Thence South 49°12'07" West, 455.45 feet to a 5/8 inch iron pin set (LDC, Inc.);

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COURSE XL           Thence South 40°47'53" East, 60.00 feet to the PRINCIPAL PLACE OF BEGINNING and containing 338.0009 acres (14,723,321 sq.ft.) of land. OF WHICH 224.8203 acres (9,793,172 sq.ft.) lie within Leroy Township and 113.1806 acres (4,930,149 sq.ft.) lie within Concord Township. As calculated and described based on previous surveys done in 2002 & 2008 by LDC, Inc. in May 2022 by William C. Vondra Jr., P.S. 7478 of LDC, Inc. bearings refer to Ohio North NAD 83 (2011), Geoid 12B, ODOT VRS Network, be the same, more or less, but subject to all legal highways and easements of record.

The Intent is to describe the remaining lands of PPN: 07A-027-009 and PPN: 08A-009-005 after a 12.1090 Acre Split.



**Western Reserve Land Conservancy**

land • people • community

## **EXHIBIT B**

Baseline Documentation Report

**OSBORNE – VROOMAN CE PROPERTY**

in

Concord and Leroy Townships, Lake County, Ohio

Report Prepared By: Shane Wohlken

Date of Site Visit: September 28, 2022 and September 29, 2022

Date Finalized: December 9, 2022

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## **SECTION 1: INTRODUCTION**

### **1.1 PURPOSE**

This Baseline Documentation Report (“BDR”) is being prepared as an exhibit to the Conservation Easement (“CE”). The Purpose of the BDR is to describe the existing conditions and the conservation values on the Protected Property at the time of the grant of the CE. The BDR is used by the Grantor and Grantee primarily for monitoring and enforcing the terms of the CE.

Western Reserve Land Conservancy (the “Land Conservancy”) has a standard practice of preparing BDRs for CEs. This practice helps ensure that BDRs are created in a consistent manner and include the necessary details for monitoring and enforcing the terms of the CE. The BDR site visit and completion of the BDR document are done as close to recording of the CE as possible. The BDR is created and kept in the course of the Land Conservancy’s regularly conducted business, and it is the organization’s practice to create and maintain the BDR as one of its records. The information in this BDR is as complete and accurate as possible based on at least one property visit and property research using available resources.

In order to be eligible to receive a federal tax deduction in connection with the grant of a CE, the federal Treasury Regulations require the Grantor to provide the Grantee with a BDR at the time the CE is granted. If the Grantor decides to file for a tax deduction in connection with the grant of the CE, then it is the Grantor’s sole responsibility to ensure that the BDR meets the IRS requirements. The Grantor approves the BDR by signing the Acknowledgement of Condition page within this document.

### **1.2 STATEMENT OF QUALIFICATIONS**

The Land Conservancy ensures that all BDRs are written by qualified professionals. The organization employs individuals with undergraduate and graduate-level degrees and training in various fields of biology, environmental planning, law, Geographic Information System (“GIS”), soil/water conservation, and other related degrees. All individuals involved in creating BDRs are trained in collecting the appropriate field data and information for documenting conservation values. All BDRs are drafted by individuals that have direct knowledge of the Protected Property or by individuals that have been provided information by someone with direct knowledge of the Protected Property.

### **1.3 GENERAL INFORMATION & SUMMARY OF FUNDING SOURCES & PROPERTY RESTRICTIONS**

#### **General Information**

For the purpose of this document, the property being protected by the CE is referred to by the property name referenced on the title page or as the “Protected Property”.

On September 28, 2022, Shane Wohlken, Land Steward – Central Region for the Land Conservancy, and Brett Rodstrom, Vice President of Eastern Field Operations for the Land Conservancy, visited the Osborne-Vrooman property to establish a BDR of the Protected Property. During the site visit, they walked a large portion of the Protected Property and took photos at the property corners and other significant locations. Shane revisited the Protected Property on September 29, 2022 to complete the visit.

#### **Summary of Funding Sources and Property Restrictions**

The Protected Property will be encumbered by a CE granted by the Grantor. The Grantor applied for and received a grant from the State of Ohio, acting by and through the Director of the Ohio Public Works Commission (“OPWC”). In connection with Grantor’s application for the funds, the Grantor proposed to use the funds for open space acquisition to protect and enhance riparian corridors, as set forth more

specifically in its application. As a condition to Grantor's receipt of the funds, the Grantor agreed to restrict the use of the Protected Property as set forth in the Declaration of Restrictions, as well as the Conservation Easement, with the intent that such restrictions run with the land.

**SECTION 2: GRANTOR INFORMATION**

Grantor: Lake Metroparks  
Address: 11211 Spear Road, Concord, OH 44077

**SECTION 3: PROPERTY REPRESENTATIVE(S) CONTACT INFORMATION**

Role: Property Owner  
Name: Paul Palagyi  
Title: Executive Director  
Address: 11211 Spear Road, Concord, OH 44077  
Phone: 440.639.7275  
Email: ppalagyi@lakemetroparks.com

Role: Monitoring Visit Contact  
Name: Vince Urbanski  
Title: Deputy Director  
Address: 11211 Spear Road, Concord, OH 44077  
Phone: 440.639.7275 #1602  
Email: vurbanski@lakemetroparks.com

Role: Grant Administrator  
Name: Ohio Public Works Commission, Attn: Director  
Address: 65 East State Street, suite 312, Columbus, OH 43215  
Phone: 614.466.0880

**SECTION 4: GRANTEE INFORMATION**

Name: Western Reserve Land Conservancy  
Address: 3850 Chagrin River Road, Moreland Hills, OH 44022-1131  
Phone: 440.528.4150

**SECTION 5: PARCEL INFORMATION**

Acres Preserved: 338.0009 (See Exhibit A – the legal description.)  
County: Lake  
Municipality: Concord and Leroy Townships  
Watershed: Grand River  
HUC 12: 041100040607  
HUC 12 Narrative: Red Creek-Grand River  
HUC 14: 04110004060080  
HUC 14 Narrative: Grand River below Paine Cr. to Lake Erie [except Big Cr.]  
Protected Property Address: 5848 Vrooman Road, Painesville, OH 44077  
Adjacent to: The Protected Property is adjacent to private property on the northeast, Vrooman Road on a portion of the east, Interstate 90 on the south, Lake Metroparks on the west, and the Grand River on the north.  
Access Notes: Access the Protected Property from the access easement located at 5848 Vrooman Road, Painesville, OH 44077.



Permanent Parcels: The total parcel acres included in the chart below was gathered from the legal description for the two permanent parcels owned by the Grantor (Exhibit A to the CE).

<b>Parcel Number or ID</b>	<b>CE covers all or a portion of the parcel</b>	<b>Road Frontage</b>	<b>Total Parcel Acres</b>	<b>Acres covered by CE</b>
08A0090000050	All	I-90	113.1806	113.1806
07A0270000090	All	Vrooman Rd and I-90	224.8203	224.8203
		<b>Total Acres:</b>	338.0009	338.0009

## **SECTION 6: PROTECTED PROPERTY SUMMARY DESCRIPTION**

### **6.1 LOCATION & SURROUNDING LAND USE**

The Protected Property is located on Vrooman Road in Leroy and Concord Townships in Lake County, OH. The Painesville city center is located approximately 2.9 miles to the northwest of the Protected Property. The Protected Property is adjacent to Vrooman Road to the east and Interstate 90 to the south, and within 0.8 miles of St. Rt. 84 to the north. The Grand River is adjacent to the north. Nearby properties protect by the Land Conservancy include the 8-acre Sarvis property adjacent across the Grand River to the north, the 64-acre Johnson Lake Metroparks property ~0.2 miles to the west-northwest, the 70-acre Indian Point – Dominish property ~0.6 miles to the northeast, and the 33-acre Siegel property ~1.6 miles to the northwest. Other nearby protected land includes Lake Metropark’s 644-acre Indian Point Park adjacent across Vrooman Road to the east, 133-acre Mason’s Landing Park adjacent across the Grand River to the north, 422-acre Conley and Paradise Road Park adjacent to the west, and 377-acre Pain Falls Park ~0.4 miles to the east. The Protected Property is within the Gran River watershed. Topographically, the flat and gently sloping upland areas in the southern and central portions of the Protected Property give way to a steep bluff in the north that descends into a wide floodplain along the Grand River (see Appendix C: Topography map). The topography is characteristic of northeastern Ohio.

The surrounding land use consists of large blocks of forested land with scattered some residential and commercial lots along Vrooman Road frontage. The Grand River extends along the northern boundary and I-90 extends along the southern boundary.

### **6.2 CURRENT USE(S) & MANAGEMENT OF THE PROTECTED PROPERTY**

#### *General Uses*

The Protected Property is currently managed a natural area with old field habitat, early to mid-successional and mature upland and floodplain forests, buttonbush wetlands, and scrub-shrub habitat.

### **6.3 PAST USE(S) OF THE PROTECTED PROPERTY**

In order to understand past uses on the Protected Property, the Land Conservancy reviewed historical aerial photos and noted any evidence of past uses during the BDR visit about the Protected Property’s history. Based on reviewing historical aerial photography provided by Google Earth Pro and NETROnline, it appears that the uses of the Protected Property have not changed significantly in the last 52 years, but did experience some significant changes between 52 and 70 years ago. Based on aerial imagery dating from 1952 to 1962, the western and southeastern upland areas were maintained as agricultural fields and the central portion was left as forest. By 1962, the northern portion of the western field and the southeastern fields were undergoing early succession. By 1970, the only field left was located in the southwestern portion of the Protected Property. By 1982, the entire Protected Property was in various stages of succession back

into forest. The forests have continued to fill in from 1982 to 2022, with a one significant change sometime between 2005 and 2006 when a series of roads and cul-de-sacs were cut into the upland area of the Protected Property. The powerline corridor has been in place since at least 1952, with some occasional upgrades throughout the years.

## **SECTION 7: PROTECTED PROPERTY INVENTORY**

(Refer to the Photo Point Photos section and Appendix C: Maps for visual depictions of some of the following Protected Property features.)

### **7.1 RESIDENTIAL AREAS, STRUCTURES, AND/OR OTHER CONSTRUCTED FEATURES**

- Elevated Hunting Blind – (Photo Point 1) – An elevated wooden hunting blind is located in the eastern portion of the Protected Property east of the powerline corridor. Based on the outside appearance, the blind is in fair condition.
- Metal Gates – (Photo Points 3-5, 11, 14, 16, 21, 22, 26, 28, 86) – Metal gates are located along the eastern and western property boundaries to control access to the Protected Property as well as at key points along the access trails in the Protected Property. The gates are in good condition.
- Gas Pipeline Apparatus – (Photo Points 6, 8-10, 25) – Gas pipeline apparatus is found along the main gravel access drive that extends through the southern portion of the Protected Property. Most of the structures are located at the intersections with secondary access drives.
- Oil/Gas Wells and Storage Tanks – (Photo Points 15, 20, 37) – A nodding donkey gas well pump with storage tanks is located along the southern property boundary in the southeastern portion of the Protected Property (Photo Point 37). The remains of two other a gas well pumps are located in the gas well openings at the northern ends of the gravel driveways in the northwestern and north-central portions of the Protected Property. The openings include storage tanks and other gas well apparatus.
- Metal Footbridge – (Photo Point 18) – A long metal footbridge spans a deep ravine in the northwestern portion of the Protected Property. The bridge is located along the access trail that extends along the edge of the bluff overlooking the Grand River floodplain. The bridge is in good condition.
- Wood and Metal Bridge – (Photo Points 13, 25) – Most of the bridges that were located over streams along the access drive and access trails have been removed (Photo Point 7), but at least two wood and metal bridges remain, including on the western access trail the extends along the western property boundary and on the southern access trail that extends along the southern property boundary.
- Fences – Photo Points 12, 37, 38, 47, 48, 80-86) – Chain-link fencing extends along the southern property boundary and I-90 and wire and wood-post fencing extends along the western property boundary and the northeastern property boundary. The fencing is in good condition.

### **7.2 POWER/UTILITY RIGHTS-OF-WAY**

- Utility lines extend along a small portion of the eastern property boundary along Vrooman Road (Photo Point 85). The right-of-way consists of a mowed ditch in good condition.
- A powerline corridor extends through the eastern portion of the Protected Property from the southern property boundary to the northern property boundary (Photo Point 27). The corridor is periodically mowed to control woody vegetation.

### **7.3 OTHER EXISTING EASEMENTS OR RIGHTS-OF-WAY**

- Refer to the updated title commitment on file with the Grantee for the most up to date list of existing easements and/or Rights-of-Way found on the Protected Property.

#### **7.4 ACCESS ROADS & TRAILS**

- A gravel access road extends east/west through the southern portion of the Protected Property (Photo Points 7, 25, 26), with secondary gravel roads extending north/south to the gas well openings (Photo Points 8, 10). The access drives are in fair condition. Bridges that extended over streams have been removed (Photo Point 7) and vegetation is beginning to fill in the gravel tread.
- Three unfinished access roads with dirt and grass tread extend north/south from the main gravel access road (Photo Points 9, 57). The unfinished roads are located in the western and central portions of the Protected Property and are becoming overgrown with old-field vegetation.
- Dirt and gravel access trails extend around the perimeter of the upland areas in the southern, central, and eastern portions of the Protected Property (Photo Points 2-5, 12, 13, 19, 22, 24, 28, 47, 48, 56). An access trail to the Grand River floodplain extends north from the north-central gas well opening (Photo Point 21, 58).

#### **7.5 GENERAL DISTURBANCES, GARBAGE DUMPS, AND/OR POTENTIAL ENVIRONMENTAL THREATS**

- No general disturbances, garbage dumps, or potential environmental threats were observed at the time of the visit.

#### **7.6 ENCROACHMENTS**

- No encroachments were observed at the time of the visit.

#### **7.7 INVASIVE SPECIES**

- Autumn olive is found occasionally in the eastern field along Vrooman Road.
- Canada thistle is found in the gas well clearing and in the old field habitat along the access roads.
- Coltsfoot is found on the exposed bluff along the Grand River floodplain.
- Fuller's teasel is found scattered throughout the old field habitat along the access roads and in the powerline corridor.
- Glossy buckthorn is found throughout the Protected Property, with dense stands at the edges of the access road and some access trails.
- Japanese barberry is found scattered throughout the forested area.
- Japanese stiltgrass is found in occasional dense stands in wet areas along the access trails and in the floodplain.
- Japanese knotweed is found in very dense stands along the edge of the Grand River.
- Multiflora rose is found throughout the Protected Property, with dense stands at the edges of the access roads and access trails and in the floodplain along the Grand River.
- Narrow-leaved cattail is found occasionally at the edges of the wetland areas in the upland portion of the Protected Property.
- *Phragmites* is found in the gas well clearings, at the edges of drainages along the access roads, and in small pocket wetlands throughout the upland forest.
- Privet is found occasionally throughout the Protected Property, with some dense occurrences at the edges of wetland areas.
- Reed canarygrass is found occasionally in dense patches in wet areas throughout the Protected Property.

#### **7.8 MONITORING NOTES**

- The Protected Property is easily accessible from the access easement in the southeastern corner of the Protected Property. All upland areas and boundaries are easy to traverse, but the floodplain along the Grand River is very dense with vegetation and is difficult to traverse, especially when the vegetation is leafed out.

**SECTION 8: LAND COVER SUMMARY**

The Protected Property encompasses approximately 338 acres in total land area and contains gas well openings, old field habitat, successional hardwood and hardwood/hemlock forests, wetland forest with wet meadow, forested scrub-shrub, and buttonbush wetland (see Appendix C: Land Cover map). The acres listed below were calculated using GIS and may not match the exact acreage of the Protected Property. Refer to the Appendix C: Soils map for the location of soil types on the Protected Property.

Natural Resource / Land Cover	Description
Oil/Gas Well Opening	~ 2.8 acres
Old Field	~ 34.0 acres
Early Successional Maple Forest	~ 20.6 acres
Early/Mid-Successional Maple-Oak-Ash Forest	~ 131.3 acres
Early/Mid-Successional Mixed Hardwood Forest	~ 52.2 acres
Early/Mid-Successional Mixed Wetland Forest with Wet Meadow	~ 4.2 acres
Early/Mid-Successional Mixed Floodplain Forest	~ 43.3 acres
Mid-Successional Mixed Hardwood and Hemlock Forest	~ 26.7 acres
<i>Phragmites</i> Marsh	~ 0.6 acres
Buttonbush Wetland	~ 1.8 acres
Forested Scrub-Shrub	~ 5.4 acres
Grand River	~ 9.8 acres
Grand River and Intermittent Tributaries	Grand River: ~ 5,561 linear feet Tributaries: ~ 12,814 linear feet Total: ~ 18,375 linear feet
Road Frontage	~ 5,704 linear feet

**SECTION 9: NARRATIVE DESCRIPTION OF LAND COVER AND CONSERVATION VALUES**

Introduction

The land cover areas described below and depicted on the “Land Cover” map of Appendix C were defined based on observations during the BDR site visit and based on other available natural resource information for the Protected Property and the area in general. These land cover areas describe existing conditions and do not correspond to reserved areas, if any, defined in the CE. Appendix B contains additional species inventories including an e-Bird checklist, a bat survey, a list of rare and endangered species, and the results of a BioBlitz.

Land Cover and Habitats (Refer to Appendix C: Land Cover map)

*Oil/Gas Well Opening* - (Photo Points 15, 20, 39)

Three oil/gas well openings totaling approximately 2.8 acres are located throughout the Protected Property, including along the southern property boundary off the main access drive in the southeast, at the end of a secondary access drive in the central-east, and at the end of a secondary access drive in the northwest. The southeastern opening is populated with New England aster, white-heath aster, Canada goldenrod, early goldenrod, white sweet clover, bull thistle, Queen Anne’s lace, teasel, *Phragmites*, and multiflora rose at the edges. The northwestern opening is populated with woolgrass, white vervain, chicory, white-heath aster, calico aster, common ragweed, broadleaf dock, slender mountain mint, wrinkleleaf goldenrod, dogbane, yellow foxtail grass, daisy fleabane, timothy grass, and bluestem broomsedge. The edge of the opening also



has blackberry, raspberry, honeysuckle, staghorn sumac, hophornbeam, multiflora rose, and *Phragmites*. The central-east opening has many of the same species as the first two opening, but also include Japanese stilt grass, smartweed, Canada thistle, common rush, deer-tongue grass, and common mugwort in some of the wetter areas.

*Old Field* - (Photo Points 6-10, 12, 16, 25-27, 28-31, 34-36, 47, 48, 51, 57, 58, 80-87)

The Protected Property contains approximately 34.0 acres of old field habitat that extends along the graveled main access road in the south; the secondary graveled access roads in the west and center; the access trails in the northeast, south, west, and center; the powerline corridor in the east; and the edge of the forest in the southeast. The fields are dense with grasses including timothy grass and bluestem broomsedge, Canada goldenrod, grass-leaved goldenrod, gray goldenrod, white-heath aster, calico aster, New England aster, flattop aster, frost aster, curly dock, white vervain, black-eyed Susan, Pennsylvania pellitory, chicory, Carolina rose, roundhead bush clover, wild indigo, strawberry, birdsfoot trefoil, dogbane, white sweet clover, daisy fleabane, common cinquefoil, moth mullein, mullein, bull thistle, Canada thistle, and teasel. The wetter areas of the habitat include wrinkleleaf goldenrod, broadleaf dock, blue vervain, sensitive fern, Japanese stilt grass, Virginia cutgrass, stout wood reed, woolgrass, common rush, sedges, northern dewberry, devil's walking stick, common mugwort, narrow-leaved cattail, and *Phragmites*. Some of the edges of the old field habitat are dense with raspberry, blackberry, staghorn sumac, crabapple, arrowleaf viburnum, riverbank and summer grape, oriental bittersweet, private, Amur honeysuckle, glossy buckthorn, autumn olive, and multiflora rose.

*Early Successional Maple Forest* - (Photo Points 43, 50)

The Protected Property contained approximately 20.6 acres of early successional maple forest in the south-central and southwestern portions of the Protected Property. The typical canopy trees range in diameter-at-breast height (dbh) from 4" to 12", with some very occasional trees up to 20". The forest is dominated by red maple and sugar maple, but does have some occasional black cherry, black locust, black tupelo, tuliptree and white pine. Ash trees used to be common throughout the forest, but most are dead or dying. The understory is mostly open with some spicebush, blackberry, poison ivy, grapevine, oriental bittersweet, and multiflora rose. The ground cover is sparse with some spinulose wood fern and dense patches of maple saplings. A few openings in the forest are populated with grasses, sensitive fern, wrinkleleaf goldenrod, and calico aster.

*Early/Mid-Successional Maple-Oak-Ash Forest* - (Photo Points 1-3, 8-10, 16, 19, 46, 51, 54, 55, 57)

The Protected Property contains approximately 131.3 acres of early to mid-successional maple-oak-ash forest that extends through most of the central and western portions of protected property with a smaller section in the eastern portion. The typical canopy trees range in dbh from 10" to 22" with a number of trees near the bluff in the northern portion of the Protected Property as large as 36". The forest is dominated by red maple, sugar maple, red oak, white oak, and ash (which are in decline). Other tree species scattered throughout the forest include black cherry, American beech, American hophornbeam, black tupelo, tuliptree, pawpaw, and white pine. The understory is open with some spicebush, serviceberry, mapleleaf viburnum, grapevine, Japanese barberry, and multiflora rose. The groundcover is sparse with some spinulose wood fern, Christmas fern, greenbrier, partridgeberry, and dense patches of saplings, including maple, oak, and ash.

*Early/Mid-Successional Mixed Hardwood Forest* - (Photo Points 5, 24, 28-38, 40-42, 80-85, 87, 88)

The eastern and south-central portions of the Protected Property contain approximately 52.2 acres of early to mid-successional mixed hardwood forest that extends along the drainages that cut deep ravine north to the floodplain. The canopy trees range in dbh from 10" to 22" with occasional larger trees up to 36" in more

protected areas. The tree species include red maple, sugar maple, red oak, silver maple, white oak, chestnut, ash, American beech, American elm, basswood, black walnut, black locust, cucumbertree, tuliptree, catalpa, pawpaw, shagbark hickory, sassafras, quaking aspen, cottonwood, white pine, and hemlock. The understory is open in the upland areas, but becomes dense at the edges of the ravines, access trails, and forest with blackberry, spicebush, crabapple, summer grape, witch-hazel, pussy willow, glossy buckthorn, Amur honeysuckle, privet, and multiflora rose. The groundcover is mostly open with spinulose wood fern, sensitive fern, Christmas fern, poison ivy, calico aster, wrinkleleaf goldenrod, strawberry, some small pockets of *Phragmites*, and dense patches of saplings including maple and ash.

*Early/Mid-Successional Mixed Wetland Forest with Wet Meadow* - (Photo Points 44, 45, 49)

Three small pockets of early to mid-successional mixed wetland forest with a wet meadow totaling approximately 4.2 acres is found in the southwestern portion of the protected Property along the southern access trail. The canopy trees range in dbh from 8" to 20". The easternmost area extends in a narrow, shallow drainage that is populated with ash, shagbark hickory, American elm, sugar maple, and some occasional black willow in the wetter sections. The groundcover is dense with sedges including shallow sedge and hop sedge, Virginia creeper, wrinkleleaf goldenrod, willow-herb, sensitive fern, lady fern, broadleaf dock, Virginia knotweed, calico aster, clearweed, sharp-wing monkeyflower, false nettle, and dotted smartweed. Mapleleaf viburnum, spicebush, privet, buckthorn, and multiflora rose can be found scattered throughout, but particularly in the more open areas at the eastern end of the area. The smaller pockets located to the west include ash, cottonwood, red maple, sugar maple, and American elm with a groundcover dense with rice cutgrass, sedges including threeway sedge, wrinkleleaf goldenrod, common rush, sensitive fern, devil's beggartick, Virginian water horehound, curly dock, rough avens, poison ivy, narrow-leaved cattail, *Phragmites*, arrowwood viburnum, and privet.

*Early/Mid-Successional Mixed Floodplain Forest* - (Photo Points 59, 63-66, 68, 69, 71-74)

The floodplain along the Grand River in the northern portion of the Protected Property contains approximately 43.3 acres of mid-successional mixed floodplain forest. The canopy trees range in dbh from 8" to 24". Most of the younger trees are found along the bottom of the bluff and throughout the center of the floodplain, while the more mature trees are found along the river's edge. The trees species found throughout the floodplain included sycamore, cottonwood, American elm, silver maple, red maple, sugar maple, ash, tuliptree, black walnut, American beech, American hornbeam, basswood, black locust, and Ohio buckeye. The understory is dense in places with spicebush, serviceberry, witch-hazel, hawthorn, crabapple, pussy willow, riverbank grape, Amur honeysuckle, privet, and multiflora rose. The ground cover includes New England aster, calico aster, Jack-in-the-pulpit, great blue lobelia, boneset, wrinkleleaf goldenrod, zigzag goldenrod, white snakeroot, sensitive fern, clearweed, dotted smartweed, Virginia knotweed, lizard's tail, false nettle, stickseed, field horsetail, Joe Pye weed, sensitive fern, ostrich fern, wingstem, giant puffball, poison ivy, Japanese stiltgrass, Japanese knotweed, and *Phragmites*. The edge of the river is dense with reed canarygrass, arrowleaf tearthumb, ostrich fern, common mugwort, Canada wood nettle, dotted smartweed, Japanese knotweed, sycamore, cottonwood, willow, and silver maple. The bottom of the bluff is also populated with black maple, yellow birch, and eastern hemlock.

*Mid-Successional Mixed Hardwood and Hemlock Forest* - (Photo Points 4, 18, 19, 22, 52, 56, 61, 62, 76-79)

The Protected Property contains approximately 26.7 acres of mid-successional mixed hardwood and hemlock forest in the steeper parts of the ravines and along the top and on the slope of the bluff that overlooks the floodplain. Some sections of the very steep slope are exposed rock with no vegetation. The typical canopy trees range in dbh from 12" to 22", with occasional larger trees up to 36" in the more protected parts of the slope and ravines. The tree species include sugar maple, red oak, white oak, chestnut



oak, American beech, eastern hemlock, shagbark hickory, pignut hickory, black walnut, cucumbertree, tuliptree, ash, sycamore, and pawpaw. The understory is mostly open with some mapleleaf viburnum and witch-hazel. The groundcover is sparse with some marginal wood fern, Christmas fern, New York fern, sensitive fern, ostrich fern, Virginia knotweed, bluestem goldenrod, zigzag goldenrod, white wood aster, common blue violet, partridgeberry, common cinquefoil, deer-tongue grass, false nettle, yellow fairy cup and hen-of-the-woods.

*Phragmites Marsh* - (Photo Point 17)

A large pocket of *Phragmites* marsh totaling approximately 0.6 acres is located in the west-central portion of the Protected Property along an access trail that extends east off the westernmost secondary gravel access drive. The wetland is dominated by *Phragmites*, but also included some narrow-leaved cattail, rice cutgrass, smartweed, and sedges. The edges of the wetland includes blackberry, glossy buckthorn, Amur honeysuckle, multiflora rose, ash, and black locust.

*Buttonbush Wetland* - (Photo Points 60, 75)

Large pockets of buttonbush wetland totaling approximately 1.8 acres are located in the floodplain in the northern portion of the Protected Property. One pocket is located near the center of the floodplain and the other is located in the western end. The wetland has lots of open water and is dominated by buttonbush. The edges of the wetland areas are populated with sensitive fern, marginal wood fern, intermittent wood fern, lizard's tail, dotted smartweed, false nettle, true forget-me-not, wingstem, oriental bittersweet, sycamore, silver maple, and black walnut.

*Forested Scrub-Shrub* - (Photo Points 67, 70)

The northeastern edge of the floodplain in the northern portion of the Protected Property contains approximately 5.4 acres of dense scrub-shrub with occasional trees throughout. The scrub-shrub is mostly very large bushes of multiflora rose, but also includes wingstem, goldenrod, dotted smartweed, reed canarygrass, blackberry, arrowleaf tearthumb, riverbank grape, oriental bittersweet, spicebush, pussy willow, hawthorn, crabapple, privet, Japanese knotweed, and Amur honeysuckle. The occasional trees found throughout the scrub-shrub include sycamore, silver maple, willow, and cottonwood.

*Grand River and Intermittent Tributaries* - (Photo Points 23, 42, 53, 61, 63-66, 69-71, 76, 79)

The Protected Property contains approximately 9.8 acres of the Grand River that extends 5,561 linear feet along the northern property boundary. Three large potential Class III intermittent headwater tributaries totaling approximately 12,814 linear feet flow north, cutting deep ravines down to the floodplain and emptying into the Grand River. The easternmost intermittent stream exhibits good sinuosity as it flows northwest through stable banks that descend steeply through a ravine. The 4 to 7-foot wide stream has a substrate of about 2% detritus, 4% gravel, 10% cobble, 19% boulder slabs, and 65% bedrock and flows through a good series of runs, riffles, pools, waterfalls (See Photo Point 78). The central-east intermittent stream exhibits good sinuosity as it flows northeast, north, and northwest through stable banks that start through gentle grade in the south, but quickly descends through a steep ravine. The 4 to 7-foot wide stream has a substrate of about 5% detritus, 3% gravel, 12% cobble, and 80% bedrock and flows through a good series of runs, riffles, pools, waterfalls (See Photo Points 23, 42, and 76). The westernmost intermittent stream exhibits good sinuosity as it flows northwest through stable banks that descend steeply through a ravine. The 4 to 7-foot wide stream has a substrate of about 2% sand, 8% gravel, 10% bedrock, 10% boulder, 30% cobble, and 40% boulder slabs and flows through a good series of runs, riffles, pools, waterfalls (See Photo Point 78). perennial tributary flows from northwest to southeast through the south-central and southeastern portion of the Protected Property (See Photo Point 53, 61). Other ephemeral streams feed into these intermittent tributaries and directly into the Grand River.

For a complete list of species found on the Protected Property during the site visit, refer to Appendix B: Natural Resource Inventory. For the general location of habitats on the Protected Property, refer to Appendix C: Land Cover map.

Summary of Conservation Values

The Protected Property is being preserved by the Grantor, Lorain County Metroparks, in part for outdoor recreation by and/or the education of the general public. The Protected Property may be used for many forms of passive use outdoor recreation including picnicking, trails for hiking, mountain biking, and cross-country skiing, excellent bird watching, and identifying plants and animals. The Protected Property contains opportunities for education of the general public including the study of unique habitat like old field habitat, early successional maple forest, high quality mid-successional maple-oak-ash forest, emergent wetlands, wetland scrub-shrub, mid-successional floodplain forest, and about 5,561 linear feet of the Grand River and over 12,814 linear feet of high quality tributaries.

**SECTION 10: PHOTO POINT COORDINATES**

Coordinate System: Latitude/Longitude (Decimal Degrees)

Global Positioning System (“GPS”) points were taken on September 28, 2022 using a Bad Elf GNSS Surveyor GPS.

Point Number	Latitude	Longitude
1	41.708711	-81.181235
2	41.710808	-81.182374
3	41.709935	-81.183551
4	41.70982	-81.183842
5	41.705425	-81.182551
6	41.705256	-81.182418
7	41.705171	-81.182892
8	41.705831	-81.18531
9	41.702756	-81.19016
10	41.701678	-81.191313
11	41.698203	-81.196242
12	41.699185	-81.196242
13	41.703105	-81.195943
14	41.704374	-81.196153
15	41.704679	-81.19512
16	41.702431	-81.193264
17	41.703287	-81.192314
18	41.705944	-81.193734
19	41.705039	-81.194379
20	41.708657	-81.185783
21	41.708947	-81.185722
22	41.70873	-81.185578
23	41.707043	-81.183083

24	41.70344	-81.185784
25	41.698465	-81.195443
26	41.706908	-81.179761
27	41.707054	-81.179579
28	41.711039	-81.179235
29	41.710883	-81.17949
30	41.710879	-81.179485
31	41.709838	-81.179423
32	41.709882	-81.179409
33	41.709281	-81.178668
34	41.70927	-81.178663
35	41.707893	-81.178547
36	41.707896	-81.178539
37	41.706823	-81.179626
38	41.706842	-81.179671
39	41.704819	-81.183164
40	41.70482	-81.183191
41	41.704645	-81.183988
42	41.704606	-81.184423
43	41.704067	-81.185671
44	41.703143	-81.187142
45	41.70243	-81.188686
46	41.702777	-81.188859
47	41.699761	-81.191323

48	41.69704	-81.195774
49	41.697735	-81.195355
50	41.700183	-81.196011
51	41.704356	-81.196076
52	41.705655	-81.196273
53	41.705318	-81.194669
54	41.706166	-81.191738
55	41.704978	-81.189772
56	41.707226	-81.189995
57	41.706325	-81.188133
58	41.708995	-81.185985
59	41.708524	-81.188784
60	41.708077	-81.189765
61	41.706005	-81.194682
62	41.706154	-81.195549
63	41.706161	-81.195546
64	41.706166	-81.195554
65	41.708381	-81.193039
66	41.708369	-81.193049
67	41.711225	-81.187607
68	41.711237	-81.187592

69	41.711535	-81.187606
70	41.711565	-81.18716
71	41.714146	-81.183062
72	41.714122	-81.183065
73	41.714157	-81.181912
74	41.714155	-81.181907
75	41.71073	-81.183519
76	41.708855	-81.184717
77	41.711863	-81.181715
78	41.711884	-81.181686
79	41.711165	-81.180966
80	41.711893	-81.18038
81	41.711898	-81.180386
82	41.711492	-81.18039
83	41.711492	-81.180391
84	41.711444	-81.176934
85	41.711501	-81.176653
86	41.711001	-81.176653
87	41.710886	-81.17662
88	41.711242	-81.177624

Note: The coordinates for each point were determined using the GPS unit; however, it should be noted that there is a small amount of error inherent in the GPS readings.

**SECTION 11: ACKNOWLEDGMENT OF CONDITION**

This Baseline Documentation Report is an accurate representation of the Protected Property, including conservation resources and existing conditions, at the time of the recording of the CE.

**GRANTOR: LAKE METROPARKS**

  
BY: PAUL PALAGYI  
EXECUTIVE DIRECTOR

DATE: 12/19/22

**GRANTEE: WESTERN RESERVE LAND CONSERVANCY**

  
BY: ROBERT B. OWEN  
ASSISTANT SECRETARY

DATE: 12/19/2022



**SECTION 12: PHOTO POINT PHOTOS** (All photos were taken by Shane Wohlken with a iPhone 14 Pro Max camera on September 28, 2022. All structures depicted in the photos are located on the Protected Property unless otherwise noted.)



1. Looking east at an elevated wooden deer stand in the eastern portion of the Protected Property east of the powerline corridor.



2. Looking east-southeast at an access trail that loops through the eastern portion of the Protected Property.



3. Looking east-northeast at a gate and access trail in the northeastern portion of the Protected Property. The gate is located on the eastern side of the powerline corridor.



4. Looking west-southwest at a gate and access trail in the northeastern portion of the Protected Property. The gate is located on the western side of the powerline corridor.





5. Looking north-northeast at a gate and access trail that loops through the eastern portion of the Protected Property. The gate is located along the main access drive.



7. Looking east-northeast at the main access drive where a bridge was removed from the stream crossing. Most bridges were removed from the stream crossing on the access drives.



6. Looking north-northeast at gas line apparatus located on the north side of the main access drive in the southeastern portion of the Protected Property.



8. Looking north at an access drive that extends of the main access drive to a gas well opening. Gas line apparatus is located at the intersection.





9. Looking north-northwest at an unfinished access drive that extends off the main access drive. Gas line apparatus is located at the intersection.



10. Looking north-northwest at an access drive that extends off the main access drive to a gas well opening. Gas line apparatus is located at the intersection.



11. Looking west-south west at a gate in the fence that extends along the western property Boundary. Lake Metroparks owns the property to the west.



12. Looking north at an access trail that extends along the western property boundary and fence.





13. Looking east-northeast at the western access trail and a wood and metal bridge over an ephemeral drainage.



15. Looking east-northeast at a gas well opening that includes storage tanks and other gas well apparatus. The opening is at the northern end of the access drive shown in Photo #10.



14. Looking west at a gate in the fence that extends along the western property boundary. Lake Metroparks owns the property to the west.



16. Looking northeast at a gate and access trail that extends east from the western access drive shown in Photo #10.





17. Looking south-southeast at a dense pocket of a *Phragmites* wetland in the west-central portion of the Protected Property located off the access trail shown in Photo #16.



18. Looking north at a metal footbridge that extends over a steep ravine along the northern bluff. The bridge provides a shortcut across the ravine on the northwestern access trail.



19. Looking north at the access trail the loops through the western and central portions of the Protected Property and extends along most of the northern bluff.



20. Looking north-northeast at a gas well opening with storage tanks and other gas well apparatus. The opening is at the northern end of the access drive shown in Photo # 8.





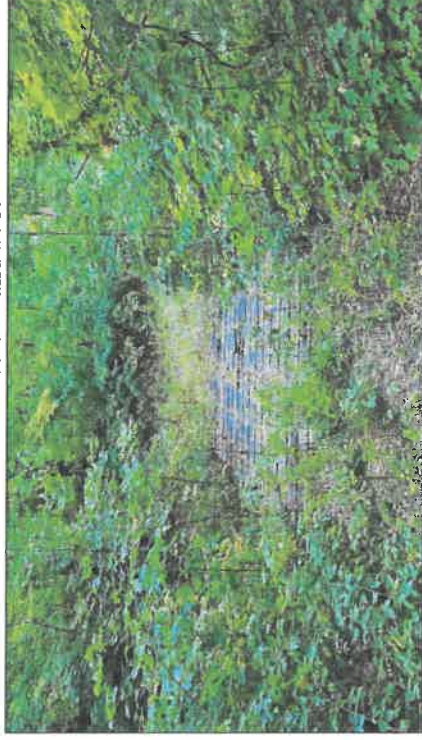
21. Looking west-northwest at a gate and access trail located north of the gas well opening shown in Photo #20. The access trail descends into the Grand River floodplain.



22. Looking east-southeast at a gate and access trail that continues east from the gas well opening shown in Photo #20. The trail is part of the western and central loop trail.



23. Looking southeast up the stream in the central-east portion of the Protected Property and at a large waterfall. This is the same stream shown in Photos #42 and #76.



24. Looking south-southwest at the access trail that loops through the southern portion of the Protected Property and at a wood and metal bridge.

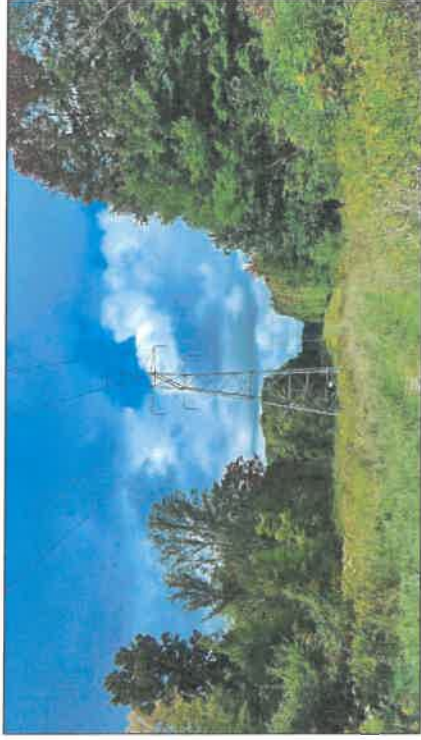




25. Looking east-northeast at the western end of the main access drive surrounded by old field habitat. Gas line apparatus is located in the field.



26. Looking west-southwest at a gate at the southeastern property corner at the eastern end of the main access drive.



27. Looking northwest at a powerline that extends through the eastern portion of the Protected Property from the southern property boundary to the northern property boundary.

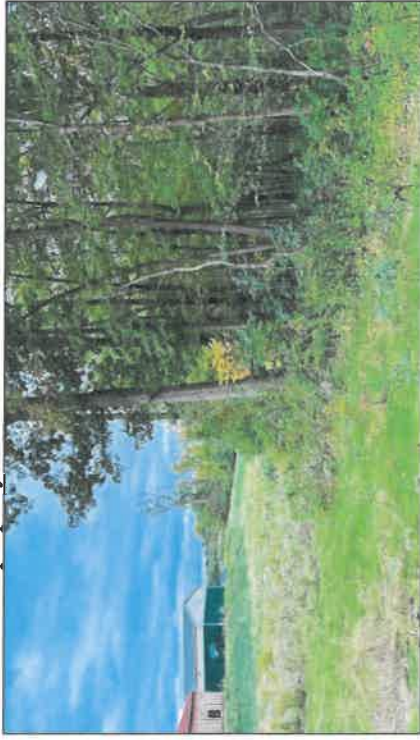


28. Looking north at two gates and a trail that provides access to the fence in the northeastern corner of the Protected Property.





29. Looking east along the southern property boundary of the eastern dogleg out to Vrooman Road from near a sharp jog at an eastern property corner.



30. Looking south along the eastern property boundary from near a sharp jog at an eastern property corner. The structures are located off the Protected Property.



31. Looking north along the eastern property boundary from near a jog at an eastern property corner. The structure is located off the Protected Property.



32. Looking southeast along the eastern property boundary from near a jog at an eastern property corner. The structure is located off the Protected Property.





33. Looking northeast along the eastern property boundary at a section of mixed hardwood forest that extends to the eastern property boundary between the eastern old field habitat.



34. Looking south along the eastern property boundary at the old field habitat in the southeastern corner of the Protected Property.



35. Looking north from near the southern property boundary at the edge of the mixed hardwood forest and the old field habitat in the southeastern corner of the Protected Property.



36. Looking southwest along the southern property boundary at the mixed hardwood forest the extends to the northern edge of the access easement that extends off Vrooman Road.





37. Looking northwest along the eastern property boundary from near a sharp jog at a southern property corner. The fence is the same one shown in Photo #26.



38. Looking southwest along the southern property boundary and chain-link fence from near a sharp jog at a southern property corner.



39. Looking northeast along the southern property boundary and at a gas well opening with a nodding donkey gas pump and storage tanks from near a jog at a southern property corner.



40. Looking southwest along the southern property boundary from near a jog at a southern property corner.





41. Looking northwest at a section of the southern forest. Chinquapin oak and hemlock are prominent in this small section of the larger mixed hardwood forest.



42. Looking west-southwest down the stream that extends through the central-east portion of the Protected Property. This is the same stream shown in Photos #76 and #23.

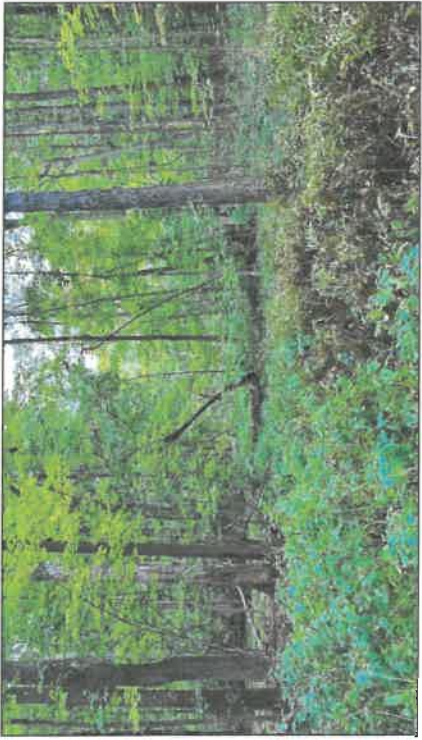


43. Looking west at the early to mid-successional maple forest in the southern portion of the Protected Property south of the main access drive.



44. Looking east-southeast at the eastern end of a long, narrow wetland area that extends through the southern mixed forest.





45. Looking east-northeast at the western end of the long, narrow wetland area that extends through the southern mix forest.



46. Looking north-northeast at the maple forest in the southern portion of the Protected Property south of the main access drive.



47. Looking southwest along the access trail that extends along the southern property boundary. I-90 is located on the other side of the tree row seen on left side of the photo.

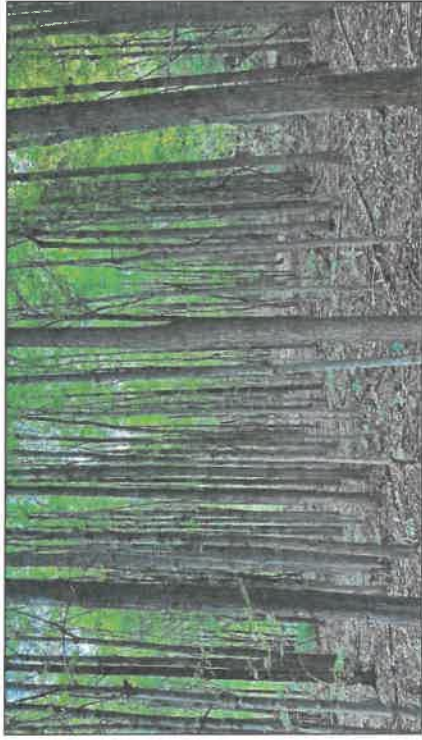


48. Looking north-northeast along the southern and western property boundaries and access trails from near the southwestern property corner.





49. Looking southwest at a wetland area in the southwestern corner of the Protected Property.



50. Looking east at an early successional maple forest that extends along the western edge of the Protected Property.



51. Looking northeast at a mid-successional maple-oak forest with some wet meadow along an access trail. The forest is near the bluff in the northwestern property corner.



52. Looking north off the bluff along the western property boundary towards the northwestern property corner located down the slope and in the Grand River.

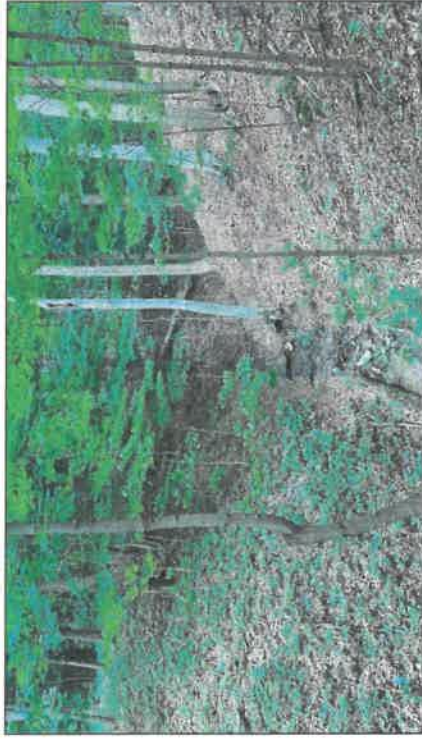




53. Looking south-southeast up a stream in the western portion of the Protected Property and at a small waterfall.



55. Looking east at the early to mid-successional maple forest near the center of the Protected Property.



54. Looking east-southeast at the forest along the northern bluff and up a ravine cut by an ephemeral stream.



56. Looking east at the access trail that loops along the northern bluff and at the mid-successional mixed hardwood and hemlock forest on the slope that descends to the floodplain.





57. Looking south-southeast at an unfinished access drive with old field habitat that extends north off the main access drive near the center of the Protected Property.



58. Looking west-northwest down the access trail into floodplain forest along the Grand River. The access trail is located north of the gas well opening shown in Photo #20.



59. Looking east-northeast at the mid-successional mixed hardwood floodplain forest in the northern portion of the Protected Property.



60. Looking west-northwest at wetland scrub-shrub in the western portion of the floodplain forest.





61. Looking south up the same stream shown in Photo # 53 from the bottom of the bluff.



62. Looking southwest towards the western property boundary and at the bluff with exposed shale from the southern edge of the Grand River.



63. Looking west toward the northwestern property corner from the southern edge of the Grand River.



64. Looking northeast along the northern property boundary and the Grand River from near the northeastern property corner.





65. Looking west-southwest along the northern property boundary and the Grand River in the northwestern portion of the Protected Property.



67. Looking east-southeast at the scrub-shrub forest in the north-central portion of the floodplain.



66. Looking east-southeast along the northern property boundary and the Grand River in the northwestern portion of the Protected Property.



68. Looking southwest at the floodplain forest in the north-central portion of the Protected Property.





69. Looking southwest along the northern property boundary and the Grand River in the north-central portion of the Protected Property.



70. Looking southeast along the northern property boundary and the Grand River in the north-central portion of the Protected Property.



71. Looking south along the northern property boundary and the Grand River from near a sharp jog at a northern property corner.



72. Looking east along the northern property boundary from near a sharp jog at a northern property corner.





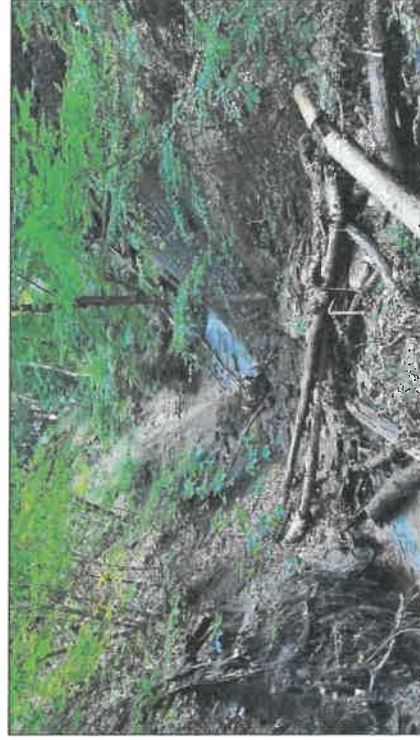
73. Looking west along the northern property boundary from near the northeastern property corner at the base of the bluff.



74. Looking south along the eastern property boundary from near the northeastern property corner at the base of the bluff.



75. Looking west at a large buttonbush wetland in the eastern end of the Grand River floodplain.



76. Looking south-southeast up the stream in the central-east portion of the Protected Property. This is the same stream shown in Photos #23 and #42.

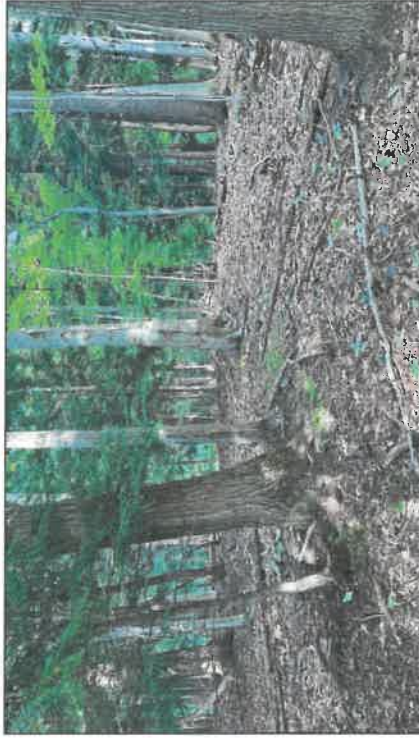




77. Looking north along the eastern property boundary from a sharp jog at an eastern property corner with a metal pipe.



79. Looking east-southeast up the stream in the eastern portion of the Protected Property and at a large waterfall.



78. Looking east along the northern property boundary from a sharp jog at an eastern property corner with a metal pipe.



80. Looking west along the northern property boundary and fence from near a sharp jog at an eastern property corner with a metal pipe.





81. Looking south along the eastern property boundary and fence along the eastern property boundary from near a sharp jog at an eastern property corner with a metal pipe.



82. Looking north along the eastern property boundary and fence from near a sharp jog at an eastern property corner with a metal pipe.



83. Looking east along the northern property boundary of the eastern dogleg and fence from near a sharp jog at an eastern property corner with a metal pipe.



84. Looking west along the northern property boundary of the eastern dogleg and fence from near a sharp jog at the northeastern corner of the dogleg.





85. Looking south along the eastern boundary of the dogleg, Vrooman Road, and fence from near a sharp jog at the northeastern corner of the dogleg.



86. Looking east at a gate in the fence along Vrooman Road near the southeastern corner of the eastern dogleg.



87. Looking west along the southern property boundary of the eastern dogleg from near a sharp jog at the southeastern corner of the dogleg.



88. Looking southwest at the early to mid-successional mixed hardwood forest in the eastern dogleg.



## **APPENDICES**

## APPENDIX A: SOILS

(For soil locations refer to Appendix C: Soils map)

SOIL SYM.	MAP UNIT KEY	SOIL NAME	FARMLAND CLASSIFICATION	HYDRIC RATING	ACRES
GoF	286816	Gosport silty clay loam, 25 to 70 percent slopes	Not prime farmland	Unknown Hydric	43.5
Lb	286819	Lobdell silt loam	Prime farmland if protected from flooding or not frequently flooded during the growing season	Unknown Hydric	26.2
Or	286828	Orrville silt loam	Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season	Partially Hydric	9.7
PeC2	286835	Pierpont silt loam, 6 to 12 percent slopes, moderately eroded	Not prime farmland	Unknown Hydric	137.1
PsB	286839	Platea silt loam, 2 to 6 percent slopes	Not prime farmland	Unknown Hydric	96.2
Tg	286844	Tioga loam	Prime farmland if protected from flooding or not frequently flooded during the growing season	Unknown Hydric	15.5
UdD	286850	Udorthents, moderately steep	Not prime farmland	Not Hydric	0.9
W	286852	Water	Not prime farmland	Unknown Hydric	8.9

- The acres listed in the table above were calculated using GIS and may not match the exact acreage of the Protected Property.
- Source: USDA - Natural Resource Conservation Service SSURGO Soils Database for Ohio - 2003



## APPENDIX B: NATURAL RESOURCE INVENTORIES

### Western Reserve Land Conservancy Species Inventory

Survey Dates: September 28, 2022 and September 29, 2022

By: Shane Wohlken, Land Steward – Central Region for Western Reserve Land Conservancy

Note: This inventory is based on a field survey with the intention of documenting major habitat types, other natural features, and as many species as possible found on the Protected Property. More extensive field surveys may yield a more complete inventory.

#### Plant Inventory

Type	Common Name	Scientific Name	Notes
Herbaceous	Aster, calico	<i>Aster lateriflorus</i>	
Herbaceous	Aster, flat-topped	<i>Doellingeria umbellata</i>	
Herbaceous	Aster, frost	<i>Symphotrichum pilosum</i>	
Herbaceous	Aster, New England	<i>Symphotrichum novae-angliae</i>	
Herbaceous	Aster, white-heath	<i>Aster pilosus</i>	
Herbaceous	Avens, rough	<i>Geum laciniatum</i>	
Herbaceous	Avens, yellow	<i>Geum aleppicum</i>	
Herbaceous	Beggarticks, devil's	<i>Bidens frondosa</i>	Common
Herbaceous	Birdsfoot trefoil	<i>Lotus corniculatus</i>	
Herbaceous	Black-eyed Susan	<i>Rudbeckia hirta</i>	
Herbaceous	Bluestem, broomsedge	<i>Andropogon virginicus</i>	
Herbaceous	Boneset, common	<i>Eupatorium perfoliatum</i>	
Herbaceous	Bush clover, roundhead	<i>Lespedeza capitata</i>	
Herbaceous	Cattail, narrow-leaved	<i>Typha angustifolia</i>	INVASIVE
Herbaceous	Chicory	<i>Cichorium intybus</i>	
Herbaceous	Cinquefoil, common	<i>Potentilla simplex</i>	
Herbaceous	Clearweed	<i>Pilea pumila</i>	
Herbaceous	Clover, white sweet	<i>Melilotus alba</i>	
Herbaceous	Cocklebur	<i>Xanthium strumarium</i>	
Herbaceous	Coltsfoot	<i>Tussilago farfara</i>	INVASIVE
Herbaceous	Common reed	<i>Phragmites australis</i>	INVASIVE
Herbaceous	Creeper, Virginia	<i>Parthenocissus quinquefolia</i>	
Herbaceous	Devil's walking stick	<i>Aralia spinosa</i>	
Herbaceous	Dock, broadleaf	<i>Rumex obtusifolia</i>	Bitter dock
Herbaceous	Dock, curly	<i>Rumex crispus</i>	
Herbaceous	Dogbane	<i>Apocynum cannabinum</i>	Indian hemp
Herbaceous	Fern, Christmas	<i>Polystichum acrostichoides</i>	
Herbaceous	Fern, intermediate wood	<i>Dryopteris intermedia</i>	
Herbaceous	Fern, lady	<i>Athyrium filix-femina</i>	
Herbaceous	Fern, marginal wood	<i>Dryopteris marginalis</i>	
Herbaceous	Fern, New York	<i>Thelypteris noveboracensis</i>	

Herbaceous	Fern, ostrich	<i>Matteuccia struthiopteris</i>	
Herbaceous	Fern, sensitive	<i>Onoclea sensibilis</i>	
Herbaceous	Fern, spinulose wood	<i>Dryopteris carthusiana</i>	
Herbaceous	Fleabane, daisy	<i>Erigeron annuus</i>	
Herbaceous	Forget-me-not	<i>Myosotis scorpioides</i>	True forget-me-not
Herbaceous	Foxtail Grass spp.	<i>Setaria spp.</i>	
Herbaceous	Fuller's teasel	<i>Dipsacus fullonum</i>	INVASIVE
Herbaceous	Goldenrod spp.	<i>Solidago spp.</i>	
Herbaceous	Goldenrod, bluestem	<i>Solidago caesia</i>	
Herbaceous	Goldenrod, Canada	<i>Solidago canadensis</i>	
Herbaceous	Goldenrod, grass-leaved	<i>Euthamia graminifolia</i>	
Herbaceous	Goldenrod, gray	<i>Solidago nemoralis</i>	
Herbaceous	Goldenrod, wrinkle-leaved	<i>Solidago rugosa</i>	Goldenrod, rough leaved
Herbaceous	Goldenrod, zig zag	<i>Solidago flexicaulis</i>	
Herbaceous	Grass, Chinese silver	<i>Miscanthus sinensis</i>	
Herbaceous	Grass, deer-tongue	<i>Dichanthelium clandestinum</i>	
Herbaceous	Grass, white	<i>Leersia virginica</i>	Virginia cutgrass
Herbaceous	Horsetail, field	<i>Equisetum arvense</i>	common horsetail
Herbaceous	Indigo, wild	<i>Baptisia tinctoria</i>	
Herbaceous	Jack-in-the-pulpit	<i>Arisaema triphyllum</i>	
Herbaceous	Japanese stiltgrass	<i>Microstegium vimineum</i>	INVASIVE
Herbaceous	Knotweed, Japanese	<i>Polygonum cuspidatum</i>	INVASIVE
Herbaceous	Knotweed, Virginia	<i>Polygonum virginianum</i>	Jumpseed
Herbaceous	Lizard's tail	<i>Saururus cernuus</i>	
Herbaceous	Lobelia, great blue	<i>Lobelia siphilitica</i>	
Herbaceous	Mint, slender mountain	<i>Pycnanthemum tenuifolium</i>	
Herbaceous	Monkeyflower, sharp-wing	<i>Mimulus alatus</i>	
Herbaceous	Mugwort	<i>Artemisia vulgaris</i>	
Herbaceous	Mullein, common	<i>Verbascum thapsus</i>	
Herbaceous	Mullein, moth	<i>Verbascum blattaria</i>	
Herbaceous	Nettle, Canada wood	<i>Laportea canadensis</i>	
Herbaceous	Nettle, false	<i>Boehmeria cylindrica</i>	
Herbaceous	Partridgeberry	<i>Mitchella repens</i>	
Herbaceous	Pennsylvania pellitory	<i>Parietaria pensylvanica</i>	
Herbaceous	Poison ivy	<i>Toxicodendron radicans</i>	
Herbaceous	Queen Anne's lace	<i>Daucus carota</i>	Wild carrot
Herbaceous	Ragweed, common	<i>Ambrosia artemisiifolia</i>	
Herbaceous	Reed canarygrass	<i>Phalaris arundinacea</i>	INVASIVE
Herbaceous	Rice cutgrass	<i>Leersia oryzoides</i>	
Herbaceous	Rose, Carolina	<i>Rosa carolina</i>	
Herbaceous	Rush, common	<i>Juncus effusus</i>	Soft
Herbaceous	Sedge spp.	<i>Carex spp.</i>	

Herbaceous	Sedge, hop	<i>Carex lupulina</i>	
Herbaceous	Sedge, shallow	<i>Carex lurida</i>	
Herbaceous	Sedge, three-way	<i>Dulichium arundinaceum</i>	
Herbaceous	Smartweed spp.	<i>Polygonum spp.</i>	
Herbaceous	Smartweed, dotted	<i>Polygonum punctatum</i>	
Herbaceous	Snakeroot, white	<i>Ageratina altissima</i>	
Herbaceous	Spotted Joe Pye weed	<i>Eupatorium maculatum</i>	
Herbaceous	Stickseed	<i>Hackelia virginiana</i>	
Herbaceous	Strawberry spp.	<i>Fragaria spp.</i>	
Herbaceous	Tearthumb, arrow-leaved	<i>Polygonum sagittatum</i>	
Herbaceous	Thistle, bull	<i>Cirsium vulgare</i>	
Herbaceous	Thistle, Canada	<i>Cirsium arvense</i>	INVASIVE
Herbaceous	Timothy-grass	<i>Phleum pratense</i>	
Herbaceous	Vervain, blue	<i>Verbena hastata</i>	
Herbaceous	Vervain, white	<i>Verbena urticifolia</i>	
Herbaceous	Violet, common blue	<i>Viola sororia</i>	
Herbaceous	Water horehound, American	<i>Lycopus americanus</i>	American bugleweed
Herbaceous	Willow-herb spp.	<i>Epilobium spp.</i>	
Herbaceous	Wingstem	<i>Verbesina alternifolia</i>	
Herbaceous	Woodreed, stout	<i>Cinna arundinacea</i>	
Herbaceous	Woolgrass	<i>Scirpus cyperinus</i>	
Shrub	Autumn olive	<i>Elaeagnus umbellata</i>	INVASIVE
Shrub	Buckthorn, glossy	<i>Rhamnus franula</i>	INVASIVE
Shrub	Buttonbush	<i>Cephalanthus occidentalis</i>	
Shrub	Honeysuckle spp.	<i>Lonicera spp.</i>	
Shrub	Honeysuckle, amur	<i>Lonicera maackii</i>	
Shrub	Japanese barberry	<i>Berberis thunbergii</i>	INVASIVE
Shrub	Privet spp.	<i>Ligustrum spp.</i>	INVASIVE
Shrub	Rose, Multiflora	<i>Rosa multiflora</i>	INVASIVE
Shrub	Spicebush	<i>Lindera benzoin</i>	
Shrub	Viburnum, arrowwood	<i>Viburnum dentatum</i>	
Shrub	Viburnum, mapleleaf	<i>Viburnum acerifolium</i>	
Shrub	Willow, American	<i>Salix discolor</i>	Pussy willow
Tree	Ash spp.	<i>Fraxinus spp.</i>	
Tree	Aspen, quaking	<i>Populus tremuloides</i>	
Tree	Basswood, American	<i>Tilia americana</i>	
Tree	Beech, American	<i>Fagus grandifolia</i>	
Tree	Birch, yellow	<i>Betula alleghaniensis</i>	
Tree	Buckeye, Ohio	<i>Aesculus glabra</i>	
Tree	Catalpa, northern	<i>Catalpa speciosa</i>	
Tree	Cherry, black	<i>Prunus serotina</i>	

Tree	Chestnut spp.	<i>Castanea spp.</i>	
Tree	Cottonwood, eastern	<i>Populus deltoides</i>	
Tree	Crabapple	<i>Malus spp.</i>	
Tree	Cucumbertree	<i>Magnolia acuminata</i>	Cucumber magnolia
Tree	Elm, American	<i>Ulmus americana</i>	
Tree	Hawthorn spp.	<i>Crataegus spp.</i>	
Tree	Hemlock, eastern	<i>Tsuga canadensis</i>	
Tree	Hickory, pignut	<i>Carya glabra</i>	
Tree	Hickory, shagbark	<i>Carya ovata</i>	
Tree	Hophornbeam, American	<i>Ostrya virginiana</i>	Ironwood
Tree	Hornbeam, American	<i>Carpinus caroliniana</i>	Blue beech, musclewood
Tree	Locust, black	<i>Robinia pseudoacacia</i>	
Tree	Maple, black	<i>Acer nigrum</i>	
Tree	Maple, red	<i>Acer rubrum</i>	
Tree	Maple, silver	<i>Acer saccharinum</i>	
Tree	Maple, sugar	<i>Acer saccharum</i>	
Tree	Oak, chestnut	<i>Quercus prinus</i>	
Tree	Oak, red	<i>Quercus rubra</i>	
Tree	Oak, white	<i>Quercus alba</i>	
Tree	Pawpaw	<i>Asimina triloba</i>	
Tree	Pine, white	<i>Pinus strobus</i>	
Tree	Sassafras	<i>Sassafras albidum</i>	
Tree	Serviceberry	<i>Amelanchier canadensis</i>	Shadbush
Tree	Sumac, staghorn	<i>Rhus hirta</i>	
Tree	Sycamore	<i>Platanus occidentalis</i>	
Tree	Tuliptree	<i>Liriodendron tulipifera</i>	Yellow poplar
Tree	Tupelo, black	<i>Nyssa sylvatica</i>	Sourgum, Black gum
Tree	Walnut, black	<i>Juglans nigra</i>	
Tree	Willow, black	<i>Salix nigra</i>	
Tree	Witch-hazel, American	<i>Hamamelis virginiana</i>	
Vine/briar	Bittersweet, Oriental	<i>Celastrus orbiculatus</i>	
Vine/briar	Blackberry spp.	<i>Rubus spp.</i>	
Vine/briar	Dewberry, common	<i>Rubus flagellaris</i>	
Vine/briar	Grape, river bank	<i>Vitis riparia</i>	
Vine/briar	Grape, summer	<i>Vitis aestivalis</i>	
Vine/briar	Greenbrier, round leaf	<i>Smilax rotundifolia</i>	
Vine/briar	Raspberry spp.	<i>Rubus spp.</i>	

#### Fungus Inventory

Type	Common Name	Scientific Name
Fungus	Golden scalytop	<i>Pholiota aurivella</i>
Fungus	Hen of the Woods	<i>Grifola frondosa</i>



Fungus	Orange mycena	<i>Mycena leaiana</i>
Fungus	Puffball, giant	<i>Calvatia gigantea</i>
Fungus	Turkey-tail	<i>Trametes versicolor</i>
Fungus	Yellow fairy cup	<i>Bisporella citrina</i>

### **Animal Inventory**

Type	Common Name	Scientific Name
Bird	Blue Jay	<i>Cyanocitta cristata</i>
Bird	Bluebird, Eastern	<i>Sialia sialis</i>
Bird	Duck, Wood	<i>Aix sponsa</i>
Bird	Eagle, Bald	<i>Haliaeetus leucocephalus</i>
Bird	Hawk, Red-tailed	<i>Buteo jamaicensis</i>
Bird	Woodpecker, Pileated	<i>Dryocopus pileatus</i>
Insect	Butterfly, pearl crescent	<i>Phyciodes tharos</i>
Insect	Moth, Isabella tiger	<i>Pyrrharctia isabella</i>
Mammal	Deer, white-tailed	<i>Odocoileus virginianus</i>

### **e-Bird Checklist**

Date Compiled: January 28, 2022

By: Unknown

Species	State ranking
Acadian Flycatcher	
Bald Eagle	
Bank Swallow	
Black-and-white Warbler	
Blackburnian Warbler	Special Interest
Black-throated Blue Warbler	Special Interest
Black-throated Green Warbler	
Blue-gray Gnatcatcher	
Blue-headed Vireo	Special Interest
Blue-winged Warbler	
Brown Creeper	Special Interest
Cerulean Warbler	Species of Concern
Common Merganser	Special Interest
Dark-eyed Junco	Special Interest
Gray-cheeked Thrush	
Great Crested Flycatcher	
Hooded Warbler	

Least Flycatcher	Special Interest
Louisiana Waterthrush	
Nashville Warbler	Special Interest
Northern Rough-winged Swallow	
Ovenbird	
Pileated Woodpecker	
Purple Finch	Special Interest
Purple Martin	
Red-eyed Vireo	
Red-headed woodpecker	Species of Concern
Spotted Sandpiper	
Swainson's Thrush	
Tennessee Warbler	
Veery	Special Interest
Warbling Vireo	
Winter Wren	Special Interest
Wood Duck	
Wood Thrush	
Worm-eating Warbler	

Yellow-billed Cuckoo	
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Yellow-throated Vireo	
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**Rare or Endangered Species Listed in the Ohio Natural Heritage Database**

Date Compiled: March 11, 2022

Reviewed and Compiled By: Rick Gardner, Ohio Division of Natural Areas and Preserves

**Animals**

Common Name	Scientific Name	Status
Elktoe	<i>Alasmidonta marginata</i>	State Species of Concern
Snuffbox	<i>Epioblasma triquetra</i>	Federal Endangered
Northern Brook Lamprey	<i>Ichthomzon fossor</i>	State Endangered
Black Sandshell	<i>Ligumia recta</i>	State Threatened
Kidneyshell	<i>Ptychobranchus fasciolaris</i>	State Species of Concern
Salamander Mussell	<i>Simpsonaias ambigua</i>	State Species of Concern

**Plants**

Common Name	Scientific Name	Status
Narrow-leaved Pinweed	<i>Lechea tenuifolia</i>	State Potentially Threatened

**Bat Survey Conducted by Western Reserve Land Conservancy**

Survey Dates: May 21 to July 31, 2021

By: Brett Rodstrom, Vice President of Eastern Field Operations for Western Reserve Land Conservancy

Common Name	Scientific Name	Status
Big brown bat	<i>Eptesicus fuscus</i>	State Species of Concern
Eastern red bat	<i>Lasiurus borealis</i>	State Species of Concern
Silver-haired bat	<i>Lasionycteris noctivagans</i>	State Species of Concern
Evening bat	<i>Nycticeius humeralis</i>	State Special Interest
Tri-colored bat	<i>Perimyotis subflavus</i>	State Endangered

**BioBlitz Survey**

Survey Date: July 21, 2021

By: Western Reserve Land Conservancy and Partners; List compiled by Judy Semroc, Conservation Outreach Specialist for the Cleveland Museum of Natural History

Common Name	Genus	Species	Rank
<u>Birds</u>			
Mallard	<i>Anas</i>	<i>platyrhynchos</i>	
Great Blue Heron	<i>Ardea</i>	<i>herodias</i>	
Turkey Vulture	<i>Cathartes</i>	<i>aura</i>	
Osprey	<i>Pandion</i>	<i>haliaetus</i>	
Red-tailed Hawk	<i>Buteo</i>	<i>jamaicensis</i>	
Mourning Dove	<i>Zenaida</i>	<i>macroura</i>	
Yellow-billed Cuckoo	<i>Coccyzus</i>	<i>americanus</i>	

Chimney Swift	<i>Chaetura</i>	<i>pelagica</i>	
Ruby-throated Hummingbird	<i>Archilochus</i>	<i>colubris</i>	
Belted Kingfisher	<i>Ceryle</i>	<i>ceryle</i>	
Red-bellied Woodpecker	<i>Melanerpes</i>	<i>carolinus</i>	
Downy Woodpecker	<i>Picoides</i>	<i>pubescens</i>	
Hairy Woodpecker	<i>Picoides</i>	<i>villosus</i>	
Northern Flicker	<i>Colaptes</i>	<i>auratus</i>	
Pileated Woodpecker	<i>Dryocopus</i>	<i>pileatus</i>	
Eastern Wood-Pewee	<i>Contopus</i>	<i>virens</i>	
Acadian Flycatcher	<i>Empidonax</i>	<i>virescens</i>	
Eastern Phoebe	<i>Sayornis</i>	<i>phoebe</i>	
Great Crested Flycatcher	<i>Myiarchus</i>	<i>crinitus</i>	
Eastern Kingbird	<i>Tyrannus</i>	<i>tyrannus</i>	
Warbling Vireo	<i>Vireo</i>	<i>gilvus</i>	
Red-eyed Vireo	<i>Vireo</i>	<i>olivaceus</i>	
Blue Jay	<i>Cyanocitta</i>	<i>cristata</i>	
American Crow	<i>Corvus</i>	<i>brachyrhynchos</i>	
Tree Swallow	<i>Tachycineta</i>	<i>bicolor</i>	
Black-capped Chickadee	<i>Poecile</i>	<i>atricapilla</i>	
Tufted Titmouse	<i>Baeolophus</i>	<i>bicolor</i>	
White-breasted Nuthatch	<i>Sitta</i>	<i>carolinensis</i>	
Carolina Wren	<i>Thryothorus</i>	<i>ludovicianus</i>	
House Wren	<i>Troglodytes</i>	<i>aedon</i>	
Eastern Bluebird	<i>Sialia</i>	<i>sialis</i>	
Veery	<i>Catharus</i>	<i>fuscescens</i>	
Wood Thrush	<i>Hylocichla</i>	<i>mustelina</i>	
American Robin	<i>Turdus</i>	<i>migratorius</i>	
Gray Catbird	<i>Dumetella</i>	<i>carolinensis</i>	
European Starling	<i>Sturnus</i>	<i>vulgaris</i>	
Cedar Waxwing	<i>Bombycilla</i>	<i>cedrorum</i>	
Louisiana Waterthrush	<i>Parkesia</i>	<i>motacilla</i>	
Common Yellowthroat	<i>Geothlypis</i>	<i>trichas</i>	
Hooded Warbler	<i>Setophaga</i>	<i>citrina</i>	
American Redstart	<i>Setophaga</i>	<i>ruticilla</i>	
Yellow Warbler	<i>Dendroica</i>	<i>petechia</i>	
Eastern Towhee	<i>Pipilo</i>	<i>erythrophthalmus</i>	
Chipping Sparrow	<i>Spizella</i>	<i>passerina</i>	
Field Sparrow	<i>Spizella</i>	<i>pusilla</i>	
Song Sparrow	<i>Melospiza</i>	<i>melodia</i>	
Scarlet Tanager	<i>Piranga</i>	<i>olivacea</i>	
Northern Cardinal	<i>Cardinalis</i>	<i>cardinalis</i>	
Indigo Bunting	<i>Passerina</i>	<i>cyanea</i>	
Red-winged Blackbird	<i>Agelaius</i>	<i>phoeniceus</i>	
Common Grackle	<i>Quiscalus</i>	<i>quiscula</i>	

Brown-headed Cowbird	<i>Molothrus</i>	<i>ater</i>	
American Goldfinch	<i>Carduelis</i>	<i>tristis</i>	
<b><u>Mammals</u></b>			
Eastern Chipmunk	<i>Tamias</i>	<i>striatus</i>	
Eastern Cottontail	<i>Sylvilagus</i>	<i>floridanus</i>	
White-footed Mouse	<i>Peromyscus</i>	<i>leucopus</i>	
<b><u>Tracks &amp; Signs</u></b>			
Turkey (tracks & scat)	<i>Meleagris</i>	<i>gallopavo</i>	
White-tailed Deer (tracks & scat)	<i>Odocoileus</i>	<i>virginianus</i>	
Raccoon (tracks & scat)	<i>Procyon</i>	<i>lotor</i>	
Coyote (tracks)	<i>Canis</i>	<i>latrans</i>	
Great Horned Owl (scat)	<i>Bubo</i>	<i>virginianus</i>	
<b><u>Reptiles</u></b>			
Eastern Garter Snake	<i>Thamnophis</i>	<i>sirtalis sirtalis</i>	
<b><u>Amphibians</u></b>			
Eastern American Toad	<i>Anaxyrus</i>	<i>americanus</i> <i>americanus</i>	
Northern Spring Peeper	<i>Pseudacris</i>	<i>crucifer crucifer</i>	
Northern Green Frog	<i>Lithobates</i>	<i>clamitans melanota</i>	
Wood Frog	<i>Lithobates</i>	<i>sylvaticus</i>	
<b><u>Snails &amp; Slugs</u></b>			
Amber Snail	Family	Succineidae	
Dusky Arion Slug	<i>Arion</i>	<i>subfuscus</i>	
<b><u>Insects &amp; Arthropods</u></b>			
<b><u>Spiders/Harvestmen</u></b>			
Six-spotted Fishing Spider	<i>Dolomedes</i>	<i>triton</i>	
Long-jawed Orbweaver	Family	Tetragnatha	
Eastern Harvestman	<i>Leiobunum</i>	<i>vittatum</i>	
Wolf Spider	<i>Rabidosa</i>	<i>rabida</i>	
Trashline Orbweaver	<i>Cyclosa</i>	<i>turbinata</i>	
Field Wolf Spider	<i>Hogna</i>	<i>helluo</i>	
Orchard Orbweaver	<i>Leucauge</i>	<i>venusta</i>	
Bowl & Doily Spider	<i>Frontinella</i>	<i>communis</i>	
<b><u>Centipedes, Millipedes, Isopods</u></b>			
Stone Centipede	Order	Lithobiomorpha	
Sowbug	Order	Isopoda	



<u>Earwigs</u>			
European Earwig	<i>Forficula</i>	<i>auricularia</i>	
<u>Scorpionflies</u>			
Scorpion Fly	<i>Panorpa</i>	<i>helenae</i>	
<u>Odonates</u>			
Eastern Pondhawk	<i>Erythemis</i>	<i>simplicicollis</i>	
Widow Skimmer	<i>Libellula</i>	<i>luctuosa</i>	
Blue Dasher	<i>Pachydiplax</i>	<i>longipennis</i>	
Common Whitetail	<i>Plathemis</i>	<i>lydia</i>	
Ruby Meadowhawk	<i>Sympetrum</i>	<i>rubicundulum</i>	
Slender Spreadwing	<i>Lestes</i>	<i>rectangularis</i>	
Violet Dancer	<i>Argia</i>	<i>fumipennis violacea</i>	
Powdered Dancer	<i>Argia</i>	<i>moesta</i>	
<u>Roaches</u>			
Pennsylvania Wood Cockroach	<i>Parcoblatta</i>	<i>pennsylvanica</i>	
<u>Butterflies</u>			
Black Swallowtail	<i>Papilio</i>	<i>polyxenes</i>	
Tiger Swallowtail	<i>Papilio</i>	<i>glaucus</i>	
Spicebush Swallowtail	<i>Papilio</i>	<i>troilus</i>	
Cabbage butterfly	<i>Pieris</i>	<i>rapae</i>	
Clouded (Yellow) Sulfur	<i>Colias</i>	<i>philodice</i>	
Eastern Tailed Blue	<i>Everes</i>	<i>comyntas</i>	
Summer Azure	<i>Celastrina</i>	<i>ladon neglecta</i>	
Great Spangled Fritillary	<i>Speyeria</i>	<i>cybele</i>	
Pearl Crescent	<i>Phyciodes</i>	<i>tharos</i>	
Question Mark	<i>Polygonia</i>	<i>interrogationis</i>	
Viceroy	<i>Limenitis</i>	<i>archippus</i>	
Common Wood Nymph	<i>Cercyonis</i>	<i>pegala</i>	
Monarch	<i>Danaus</i>	<i>plexippus</i>	
Silver-spotted Skipper	<i>Epargyreus</i>	<i>clarus</i>	
Least Skipper	<i>Ancyloxypha</i>	<i>numitor</i>	
<u>Moths</u>			
<b>Ailanthus Webworm Moth</b>	<b>H#</b>	<b><i>Atteva</i></b>	<b><i>aurea</i></b>
<b>2401</b>			<b>County Record</b>
<b>Reticulated Fruitworm Moth</b>		<b><i>Cenopsis</i></b>	<b><i>reticulatana</i></b>
<b>H# 3720</b>			<b>County Record</b>
<b>Saddleback Moth</b>	<b>H#</b>	<b><i>Acharia</i></b>	<b><i>stimulea</i></b>
<b>4700</b>			<b>County Record</b>

<b>Greenish-yellow Sitochroa</b> 4986.1	<b>H#</b>	<i>Sitochroa</i>	<i>palealis</i>	<b>County Record</b>
<b>Bold-feathered Grass Moth</b> 5275	<b>H#</b>	<i>Herptogramma</i>	<i>pertextalis</i>	<b>County Record</b>
<b>Double-banded Grass-Veneer</b> 5362	<b>H#</b>	<i>Crambus</i>	<i>agitatellus</i>	<b>County Record</b>
<b>Plain Plume Moth</b> 6203	<b>H#</b>	<i>Hellinsia</i>	<i>homodactylus</i>	<b>County Record</b>
False Crocus Geometer 6740	H#	<i>Xanthotype</i>	<i>articoria</i>	
Large Lace Bordered Moth 7159	H#	<i>Scopula</i>	<i>limboundata</i>	
White-striped Black Moth 7430	H#	<i>Trichodezia</i>	<i>albovittata</i>	
<b>Hummingbird Clearwing</b> 7853	<b>H#</b>	<i>Hemaris</i>	<i>thysbe</i>	<b>County Record</b>
<b>Leconte's Haploa Moth</b> 8111	<b>H#</b>	<i>Haploa</i>	<i>lecontei</i>	<b>County Record</b>
Virginia Tiger Moth 8137	H#	<i>Spilosoma</i>	<i>virginica</i>	
Fall Webworm Moth 8140	H#	<i>Hyphantrea</i>	<i>cunea</i>	
<b>Hickory Tussock Moth (larva)</b> H# 8211		<i>Lophocampa</i>	<i>caryae</i>	<b>County Record</b>
Delicate Cynia 8230	H#	<i>Cynia</i>	<i>tenera</i>	
<b>Dark-spotted Palthis</b> 8397	<b>H#</b>	<i>Palthis</i>	<i>angulalis</i>	<b>County Record</b>
<b>Lost Owlet Moth</b> 8491	<b>H#</b>	<i>Ledaea</i>	<i>perditalis</i>	<b>County Record</b>
<u>Grasshoppers, Katydids, Crickets</u>				
Swamp Cicada		<i>Tibicen</i>	<i>chloromera</i>	
Short-winged Green Grasshopper		<i>Dichromorpha</i>	<i>viridis</i>	
Pygmy Grasshopper		<i>Tetrix</i>	<i>sublata</i>	
Carolina Ground Cricket		<i>Eunemobius</i>	<i>carolinus</i>	
Black Field Cricket		<i>Gryllus</i>	sp.	
Red-headed Bush Cricket		<i>Phyllopalpus</i>	<i>pulchellus</i>	
Black-legged Meadow Katydid		<i>Orchelimum</i>	<i>nigripes</i>	
Fork-tailed Bush Katydid		<i>Scudderia</i>	<i>furcata</i>	
Carolina Locust		<i>Dissosteira</i>	<i>carolina</i>	
<u>Mayflies</u>				
Mayflies		Order	<i>Ephemeroptera</i>	
<u>Mantids</u>				

European Mantis	<i>Mantis</i>	<i>religiosa</i>	
<u>Water Striders</u>			
Silver-sided Water Strider	<i>Gerris</i>	sp.	
<u>True Bugs - Order Hemiptera</u>			
Leaf-footed Bug	<i>Acanthocephala</i>	sp.	
Green Stink Bug	<i>Acrosternum</i>	<i>hilare</i>	
Assassin Bug	<i>Zelus</i>	<i>luridus</i>	
Tarnished Plant Bug	<i>Lygus</i>	<i>lineolaris</i>	
Damsel Bug	<i>Nabis</i>	sp.	
Ebony Beetle	<i>Corimelaena</i>	sp.	
<u>Lacewings &amp; Kin</u>			
Green Lacewing	Family	Chrysopidae	
<u>Treehopper, Leafhopper, Spittlebugs</u>			
Green Leafhopper	<i>Draeculacephala</i>	sp.	
Meadow Spittlebug (spittle & adult)	<i>Philaenus</i>	<i>spumaris</i>	
Candy-striped Leafhopper	<i>Graphocephala</i>	<i>coccinea</i>	
Green Planthopper	<i>Acanalonia</i>	<i>conica</i>	
<u>Gall-forming Insects &amp; Fungus on Plants</u>			
Oak Apple Gall (wasp)	<i>Amphibolips</i>	<i>confluenta</i>	
Goldenrod Ball Gall (fly)	<i>Eurosta</i>	<i>solidaginis</i>	
Goldenrod Bunch Gall (midge)	<i>Rhopalomyia</i>	<i>solidaginis</i>	
Elm Cockscomb Gall (aphid)	<i>Colopha</i>	<i>ulmicola</i>	
Blackberry Knot Gall (wasp)	<i>Diastrophus</i>	<i>nebulosus</i>	
Willow Cone Gall (midge)	<i>Rhabdophaga</i>	<i>strobiloides</i>	
Cedar Hawthorn Rust (on hawthorn)	<i>Gymnosporangium</i>	<i>globosum</i>	
<u>Beetles</u>			
Asian Lady Beetle	<i>Harmonia</i>	sp.	
Brown Click Beetle	<i>Melanotus</i>	sp.	
Firefly	<i>Photinus</i>	sp.	
Soldier Beetle	<i>Podabrus</i>	sp.	
Japanese Beetle	<i>Popillia</i>	<i>japonica</i>	
Ground Beetle	<i>Scarites</i>	sp.	
Net-winged Beetle	<i>Calopteron</i>	sp.	
<u>Flies - Order Diptera</u>			
<u>Craneflies/Hangingflies</u>			

Cranefly	Family	Tipulidae	
<u>Flies</u>			
Deer Fly (egg mass & adult)	<i>Chrysops</i>	sp.	
Long-legged Fly	<i>Condostylus</i>	sp.	
Syrphid Fly (wasp mimic)	<i>Helophilus</i>	sp.	
Robber Fly	<i>Laphria</i>	<i>thoracica</i>	
Stilt-legged Fly	family	Micropezidae	
<u>Bees/Wasps/Sawflies</u>			
Mining Bee	<i>Andrena</i>	sp.	
Honey Bee	<i>Apis</i>	<i>mellifera</i>	
Common Eastern Bumble Bee	<i>Bombus</i>	<i>impatiens</i>	
Bald-faced Hornet	<i>Dolichovespula</i>	<i>maculata</i>	
Sweat Bee	family	Halictidae	
Leafcutter Bee	<i>Megachile</i>	sp.	
Pipe Organ Mud Dauber	<i>Trypoxylon</i>	<i>politum</i>	
Eastern Yellow Jacket	<i>Vespula</i>	<i>maculifrons</i>	
Eastern Carpenter Bee	<i>Xylocopa</i>	<i>virginica</i>	
<u>Ants</u>			
Allegheny Mound Ant	<i>Formica</i>	<i>exsectoides</i>	
Black Carpenter Ant	<i>Camponotus</i>	<i>pennsylvanicus</i>	
<b>Trees &amp; Shrubs</b>			
Boxelder	<i>Acer</i>	<i>negundo</i>	
Maple, Red	<i>Acer</i>	<i>rubrum</i>	
Devil's Walkingstick	<i>Aralia</i>	<i>spinosa</i>	
Hornbeam American	<i>Carpinus</i>	<i>caroliniana</i>	
Hickory, Bitternut	<i>Carya</i>	<i>cordiformis</i>	
Hickory, Pignut	<i>Carya</i>	<i>glabra</i>	
Hickory, Shagbark	<i>Carya</i>	<i>ovata</i>	
Buttonbush	<i>Cephalanthus</i>	<i>occidentalis</i>	
Dogwood, Silky	<i>Cornus</i>	<i>amomum</i>	
Dogwood, Flowering	<i>Cornus</i>	<i>florida</i>	
Dogwood, Gray	<i>Cornus</i>	<i>racemosa</i>	
Hawthorn	<i>Crataegus</i>	sp.	
Ash species	<i>Fraxinus</i>	sp.	
Witch-hazel, American	<i>Hamamelis</i>	<i>virginiana</i>	
Walnut, Black	<i>Juglans</i>	<i>nigra</i>	
Spicebush	<i>Lindera</i>	<i>benzoin</i>	
Hophornbeam, American	<i>Ostrya</i>	<i>virginiana</i>	
Spruce, Norway	<i>Picea</i>	<i>abies</i>	
Sycamore	<i>Platanus</i>	<i>occidentalis</i>	



Oak, Pin	<i>Quercus</i>	<i>palustris</i>	
Oak, Chestnut	<i>Quercus</i>	<i>prinus</i>	
Sumac, Staghorn	<i>Rhus</i>	<i>typhina</i>	
Rose, Swamp	<i>Rosa</i>	<i>palustris</i>	
Willow, Pussy	<i>Salix</i>	<i>discolor</i>	
Willow, Black	<i>Salix</i>	<i>nigra</i>	
Elderberry, Common	<i>Sambucus</i>	<i>canadensis</i>	
Spirea, Meadowsweet	<i>Spirea</i>	<i>alba (latifolia)</i>	
Spirea, Hardhack	<i>Spirea</i>	<i>tomentosa</i>	
Basswood, American	<i>Tilia</i>	<i>americana</i>	
Elm, American	<i>Ulmus</i>	<i>americana</i>	
Elm, Slippery	<i>Ulmus</i>	<i>rubra</i>	
<b>Ferns &amp; Allies</b>			
Lady Fern	<i>Athyrium</i>	<i>filix-femina</i>	
Spinulose Wood Fern	<i>Dryopteris</i>	<i>carthusiana</i>	
Crested Wood Fern	<i>Dryopteris</i>	<i>cristata</i>	
Marginal Shield Fern	<i>Dryopteris</i>	<i>marginalis</i>	
Sensitive Fern	<i>Onoclea</i>	<i>sensibilis</i>	
Interrupted Fern	<i>Osmunda</i>	<i>claytoniana</i>	
Christmas Fern	<i>Polystichum</i>	<i>acrostichoides</i>	
<b>Fungus</b>			
Northern Tooth	<i>Climacodon</i>	<i>septentrionalis</i>	
Common Inky Cap	<i>Coprinellus</i>	<i>micaceus</i>	
Artist Conk	<i>Ganoderma</i>	<i>applanatum</i>	
Sulfur Shelf	<i>Gymnopus</i>	<i>dryophilus</i>	
Pear-shaped Puffball	<i>Lycoperdon</i>	<i>pyriforme</i>	
Orange Mycena	<i>Mycena</i>	<i>leaiana</i>	
Dryad's Saddle	<i>Polyporus</i>	<i>squamosus</i>	
Red Russula	<i>Russula</i>	<i>silvicola</i>	
False Turkey Tail	<i>Stereum</i>	<i>ostrea</i>	
Turkey Tail	<i>Trametes</i>	<i>versicolor</i>	
Dead Man's Fingers	<i>Xylaria</i>	<i>polymorpha</i>	
<b>Lichens</b>			
Lemon Lichen	<i>Candelaria</i>	<i>concolor</i>	
Common Powderhorn	<i>Cladonia</i>	<i>coniocraea</i>	
British Soldiers	<i>Cladonia</i>	<i>crystalata</i>	
Common Greenshield	<i>Flavoparmelia</i>	<i>caperata</i>	
<b>Plants</b>			
White Baneberry (Doll's Eyes)	<i>Actaea</i>	<i>pachypoda</i>	
Wingstem	<i>Actinomeris</i>	<i>alterniflora</i>	

Agrimony, Small-flowered	<i>Agrimonia</i>	<i>parviflora</i>	
Leek, Wild	<i>Allium</i>	<i>triccoccum</i>	
Ragweed, Common	<i>Ambrosia</i>	<i>artemisiifolia</i>	
Hog Peanut Vine	<i>Amphicarpa</i>	<i>bracteata</i>	
Dogbane (Indian Hemp)	<i>Apocynum</i>	<i>cannabinum</i>	
Milkweed, Swamp	<i>Asclepias</i>	<i>incarnata</i>	
Milkweed, Common	<i>Asclepias</i>	<i>syriaca</i>	
Spanish Needles	<i>Bidens</i>	<i>bipinnata</i>	
Beggar Ticks, Swamp	<i>Bidens</i>	sp.	
Wood Mint, Hairy	<i>Blephila</i>	<i>hirsuta</i>	
Pigweed*	<i>Chenopodium</i>	<i>album</i>	
Nightshade, Enchanter's	<i>Circaea</i>	<i>quadrisulcata</i>	
Bower, Virgin's	<i>Clematis</i>	<i>virginiana</i>	
Beechdrops	<i>Epifagus</i>	<i>virginiana</i>	
Pilewort	<i>Erechtites</i>	<i>hieracifolia</i>	
Horseweed	<i>Erigeron</i>	<i>canadensis</i>	
Joe-Pye Weed, Spotted	<i>Eupatorium</i>	<i>maculatum</i>	
Boneset	<i>Eupatorium</i>	<i>perfoliatum</i>	
Cleavers	<i>Galium</i>	<i>aparine</i>	
Avens, Yellow	<i>Geum</i>	<i>aleppicum</i>	
Avens, White	<i>Geum</i>	<i>canadense</i>	
Avens	<i>Geum</i>	sp.	
Waterleaf, Virginia	<i>Hydrophyllum</i>	<i>virginianum</i>	
Touch-me-not, Spotted	<i>Impatiens</i>	<i>capensis</i>	
Nettle, Wood	<i>Laportea</i>	<i>canadensis</i>	
Cardinal Flower	<i>Lobelia</i>	<i>cardinalis</i>	
Tobacco, Indian	<i>Lobelia</i>	<i>inflata</i>	
Loosestrife, Fringed	<i>Lysimacha</i>	<i>ciliata</i>	
Loosestrife, Whorled	<i>Lysimacha</i>	<i>quadrifolia</i>	
Forget-me-not, Smaller	<i>Myosotis</i>	<i>laxa</i>	
Evening Primrose, Common	<i>Oenothera</i>	<i>biennis</i>	
Sweet Cicely	<i>Osmorhiza</i>	<i>claytoni</i>	
Virginia Creeper	<i>Parthenocissus</i>	<i>quinquefolia</i>	
Beardtongue, White (Foxglove)	<i>Penstemon</i>	<i>digitalis</i>	
Pokeweed	<i>Phytolacca</i>	<i>americana</i>	
Clearweed	<i>Pilea</i>	<i>pumila</i>	
Tearthumb, Halberd-leaved	<i>Polygonum</i>	<i>arifolium</i>	
Tearthumb, Arrow-leaved	<i>Polygonum</i>	<i>sagittatum</i>	
Smartweed	<i>Polygonum</i>	sp.	
Cinquefoil	<i>Potentilla</i>	sp.	
Lettuce, Tall White	<i>Prenanthes</i>	<i>altissima</i>	
Mountain Mint, Narrow-leaved	<i>Pycnanthemum</i>	<i>tenuifolium</i>	
Sumac, Staghorn	<i>Rhus</i>	<i>typhina</i>	
Blackberry, Common	<i>Rubus</i>	<i>allegheniensis</i>	

Dewberry, Swamp	<i>Rubus</i>	<i>hispidus</i>	
Raspberry, Purple-flowering	<i>Rubus</i>	<i>odoratus</i>	
Black-eyed Susan	<i>Rudbeckia</i>	<i>serotina</i>	
Sorrel, Field (Sheep)	<i>Rumex</i>	<i>acetosella</i>	
Arrowhead, Common	<i>Sagittaria</i>	<i>latifolia</i>	
Lizard's Tail	<i>Saururus</i>	<i>cernuus</i>	
Blue-eyed Grass, Stout	<i>Sisyrinchium</i>	<i>augustifolium</i>	
Greenbrier, Common	<i>Smilax</i>	<i>rotundifolia</i>	
Nettle, Horse	<i>Solanum</i>	<i>carolinense</i>	
Nightshade, Bittersweet	<i>Solanum</i>	<i>dulcamara</i>	
Goldenrod, Tall	<i>Solidago</i>	<i>altissima</i>	
Goldenrod, Blue-stemmed	<i>Solidago</i>	<i>caesia</i>	
Goldenrod, Late	<i>Solidago</i>	<i>gigantea</i>	
Goldenrod, Grass-leaved	<i>Solidago</i>	<i>graminifolia</i>	
Goldenrod, Early	<i>Solidago</i>	<i>juncea</i>	
Goldenrod, Gray	<i>Solidago</i>	<i>nemoralis</i>	
Goldenrod, Rough-stemmed	<i>Solidago</i>	<i>rugosa</i>	
Aster, Heart-leaved	<i>Symphyotrichum</i>	<i>cordifolius</i>	
Aster, New England	<i>Symphyotrichum</i>	<i>novi-angliae</i>	
Aster, Frost (Heath)	<i>Symphyotrichum</i>	<i>pilosus</i>	
Skunk Cabbage	<i>Symplocarpus</i>	<i>foetidus</i>	
Germander, American (Wood Sage)	<i>Teucrium</i>	<i>canadense</i>	
Jumpseed	<i>Tovara</i>	<i>virginiana</i>	
Poison Ivy	<i>Toxicodendron</i>	<i>radicans</i>	
Common Cattail	<i>Typha</i>	<i>latifolia</i>	
Vervain, Blue	<i>Verbena</i>	<i>hastata</i>	
Vervain, White	<i>Verbena</i>	<i>urticifolia</i>	
Ironweed, Tall	<i>Vernonia</i>	<i>gigantea</i>	
Grape, Summer	<i>Vitis</i>	<i>aestivalis</i>	
Grape, Riverbank	<i>Vitis</i>	<i>riparia</i>	
<b>Alien &amp; Naturalized Plants</b>			
Yarrow*	<i>Achilla</i>	<i>millefolium</i>	
Pimpernel*	<i>Anagallis</i>	<i>arvensis</i>	
Burdock, Common*	<i>Arctium</i>	<i>minus</i>	
Daisy, Oxeye	<i>Chrysanthemum</i>	<i>leucanthemum</i>	
Chicory	<i>Cichorium</i>	<i>intybus</i>	
Queen Anne's Lace	<i>Daucus</i>	<i>carota</i>	
Deptford Pink*	<i>Dianthus</i>	<i>armeria</i>	
Daisy Fleabane	<i>Erigeron</i>	<i>annuus</i>	
St. Johnswort, Common*	<i>Hypericum</i>	<i>perforatum</i>	
Peppergrass, Field*	<i>Lepidium</i>	<i>campestre</i>	
Trefoil, Birdsfoot*	<i>Lotus</i>	<i>corniculatus</i>	
Sweet Clover, White*	<i>Medicago</i>	<i>alba</i>	

Sweet Clover, Yellow*	<i>Melilotys</i>	<i>officinalis</i>	
Heal-all	<i>Prunella</i>	<i>vulgaris</i>	
Dock, Curled*	<i>Rumex</i>	<i>crispus</i>	
Dock, Broad-leaved (Bitter)*	<i>Rumex</i>	<i>obtusifolius</i>	
Dandelion, Common*	<i>Taraxacum</i>	<i>officinale</i>	
Clover, Red*	<i>Trifolium</i>	<i>pratense</i>	
Clover, White*	<i>Trifolium</i>	<i>repens</i>	
Coltsfoot*	<i>Tussilago</i>	<i>farfara</i>	
Nettle, Stinging*	<i>Urtica</i>	<i>dioica</i>	
Mullien, Moth*	<i>Verbascum</i>	<i>blattaria</i>	
Mullien, Common*	<i>Verbascum</i>	<i>thapus</i>	
Pea, Everlasting*	<i>Vicia</i>	<i>latifolius</i>	
<b>Grasses, Sedges &amp; Rushes</b>			
Fringed Sedge	<i>Carex</i>	<i>crinita</i>	
Emory's Sedge	<i>Carex</i>	<i>emori</i>	
Bunny Blue Sedge	<i>Carex</i>	<i>laxiculmis</i>	
Wide-leaved Woodland Sedge	<i>Carex</i>	<i>plantaginea</i>	
Common Lake Sedge	<i>Carex</i>	<i>lacustris</i>	
Spikerush	<i>Eleocharis</i>	sp.	
Bottlebrush Grass	<i>Elymus</i>	<i>hystrix</i>	
Common Horsetail	<i>Equisetum</i>	<i>arvense</i>	
Soft Rush	<i>Juncus</i>	<i>effusus</i>	
Rice Cutgrass	<i>Leersia</i>	<i>oryzoides</i>	
Deer-Tongue Grass	<i>Panicum</i>	<i>clandestinum</i>	
Soft-stemmed Bulrush	<i>Schoenoplectus</i>	<i>tabernaemontani</i>	
Wool Grass	<i>Scirpus</i>	<i>cyperinus</i>	
<b>Invasives</b>			
Tree-of-heaven	<i>Ailanthus</i>	<i>altissima</i>	
Garlic Mustard	<i>Alliaria</i>	<i>petiolata</i>	
Mugwort	<i>Artemesia</i>	<i>vulgaris</i>	
Barberry, Japanese	<i>Berberis</i>	<i>thunbergii</i>	
Bittersweet, Asian	<i>Celastrus</i>	<i>orbiculatus</i>	
Canada Thistle	<i>Cirsium</i>	<i>arvense</i>	
Field Bindweed	<i>Convolvulus</i>	<i>arvensis</i>	
Crown-vetch	<i>Coronilla</i>	<i>varia</i>	
Queen Anne's Lace	<i>Daucus</i>	<i>carota</i>	
Common Teasel	<i>Dipsacus</i>	<i>sylvestris</i>	
Olive, Autumn	<i>Elaeagnus</i>	<i>umbellata</i>	
Hairy Willow-herb	<i>Epilobium</i>	<i>hirsutum</i>	
Privet, Common	<i>Ligustrum</i>	<i>vulgare</i>	
Honeysuckle, Japanese	<i>Lonicera</i>	<i>japonica</i>	
Honeysuckle, Amur	<i>Lonicera</i>	<i>maackii</i>	



Moneywort	<i>Lysimachia</i>	<i>nummularia</i>	
Purple Loosestrife	<i>Lythrum</i>	<i>salicaria</i>	
Japanese Stiltgrass	<i>Microstegium</i>	<i>vimineum</i>	
Mulberry, White	<i>Morus</i>	<i>alba</i>	
Reed Canary Grass	<i>Phalaris</i>	<i>arundinacea</i>	
Common Reed Grass	<i>Phragmites</i>	<i>australis</i>	
Plantain, English	<i>Plantago</i>	<i>lanceolata</i>	
Plantain, Common	<i>Plantago</i>	<i>major</i>	
Knotweed, Japanese	<i>Polygonum</i>	<i>cuspidatum</i>	
Callery Pear	<i>Pyrus</i>	<i>calleryana</i>	
Glossy Buckthorn	<i>Rhamnus</i>	<i>frangula</i>	
Multiflora Rose	<i>Rosa</i>	<i>multiflora</i>	
Cattail, Narrow-leaved	<i>Typha</i>	<i>angustifolia</i>	
Cattail, Hybrid	<i>Typha X glauca</i>		

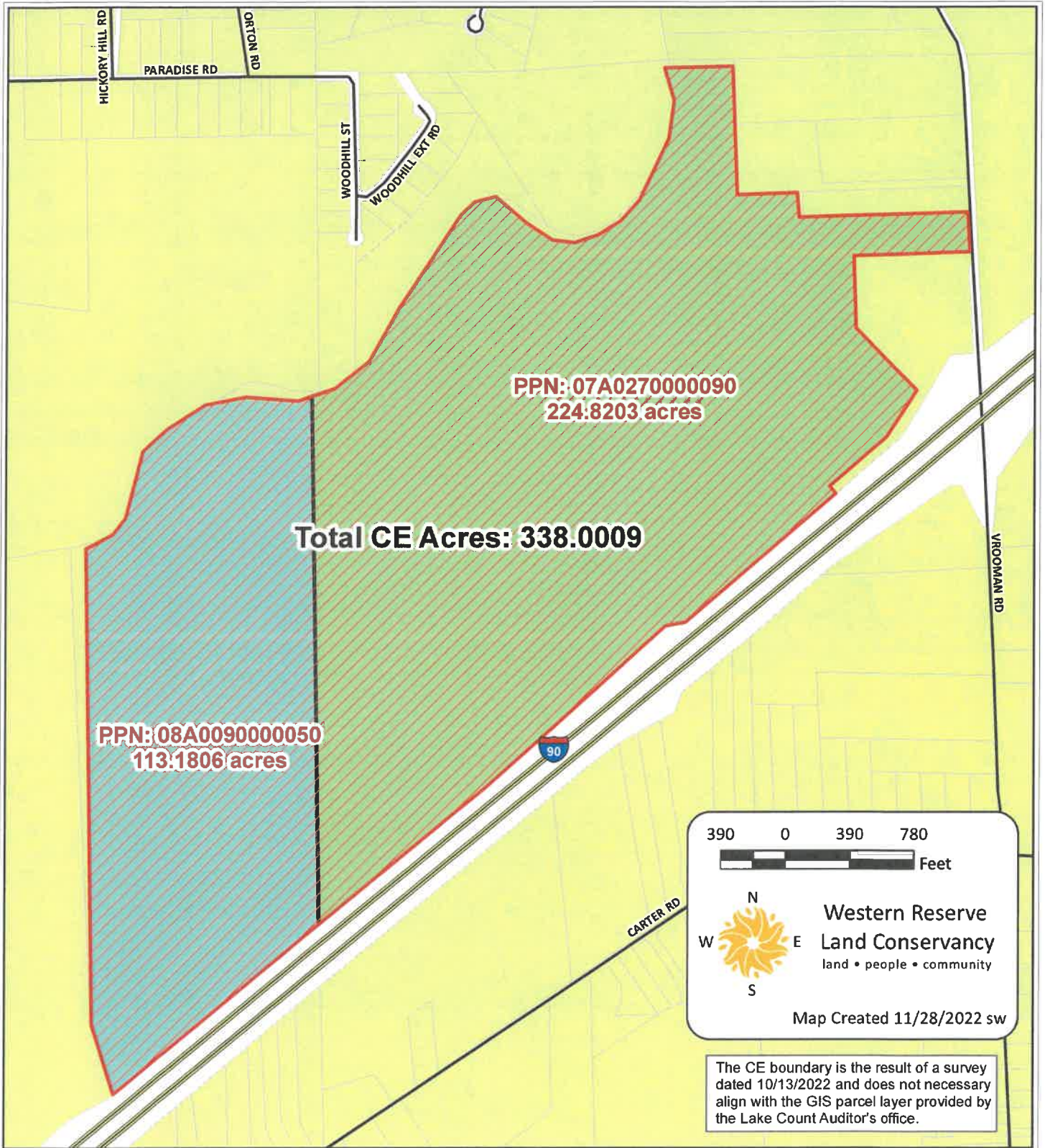
## APPENDIX C: MAPS

### MAP LIST

Property Identification  
Watershed Location  
Location  
Aerial View I  
Aerial View II  
Soils  
Topography  
Land Cover  
Existing Conditions  
Access Easement  
Photo Points East  
Photo Points West

**Disclaimer:** The maps included in this appendix are not legal surveys and should not be construed as such. The maps assist the Land Conservancy in its efforts to depict the boundaries of the CE, the regional property location, neighboring property boundaries, potential encroachments, areas of reserved and/or excluded rights, habitats, and other important existing conditions and property features related to the terms of the CE. Property boundaries, while approximate, were established using the best available information, which may include: publicly and privately available local, county, state and federal GIS data, legal surveys, tax maps, field mapping using GPS, and other sources.

The legal boundary of the CE is derived from the legal description that is an exhibit to the CE document. The Land Conservancy attempts to make all maps match the legal description as closely as possible.



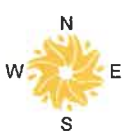
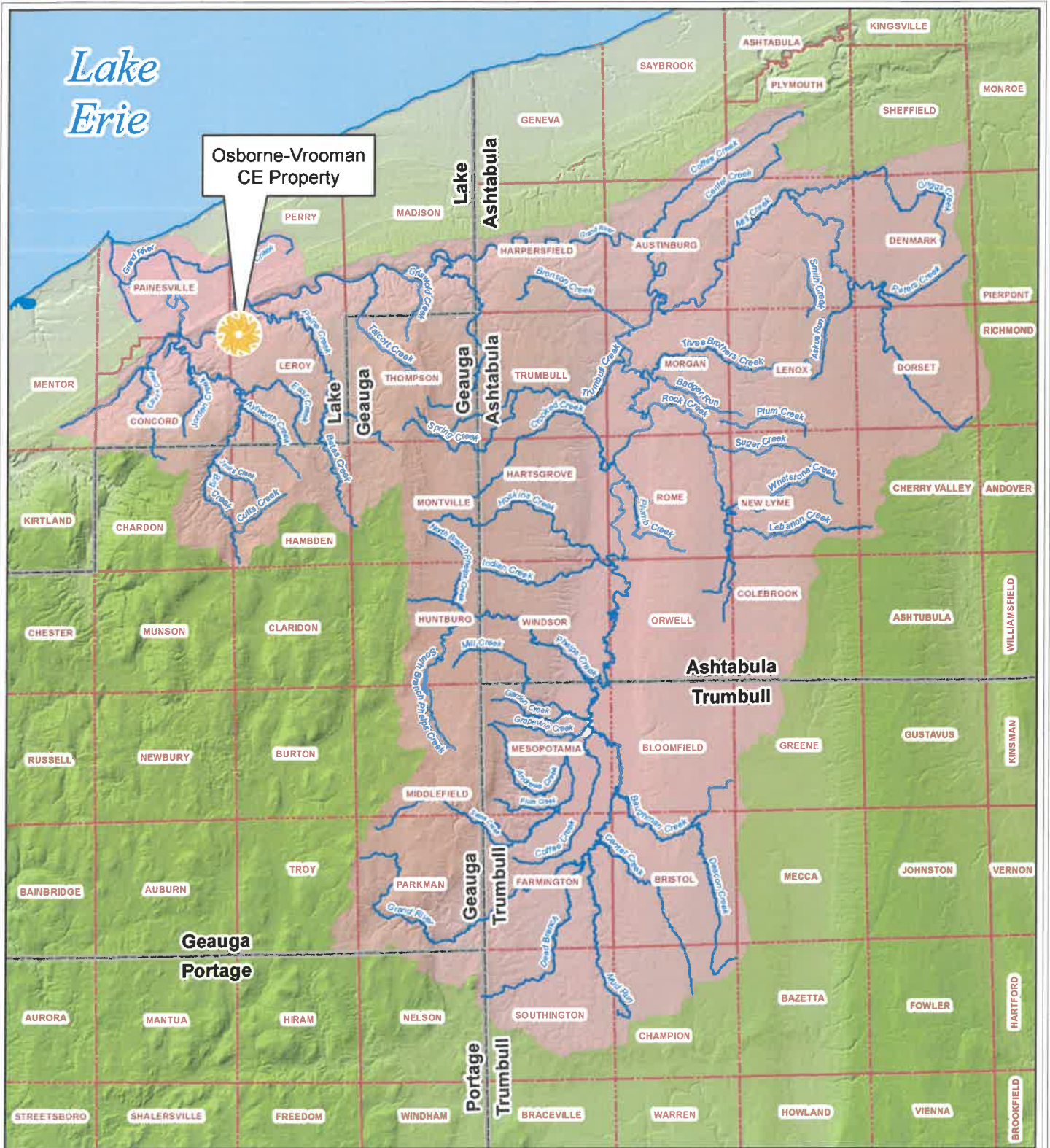
**Property Identification: Osborne - Vrooman CE Property - BDR**

- Osborne-Vrooman CE Property: 338.0009 acres
- Leroy Township: PPN: 07A0270000090
- Concord Township: PPN: 08A0090000050
- Parcels - Lake Co.
- Interstate
- County & Township Roads



Lake Erie

Osborne-Vrooman  
CE Property



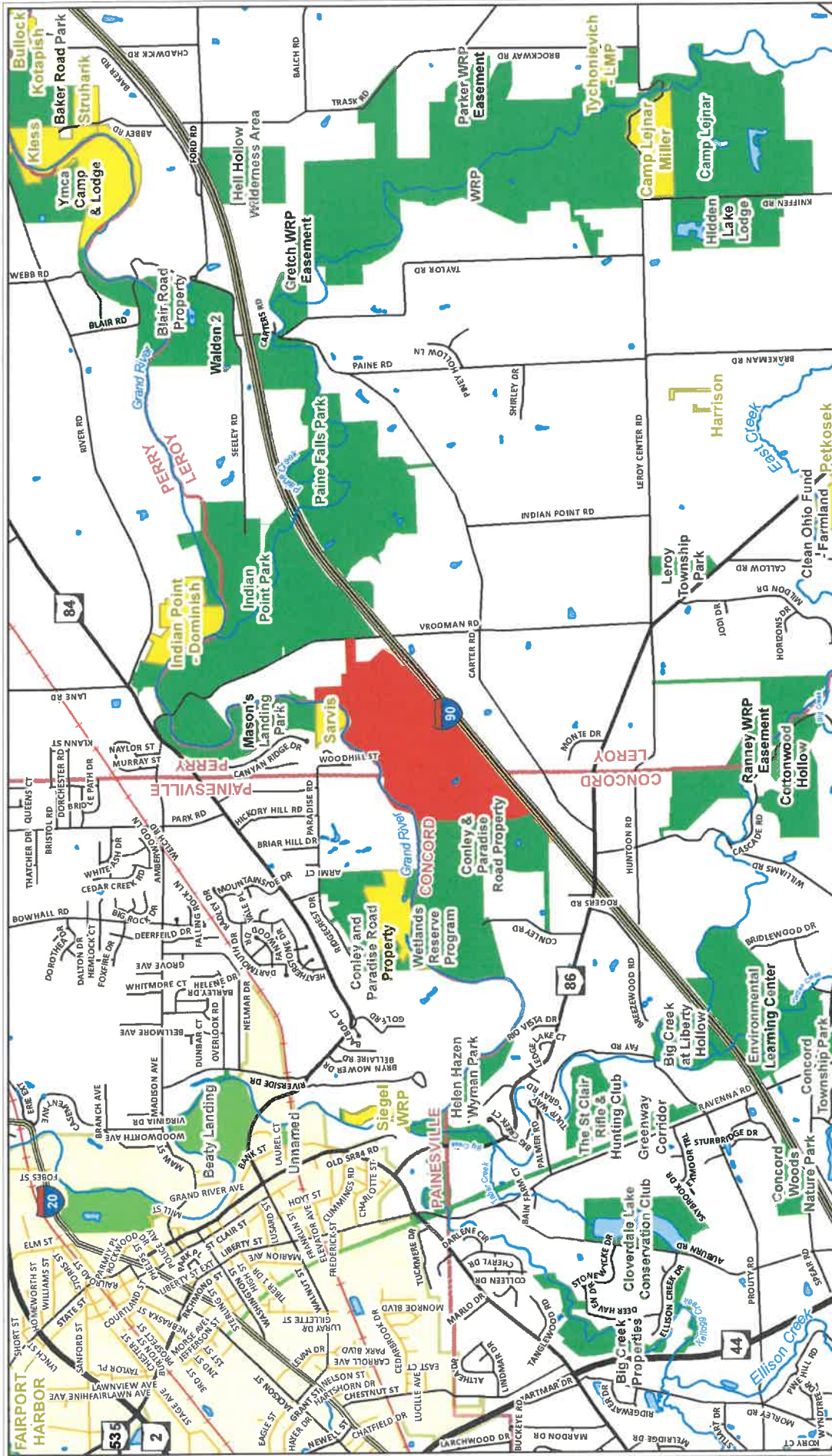
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Land Conservancy  
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Map Created  
04/14/2015 sw



Watershed Location: Osborne - Vrooman CE Property - BDR

-  County Boundaries
-  Township Boundaries
-  Grand River Watershed
-  NHD - Named Streams/Rivers
-  Lake Erie





Location: Osborne - Vrooman CE Property - BDR

-  Osborne-Vrooman CE Boundary: 338,000 acres
-  The Land Conservancy Protected Properties
-  Parks and Managed
-  NHD - Lake/Pond/Reservoir
-  NHD - Named Streams/Rivers
-  Township Boundaries
-  Municipal Boundaries
-  Interstate
-  County & Township Roads
-  Municipal Roads
-  State Highways
-  Rail Line



Map Created 10/24/2022 sw





The CE boundary is the result of a survey dated 10/13/2022 and does not necessarily align with the GIS parcel layer provided by the Lake County Auditor's office.

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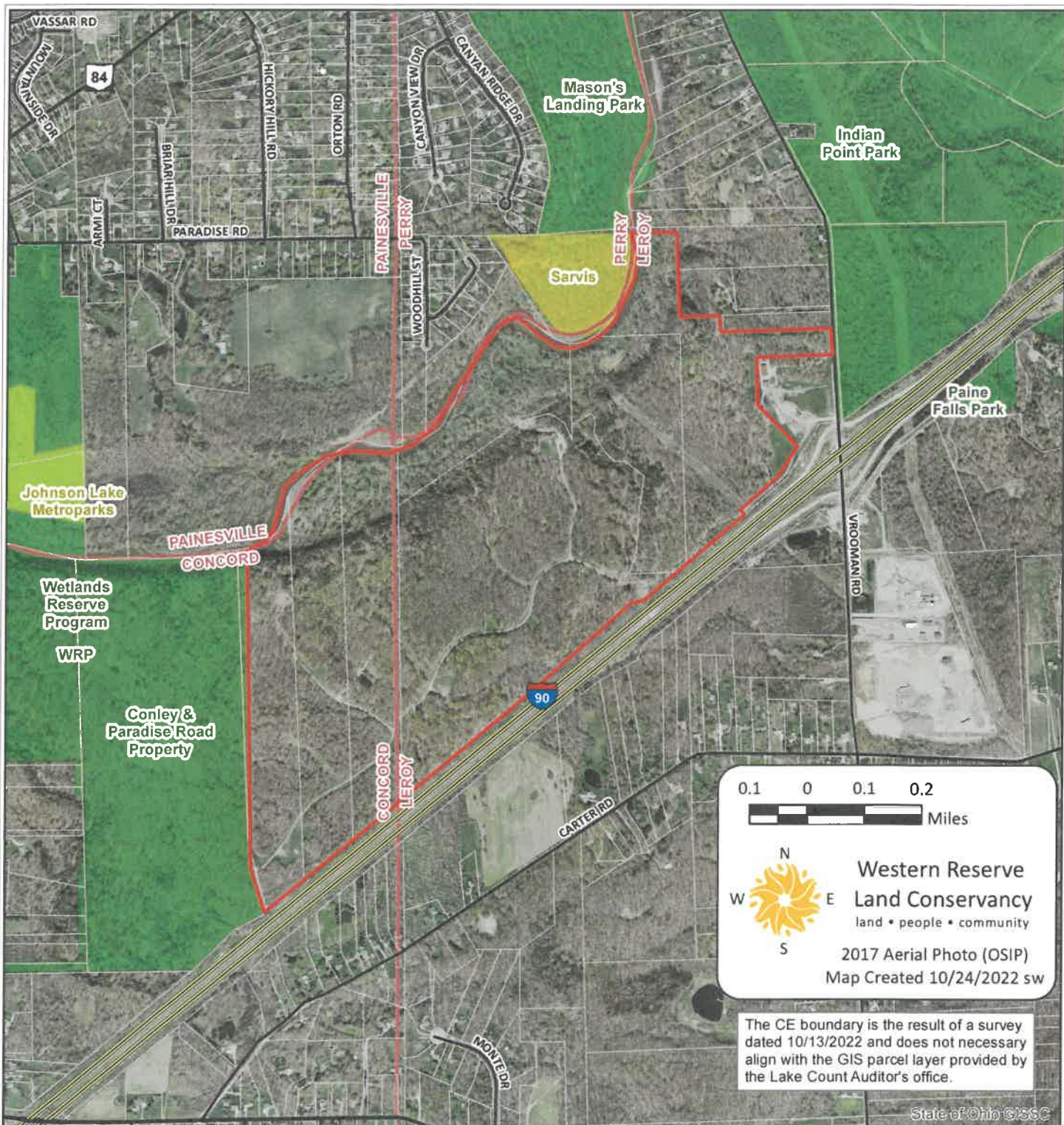


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2017 Aerial Photo (OSIP)  
Map Created 10/24/2022 sw

**Aerial View I: Osborne - Vrooman CE Property - BDR**

- Osborne-Vrooman CE Boundary: 338.0009 acres
- Interstate
- Parcels - Lake Co.
- County & Township Roads





0.1 0 0.1 0.2 Miles

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2017 Aerial Photo (OSIP)  
Map Created 10/24/2022 sw

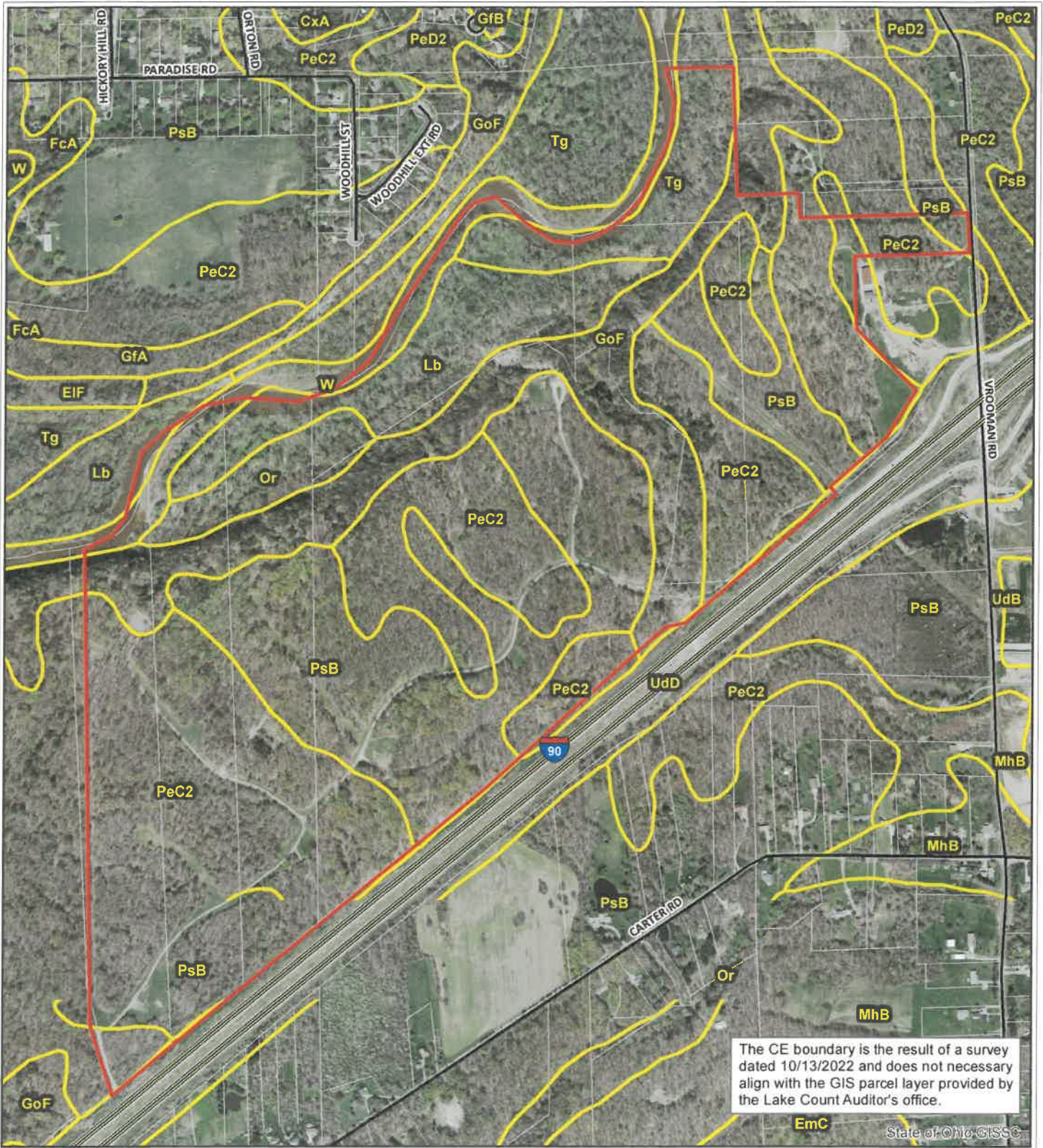
The CE boundary is the result of a survey dated 10/13/2022 and does not necessarily align with the GIS parcel layer provided by the Lake Count Auditor's office.

State of Ohio ©ISSC

### Aerial View II: Osborne - Vrooman CE Property - BDR

- Osborne-Vrooman CE Boundary: 338.0009 acres
- The Land Conservancy Protected Properties
- Parks and Managed Areas
- Township Boundaries
- Parcels - Lake Co.
- Interstate
- State Highways
- County & Township Roads





The CE boundary is the result of a survey dated 10/13/2022 and does not necessarily align with the GIS parcel layer provided by the Lake Count Auditor's office.

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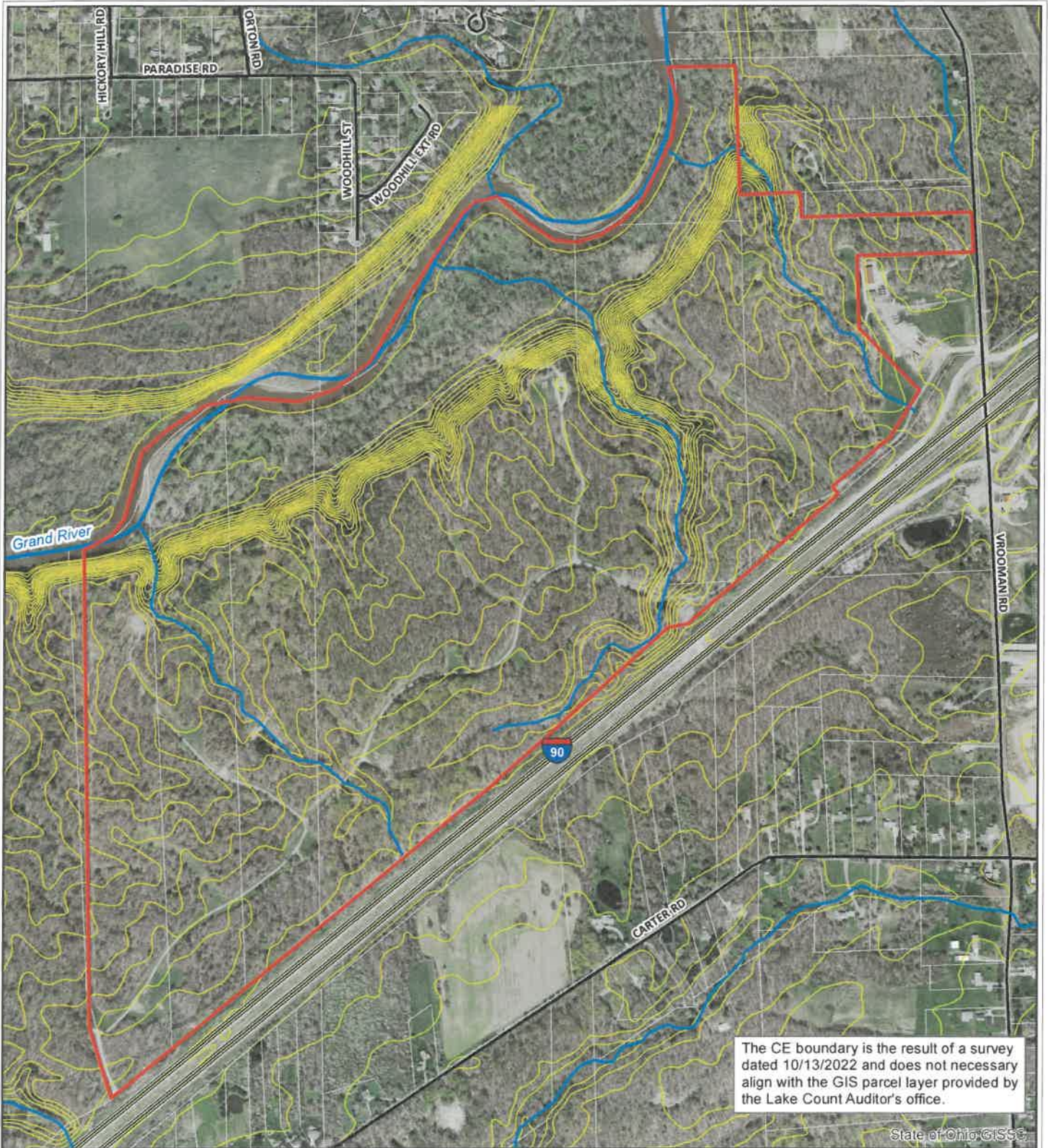


2017 Aerial Photo (OSIP)  
Map Created 10/24/2022 sw

### Soils: Osborne - Vrooman CE Property - BDR

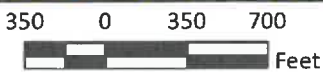
- Osborne-Vrooman CE Boundary: 338.0009 acres
- USA Soils Map Units
- Prime Farmland Soil
- Interstate
- County & Township Roads
- Parcels - Lake Co.





The CE boundary is the result of a survey dated 10/13/2022 and does not necessarily align with the GIS parcel layer provided by the Lake Count Auditor's office.

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2017 Aerial Photo (OSIP)  
Map Created 10/24/2022 sw

### Topography: Osborne - Vrooman CE Property - BDR

Osborne-Vrooman CE Boundary: 338.0009 acres

Parcels - Lake Co.

Contours - 10 ft

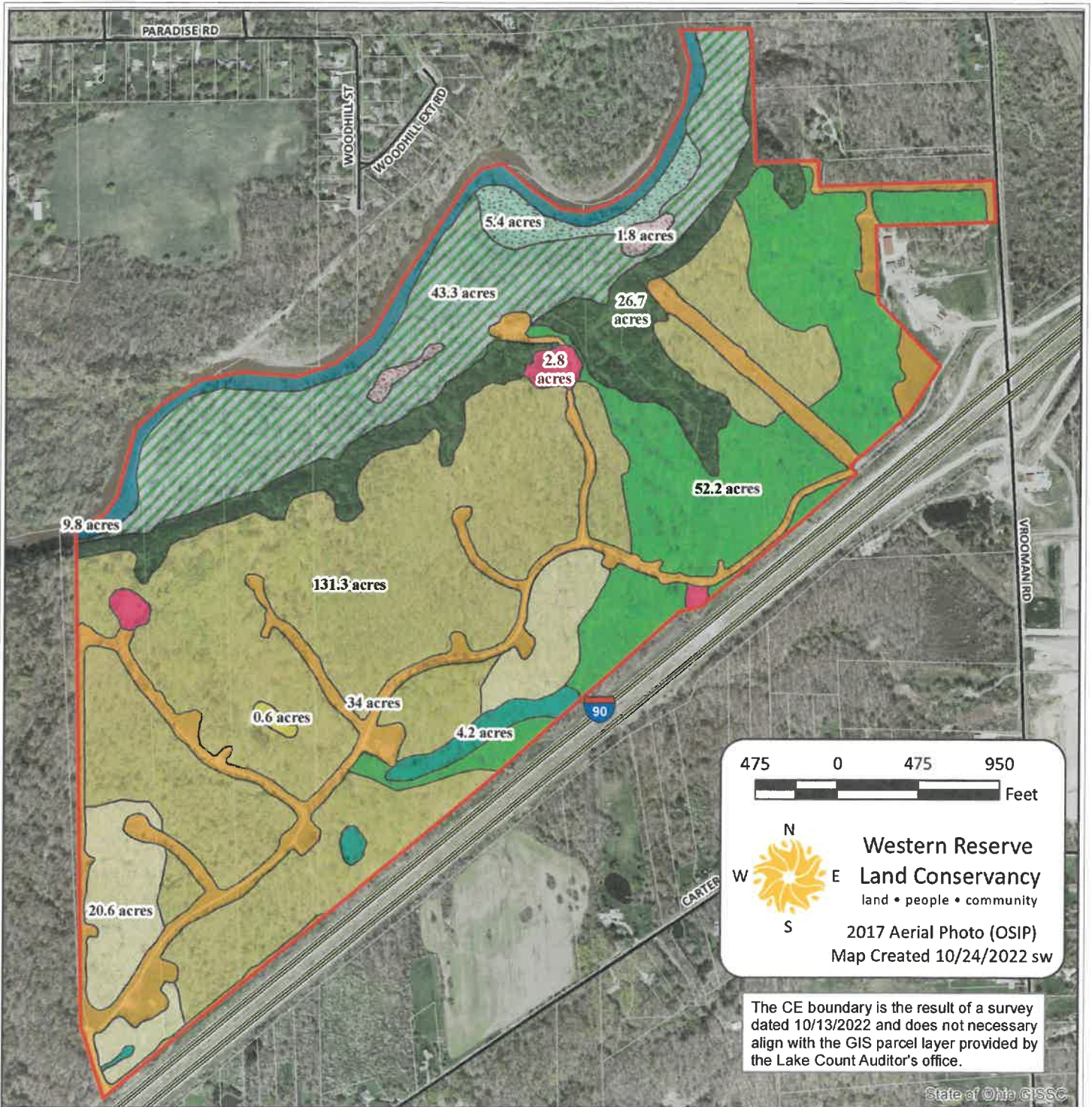
Interstate

County & Township Roads

Grand River

Stream

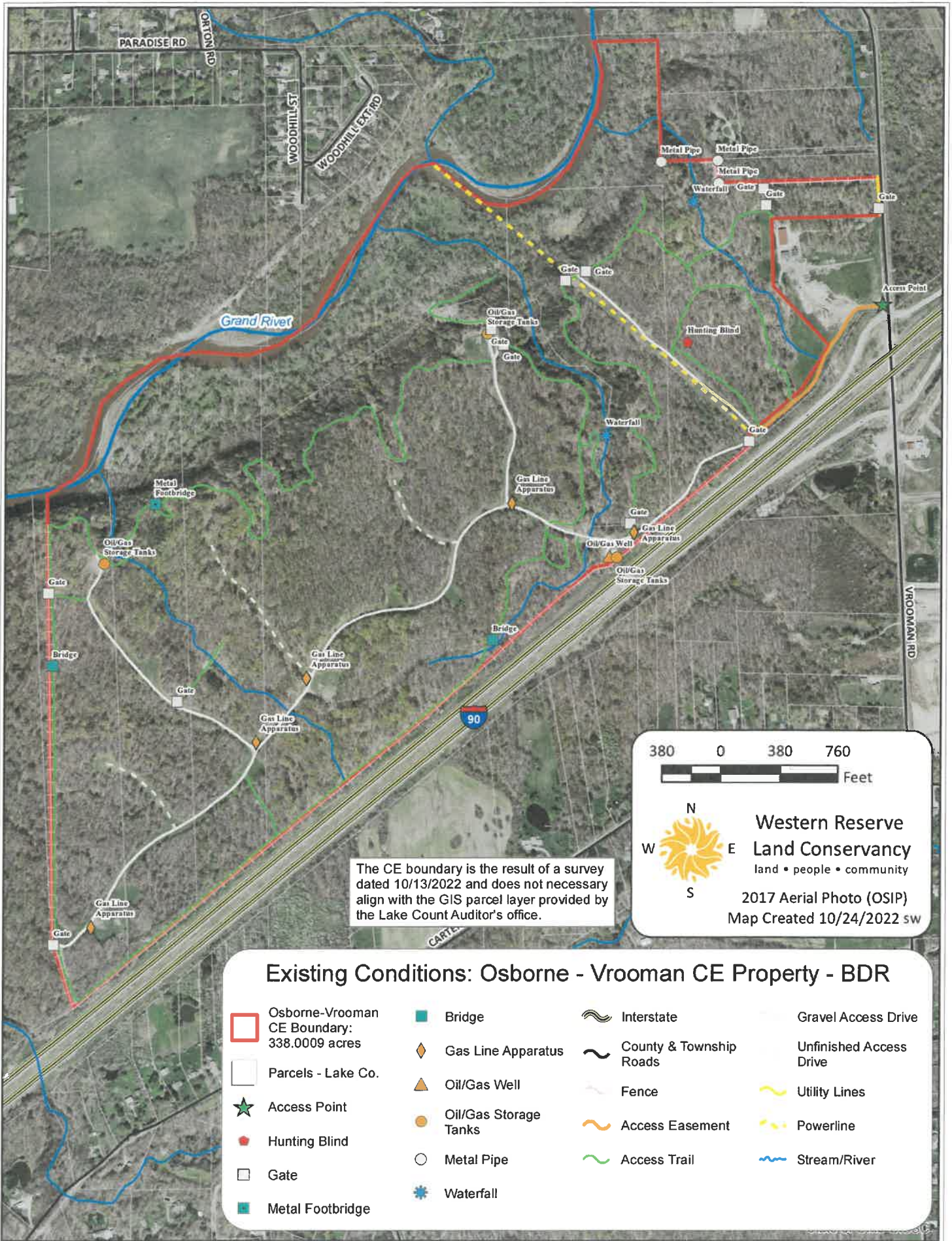




### Land Cover: Osborne - Vrooman CE Property - BDR

Osborne-Vrooman CE Boundary: 338.0009 acres	Early Successional Maple Forest: ~20.6 acres	Early/Mid-Succes... Mixed Wetland Forest with Wet Meadow: ~4.2 acres	Phragmites Marsh: ~0.6 acres	Interstate
Parcels - Lake Co.	Early/Mid-Succesi... Maple-Oak-Ash Forest: ~131.3 acres	Early/Mid-Succes... Mixed Floodplain Forest: ~43.3 acres	Buttonbush Wetland: ~1.8 acres	County & Township Roads
Oil/Gas Well Opening: ~2.8 acres	Early to Mid-Successional Mixed Hardwood Forest: ~52.2 acres	Mid-Successional Mixed Hardwood and Hemlock Forest: ~26.7 acres	Forested Scrub-Shrub: ~5.4 acres	
Old Field: ~34 acres			Grand River: ~9.8 acres	



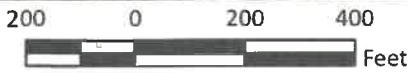






The CE boundary is the result of a survey dated 10/13/2022 and does not necessary align with the GIS parcel layer provided by the Lake Count Auditor's office.

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### Access Easement: Osborne - Vrooman CE Property - BDR



Osborne-Vrooman  
CE Boundary:  
338.0009 acres



60 ft. Wide Access  
Easement: ~2.053  
acres



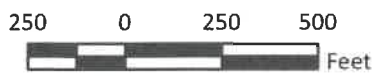
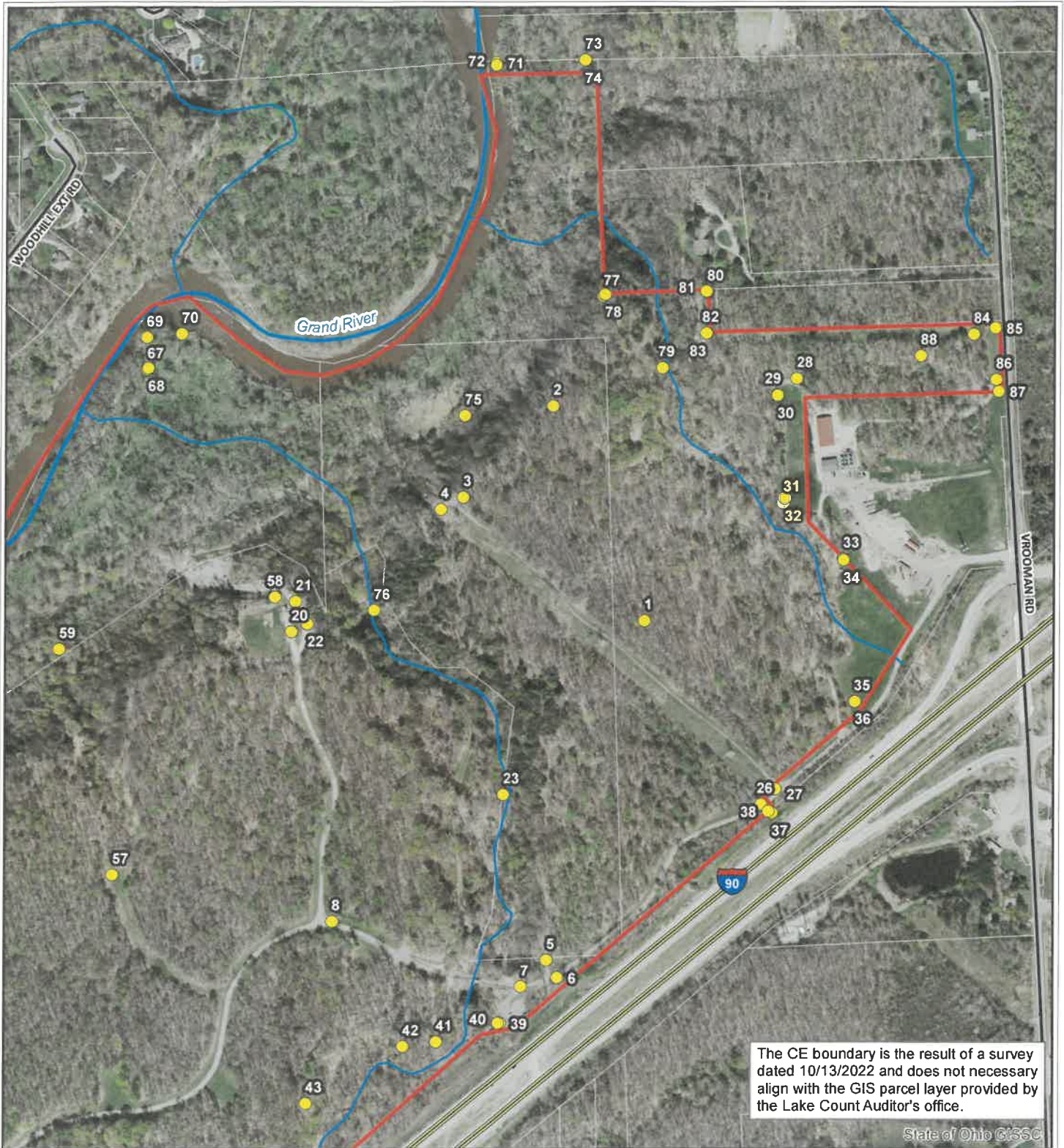
County & Township  
Roads

Parcels - Lake Co.



Interstate





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Map Created 10/24/2022 sw

### Photo Points East: Osborne - Vrooman CE Property - BDR



Osborne-Vrooman  
CE Boundary:  
338.0009 acres



Photo Points  
9/28/2022



County & Township  
Roads



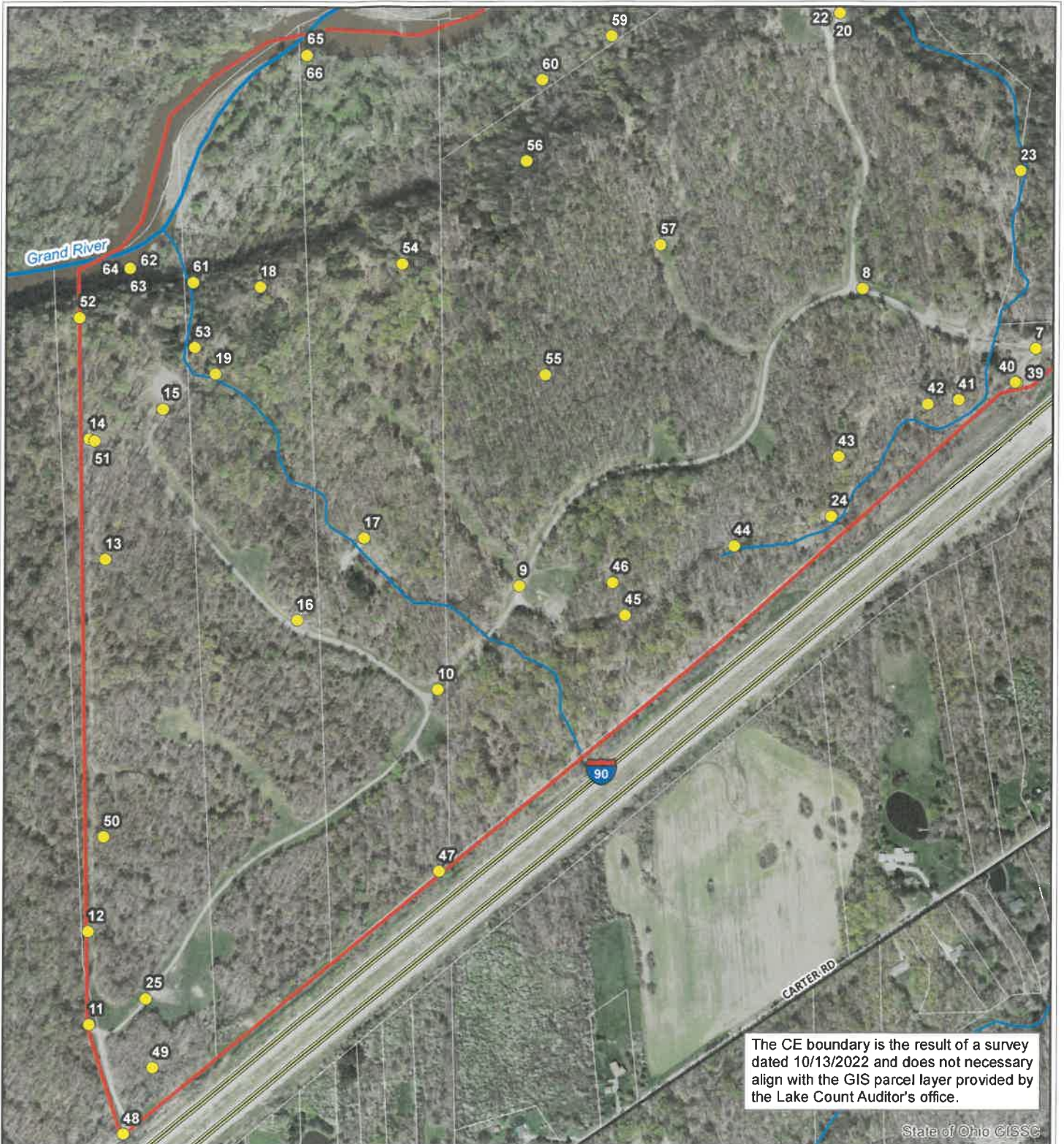
Interstate



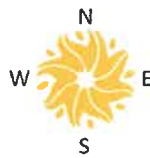
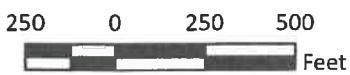
Stream/River

Parcels - Lake Co.





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2017 Aerial Photo (OSIP)  
Map Created 10/24/2022 sw

### Photo Points West: Osborne - Vrooman CE Property - BDR



Osborne-Vrooman  
CE Boundary:  
338.0009 acres



Photo Points  
9/28/2022



County & Township  
Roads



Interstate



Stream/River

Parcels - Lake Co.



# Zoning Maps

# CONCORD TOWNSHIP








## Zoning District

- AP: Airport
- B-1: Restricted Retail
- B-2: General Business
- BX: Business Interchange
- C: Capital
- GB: Gateway Business
- GH: Gateway Health
- M: Manufacturing
- R-1: Residential
- R-2: Planned Unit Development
- R-2: Residential Conservation Development
- R-3: Residential
- R-4: Residential
- R-6: Residential
- R-8: Rural Residential and Recreational
- RD-2: Research and Limited Industrial
- S: Special Interchange
- THC: Town Hall Commons

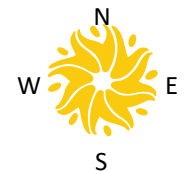
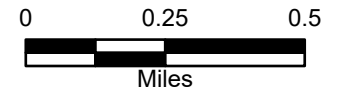
# Leroy Township Zoning

- ◇ R-1: Residential (1.5 acre)
- ◆ B-3: Community Business
- R-2: Residential (3 acre)
- ◆ B-4: Neighborhood Business
- ◆ B-1: Business and Commercial
- ◆ I: Industrial and Manufacturing
- B-2: Special Interchange

## Zoning

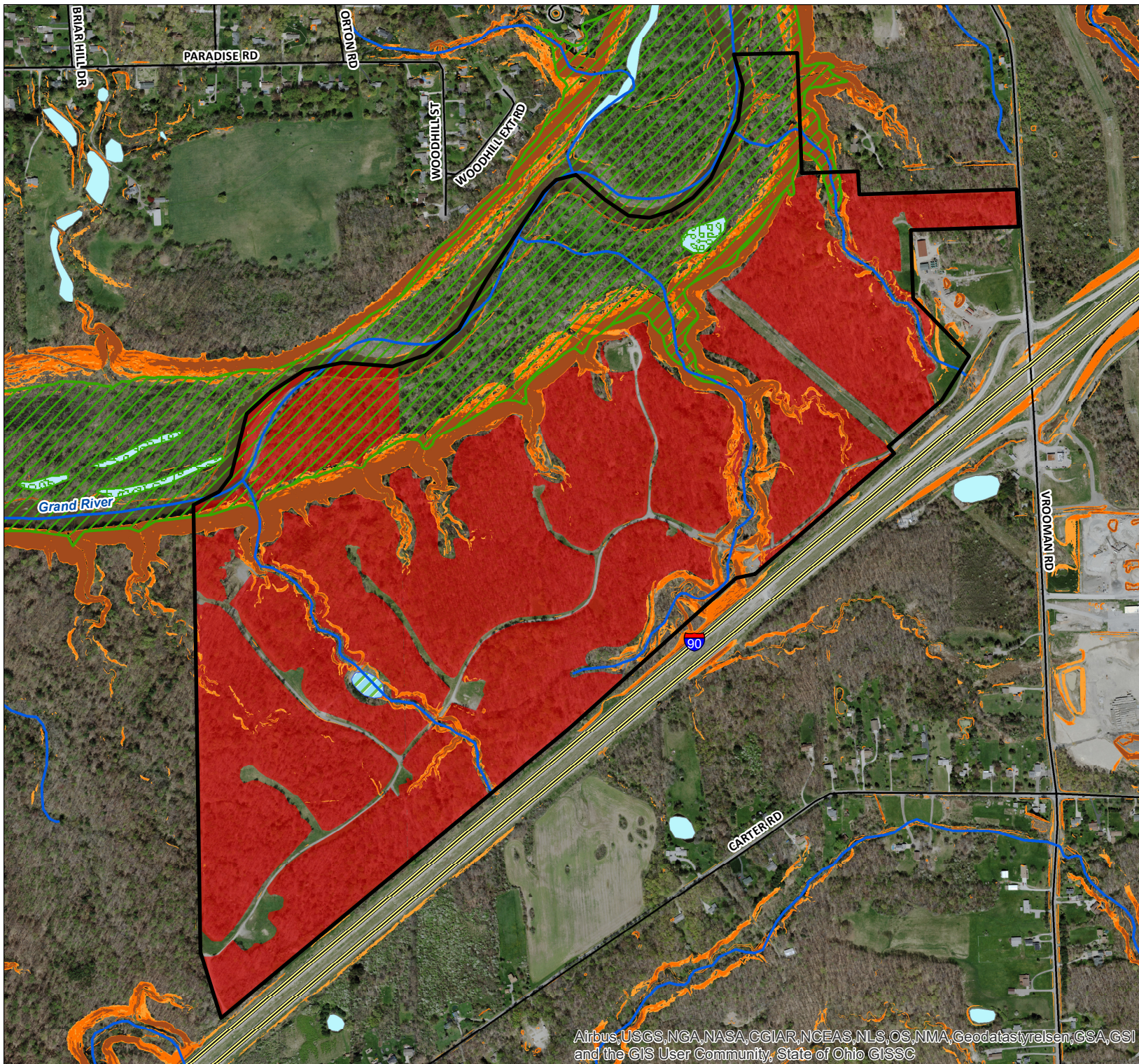
-  Project Area - 222.8 Acres
-  Property Area - 338 Acres
-  Trees Only - R4 Residential: 13.7 Acres
-  Trees and Soil - R4 Residential: 74.6 Acres
-  Trees and Soil - R2 Residential: 106.5 Acres
-  Trees and Soil - B2 Special Interchange: 28 Acres
-  Township Boundaries

\*Creditable Area: 192.8 Ac.  
 \*Difference Accommodates 30 Ac. Improvement Area












Western Reserve  
 Land Conservancy  
 land • people • community





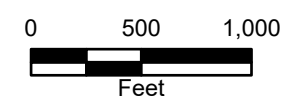


## Overlay Map

-  Property Boundary - 338 Acres
-  Project Area - 222.8 Acres
-  100 Year Floodzone
-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond
-  River/Stream
-  Interstate
-  County & Township Roads

## Steep Slopes

-  Moderately Steep (16° - 20°)
-  Steep (21° - 30°)
-  Very steep (31° - 90°)



Western Reserve  
Land Conservancy  
land • people • community

Airbus, USGS, NGA, NASA, CGIAR, NCEAS, NLS, OS, NMA, Geodatastyralen, GSA, GSI and the GIS User Community, State of Ohio GISCC



## Zoning Description(s)

## **Hemlock Ridge Zoning Documentation**

[Concord Township Zoning Resolution](#)

[Concord Township Riparian Setback Ordinance](#)

[Leroy Township Rural Residential R2](#)

[Leroy Township Commercial and Industrial District Regulations](#)

[Leroy Township Landscaping Regulations](#)

[Leroy Township Riparian Setback Ordinance](#)

[Communication with local authorities on floodplain and riparian regulations](#)

**SECTION XV – RESIDENTIAL DISTRICTS**

15.01	Purposes.	Development Standards.
15.02	Use Regulations.	15.05 Minimum dwelling area.
15.03	Use Specific Standards.	15.06 Areas Zoned R-1, R-3, R-4, R-6, R-8
15.04	Area, Setback, and Other Site	

**15.01 PURPOSE.**

The R-1, Residential; R-3, Residential; R-4, Residential; R-6, Residential; and R-8, Rural Residential and Recreational Districts and their regulations are established in order to achieve, among others, the following:

- A. The purpose of the R-1 Residential District is to provide an area within the Township for housing and other compatible residential uses that are in close proximity to major state highways and interchanges of limited access highways, higher traffic roads, commercial concentrations and service areas, which are generally serviced by sanitary sewer and public water. Developments in this District tend to have a predominance of suburban residential character on gently rolling lands.
- B. The purpose of the R-3 Residential District is to provide for a limited amount of alternative housing types to the traditional single family dwellings in the Township. It is the intent of this District to allow for both multi-family and single family cluster dwellings in locations that meet the following criteria, in conformance with the Comprehensive Plan:
  - 1. As a transitional land use between areas currently zoned R-1 Residential and non-residential areas.
  - 2. In areas adjacent to major highways such as Interstate 90; and
  - 3. In locations that are currently zoned R-1 Residential and where low-density residential is not likely to develop because of locational or site conditions.

It is further intended that such Districts be located so as to minimize their impacts on existing low density residential developments, through the regulation of size, location and density of units and the application of appropriate landscaping and buffer areas, with adequate public services available to support the density.

- C. The purpose of the R-4 Residential District is to provide an area within the Township for housing and other compatible residential uses that are located further from major state highways and interchanges, situated on roads with lower traffic volumes, and generally located further from commercial areas. Areas tend to have a predominance of rural residential and agricultural character with significant areas of woodland, floodplain, and



steep slopes. Several of the Township's larger watercourses are located within the District, including the Grand River, Ellison Creek and Big Creek.

- D. The purpose of the R-6 Residential District is to preserve the green open areas which enhance the natural beauty existent in and inherent to the semi-rural residential character of Concord Township; to promote health, safety, comfort and general welfare while retaining and protecting the present favorable balance of the environment.
- E. The purpose of the R-8 Rural Residential and Recreational District is to permit the application of more recently developed planning techniques in the development of residential areas through the grouping of single family dwelling units to permit areas of land to be left open for more adaptive active and/or passive recreational use and to provide for the permanent preservation of areas of natural scenic beauty. The District promotes an orderly planned use of land while retaining the present favorable environmental balance through the protection and preservation of said land. Furthermore, the District creates a dual purpose for large parcels of land which can be associated with recreation facilities, and will allow the land to remain closer to its natural state, protect significant natural features and will effectively prevent land from over development.

#### **15.02 USE REGULATIONS.**

- A. Table of Uses Summary. Table 15.02-1 sets forth the uses allowed within all Residential zoning districts except for the R-2 District (See Section XVI of this resolution). The abbreviations used in the table are described as follows:
  - 1. Permitted Uses
    - a. A "P" in the cell indicates that a use is allowed by right in the respective zoning district. Permitted uses are subject to all other applicable regulations of this Resolution.
    - b. Permitted uses are approved administratively by the Zoning Inspector through the zoning certificate procedure (see Section XI Zoning Permit) unless otherwise indicated.
  - 2. Conditional Uses
    - a. A "C" in the cell indicates that a use may be permitted if approved through the conditional use review process (see Section XIII, Conditional Use Permit).
    - b. Conditional uses are reviewed by the Board of Zoning Appeals.
  - 3. Accessory Uses
    - a. An "A" in the cell indicates that a use is allowed by right in the respective zoning district.
    - b. Such uses shall be permitted as a subordinate building or use when it is clearly incidental to and located on the same lot as the principal building or use.

- c. Accessory uses, buildings or structures shall conform to the permit requirements in Section XI of the Zoning Resolution, unless specifically exempt.
- 4. Although a use may be indicated as a permitted, conditional or accessory use in a particular district, it shall not be approved on a parcel unless it can be located thereon in full compliance with all the standards and other regulations of this Resolution applicable to the specific use and parcel in question. Any use that is not specifically listed as either a permitted use or conditional use or that does not meet the requirements for an accessory use shall be a prohibited use in these zoning districts and shall only be permitted upon amendment of this Resolution and/or the Zoning Map, as provided in ORC 519.12.

<b>Table 15.02-1: Table of Uses</b>						
P = Permitted Use C = Conditional Use A = Accessory Use Blank Cell = Prohibited	R-1	R-3	R-4	R-6	R-8	Use-Specific Standards See Section:
<b>Residential Uses</b>						
Adult Family Home	P	P	P	P	P	
Adult Group Home	C		C			Section 13.16
Dwelling, Detached Single family	P		P	P	P	
Dwelling, Single family cluster		P				
Dwelling, Two-Family	P		P			
Dwelling, Multi-Family		P				
<b>Public and Institutional Uses</b>						
Arboretum	C		C			Section 13.13
Camp	C		C			Section 13.13
Church/place of worship	C		C			Section 13.09
Community center	C	C	C			Section 13.12
Community park, playground	C		C			Section 13.14
Golf course	P		P			
Government and Public Uses	P		P			
Home for the Aging	C		C			Section 13.07
Hospice Care Facility	C		C			Section 13.07

<b>Table 15.02-1: Table of Uses</b>						
P = Permitted Use C = Conditional Use A = Accessory Use Blank Cell = Prohibited	<b>R-1</b>	<b>R-3</b>	<b>R-4</b>	<b>R-6</b>	<b>R-8</b>	<b>Use-Specific Standards See Section:</b>
Library	C		C			Section 13.12
Museum	C		C			Section 13.12
Neighborhood park	C		C			Section 13.15
Nursing Home	C		C			Section 13.07
Residential Care Facility	C		C			Section 13.07
School, college, university	C		C			Section 13.10 and 13.11
<b>Accessory Uses</b>						
Accessory buildings including private garages, storage barns and sheds	A	A	A	A	A	Section 15.03(A)
Carport	A		A			Section 15.03(B)
Decks	A	A	A	A	A	Section 15.03(C)
Family Day Care Home, Type "B"	A	A	A	A	A	Section 15.03(D)
Fences	A	A	A	A	A	Section 15.03(E)
Gazebos or pavilions	A	A	A	A	A	Section 15.03(F)
Home Occupations	A	A	A	A	A	Section 15.03(G)
Other accessory structures not requiring a zoning permit	A	A	A	A	A	Section 15.03(H)
Off-street Parking	A	A	A	A	A	Section 15.03(I)
Signs	A	A	A	A	A	Section 15.03(J)
Swimming pools	A	A	A	A	A	Section 15.03(K)
<b>OTHER USES</b>						
Surface extraction of sand, gravel, or other earth materials	C		C			Section 13.06
(Amended 7/5/2019)						



**15.03 USE SPECIFIC STANDARDS.**

**A. General Requirements for Accessory Buildings.**

1. Shall not be constructed or used in violation of any use permitted in said District.
2. Shall not be constructed on vacant lots, and shall only be located on lots with a principal building.
3. Agricultural uses and buildings not exempt from these regulations, shall comply with the requirements set forth in Section 6.01(B)(2) of this Resolution.
4. Accessory buildings shall not be used as living quarters.
5. Any yard structure that is enclosed on at least three (3) sides and has a roof shall be regulated as an accessory building.
6. The maximum square footage for each accessory building and number of accessory buildings shall not exceed those set forth in Table 15.03-1 below unless otherwise specified.
7. In the R-3 District, each single family cluster dwelling is permitted one (1) accessory building not to exceed the square footage in Table 15.03-1. Any accessory building shall be located behind the dwelling in the rear yard.
8. The square footage of any accessory building on a lot shall not exceed the square footage of the principal building on the lot.
9. When calculating the square footage, the gross floor area shall be used.

<b>Table 15.03-1</b>		
	<b>Maximum SF</b>	<b>Number Permitted</b>
R-1, R-4, R-6, and R-8 districts – on lots less than 2 acres	1,024 SF	1
R-1, R-4, R-6, and R-8 districts – on lots 2 acres or greater	1,532 SF	No limit
R-3 District	200 SF	1

**B. Carport.**

1. Carports attached to the principal dwelling shall comply with the setback requirements for said principal dwelling.
2. Detached carports shall comply with setback requirements for accessory structures.
3. Carports are not included in the area and number calculations for permitted accessory buildings.

C. Decks.

Freestanding decks shall be permitted in compliance with the minimum front, side and rear yard clearance requirements for accessory buildings. Decks that are attached to the principal building are considered building additions and shall comply with the minimum front, side and rear yard clearance requirements for said building.

D. Family Day Care Home, Type "B".

A type "B" family day care home, whether certified or not certified by the Lake County Department of Job and Family Services, shall be considered to be a residential use of property for purposes this Resolution. In accordance with ORC 5104.054, a type "B" family day care home is a permanent residence of the provider where childcare is provided for one to six children and where no more than three children are under two years of age. For the purposes of this definition, any children under six years of age who are related to the provider and who are on the premises of the day care home shall be counted. A type "B" family day-care home does not require a zoning permit.

E. Fences and Walls.

Fences and walls may be erected in compliance with the requirements set forth in Section XXXIV of this Resolution.

F. Gazebos or Pavilions.

1. Gazebos shall not be larger than 14 feet in diameter.
2. Pavilions shall not exceed 400 sq. ft.
3. Gazebos and pavilions shall not be included in the area and number calculations for accessory buildings.
4. Gazebos and pavilions shall not contain any enclosed areas.

G. Home Occupations.

1. Home occupations shall not involve any outward evidence of such use or change in outside appearance of the dwelling or principal building other than a sign as authorized in this Resolution.
2. Home occupations shall be conducted entirely within the dwelling unit or principal building, and shall not be permitted within an accessory building.
3. Home occupations shall not occupy more than twenty-five percent (25%) of the gross floor area of the principal building in which such use is located, including but not limited to, home office or occupation.
4. Home occupations shall not offer for sale any article except as may be produced or grown on the premises by members of the immediate family.

5. Home occupations shall not employ more than one (1) person who is not a member of the immediate family in any office, studio or other home occupation.
6. Home occupations shall be carried on in such a manner so as not to create a need for off-street parking in excess of what is customarily provided for the residential use.

H. Other Accessory Structures Not Requiring a Zoning Permit.

The following uses do not require a Zoning Permit and shall be permitted to encroach within required yards, unless specifically provided for in this section.

1. Gardens, wood piles or landscape materials
2. Uncovered patios, driveways and other paved areas, except that driveways shall not be located less than three (3) feet from any from any side property line.
3. Pergolas, trellises and arbors
4. Doghouses and children’s playhouses; however, a storage shed used as a children’s playhouse shall require a permit and conform to applicable regulations.
5. Mail boxes and newspaper tubes
6. Statuary, fountains or art objects
7. Basketball hoops provided they are installed outside of the right-of-way and any temporary road or cul-de-sac easements.
8. Swing sets, trampolines and similar recreational equipment
9. Flag poles
10. Freestanding air conditioning or heating units or backup generators
11. Bird baths
12. Fire pits, outdoor fireplaces and grills
13. Hot tubs

I. Off-Street Parking.

Off-street parking shall comply with Section XXIX of this Resolution. (Amended 3/9/2018)

J. Signs.

Signs shall be permitted in compliance with the applicable requirements for residential district signs as set forth in Section XXX this Resolution.

K. Swimming Pools.

1. A swimming pool shall conform to the applicable requirements as set forth in Section XXXI of this Resolution.



2. Pools shall have a side yard setback of 15 feet from each side lot line, 10 feet rear yard setback, and 50 feet front yard setback measured from the edge of the road right-of-way. If said pool is located in a district requiring greater setbacks for accessory structures, the greater setback shall apply.

L. Temporary Structures.

1. Temporary outdoor storage units, as defined in this Resolution, shall be subject to the following restrictions:
  - a. Not more than two (2) temporary outdoor storage units shall be permitted per address in a calendar year.
  - b. The maximum size of a temporary outdoor storage unit shall not exceed a dimension of 10'x10'x22'.
  - c. Only one (1) temporary outdoor storage unit shall be stored on a property at any given time, for a period up to 30 days. Extensions may be granted, but no unit shall receive more than two 30-day extensions (not to exceed a total of 90 days).
  - d. Temporary outdoor storage units are prohibited from being placed within the right-of-way, on the front lawn of a property, or in any temporary road or cul-de-sac easements. Units must be kept in the driveway, or on a paved surface, at the furthest accessible point from the street, or as otherwise approved by the Zoning Inspector.
  - e. A Temporary Outdoor Storage Unit Permit shall be obtained from the Zoning Office prior to locating the storage unit on the property. A plot plan or survey shall be provided at the time of application, depicting the proposed location of the unit. A \$100 deposit is also required per unit, which shall be forfeited if the unit is not removed within the specified time frame.
  - f. Any temporary outdoor storage unit found to be in violation of these requirements will be subject to the penalties set forth in this Resolution.
2. Temporary construction equipment, materials and dumpsters used in conjunction with construction work, maintenance or repair on site shall be permitted only during the actual progress of construction work on the property and shall immediately be removed upon completion of the work. No zoning permit shall be required.

**15.04 AREA, SETBACK, AND OTHER SITE DEVELOPMENT STANDARDS.**

A. Measurements, Computations, and Exceptions.

1. Lot Area Measurement
  - a. Lot area is the total area within the lot lines of a lot, exclusive of any portion of the right-of-way of any public road or street.

- b. No lot shall be reduced in area so that the lot area per dwelling unit, lot width, yards, building area, or other requirements of this resolution are met.
2. Setbacks and Yards
- a. Measurements
 

Setbacks refer to the open space at grade between a building and the adjoining lot lines, unoccupied and unobstructed by any portion of a structure from the ground upward except as elsewhere specified in this Resolution.
  - b. Yards and Obstructions
 

Every part of a required yard shall be open to the sky and unobstructed except:

    - i. As otherwise provided in this section;
    - ii. For accessory buildings and structures as set forth in Section 15.03(H);
    - iii. The ordinary projections of chimneys, flues or bay windows;
    - iv. Steps and any uncovered porches less than ten (10) feet in width;
    - v. Appurtenances, such as skylights, sills, belt courses, cornices, and ornamental features attached to the principal building may project not more than 24 inches into a required yard.
    - vi. Wing walls attached to and made part of the principal building shall conform to the minimum setback requirements for said building.
  - c. Front Building Setback Line
 

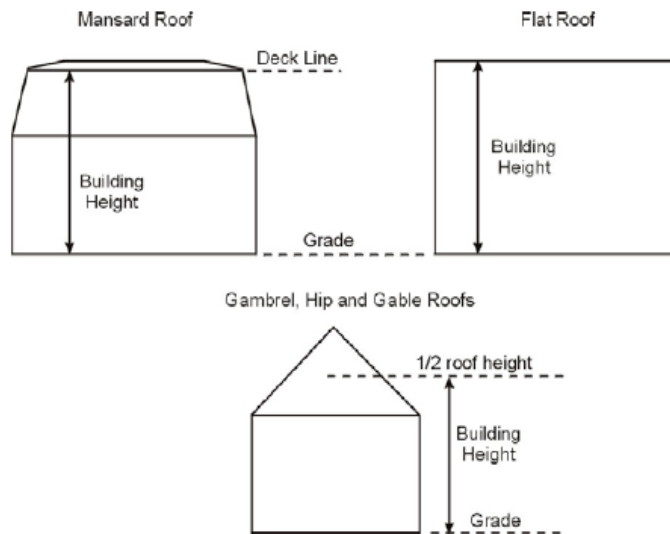
The required minimum front building setback line shall be measured from the front lot line. In cases where the front property boundary extends into a right-of-way easement, the front building setback shall be measured from the edge of the right-of-way to the building.
  - d. Corner lots
 

On corner lots, the required minimum front building setback shall be provided from each road or street.
  - e. Double frontage lots
 

Where a lot is considered a double frontage lot, the required minimum front building setback shall be provided from each road or street.
3. Lot Width and Frontage Measurements
- a. Frontage is the side of the lot abutting upon a dedicated road right-of-way and ordinarily regarded as the front of a lot, but not considered the ordinary side line of a corner lot.
  - b. Frontage is measured at the right-of-way sideline of a dedicated road and shall not be reduced in size from the right-of-way sideline of the dedicated road to the building setback line.
  - c. Lot width is the horizontal distance between side lot lines measured at the two points where the building line intersects the side lot lines.

4. Height Measurement and Exceptions

- a. Where specified in stories, building height shall be measured in number of stories above the finished grade for any elevation fronting on a street including attics, half-stories, mezzanines, at-grade structured parking, but excluding features that are greater than one-half story or completely below grade, such as basements, cellars, crawl spaces, sub-basements, and underground parking structures.
- b. Where specified in feet, building height shall be measured as the vertical distance from the established grade at the base of the structure to to:
  - i. The highest point of a flat roof;
  - ii. The deck line of a mansard roof; or
  - iii. The mean height between the eaves and ridge on gable, hip, or gambrel roofs.



c. Exceptions to Height Limits

Permitted height exceptions include church spires, belfries, clock towers, wireless towers, scenery lofts, chimneys, radio and television aerials, cupolas or other mechanical appurtenances where erected upon and as an integral part of the building, but not intended for human occupancy.

5. Building Separation

- a. When one or more building is located on a lot, the separation between buildings shall not be less than the minimum distance set forth in Table 15.04A.
- b. Measurements involving a building or structure are made to the closest support element of the structure.



- c. When buildings with a different number of stories abut each other, the spacing requirement for the higher story building shall prevail.

B. Site Development Standards for Residential Zoning Districts.

- 1. Table 15.04-1 establishes the minimum site development standards.
- 2. No building or structure nor the enlargement of any building or structure shall be hereafter erected or maintained or any parcel of land divided unless the following yard and lot areas are provided and maintained in connection with such building or structure, unless otherwise noted.

<b>Table 15.04-1: Site Development Standards</b>					
	<b>R-1</b>	<b>R-3</b>	<b>R-4</b>	<b>R-6</b>	<b>R-8</b>
<b>Minimum Lot Area</b>					
Dwelling, Detached Single Family – no public sanitary sewer	0.75 acre		1 acre	2 acres	1 acre
Dwelling, Detached Single Family – with public sanitary sewer	22,000 SF		1 acre	2 acres	1 acre
Dwelling, Two-Family	1 acre		2 acres		
Minimum project area		10 acres			75 acres
<b>Minimum Lot Width</b>					
Minimum Lot Width	100 feet <sup>a</sup>	200 feet	100 feet <sup>a</sup>	150 feet	125 feet
<b>Minimum Lot Frontage</b>					
Minimum Lot Frontage	50 feet <sup>a</sup>	200 feet	50 feet <sup>a</sup>	50 feet <sup>a</sup>	50 feet
<b>Minimum Front Building Setback</b>					
Minimum Front Building Setback	50 feet	50 feet	50 feet	50 feet	50 feet
<b>Minimum Side Yard</b>					
Principal building - dwelling	15 feet	30 feet	15 feet	30 feet	10 feet
All other permitted principal uses	15 feet	30 feet	15 feet	30 feet	100 feet
Accessory structure	10 feet	10 feet	10 feet	30 feet	15 feet
<b>Minimum Rear Yard</b>					
Principal building - dwelling	40 feet	30 feet	40 feet	40 feet	30 feet
All other permitted principal uses	40 feet	30 feet	40 feet	40 feet	100 feet

<b>Table 15.04-1: Site Development Standards</b>					
	<b>R-1</b>	<b>R-3</b>	<b>R-4</b>	<b>R-6</b>	<b>R-8</b>
Accessory structure	10 feet	10 feet	10 feet	30 feet	10 feet
<b>Minimum Riparian Setback</b>					
See Section XVII of this Resolution for Regulations (7/15/2016)					
<b>Building Separation</b>					
Between one-story dwellings		10 feet			
Between one and one-half story dwellings		12 feet			
Between two story dwellings		15 feet			
Between multi-family dwellings		50 feet <sup>b</sup>			
<b>Height Specifications</b>					
Maximum Height: Principal Building	35 feet	35 feet	35 feet	35 feet	35 feet
Maximum Height: Accessory Building or Structure	20 feet	18 feet	20 feet	35 feet	20 feet
<sup>a</sup> Where three (3) or more duplexes share contiguous common frontage, every third duplex shall be located upon a lot having a width of at least one hundred fifty (150) feet at the building setback line and having frontage of at least eighty-five (85) feet on the right-of-way sideline of a dedicated road. <sup>b</sup> Minimum distance between multi-family buildings is fifty (50) feet or two (2) times the height of the building, whichever is greater. (Amended 7/5/2019)					

C. R-3 Residential Development Standards.

1. Project Area

The minimum project area for a development in the R-3 shall be no less than set forth in Table 15.04-1. The entire tract of land to be developed shall be contiguous and shall be considered one lot.

2. Density (Amended 7/5/2019)

- a. Density shall not exceed eight (8) dwelling units per acre for multi-family dwellings.
- b. Each building used for multi-family dwellings shall consist of between three (3) and eight (8) units.
- c. Density shall not exceed six (6) dwelling units per acre for single family cluster dwellings.
- d. The maximum number of units permitted shall be calculated by:

- i. Deducting the following from the total project area: Any existing public right-of way within the project boundary; and any buffer strip areas required, as set forth in this chapter. (7/15/2016, Amended 7/5/2019)
    - ii. Multiplying the remaining area by the maximum density permitted in this Section.
  - e. Buffer strip
    - i. A minimum buffer strip of fifty (50) feet shall be provided along property lines when a project abuts an R-1 or R-4 District.
    - ii. The buffer strip shall be planted with grass and landscaped with the purpose of providing a year-round vertical green combination of shrubs and trees.
    - iii. Private roads shall not be located in any buffer strip.
    - iv. Accessory uses and structures shall not be located in the buffer strip.
    - v. If a buffer strip is required, the minimum required side and rear yard setbacks shall be measured from the edge of said buffer strip.
  - f. Private Streets
    - i. No private street shall be located closer than 20 feet to any boundary, property line or public right-of-way.
    - ii. All private streets shall be clearly identified by name and said name shall be displayed on an identification sign which shall be in conformance with the street identification signs for public streets and roads in the Township. Street signs shall also indicate the street is "Private". (Amended 7/5/2019)
    - iii. Naming of streets shall be consistent with the Lake County Subdivision Regulations as to duplication of names and names sounding the same.
    - iv. Detached single family cluster dwellings shall be setback a minimum of thirty-six (36) feet from the curb of any private street. (3/9/2018)
- 3. Sewage Disposal
 

A project in the R-3 shall be constructed only on a parcel of land serviced by public sanitary sewers and public water.
- 4. Approval Process
  - a. Prior to the construction, alteration, expansion or modification of a use in the R-3 District, a site plan shall be reviewed and approved according to the procedures set forth in Section XXXVI of this Resolution.
  - b. Upon approval of the final site plan, individual zoning permits shall be applied for in compliance with the approved plan.



D. R-8 Rural Residential and Recreational District Development Standards.

1. The minimum project area shall be no less than set forth in Table 15.04-1. All land shall be contiguous and shall not be divided by a public roadway prior to its development.
2. Density shall not exceed one (1) single family dwelling unit per three (3) acres of land.
3. Recreational Uses
  - a. Other principal uses permitted in conjunction with single family dwellings include: golf courses/country club, parks and recreation, tennis clubs, equestrian facilities, health spa/club, garden or botanical center, or ski club.
  - b. Accessory uses to the principal uses listed above may include: restaurants, lounges and snack bars; fitness centers and locker rooms; storage and maintenance buildings; equipment and maintenance buildings; driving ranges; tennis courts; greenhouses; and signs as permitted in Section XXX of this Resolution.
4. Open Space Requirements
  - a. A minimum of fifty percent (50%) of the acreage shall be preserved as open space. Such open space shall be well distributed throughout the development, and shall remain permanent open space.
  - b. In computing the amount of open space, dedicated road right(s)-of-way, impervious surfaces of all types including roof areas, and the individual lots for dwellings shall be excluded.
  - c. The developer shall submit to the Board of Trustees of Concord Township a perpetual maintenance plan for all common open space. Said plan shall set forth the responsibility for all maintenance of said area and describe the method of financing said maintenance program. The perpetual maintenance plan shall be reviewed and approved by the Board of Trustees of Concord Township prior to any approval.
5. Buffer
  - a. Any development along a county or state maintained road shall provide a permanent, undisturbed buffer strip of fifty (50) feet, as measured back from the road right-of-way sideline, the length of the frontage along said road.
  - b. Such buffer shall remain green and serve the purpose of providing a natural, vertical screen. If a natural vegetation screen is not present, one will be provided for through the planting of evergreen shrubs and trees.
  - c. To allow for the construction of internal public roadways, the buffer may be interrupted by a public road right-of-way at a rate not to exceed once for each

one thousand and four hundred (1,400) lineal feet of buffer along such county or state maintained road.

- d. There shall be no private drives allowed in the buffer area except for one (1) entrance and exit drive for a recreational facility.

**15.05 MINIMUM DWELLING UNIT FLOOR AREA.**

Each dwelling unit shall comply with the minimum dwelling unit floor area and enclosed parking spaces requirements, as set forth in Table 15.05-1. In addition, off-street parking shall comply with the regulations in Section XXIX of this Resolution. (Amended 3/9/2018)

<b>Table 15.05-1</b>		
<b>Dwelling Type</b>	<b>Minimum Floor Area per Dwelling Unit</b>	<b>Minimum Enclosed Parking Spaces per Dwelling Unit</b>
<b>Dwelling, Detached Single Family</b>		
1 story	1,200 SF	2
1 ½ story	1,400 SF	
2 story	1,600 SF	
<b>Dwelling, Single family cluster</b>		
1 story	1,200 SF	2 <sup>b</sup>
1 ½ story	1,400 SF	
2 story	1,600 SF	
<b>Dwelling, Two-Family</b>		
1 story (1 bedroom)	800 SF <sup>a</sup>	2
1 ½ story	1,150 SF	
2 story	1,300 SF	
<b>Dwelling, Multi-family</b>		
1 story (1 bedroom)	750 SF <sup>a</sup>	2 <sup>b</sup>
1 ½ story	1,000 SF	
2 story	1,200 SF	
<sup>a</sup> Each additional bedroom requires an additional 200 square feet minimum. <sup>b</sup> Enclosed parking spaces shall be attached to dwelling unit. (Amended 7/5/2019)		

**15.06 AREAS ZONED R-1, R-3, R-4, R-6, and R-8.**

Areas zoned R-1, R-3, R-4, R-6 and R-8 are on file in the Zoning Office at Concord Town Hall.

## SECTION XVII – RIPARIAN SETBACKS

(All Sections 7/15/2016)

17.01 Purpose and Intent.	17.05 Applications and Site Plans.
17.02 Definitions.	17.06 Uses Permitted.
17.03 Applicability.	17.07 Uses Prohibited.
17.04 Establishment of Designated Watercourses.	17.08 Variances within Riparian Setbacks.
	17.09 Inspection of Riparian Setbacks.

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### 17.01 PURPOSE AND INTENT.

- A. It is hereby determined that the system of headwaters, rivers, streams, and other natural watercourses within Concord Township contributes to the health, safety, and general welfare of the residents of Concord. The specific purpose and intent of these regulations is to regulate uses and developments within riparian setbacks that would impair the ability of riparian and wetland areas to:
1. Benefit the community by minimizing encroachment on designated watercourses thereby minimizing the need for costly engineering solutions or other invasive measures that may be necessary to protect persons, buildings, structures, and uses as well as to reduce the damage to real property and threats to overall public health and safety within the affected watershed.
  2. Reduce flood impacts by absorbing peak flows, slowing the velocity of flood waters, and regulating base flow.
  3. Assist in stabilizing the banks of designated watercourses to reduce woody debris from fallen or damaged trees, stream bank erosion, and the downstream transport of sediments eroded from watercourse banks.
  4. Reduce pollutants in designated watercourses during periods of high flows by filtering, settling, and transforming pollutants already present in watercourses.
  5. Reduce pollutants in designated watercourses by filtering, settling, and transforming pollutants in runoff before they enter watercourses.
  6. Preserve the scenic beauty of the environment in order to maintain the character of Concord Township, the quality of life of the residents, and the corresponding property values.
- B. The following regulations have been enacted to protect and enhance these functions of riparian areas by providing reasonable controls governing buildings, structures, uses and related soil disturbing activities within a riparian setback along designated watercourses in Concord Township.



## 17.02 DEFINITIONS.

For the purpose of these regulations, the following terms shall have the meanings as provided herein.

- A. CLASS III PRIMARY HEADWATER HABITAT STREAM: The highest quality primary headwater stream classification, as described in the most current version of the *Ohio EPA, Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams*.
- B. COMMUNITY: Concord Township, Lake County, Ohio.
- C. DAMAGED OR DISEASED TREES: Trees that have split trunks; broken tops; heart rot; insect or fungus problems that will lead to imminent death; undercut root systems that put the tree in imminent danger of falling; lean as a result of root failure that puts the tree in imminent danger of falling; or any other condition that puts the tree in imminent danger of being uprooted or falling into or along a watercourse or onto a structure.
- D. DESIGNATED WATERCOURSE: A watercourse within Concord Township that is in conformity with the criteria set forth in these regulations.
- E. FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA): The agency with overall responsibility for administering the National Flood Insurance Program.
- F. IMPERVIOUS COVER: Any paved, hardened, or structural surface regardless of its composition including but not limited to buildings, roads, driveways, parking lots, loading/unloading areas, decks, patios, and swimming pools.
- G. LAND DEVELOPMENT ACTIVITY: Any changes to the surface area of a lot including (but not limited to) clearing, grubbing, stripping, removal of vegetation, dredging, grading, excavating, cut and fill, construction of buildings or structures, paving, and any other installation of impervious cover.
- H. ONE HUNDRED YEAR FLOODPLAIN: Any land susceptible to being inundated by water from a base flood. The base flood is the flood that has a one percent or greater chance of being equaled or exceeded in any given year. The one hundred year floodplain shall be identified by the Federal Emergency Management Agency maps of the township.
- I. OHIO ENVIRONMENTAL PROTECTION AGENCY: Referred throughout these regulations as the "Ohio EPA."
- J. ORDINARY HIGH WATER MARK: The point of the bank to which the presence and action of surface water is so continuous as to leave a district marked by erosion, destruction or prevention of woody terrestrial vegetation, predominance of aquatic vegetation, or other easily recognized characteristic. The ordinary high water mark defines the bed and bank of a watercourse.
- K. RIPARIAN AREA: Naturally vegetated and adjacent to designated watercourses that, if appropriately sized, helps to stabilize streambanks, limit erosion, reduce flood size flows,

and/or filter and settle out runoff pollutants, or performs other functions consistent with the purposes of these regulations.

- L. RIPARIAN SETBACK: The real property adjacent to a designated watercourse located in the area defined by the criteria set forth in these regulations.
- M. SOIL AND WATER CONSERVATION DISTRICT: An entity organized under Chapter 1515 of the Ohio Revised Code referring to either the Soil and Water Conservation District Board or its designated employee(s), hereinafter referred to as Lake County SWCD.
- N. SOIL DISTURBING ACTIVITY: Clearing, grading, excavating, filling, or other alteration of the earth's surface where natural or human made ground cover is destroyed and which may result in, or contribute to, erosion and sediment pollution.
- O. WATERCOURSE: Any brook, channel, creek, river, or stream having banks, a defined bed and bank, and a definite direction of flow, either continuously or intermittently flowing.
- P. WETLAND: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas. (40 CFR 232, as amended).
- Q. WETLANDS, CATEGORY 1: A low quality wetlands classification as defined in Ohio Administrative Code (O.A.C.) Rule 3745-1-54(C) of the Ohio EPA.
- R. WETLANDS, CATEGORY 2: A medium quality wetlands classification as defined in Ohio Administrative Code (O.A.C.) Rule 3745-1-54(C) of the Ohio EPA.
- S. WETLANDS, CATEGORY 3: A high quality wetlands classification as defined in Ohio Administrative Code (O.A.C.) Rule 3745-1-54(C) of the Ohio EPA.

### **17.03 APPLICABILITY.**

- A. These regulations shall only apply when soil disturbing activities regulated by this resolution are those proposed in, or within 50 feet of, a riparian setback as set forth in these regulations.
- B. These regulations shall apply to all zoning districts within Concord Township.
- C. These regulations shall apply to all buildings, structures, uses, and related soil disturbing activities on lands containing a designated watercourse as defined in this regulation, except as otherwise provided herein.
- D. No zoning permit or conditional zoning permit shall be issued by Concord Township without full compliance with the terms of these regulations.

- E. The use of any building, structure, use or lot lawfully existing prior to the effective date of these regulations may be continued, subject to the provisions of Section VII, Nonconforming Uses.
- F. The repair, maintenance, extension, replacement, restoration, reconstruction or substitution of a building, structure or use lawfully existing prior to the effective date of these regulations may be continued or completed, subject to the provisions of Section VII, Nonconforming Uses.

#### **17.04 ESTABLISHMENT OF DESIGNATED WATERCOURSES AND RIPARIAN SETBACKS.**

- A. Designated watercourses shall include those watercourses meeting any one (1) of the following criteria:
  - 1. All watercourses draining an area equal to or greater than one (1.0) square mile, OR
  - 2. All watercourses draining an area less than one (1.0) square mile and having a defined bed and bank. In determining if a watercourse is a designated watercourse, Concord Township may consult with a representative of the Lake County SWCD or other technical experts as necessary.
- B. Riparian setbacks on designated watercourses shall be established as follows:
  - 1. A minimum of one hundred twenty (120) feet on each side of all designated watercourses draining an area equal to and greater than twenty (20) square miles.
  - 2. A minimum of seventy-five (75) feet on each side of all designated watercourses draining an area equal to or greater than one (1.0) square mile and up to twenty (20) square miles.
  - 3. A minimum of fifty (50) feet on each side of all watercourses determined to be a Class III Primary Headwater Habitat Stream.
  - 4. A minimum of twenty-five (25) feet on each side of all watercourses draining an area less than one (1.0) square mile and having a defined bed and bank as determined by Concord Township in Section 17.03 of this regulation.
- C. Riparian Setback Guide Map. Concord Township shall create a guide map identifying designated watercourses and their riparian setbacks. Said guide map is made part of this regulation and the most current copy shall be maintained for public inspection in the Zoning Department. The following shall apply to the Riparian Setback Guide Map:
  - 1. It shall be used as a reference document and the information contained therein shall be believed to be accurate.
  - 2. It shall be a guide only.
  - 3. Nothing herein shall prevent Concord Township from amending the Riparian Setback Guide Map from time to time as may be necessary.



4. If any discrepancy is found between the Riparian Setback Guide Map and this regulation, the criteria set forth in Section 17.04 (A) and (B) shall prevail.
- D. The following regulations shall apply in riparian setbacks:
1. Riparian setbacks shall be measured in a horizontal direction outward from the ordinary high water mark of each designated watercourse.
  2. Except as otherwise provided in this regulation, riparian setbacks shall be preserved in their natural state.
  3. Where the 100-year floodplain is wider than a minimum riparian setback on either or both sides of a designated watercourse, the minimum riparian setback shall be extended to the outer edge of the 100-year floodplain as delineated on the flood hazard boundary map(s) by FEMA.
  4. Where a wetland is identified within a minimum riparian setback, the minimum riparian setback width shall be extended to the outermost boundary of the wetland, plus the following additional setbacks based upon the particular wetland category:
    - a. An additional minimum setback of fifty (50) feet extending beyond the outermost boundary of a category 3 wetlands.
    - b. An additional minimum setback of thirty (30) feet extending beyond the outermost boundary of a category 2 wetlands.
    - c. No additional setback shall be required beyond the outermost boundary of a category 1 wetlands.
  5. Upon receipt of any applications for a Zoning Permit, the Township may consult with any governmental agency or other professionals to determine if wetlands exist within a riparian setback. Any costs associated with the Township's review may be assessed to the applicant.
  6. If wetlands are identified with the riparian setback as a result of the Zoning Inspector's review, conducted pursuant to 17.04(D)(5), the applicant may, at their own expense, present a professionally prepared site plan that includes a wetlands delineation for consideration by the Township. Said delineation shall use delineation protocols accepted by the U.S. Army Corps of Engineers at the time an application is made under this regulation.

#### **17.05 APPLICATIONS AND SITE PLANS.**

- A. When making an application for a zoning permit or a conditional use permit for a building, structure, or use regulated by this resolution and proposing soil disturbing activities regulated herein, or within ten (10) feet of, a riparian setback, the applicant shall be responsible for identifying riparian setbacks as required by these regulations and shall

indicate such setbacks on all site plans submitted to the zoning inspector.

- B. The zoning inspector may, in reviewing the site plan, consult with the Lake County SWCD or other such experts.
- C. If land development or soil disturbing activities will occur within ten (10) feet of the outer boundary of the applicable riparian setback as specified in this regulation, the riparian setback shall be required to be clearly identified by the applicant on site with construction fencing as shown on the site plan. Such identification shall be completed prior to the initiation of any soil disturbing activities and shall be maintained on the lot until the completion of such development or soil disturbing activities.

#### **17.06 USES PERMITTED IN RIPARIAN SETBACKS.**

- A. **Permitted Building, Structures and Uses Within a Riparian Setback Without a Zoning Permit.** The following buildings, structures, uses and related soil disturbing activities may be permitted within a riparian setback without a zoning permit.
  - 1. Recreational Activity. Hiking, fishing, hunting, picnicking, picnic tables, trails, walkways, and paths for non-motorized vehicles constructed of pervious materials.
  - 2. Removal of Damaged or Diseased Trees. Damaged or diseased trees and other associated debris may be removed in accordance with any and all other Federal, State, or local laws or regulations.
  - 3. Revegetation and/or Reforestation. Riparian setbacks may be revegetated and/or reforested with native, noninvasive plant species in accordance with any and all other Federal, State, or local laws or regulations.
  - 4. Maintenance and Repairs. Maintenance and repair on lawfully existing buildings, structures, and uses; roads; driveways; bridges; culverts; trails; walkways; paths; wastewater treatment plants and appurtenances; water wells; water treatment plants and appurtenances; storm sewers; and on-site sewage systems.
  - 5. Maintenance and Cultivation of Lawns and Landscaping. The maintenance of existing, and cultivation of new, lawns, landscaping, shrubbery, and trees.
  - 6. Open Space. Passive open space to preserve the riparian setback area in its natural state.
- B. **Permitted Building, Structures and Uses Within a Riparian Setback With a Zoning Permit.** The following buildings, structures, uses and related soil disturbing activities may be permitted within a riparian setback, subject to the approval of an application for a

zoning permit by the zoning inspector and in accordance with the following regulations and such other applicable regulations contained in this zoning resolution.

1. Signs.
2. Fences and walls.
3. Crossings. Crossings of designated watercourses through riparian setbacks with roads, driveways, easements, bridges, culverts, utility service lines, or other means may be permitted provided such crossings minimize disturbance in riparian setbacks and mitigate any necessary disturbances. Such crossings shall only be undertaken upon approval and consultation with the Lake County SWCD. Any costs associated with the review of the Crossing plan may be assessed to the Applicant.

If work will occur below the ordinary high water mark of the designated watercourse, proof of compliance with the applicable conditions of a US Army Corps of Engineers Section 404 Permit (either a Nationwide Permit, including the Ohio State Certification Special Conditions and Limitations, or an Individual Permit, including Ohio 401 water quality certification), shall also be provided to the zoning inspector. Proof of compliance shall be the following:

- a. A site plan showing that any proposed crossing conforms to the general and special conditions of the applicable Nationwide Permit, or
  - b. A copy of the authorization letter from the U.S. Army Corps of Engineers approving activities under the applicable Nationwide Permit, or
  - c. A copy of the authorization letter from the U.S. Army Corps of Engineers approving activities under an Individual Permit.
4. Streambank Stabilization Projects. Streambank stabilization projects along designated watercourses may be allowed, subject to other regulations contained in this resolution and the regulations enforced by the Lake SWCD. If streambank stabilization work is proposed below the ordinary high water mark of the designated watercourse, proof of compliance with the applicable conditions of a US Army Corps of Engineers Section 404 Permit (either a Nationwide Permit, including the Ohio State Certification Special Conditions and Limitations, or an Individual Permit, including Ohio 401 water quality certification) shall be provided to the zoning inspector. Proof of compliance shall be the following:
- a. A site plan showing that any proposed crossing conforms to the general and special conditions of the applicable Nationwide Permit, or
  - b. A copy of the authorization letter from the U.S. Army Corps of Engineers approving activities under the applicable Nationwide Permit, or,
  - c. A copy of the authorization letter from the U.S. Army Corps of Engineers approving activities under an Individual Permit.



### **17.07 USES PROHIBITED IN RIPARIAN SETBACKS.**

Any building, structure, use or related soil disturbing activity not authorized under these regulations shall be prohibited in riparian setbacks. By way of example, the following uses are specifically prohibited, however, prohibited uses are not limited to those examples listed here:

- A. Construction. There shall be no buildings or structures of any kind, except as otherwise permitted under this Resolution.
- B. Roads or Driveways. There shall be no roads or driveways, except as permitted under this Resolution.
- C. Parking Spaces or Lots and Loading/Unloading Spaces for Vehicles. There shall be no parking spaces, parking lots, or loading/unloading spaces for vehicles of any kind.
- D. New Surface and/or Subsurface Sewage Disposal or Treatment Areas. Riparian setbacks shall not be used for the disposal or treatment of sewage, except as necessary to repair or replace an existing home sewage disposal system and in accordance with recommendations of the Lake County General Health District.
- E. Dredging or Dumping. There shall be no drilling, filling, dredging, or dumping of soils, spoils, trash, debris, liquid or solid materials, except for noncommercial composting or uncontaminated natural materials and except as permitted under this Resolution.

### **17.08 VARIANCES WITHIN RIPARIAN SETBACKS.**

- A. The Board of Zoning Appeals may grant a variance to these regulations as provided herein. In granting a variance, the following conditions shall apply:
  - 1. In determining whether there is unnecessary hardship with respect to the use of a property or practical difficulty with respect to maintaining the riparian setback as established in this regulation, such as to justify the granting of a variance, the BZA shall consider the potential harm or reduction in riparian functions that may be caused by a proposed structure or use.
  - 2. Variances shall be void if not implemented within one (1) year of the date of issuance.
- B. In making a determination under Section 17.08 (A) of this regulation, the BZA may consider the following:
  - 1. The natural vegetation of the property as well as the percentage of the parcel that is in the 100-year floodplain.

2. The extent to which the requested variance impairs the flood control, erosion control, water quality protection, or other functions of the riparian setback. This determination shall be based on sufficient technical and scientific data.
  3. The degree of hardship, with respect to the use of a property or the degree of practical difficulty with respect to maintaining the riparian setback as established in this regulation, placed on the landowner by this regulation and the availability of alternatives to the proposed structure or use.
  4. Soil-disturbing activities permitted in the riparian setback through variances should be implemented to minimize clearing to the extent possible and to include Best Management Practices necessary to minimize erosion and control sediment.
  5. The presence of significant impervious cover in the riparian setback compromises its benefits to Concord Township.
  6. Variances should not be granted for asphalt or concrete paving in the riparian setback, but may be granted for gravel driveways when necessary.
  7. Whether a property, otherwise buildable under the regulations of Concord Township will be made unbuildable because of this regulation.
- C. In order to maintain the riparian setback to the maximum extent practicable, the Board of Zoning Appeals may consider granting variances to other area or setback requirements imposed on a property by this Resolution provided the Applicant makes the necessary application. These may include, but are not limited to, parking requirements, requirements for the shape, size, or design of buildings, or front building setbacks, rear yard clearances, or side yard clearances.
- D. In granting a variance under these regulations, the Board of Zoning Appeals, for good cause, may impose such conditions that it deems appropriate to maintain the purposes of these regulations and to mitigate any necessary impacts in the riparian setbacks permitted by variance. In determining appropriate mitigation, the BZA may consult with the Lake County Engineer or other agencies including Lake County SWCD.

#### **17.09 INSPECTION OF RIPARIAN SETBACKS.**

The identification of riparian setbacks shall be inspected by the zoning inspector.

- A. The owner shall notify the zoning inspector at least five (5) working days prior to the initiation of any construction, land development or soil disturbing activities on a lot.
- B. The zoning inspector and/or its agents, with prior notice and the authorization of the owner, may enter the affected property from time to time with any necessary representatives or affiliates to conduct on-site inspections to ensure compliance with these regulations.

# Leroy Township Zoning Regulations

## SECTION 16

### RURAL RESIDENTIAL R-2

Effective 9/27/07, (Revised effective 9/03/09), (Revised effective 5/12/10), (Revised 3/21/2017)  
(Revised effective 6/9/19), (Revised 4/29/20), (Revised 12/10/2021)

**16.01 PURPOSE:** In accordance with the Comprehensive Plan, the Rural Residential zone is intended to provide for agricultural, residential and undeveloped open space land uses while considering the unique physical and environmental characteristics of the area. Efforts to preserve and enhance riparian corridors, wetlands, mature wood lots, agricultural activities and scenic corridors during future growth are encouraged.

**16.02 PERMITTED USES:** The following uses and no other shall be deemed Rural Residential, R-2, uses and permitted in all R-2 districts:

1. Single-family dwelling for residential purpose and buildings accessory thereto, but excluding the use of tents, cabins cottages and trailer coaches (recreational vehicle) for residential purposes except as hereinafter permitted.
2. Community center, fire station, township hall, township or church cemetery and public parks.

**16.03 CONDITIONALLY PERMITTED USES:** The following uses shall be permitted upon issuance of a Conditional Use Permit in accordance with Section 14 of this resolution.

1. School, university, public library, public museum, public and private golf courses, and private parks.
2. Church, hospital, and nursing home, provided that such church, hospital, and nursing home shall have a lot area of not less than five (5) acres and a frontage not less than five hundred (500) feet.
3. Residential care facilities for the developmentally disabled, residential care facilities, nursing homes, and home for the aging in accordance with ORC 3721.01 (A).
4. Child day care facilities.
5. Assisted living home.
6. Cable television and telecommunication tower with a Conditional Use Permit as specified in Section 14 and 24 of this resolution.
7. Bed and breakfast residences.
8. Mining or surface extraction of gravel or other earth material in accordance with ORC 519.141.



# Leroy Township Zoning Regulations

## SECTION 16

### RURAL RESIDENTIAL R-2

**16.04 ACCESSORY USES:** (Revised effective 3/21/2017) The following accessory uses, clearly incidental and secondary to the primary use of the land in an R-2 district shall be limited to the:

**16.04.01 STANDARDS FOR A HOME OCCUPATION ZONING PERMIT:** The purpose of the Home Occupation resolution is to protect the character of the surrounding residential neighborhood while recognizing that traditional workplaces are no longer necessary in all situations due to changing technology, computerization, networking, and the changing job market. The following regulations are intended to recognize this trend and allow Home Occupations that are located and conducted in such a manner that the existence of the Home Occupation is not detectable outside of the dwelling unit, accessory building, or screened area. The Home Occupation use shall be clearly subordinate and incidental to the residential use of the property.

#### **A. Classes of Home Occupation:**

**1. Home Occupations Type I** - Home occupations that have little or no impact on the surrounding residential area as follows:

- a. Personal home business and professional offices; a service-oriented business use.
- b. Home craft businesses, including (but not limited to) artists, sculptors, dressmakers.
- c. Instructional services including music, art, dance, voice, and tutoring.
- d. Day care for six (6) or fewer individuals, whether for adults or children. Day care for children shall comply with the requirements for "Family Day Care Home, Type B" as defined in the Ohio Revised Code §5104.054.

**2. Home Occupations Type II** - Home occupations that have or might have a noticeable impact on the surrounding residential area. Examples include:

- a. Day care for seven (7) or more individuals, whether adults or children.
- b. Professional services including (but not limited to) medical, dental or physical therapy facilities, barbers, beauticians, and photographers.
- c. Motor vehicle repair.
- d. Repair or testing of small internal combustion or turbine engines.
- e. Contractor or service business, provided that all requirements of this section are met.

# Leroy Township Zoning Regulations

## SECTION 16

### RURAL RESIDENTIAL R-2

#### 16.04.01 STANDARDS FOR A HOME OCCUPATION ZONING PERMIT - **continued.**

##### **B. Standards for Home Occupation Type I**

1. Clients or customers will not be present on the site on a regularly scheduled basis and shall not exceed ten (10) per week on average except that instructional services are limited to a maximum of five (5) students at any one time in one day.
2. The type I home occupation conducted in a residential dwelling shall not exceed 25% in total of the dwelling square feet in size.
3. Signage, a maximum of 3.75 square feet in size with a maximum dimension of 30" including framing, non-illuminated, identifying the home occupation and located no closer to the right of way than 5.0', is permitted in a residential district.
4. Retail sales on the premises shall be prohibited, except for products or goods produced or fabricated on the premises as part of the home occupation.
5. No home occupation type I shall have more than one (1) employee that is not a resident of the household.

##### **C. Standards for Home Occupation Type II**

1. If the home occupation type II is day care for children, 100 square feet of fenced outdoor play space is required per child. The play area must be at the side or rear of the house and a drop-off area for two (2) cars must be provided.
2. If the home occupation type II is conducted in an accessory building, area of the home occupation shall not exceed 1,200 square feet in size total.
3. An outdoor area, not exceeding 1,200 square feet is permitted, provided it is screened with an 80% opaque fence 6' in height, or vegetation of equal opacity maintained at a minimum of 6' in height.
  - a. Signage, a maximum of 3.75 square feet in size with a maximum dimension of 30" including framing, non-illuminated, identifying the home occupation and located no closer to the right of way than 5.0', is permitted in a residential district.

# Leroy Township Zoning Regulations

## SECTION 16

### RURAL RESIDENTIAL R-2

- b. Two (2) off-street parking spaces shall be provided, unless additional spaces are required by the Board of Zoning Appeals. Required parking shall not be provided in the front yard, except for the driveway (which may be used to fulfill this requirement).
- c. On-site customer/client contact is limited to one appointment at any time not to exceed eight (8) visits per day, except day care facilities, which may have more than eight (8), if approved by the Board of Zoning Appeals.
- d. No more than three trucks and/or vans over one ton may be stored on-site, if related to the home occupation and if stored in an enclosed structure or behind a screened area.
- e. Home occupations type II are permitted two (2) employees who are not residents of the household and may have additional employees who are not residents of the household, if approved by the Board of Zoning Appeals.

#### 16.04.02 DEFINITIONS: As used in this chapter;

- A. **Customary home occupation** means any trade, profession or business conducted only by members of the family occupying a residential dwelling (being a *permanent* structure or building used primarily for residential purposes), and only as an accessory to the principal residential use thereof. Customary home occupations shall comply in all respects with the regulations provided in Section 16.04.03. A customary home occupation shall not include and shall not be permitted on unimproved land in a Residential District or in any dwelling not currently occupied principally as a residence. The following activities are not permitted as customary home occupations:
  - 1. The repair and/or storage of vehicles for commercial purposes, including vehicles purchased primarily for resale.
  - 2. The repair and/or storage and operation of heavy machinery and/or heavy equipment for commercial purposes.
  - 3. External wood cutting, external wood splitting and/or wood processing, metal cutting, and metal fabricating for commercial purposes.
- B. **Living area** means that area of the dwelling that would normally contain active (as opposed to storage) furniture and appliances for the use of the residents, but shall not include basements, garages or porches.
- C. **Residential district** means a district in which residences are a permitted use.

# **Leroy Township Zoning Regulations**

## **SECTION 16**

### **RURAL RESIDENTIAL R-2**

#### **16.04.03 USE REGULATIONS:**

- A.** A person may carry on a customary home occupation only in the dwelling house used by him or her as his or her private residence, or accessory building located on the same parcel.
- B.** A customary home occupation may be permitted and carried on only if it complies with all of the following:
  - 1.** The customary home occupation shall comply with all local, State and Federal laws, the Township Zoning Resolution and/or regulations pertinent to the activity pursued.
  - 2.** The person conducting such customary home occupation must, before commencement, receive permission from the Zoning Inspector and must receive a permit for such purpose, which permit shall be issued by the Zoning Inspector.
  - 3.** Such use must not involve extension or modification of the dwelling, and the dwelling must be otherwise lawful and conform to all applicable safety, fire, housing and building codes.
  - 4.** Except for one non-illuminated sign of not more than 3.75 square feet, such use shall not include the posting of any other sign or involve any other display that will indicate from the exterior that the building or premises is being used for any purpose other than that of a residential dwelling.
  - 5.** Such use shall be incidental and subordinate to the use of the premises and dwelling for residential purposes.
  - 6.** Such use shall not include any activity resulting in or creating noise, vibration, smoke, pollution, electronic interference or other nuisance or safety hazard to any person or to any adjacent or nearby property.
  - 7.** Such use shall not involve the storage of any materials, other than those normally used in the maintenance and use of the property solely as a dwelling, which are hazardous to persons or to adjacent and nearby property.
  - 8.** Trucks or other mobile equipment used in conjunction with the customary home occupation shall not be parked in the open on the premises.



# Leroy Township Zoning Regulations

## SECTION 16

### RURAL RESIDENTIAL R-2

9. Vehicles used for deliveries to or from a home occupation shall comply with the weight limits established for through traffic on the street upon which the dwelling fronts.
10. Such use shall not result in an increase in frequency of, or the generation of, vehicular or pedestrian traffic abnormal to either the neighborhood or the Township.
11. No more than a total of two vehicles of patrons or customers shall be permitted on the premises which is the site of a customary home occupation at any one time. Vehicles used solely for the personal use of the proprietor or owner of the customary home occupation shall not be included within the limitation of this paragraph.
12. Such use shall not involve the use of utilities, sewers or other community facilities beyond that which would be reasonable for the use of the property solely for residential purposes.
13. Such use shall not involve the external storage of equipment, mobile or otherwise finished materials and/or finished inventory related thereto.
14. Only one automobile, truck or van used primarily for the customary home occupation shall be permitted on the premises, and then only if:
  - a. The gross vehicle weight of such vehicle (including cargo) is 10,000 pounds or less; and
  - b. Such vehicle is of a size capable of fitting into a normal residential garage with the door closed.
15. Only one customary home occupation will be permitted per residence.

#### **16.04.04 ZONING PERMIT REQUIRED; FEE; RENEWALS:**

- A. No customary home occupation shall be permitted to operate unless the person conducting it first obtains permission from the Zoning Inspector and obtains a zoning permit to operate from the Zoning Inspector as provided in Section 16.04.03 Subsection B.2.
- B. A fee, as established by the Township Board of Trustees, is hereby established for the original issuance of a zoning permit.
- C. A fee, as established by the Township Board of Trustees, is hereby established for each bi-annual renewal or a permit previously issued under the authority of this chapter.

# Leroy Township Zoning Regulations

## SECTION 16

### RURAL RESIDENTIAL R-2

**16.04.05 CONDITIONS FOR ISSUANCE OF INITIAL ZONING PERMIT:** The Zoning Inspector shall issue an initial zoning permit for a customary home occupation when the following conditions have been met:

- A. All conditions set forth in Sections 16.04.03 and 16.04.04 have been satisfactorily complied with and completed, and evidence of such compliance and completion is filed with the Zoning Inspector;
- and
- B. The applicant has tendered the fee for the original issuance of a permit as provided in Section 16.04.04 - Subsection B.

**16.04.06 ZONING PERMIT DURATION; RENEWALS; REAPPLICATION:**

- A. The zoning permit required under this chapter, and each renewal thereof, shall be valid from the date of issuance through the next following January 31, and may be renewed on a bi-annual basis on or before January 31 thereafter as provided in Subsection B hereof.
- B. The Zoning Inspector shall issue renewals of zoning permits hereunder when all of the following conditions have been met:
  - 1. All conditions of Sections 16.01.01, 16.01.02, 16.01.03, 16.01.04 and this section have been complied with and completed and evidence of such compliance and completion is filed with the Zoning Inspector.
  - 2. The permittee has tendered the fee for each renewal of a permit as provided in Section 16.04.04 – Subsection C.
  - 3. The permittee applying for the permit renewal has committed no violation of any provision of this chapter that remained unabated for more than a cumulative total of fifteen days after notice in the twelve-month period immediately preceding the application for renewal.

**16.04.07 RIGHT OF ENTRY OF ZONING INSPECTOR; INSPECTIONS; COMPLIANCE WITH PERMIT; FRAUD; REVOCATION OF PERMIT:**

- A. The Zoning Inspector and/or his or her representative, and a representative of the fire department are hereby authorized to enter upon and inspect the premises on which a home occupation is conducted at reasonable hours, from time to time, with a 24 hour notice, to determine whether the applicant or permittee is in compliance with the provisions of this chapter.

# Leroy Township Zoning Regulations

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### RURAL RESIDENTIAL R-2

- B. If the Zoning Inspector determines that the permittee is not complying with the conditions of the permit issued pursuant to this chapter, he or she shall order the permittee to correct the offending condition or use or otherwise to comply with such permit. Upon failure by the permittee to comply with the order of the Zoning Inspector within five working days from the date of the order, Sundays and legal holidays excluded, the permittee's permit shall be revoked by the Zoning Inspector. Such action by the Zoning Inspector shall be in addition to the penalty provided in Section 16.04.10

#### **16.04.08 DECISIONS OF ZONING INSPECTOR IS FINAL; EXISTING HOME OCCUPATIONS; VIOLATIONS; INJUNCTIVE RELIEF:**

- A. Decisions of the Zoning Inspector relating to violations of this chapter, including appeals from the denial of issuance of or the revocation of permits, shall be final within the Township.
- B. Any home occupation in existence without a permit upon the passage of this chapter shall be discontinued immediately or shall be disclosed immediately to the Zoning Inspector and comply with the provisions of this chapter within six months of the passage of this chapter.
- C. No person, firm or corporation shall violate, or assist in the violation of, any of the provisions of this chapter. In the event of any such violation or the imminent threat thereof, the Township, in addition to any remedies provided by law, may institute a suit for a preliminary and/or permanent injunction to prevent or terminate such violation.

**16.04.09 TRANSFERRING OF ZONING PERMITS:** No zoning permit or renewal thereof issued under the provisions of this chapter may be sold, conveyed, transferred or assigned to any part other than the permittee named therein. No permit or renewal thereof issued under the provisions of this chapter may be transferred to or used at a location other than the location for which it was issued.

**16.04.10 PENALTY:** Whoever carries on a customary home occupation in the dwelling house used by him or her as his or her private residence, or accessory building located on the same parcel, without first securing a home occupation permit as provided in this chapter, and is discovered by the Township, shall be fined one hundred fifty dollars (\$150.00) per day.

# Leroy Township Zoning Regulations

## SECTION 16

### RURAL RESIDENTIAL R-2

**16.04.11 SWIMMING POOLS:** as provided for in Section 19 of this Zoning Resolution.

**16.04.12 ROADSIDE STANDS:** Any person may maintain a roadside stand consisting of removable structures used solely for the display and sale of products in accordance with ORC 519.21 (C) provided such stands are at least twenty-five (25) feet back from the traveled portion of the road and provided that adequate facilities are maintained in conjunction therewith for off road parking of customer vehicles.

**16.04.13 STORAGE OF VEHICLES FOR PRIVATE TRANSPORTATION** (revised 6/9/19):

- A.** Storage of more than five (5) vehicles shall be in an approved accessory use building.
- B.** Storage of not more than two (2) licensed recreational vehicles, as defined in ORC 4501.01 (Q) of the Ohio Revised Code, shall be behind the building setback line.

**16.04.14 SMALL WIND FARMS** as defined by ORC 519.213 and Section 33 of the LeRoy Township Zoning Resolution.

#### **16.05 ACCESSORY BUILDINGS:**

- A.** Accessory buildings shall not be constructed on vacant lots.
- B.** Accessory buildings shall be limited to buildings that house accessory uses clearly incidental and secondary to the main use of the land and buildings and shall include, but not be limited to:
  - 1.** Private garages.
  - 2.** Storage barns and sheds.
  - 3.** Equipment storage where the actual work is not performed at the building site, but all materials and equipment are stored on the premises in an accessory building. A Conditional Use Permit shall be required, as specified in Section 14 of this Zoning Resolution, for such an accessory use to be permitted.
- C.** In no event shall an accessory building be used as living quarters or for any use in violation of this Zoning Resolution.
- D.** The total square footage of all accessory buildings on any lot smaller than three (3) acres shall not shall not exceed two thousand (2,000) square feet in any combination. The total



## **Leroy Township Zoning Regulations**

### **SECTION 16**

#### **RURAL RESIDENTIAL R-2**

square footage of all accessory buildings on any lot three (3) acres or larger shall not exceed two thousand and four hundred (2,400) square feet in any combination. A maximum of two (2) accessory buildings per lot of two (2) acres or less is permitted.

- E.** All accessory buildings shall be a minimum of twenty (20) feet from any main building or existing residence. Minimum side yard clearance shall be twenty (20) feet, except on corner lots where the side line clearance on the side of the lot abutting the side street shall be no less than fifty (50) feet from the road right-of way sideline of the road or eighty (80) feet from the traveled portion of the road, whichever is greater.
- F.** Attached garages or accessory buildings connected with the main building by a breezeway or other permanently constructed connection shall be construed to be part of the main building for the purpose of this Section. Provided, however that on lots lawfully with one hundred (100) feet frontage or less, the minimum side yard clearance on each side shall be fifteen (15) feet.
- G.** Accessory buildings less than or equal to one-hundred and sixty (160) square feet do not require a Zoning Permit but must comply with all zoning regulations and a signed affidavit stating knowledge of and compliance with all zoning regulations must be filed with the zoning department. (effective 4/29/20)

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**Section continues on next page with 16.06 table.**

**Leroy Township Zoning Regulations**  
**SECTION 16**  
**RURAL RESIDENTIAL R-2**

Table 16.1	R-1	R-2
Development Standards (revised 12/10/21)	Residential	Rural Residential
<b>Lot Requirements</b>		
<b>Minimum Lot Size (1)</b>	1.5 acre	3 acres
<b>Minimum Lot Frontage/lot width</b>	150'	200'
<b>Cul-de-sac bulb lot frontage (2)</b>	75'	75'
<b>Rear or flag lot (2)</b>	60'	60'
<b>Minimum front yard setback/depth (3)</b>	50'	100'
<b>Minimum side yard setback (each side) (4)</b>	20'	20'
<b>Minimum rear yard</b>	20'	20'
<b>Building Specifications</b>		
<b>Height (5)</b>	35'	35'
<b>Minimum Square footage (6)</b>		
<b>Single floor dwelling</b>	1,400 sq. ft.	1,400 sq. ft.
<b>Two floor dwelling</b>	1,600 sq. ft.	1,600 sq. ft.
<b>Minimum building setback from an existing gas well</b>		100 feet
<b>Notes</b>		
<p>(1) For flag or rear lots, the lot area computation shall include all property from the point the minimum lot width specified is met. Land located in the "flag pole" portion of the lot shall not be included in the computation.</p> <p>(2) Lot shall have minimum lot width at building setback as required</p> <p>(3) Front building setback line on a corner lot shall be in accordance with the provisions governing the road or street on which the building faces. Setback measured from the road right-of-way line.</p> <p>(4) On corner lots, side yard clearance shall be no less than fifty (50) feet from the right-of-way sideline of the road or eighty (80) feet from the center of the traveled portion of the road, whichever is greater.</p> <p>(5) Does not apply to the height of a church spire, belfry, clock tower, wireless tower, chimney, silo, barn, water tank, elevator bulk head, stage tower, scenery loft or other mechanical appurtenances when erected upon and as an integral part of such building.</p> <p>(6) Minimum square footage of dwelling unit does not include basement, porches, garages, breezeways, terraces or attics.</p>		

**Leroy Township Zoning Regulations**  
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**16.07 LOTS ESTABLISHED PRIOR TO ZONING** - See section 8.7

- A. On lots lawfully platted with one hundred (100) feet frontage or less (excluding flag lots) the minimum side yard clearance of the dwelling shall be fifteen (15) feet.
- B. On lots lawfully platted with development standards below the minimum set forth in Section 16.06, the minimum front yard setback may be reduced proportionately based on the depth of such parcel in relation to a lot of minimum size under the requirements of this resolution. In no such instance shall the front yard setback be less than fifty (50) feet.

**16.08 SITE CONSIDERATIONS:**

- A. Environmental variables include soil type, riparian corridors, and steep slopes shall be given due consideration during the planning, construction, reconstruction or modification of structures or land improvements.
- B. Conformance to Section 31, Natural Resource Protection.
- C. New ingress and egress points onto public rights-of-way are subject to review by the Ohio Department of Transportation (ODOT), Leroy Township or Lake County Engineer, where applicable.

**16.09 PERSONAL PROPERTY SALES:**

- A. The number of personal property sales allowed per residence per calendar year, which use shall not constitute a commercial use, is three (3).
- B. Each such personal property sale shall not last more than five (5) consecutive days.
- C. All personal property sale signs must be removed immediately after the sale and shall be subject to Section 23.01.11.

**16.10 SCREENING AND LANDSCAPING:** - See Section 26

**16.11 PARKING:** - See Section 2

# Leroy Township Zoning Regulations

## SECTION 17

### Commercial and Industrial District Regulations

(Effective 7/11/2012) (revised 4/1/22)

17.01 Purpose.	17.08 Design standards for the
17.02 Use regulations.	B-1, B-2, B-3, B-4 and I Districts.
17.03 Table of uses, requirements.	17.09 Accessory use requirements.
17.04 Lot, yard and building requirements.	17.10 Landscaping and screening
17.05 Table of recommended area requirements.	17.11 Supplemental requirements.
17.06 Performance standards.	17.12 Site development plan review.
17.07 Off-street parking regulations.	17.13 Natural Resource Protection

**17.01 PURPOSE:** The General Business (B-1), Special Interchange (B-2), Community Business (B-3), Neighborhood Business (B-4) and Industrial and Manufacturing (I) districts and their regulations are established in order to achieve, among others, the following purposes:

- A. To provide, in appropriate and convenient districts, sufficient areas for various business activities, the exchange of goods and services, and the production of goods to serve the community and surrounding areas;
- B. To protect residential neighborhoods adjacent to commercial and industrial uses by regulating the types of establishments, particularly at the common boundaries, that would create congestion, noise or other objectionable influences;
- C. To ensure that proposed developments protect the unique natural features that comprise the character of Leroy Township and are appropriate and compatible with their surroundings, in accordance with the intent, objectives and development criteria of the Districts;
- D. To provide a General Business (B-1) District to accommodate the sale of convenience retail goods and personal services that primarily serves the residents of Leroy Township.
- E. To provide a Special Interchange (B-2) District that offers a variety and balance of general commercial, service, office and retail uses along a major thoroughfare while supporting surrounding businesses and local residents. The design of this area will encourage grouping of establishments located in a unified site, providing adequate off-street parking as well as efficient and safe methods of handling vehicular and pedestrian traffic.
- F. To provide a Community Business (B-3) District that will preserve and enhance the historic commercial center of the Township at the roundabout (“Five-Points”) area through a mixture of community facilities, business, and recreational uses that serves as a gathering place for the community. (Revised 4/1/22).



# Leroy Township Zoning Regulations

## SECTION 17

### Commercial and Industrial District Regulations

(Effective 7/11/2012) (revised 4/1/22)

- G. To provide a Neighborhood Business (B-4) District that will allow continued commercial activity at the S.R. 86 and Girdled Road intersection that is complimentary to the surrounding residential uses.
- H. To provide an Industrial and Manufacturing (I) District that accommodates the development of light manufacturing enterprises which shall operate in a clean and quiet manner.
- I. To establish design standards in certain areas that will integrate proposed developments into the surrounding environment and avoid large blank walls typical of big box buildings.

#### 17.02 USE REGULATIONS.

- A. A use listed in Section 17.03 shall be permitted by right as a permitted use in a district when denoted by the letter “P”, provided that all the requirements of Section 30, Site Development Plan Review, and other applicable requirements of this Zoning Resolution and other township resolutions have been met.
- B. A use listed in Section 17.03 shall be permitted as a conditional use in a district when denoted by the letter “C”, provided the Board of Zoning Appeals first makes the determination that the requirements and procedures of Section 14, Conditional Use Permits, and Section 30, Site Development Plan Review, of the Zoning Resolution have been met.
- C. A use listed in Section 17.03 shall be permitted as an accessory use in a district when denoted by the letter “A”. Such use shall be permitted as a subordinate building or use when it is clearly incidental to and located on the same lot as the principal building or use. Accessory uses are further regulated in subsequent sections of this Zoning Resolution.
- D. Although a use may be indicated as a permitted, conditional or accessory use in a particular business, commercial or industrial district, it shall not be approved on a parcel unless it can be located thereon in full compliance with all of the standards and other regulations of this Resolution applicable to the specific use and parcel in question.
- E. Any use that is not specifically listed in a district as either a permitted use or conditional use or that does not meet the requirements for an accessory use shall be a prohibited use in that district.

**Leroy Township Zoning Regulations**  
**SECTION 17**  
**Commercial and Industrial District Regulations**  
(Effective 7/11/2012) (revised 4/1/22)

Table 17.03 Recommended Permitted Uses Generalized format (revised 4/1/22)	B-1	B-2	B-3	B-4	I
	General Business District	Special Interchange District	Community Business District	Neighborhood Business District	Industrial & Manufacturing District
<b>Office and Professional Services</b>					
Urgent care/ medical clinic		P			
Medical & dental office	P	P	P	P	
Administrative, business & professional offices	P	P	P	P	
Research and development labs		P			P
<b>Retail and Personal Services</b>					
Restaurant (sit-down/table service)	P	P	P	P	
Restaurant (counter service)	P	P	P	P	
Retail establishments 10,000 SF +		P			
Retail establishments <10,000 SF	P	P	P	P	
Personal services including but not limited to hair care, dry cleaning, shoe repair, photography studios.	P	P	P	P	
Garden or nursery retail sales (non-wholesale)	P	P			
Bank, financial institutions	P	P	P		
Veterinary services	C	C		C	
Funeral services	C	C			
Bed and breakfast			C	C	
Hotels/Motels		P			
Business services including mailing and copy centers	P	P	P		
Rental services including electronic/furniture and party supplies		P			
Child day care ctr.	P	P		C	
<b>Automotive &amp; Transportation</b>					
Gas stations		P			
Car wash		P			
Motor vehicle, recreational vehicle, and motor cycle dealers (new w/pre-owned)		C			
Automotive rental	P	P			
Automotive parts & supply		P			P

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Table 17.03 Recommended Permitted Uses Generalized format	B-1	B-2	B-3	B-4	I
	General Business District	Special Interchange District	Community Business District	Neighborhood Business District	Industrial & Manufacturing District
Automotive services (including instant oil change)	P	P			P
Automotive repair					P
<b>Manufacturing and Limited Industrial</b>					
Light manufacturing					P
<b>Distribution and Wholesale</b>					
Wholesale business					P
Warehouse facilities					P
<b>Trade Business Services</b>					
Publishing/printing/commercial copying					P
Landscaping services		C			P
Lumber and building material dealers	C	P			
General building contractors	C	C			P
Construction and equipment sales	C	C			C
Construction and equipment rental (Including misc. yard care equipment)	P	P			P
<b>Entertainment/Recreation</b>					
Membership/sports/fitness club	P	P	P		P
Studios for instruction	P	P	P	P	
Indoor commercial recreation	P	P			P
Theater	P	P	C	C	
Assembly Hall, meeting place, party center	P	P	C	C	
<b>Community Facilities</b>					
Libraries			P	P	
Schools	P				
Civic, social, and religious organizations	P	P	C	C	
Museums, community centers	P		P		
U.S. Postal Service	P	P	P	P	P
Hospital	P	P			

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Residential care facility, nursing home, and home for the aging	C	C	C		
Hospice care facility (used for hospice patients only)	C	C			
Government facilities	C	C			p
Other					
<b>Table 17.03</b>	<b>B-1</b>	<b>B-2</b>	<b>B-3</b>	<b>B-4</b>	<b>I</b>
<b>Recommended Permitted Uses</b> Generalized format	General Business District	Special Interchange District	Community Business District	Neighborhood Business District	Industrial & Manufacturing District
Utility and communication services	C	C	C		
Surface extraction of sand, gravel or other earth materials	C	C			C
Sexually oriented business					
Accessory Uses					
Outdoor storage & display in an association with a permitted use	C	C	C		C
Warehousing	C	C	C	C	C
Police, fire services	C	C	C	C	C
Drive –thru service	C	C			
Outside dining	C	C	C	C	C

**17.04 LOT, YARD AND BUILDING REQUIREMENTS.**

The minimum lot and building requirements for uses in the commercial and industrial districts set forth in Section 17 are specified in Table 17.05.

- A. **Minimum Lot Area.** The area of the lot shall not be less than the dimensions set forth in Table 17.05.
- B. **Minimum Lot Frontage/Width.** The minimum lot frontage shall be the same as the minimum lot width, except for lots fronting on cul-de-sacs as set forth in Table 17.05.
- C. **Minimum Lot Width for Corner Lots.** Corner lots shall have an additional fifty (50') feet of frontage.
- D. **Building Setbacks and Yard Clearances.** All buildings and structures shall be located on a lot so as not to obstruct or otherwise encroach upon the minimum front, side and rear



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## SECTION 17

### Commercial and Industrial District Regulations

(Effective 7/11/2012) (revised 4/1/22)

yard setback or clearance requirements established in Table 17.05, measured from the appropriate lot line. For corner lots, the minimum front building setback shall be required for both street frontages.

- E. **Building Separation.** When more than one building is located on a lot, the separation between buildings shall not be less than the minimum distance set forth in Table 17.05, and shall further comply with the applicable requirements set forth in the Ohio Building and Fire Codes.
- F. **Maximum Impervious Surface.**
  - 1. The impervious surface on a lot shall comply with the maximum percentage of the total lot area set forth in Table 17.05.
  - 2. The percentage shall be calculated by dividing the amount of the site that is covered by any material that substantially reduces or prevents the infiltration of storm water by the total horizontal area of the lot. Impervious surfaces include, but are not limited to, roofs, streets, sidewalks, and parking lots paved with asphalt, concrete, compacted sand, compacted gravel or clay.
- G. **Building Height.** The height of principal and accessory buildings shall not exceed the maximum heights established in Table 17.05. Church spires, belfries, clock towers, wireless towers, scenery lofts or other mechanical appurtenances may exceed these height restrictions when erected upon and as an integral part of such building.
- H. **Roof mechanicals:** All mechanical appurtenances on the roof top and all visible equipment mounted on the side of a building shall be shielded from public view and adjoining developments. The shielding shall be integrated into the architecture of the building in terms of massing, materials and details. The shielding for the mechanical appurtenances on the roof shall be part of the roof form.

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**See next page for continuation beginning with Table 17.05.**

**Leroy Township Zoning Regulations**  
**SECTION 17**  
**Commercial and Industrial District Regulations**  
(Effective 7/11/2012) (revised 4/1/22)

Table 17.05 Recommended Area Requirements	B-1	B-2	B-3	B-4	I
	General Business District	Special Interchange District	Community Business District	Neighborhood Business District	Industrial & Manufacturing District
<b>Lot Requirements</b>					
Minimum Lot Area	2 acres	2 acres	1.5 acres	1.5 acres	2 acres
Minimum Lot Frontage/Lot Width	200 ft. per use	200ft. per use	150 ft.	150 ft.	200 ft. per use
<b>Minimum Front Building Setback</b>					
Lots Fronting Vrooman Road	100 ft.	50 ft.	50 ft.	N/A	100 ft.
Lots Fronting Carter Road	100 ft.	N/A	N/A	N/A	N/A
Lots Fronting S.R. 86	N/A	N/A	50 ft.	50 ft.	N/A
Lots Fronting Mildon Drive	N/A	N/A	50 ft.	N/A	N/A
Lots Fronting Girdled Road	N/A	N/A	N/A	50 ft.	N/A
Lots Fronting LeRoy Center Road	N/A	N/A	50 ft.	N/A	N/A
Lots Fronting Huntoon Road	N/A	N/A	50 ft.	N/A	N/A
<b>Minimum Side Yard Clearance (each side)</b>					
Abutting Residential District	60 ft.	60 ft.	60 ft.	60 ft.	60 ft.
Abutting Non-Residential District	20 ft.	20 ft.	20 ft.	20 ft.	20 ft.
<b>Minimum Rear Yard Clearance</b>					
Abutting Residential District	60 ft.	60 ft.	60 ft.	60 ft.	60 ft.
Abutting Non-Residential District	20 ft.	20 ft.	20 ft.	20 ft.	20 ft.
Table 17.05 Recommended Area Requirements	B-1	B-2	B-3	B-4	I
	General Business District	Special Interchange District	Community Business District	Neighborhood Business District	Industrial & Manufacturing District
<b>Building Specifications</b>					
Minimum Building Separation	20 ft.	20 ft.	20 ft.	20 ft.	20 ft.
Maximum Impervious Surface	70%	70%	70%	70%	70%
Height: Principal Building	35 ft.	35 ft.	35 ft.	35 ft.	35 ft.
Height: Accessory Building	35 ft.	35 ft.	35 ft.	35 ft.	35 ft.

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Minimum Parking Setback					
Front Yard	50 ft.	20 ft.	20 ft.	10 ft.	50 ft.
Side Yard					
Abutting Residential District	40 ft.	40 ft.	40 ft.	20 ft.	40 ft.
Abutting Non-Residential District	10 ft.	10 ft.	5 ft.	10 ft.	10 ft.
Rear Yard					
Abutting Residential District	40 ft.	40 ft.	40 ft.	20 ft.	40 ft.
Abutting Non-Residential District	10 ft.	10 ft.	5 ft.	10 ft.	10 ft.

**17.06 PERFORMANCE STANDARDS**

All uses in LeRoy Township shall conform to the performance standards in Section 7.12.

**OFF-STREET PARKING REGULATIONS.**

Off-street parking areas shall conform to the off-street parking requirements specified in Section 25 of the Zoning Resolution.

**17.07 DESIGN STANDARDS FOR THE B-1, B-2, B-3, B-4 AND I DISTRICTS.**

Design standards are established for the General Business (B-1), Special Interchange (B-2), Community Business (B-3), Neighborhood Business (B-4) and Industrial and Manufacturing (I) Districts to ensure that new development or redevelopment complies with the purposes of this Section. All uses proposed in the B-1, B-2, B-3, B-4 and I Districts regulated in this Section shall comply with the design requirements set forth in Section 32 of the Zoning Resolution.

**17.08 ACCESSORY USE REQUIREMENTS.**

Accessory uses, buildings and structures permitted in commercial and industrial districts set forth in Section 17 shall comply with the following regulations:

- A. Accessory Buildings. Accessory buildings with a floor area 1,500 square feet or less shall conform to all lot and yard requirements for principal buildings of the corresponding zoning district and be subject to the approval of the Zoning Inspector. Accessory buildings with a floor area greater than 1,500 square feet shall conform to all lot and yard regulations and site plan review and approval requirements of the zoning district in which the parcel or lot is located. No accessory building or structure, permanent or temporary, shall be located within the front yard setback area.

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- B. **Trash Receptacles.** All solid waste resulting from any permitted principal, conditional or accessory use shall either be disposed of, stored in buildings or in a completely enclosed container. Such building, container or dumpster shall comply with the following:
1. All commercial compactors, storage bins, refuse containers, utilities and mechanical equipment shall be contained wholly within enclosed buildings, or enclosed by three solid walls and one gated wall of such nature and height (2 ft. height exceeding enclosed containers) as to conceal completely all operations thereof from grade level.
  2. Gates and doors shall be kept closed at all times and only opened when containers are being used or emptied or serviced.
  3. All receptacle areas shall be designed and constructed with screening as an integral part of the associated building architecture and using the building massing, materials, and architectural details to unite screening structure with the building when property abuts a residential property.
  4. Loading, unloading, opening, closing, or operation of trash containers shall not take place in such a manner as to cause a noise disturbance across a residential real property boundary between the hours of 7:00 p.m. and 7:00 a.m. The actual pick-up time/haul away for trash containers and commercial trash/waste containers shall be prohibited between the hours of 7:00 p.m. and 7:00 a.m. The actual operation of trash compactors shall be prohibited between the hours of 7:00 p.m. and 7:00 a.m., including delivery and loading operations.
- C. **Fences and Walls.** Fences and walls may be erected in compliance with the requirements set forth in Section 21 of the Zoning Resolution.
- D. **Signs.** Signs shall conform to the regulations specified in Section 23 of the Zoning Resolution.
- E. **Other Permitted Accessory Uses.** In addition to the accessory uses set forth in Section 17.03, the following items shall be considered permitted accessory structures within the commercial and industrial districts set forth in Section 17. The following structures do not require a zoning permit, but shall not be located on a lot where they will impair vehicular or pedestrian traffic movement or visibility both on and off the property, or within any public or private right-of-way.
1. Mailboxes or newspaper tubes.
  2. Flag poles.



# Leroy Township Zoning Regulations

## SECTION 17

### Commercial and Industrial District Regulations

(Effective 7/11/2012) (revised 4/1/22)

3. Statuary or art objects.
4. Charity boxes.
5. Public phone facilities.

#### **17.10 LANDSCAPING AND SCREENING REQUIREMENTS.**

Visual screening and landscape buffers shall be provided for all lots in the commercial and industrial districts set forth in Section 17 in accordance with the landscaping requirements set forth in Section 26 of the Zoning Resolution.

#### **17.11 SUPPLEMENTAL REQUIREMENTS.**

##### **17.12**

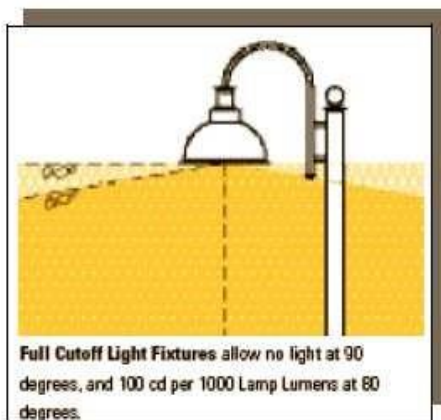
- A. Delivery and Loading Areas: Delivery and loading operations shall be designed and located to mitigate visual and noise impacts to adjoining residential neighborhoods. Delivery and loading areas shall be substantially set back from a residential use or residentially zoned property that is adjacent to that site. The delivery and loading areas shall be enclosed so that they are not visible to adjacent residential properties. The enclosure shall screen the noise and activity at the loading dock. Loading, unloading, opening, closing, or other handling of boxes, crates, containers, building materials, or similar objects between the hours of 7:00 p.m. and 7:00 a.m. shall not take place in such a manner as to cause a noise disturbance across a residential real property boundary. Delivery trucks shall not be parked in close proximity to or within a designated delivery or loading area between 7:00 p.m. and 7:00 a.m. with motor and/or refrigerators/generators running.
- B. Outdoor Grilling Adjacent to Residential Areas: No person shall kindle or maintain a fire for the commercial preparation of food in any type of outdoor or portable grill in the rear outside yard of the building, adjacent to any residential area.
- C. Lighting:
  1. Exterior lighting of buildings and/or parking areas shall be positioned so as not to emit light onto neighboring properties or road rights-of-way, but shall shine directly onto buildings, or be directed downward onto parking areas, access drives and pedestrian walkways.
  2. All lighting shall be shielded from adjoining residential properties in such a manner as to prevent distraction and glare. Light pollution control measures shall be taken to avoid negative impact of misdirected light. Business that utilizes canopy lighting shall use recessed ceiling fixtures with the bottom of the lenses flush with the canopy in addition to meeting other lighting guidelines. No lights shall be oriented towards residential areas. Building-mounted light fixtures and free-standing light fixtures should be in proportion with the building and shall not exceed the building height. Pole and building-mounted light fixtures shall not exceed the height of the building as follows:

**Leroy Township Zoning Regulations**  
**SECTION 17**  
**Commercial and Industrial District Regulations**  
(Effective 7/11/2012) (revised 4/1/22)

Height of Building Height of  
Fixture < - 35' fixture 14ft.

3. Light Trespass. Light trespass over a commercial or industrial property line when adjoining residential properties shall be limited to no more than 0.5 foot-candles at the property line and one quarter foot candle ten feet over the property line. Lighting levels are based on initial lamp lumens and 1.0 maintenance factor. Fully shielded light source (full cut off) shall be used, as illustrated in Figure 1. They are shielded so that light emitted from a fixture, directly or indirectly, is projected below a horizontal plane through the lowest point of the fixture where light is emitted.

**Figure 1.**



4. Up-lighting is not permitted, except for use on flagpoles. (12/15/2006)
5. The IESNA Lighting Handbook, ninth edition or later, is recommended to be used as reference for lighting. It provides explanations of concepts, techniques, applications, procedures, and systems. Specific “lighting measurements” methods and calculations are found in Chapter 2 and Chapter 9 (ninth edition). “Levels of Trespass” explanations are found in Chapter 21.

**17.12 SITE DEVELOPMENT PLAN REVIEW.**

Prior to the construction, alteration, expansion or modification of a use in the commercial and industrial districts set forth in Section 17, a site plan for such activity shall be reviewed and approved according to the site plan development review procedures set forth in Section 30 of the Zoning Resolution.

**Leroy Township Zoning Regulations**  
**SECTION 17**  
**Commercial and Industrial District Regulations**  
(Effective 7/11/2012) (revised 4/1/22)

**17.13 NATURAL RESOURCE PROTECTION.**

Prior to the construction, alteration, expansion or modification of a use in the commercial and industrial districts set forth in Section 17, a site plan for such activity shall be reviewed and approved in accordance to the Natural Resource Protection procedures set forth in Section 31 of the Zoning Resolution.

SECTION 26 – SCREENING AND LANDSCAPING  
*Effective July 1, 1991*

1. Screening and Landscaping

A. Screening Requirements

A hedge, landscaping, landscaped earth berm, natural buffer area, or any combination thereof shall be provided to obscure certain uses or portions of a specific use which by their nature are unsightly or which by the scale or design represent the potential to negatively impact adjacent properties.

The following specific uses or features shall be screened from adjacent properties and from public view from a public street and the following shall not be allowed within the building setback line.

- (1) Dumpster and trash-handling areas
- (2) Service entrances and utility facilities
- (3) Loading docks or spaces
- (4) Outdoor storage or any material stocks, or equipment, including but not limited to motor vehicles, farm or construction equipment or other similar items.
- (5) Parking lots

B. Screening Standards

Any screening utilized to fulfill the requirements of this Section shall consist of an area no less than five (5) feet in width containing any materials as defined above to visually separate land uses, except for a fence or a wall, and shall have provisions for its maintenance. The composition of the screening material and its placement on the lot shall be at the discretion of the developer of the lot as long as the purpose and requirements of the Section are fulfilled. The following standards apply to all screening:

- (1) Maximum height at any point for a solid screening structure located along the property line: eight feet
- (2) Maximum height in any required front yard for a solid screening structure including an earth berm: six feet
- (3) The minimum height of any screening shall be that which is sufficient to visually separate uses within the subject property from adjoining properties or public streets
- (4) Height of any screening materials on a corner lot is also controlled by vehicular sight distance considerations at the street intersections.
- (5) For every fifty (50) feet of property line where screening is required, a tree, either evergreen or deciduous, of at least two (2) inches in caliper shall be planted and incorporated into the screening material.
- (6) Any earth berm used to fulfill the requirements of this Section shall be stabilized to prevent erosion and landscaped with grasses, shrubs, or other materials.



## **SECTION 31 NATURAL RESOURCE PROTECTION**

(Effective 01/15/2009) (Revised effective 7/11/2012)

### **31.1- Riparian Setbacks**

#### **Section 31.1.1-Purpose and Intent**

- A. It is hereby determined that the system of headwaters, rivers, streams, wetlands and other watercourses within Leroy Township contributes to the health, safety and general welfare of the residents of Leroy Township. These regulations have been enacted to protect and enhance the functions of riparian areas by providing reasonable controls governing buildings, structures, uses, and related soil disturbing activities within a riparian setback along designated watercourses and wetlands in the Township.
- B. The specific purpose and intent of this regulation is to regulate uses and developments within riparian setbacks that would impair the ability of riparian setback areas to:
1. Benefit the community by minimizing encroachment on designated watercourses and wetlands thereby minimizing the need for costly engineering solutions or other invasive measures that may be necessary to protect persons, buildings, structures, and uses as well as to reduce the damage to real property and threats to overall public health and safety within the affected watershed.
  2. Preserve and conserve the quality and free flowing condition of designated watercourses, protect groundwater recharge and ground (well) water quality in the interest of promoting and protecting public health and safety.
  3. Reduce flood impacts by absorbing peak flows, slowing the velocity of floodwaters, and regulating base flow.
  4. Assist in stabilizing the banks of designated watercourses, reduce stream bank erosion, and the downstream transport of sediments eroded from such watercourse banks.
  5. Reduce pollutants in designated watercourses during periods of high flows by filtering, settling, and transforming pollutants already present in such watercourses.
  6. Reduce pollutants in designated watercourses by filtering, settling, and transforming pollutants in runoff before they enter such watercourses.
  7. Preserve the scenic beauty of the environment in order to maintain the character of Leroy Township, the quality of life of the residents, and the corresponding property values.

## **SECTION 31 NATURAL RESOURCE PROTECTION**

### **Section 31.1.2-Applicability**

- A. The Regulations as set forth herein shall apply to all zoning districts.
- B. The Regulations set forth herein shall apply to all buildings, structures, uses, and related soil disturbing activities on a lot containing a designated watercourse or wetland, when a riparian setback, as set forth in these Regulations, is proposed to be impacted.
- C. The use of any building, structure, or lot lawfully existing prior to the effective date of these regulations may be continued, pursuant to the provisions of Section 8, Nonconforming Uses.
- D. The repair, maintenance, extension, replacement, restoration, reconstruction or substitution of a building, structure or use lawfully existing prior to the effective date of these Regulations may be continued, expanded or completed, subject to the provisions of Section 8, Nonconforming Uses.
- E. No Zoning Certificate in accordance with Section 13 of these Regulations or Conditional Use Permit in accordance with Section 14 of these Regulations shall be issued for any building, structure, or use on a lot containing, wholly or partly, a designated watercourse or wetland except in conformity with the Section 31.1 of these Regulations as set forth herein.
- F. Due to the importance of properly functioning riparian areas, minimum riparian setbacks may be given preference over minimum front, side, or rear yard setbacks as specified in this Resolution in the consideration of a Conditional Use Permit or an Appeal for a Variance by the Board of Zoning Appeals.

### **Section 31.1.3-Establishment of Riparian Setbacks**

- A. A designated watercourse, as defined in Section 2 herein, shall include:
  - 1. All watercourses within the territorial boundaries of Leroy Township designated as having banks, a defined bed, and definite direction of flow, either continuously or intermittently flowing, including through culverts, bridges and other conveyance structures. In determining if a watercourse shall be a designated watercourse by the Township, so as to require a riparian setback, the Leroy Township Zoning Inspector may consult with representatives of the Lake County Soil and Water Conservation District and/or State or Federal governmental officials or technical experts. Final determination shall be made by the Zoning Inspector in accordance with the rules herein.
  - 2. Any watercourse newly constructed, altered, restored, or proposed in a development or as part of an overall development plan. Such projects must show compliance with all applicable local, state, and federal requirements.

## SECTION 31 NATURAL RESOURCE PROTECTION

- B. A riparian setback of land shall be required on all land adjacent to designated watercourses. The setback distance will be determined by the size of the watershed that the watercourse drains. Riparian setbacks on designated watercourses shall be established as follows.
1. A minimum of 120 feet on each side of all designated watercourses draining an area equal to or greater than 20 square miles.
  2. A minimum of 75 feet on each side of all designated watercourses draining an area equal to or greater than 1 square mile and up to 20 square miles.
  3. A minimum of 25 feet on each side of all designated watercourses draining an area less than 1 square mile and having a defined bed and bank as determined in these regulations.
  4. A minimum of 50 feet on each side of all designated watercourses determined to be a Class III primary headwater habitat stream.
- C. The following regulations shall apply to riparian setbacks.
1. Riparian setbacks shall be measured in a horizontal direction outward from the ordinary high water mark of a designated watercourse.
  2. Except as otherwise provided in this Regulation, riparian setbacks shall be preserved in their natural state.
  3. Where the one hundred year flood plain is wider than the minimum riparian setback on either or both sides of a designated watercourse, the minimum riparian setback shall be extended to include the outermost boundary of the one hundred year flood plain as delineated on the flood hazard boundary map(s) for the affected area provided by FEMA.
- D. Where proposed projects indicate impacts to wetlands, the wetlands shall be delineated using protocols accepted by the U.S. Army Corps of Engineers. Such delineation is a requirement of the U.S. Army Corps of Engineers and the Ohio Environmental Protection Agency (OEPA).
1. All wetlands as identified by the State of Ohio and/or US Army Corps of Engineers shall have the following setback as measured from the jurisdictional boundary:
    - a. 50 feet extending beyond the outermost boundary of a category 3 wetland.
    - b. 30 feet extending beyond the outermost boundary of a category 2 wetland.
    - c. 10 feet extending beyond the outermost boundary of a category 1 wetland.

## **SECTION 31 NATURAL RESOURCE PROTECTION**

### **Section 31.1.4-Applications and Site Plan**

- A. When making an application for a Zoning Certificate or a Conditional Use Permit for a building, structure or use regulated by this resolution that impacts a designated water course or wetlands, the owner or applicant shall be responsible for identifying riparian setbacks, proposed stream crossings and stream bank stabilization as required by these Regulations. The owner or applicant shall indicate such setback distance in accordance with the Section 31.1.3 on all site plans submitted to the Zoning Inspector.
- B. The Township shall adopt a riparian setback map including any additions, amendments, or deletions to the map, as created and updated from time to time by the Lake County Soil and Water Conservation District. The riparian setback map identifies known and potential designated watercourses, and their riparian setbacks. Said map is on file at Leroy Township Hall. Due to the potential for natural and artificial changes, inaccuracies of scale and limitations on information available, all designated watercourses and setbacks may not be accurately identified on the riparian setback map.
- C. If any discrepancy is found between the riparian setback map and the on site conditions, the on site conditions shall prevail when applying the Regulations herein.
- D. The riparian setback map shall be utilized as a guide or reference document by the owner, applicant, Zoning Inspector and the Board of Zoning Appeals in determining when the riparian setback applies.
- E. The Zoning Inspector, may, in reviewing the site plan, consult with the Lake County Soil and Water Conservation District, federal or state experts or such other such expert(s) retained by the Board of Township Trustees to make infield determinations and/or classification of the required setback distance on a designated watercourse or wetland.

### **Section 31.1.5-Permitted Buildings, Structures, and Uses Within a Riparian Setback Without a Zoning Certificate**

- A. Only the following buildings, structures, uses, and related soil disturbing activities shall be permitted within a riparian setback without a Zoning Certificate.
  - 1. Recreational Activities: Fishing, hunting, picnicking, picnic tables, trails, walkways, and paths for non-motorized vehicles constructed of pervious materials.
  - 2. Removal of Damaged or Diseased Trees: Damaged or diseased trees and other associated debris may be removed.



## **SECTION 31 NATURAL RESOURCE PROTECTION**

3. **Maintenance and Repairs:** Maintenance and repair on lawfully existing buildings, structures, and uses; roads; driveways; bridges; culverts; trails; walkways; paths; wastewater treatment plants and appurtenances; water wells; water treatment plants and appurtenances; storm sewers; and on-site sewage systems.
4. **Maintenance and Cultivation of Lawns and Landscaping:** The maintenance of existing, and the cultivation of new, lawns, landscaping, shrubbery, and trees.
5. **Open Space:** Passive open space to preserve the riparian setback area in its natural state.

### **Section 31.1.6-Permitted Buildings, Structures, and Uses Within a Riparian Setback in Accordance with Zoning Certificate.**

- A. Only the following buildings, structures, and uses may be permitted within a riparian setback in accordance with the following Regulations and such other applicable Regulations contained in this Zoning Resolution.
  1. **Crossings:** Crossings of designated watercourses through riparian setbacks are permitted in consultation with Lake County Soil & Water.
  2. **Stream bank Stabilization Projects:** Stream bank stabilization projects along designated watercourses are permitted in consultation with Lake County Soil & Water.
  3. **Signs:** Signs in accordance with Section 23 of this Zoning Resolution.
  4. **Fences and walls:** Fences and walls in accordance with Section 21 of this Zoning Resolution.
  5. **Water Supply Wells:** Water supply wells subject to the regulations enforced by the Lake County General Health District and/or the Ohio EPA.
  6. **On-site Sewage Systems and Waste Water Treatment Plants:** On-site sewage systems and wastewater treatment plants and appurtenances subject to the applicable regulations enforced by the Lake County General Health District and/or the Ohio EPA. Proof of compliance with such regulations shall be required

## **SECTION 31 NATURAL RESOURCE PROTECTION**

### **Section 31.1.7-Buildings, Structures and Uses Prohibited Within a Riparian Setback**

- A. Any building, structure, use, or related soil disturbing activity not permitted under this Regulation shall be prohibited within a riparian setback. The following buildings, structures, and uses are specifically prohibited.
  - 1. Construction: There shall be no buildings, structures, uses, or related soil disturbing activities of any kind except as permitted under these Regulations.
  - 2. Parking Spaces or Lots and Loading/Unloading Spaces for Vehicles: There shall be no parking spaces, parking lots, loading/unloading spaces, or related soil disturbing activities.
  - 3. Structural Storm water Management Practices: There shall be no structural storm water management practices or related soil disturbing activities.

### **Section 31.1.8-Notice and Inspections of Riparian Setbacks**

- A. The owner shall notify the Zoning Inspector at least 10 working days prior to the initiation of any construction, land development or soil disturbing activities on a lot containing an approved site plan submitted by the owner or applicant in accordance with Section 31.1.4 herein.
- B. The Zoning Inspector and/or its agents, with prior notice and the authorization of the owner, may enter the affected lot from time to time to conduct on-site inspections to ensure compliance with these Regulations.
- C. The Zoning Inspector shall be permitted to make an on-site inspection of the delineation of riparian setbacks, prior to the initiation of any construction, land development, or soil disturbing activities, on an affected lot.

### **Section 31.1.9-Variance**

- A. In accordance with Section 11 herein, the owner or applicant may apply for a variance to the Board of Zoning Appeals.

### **Section 31.1.10-Penalty**

- A. In accordance with Section 5, Enforcement, herein, the owner or applicant may be subject to penalties for failing to comply with the terms and requirements of this Zoning Resolution.



# Leroy Township Riparian Setback Guidance Map

Leroy Town Hall  
5920 Paine Rd.  
Leroy, OH 44077  
440.254.4234

www.leroyohio.com  
Feb. 2010

Stream

Watershed Boundary

FEMA Floodplain setback

120' Setback

75' Setback

Class III 50' Setback

25' Setback

**LEROY TOWNSHIP RIPARIAN SETBACKS**

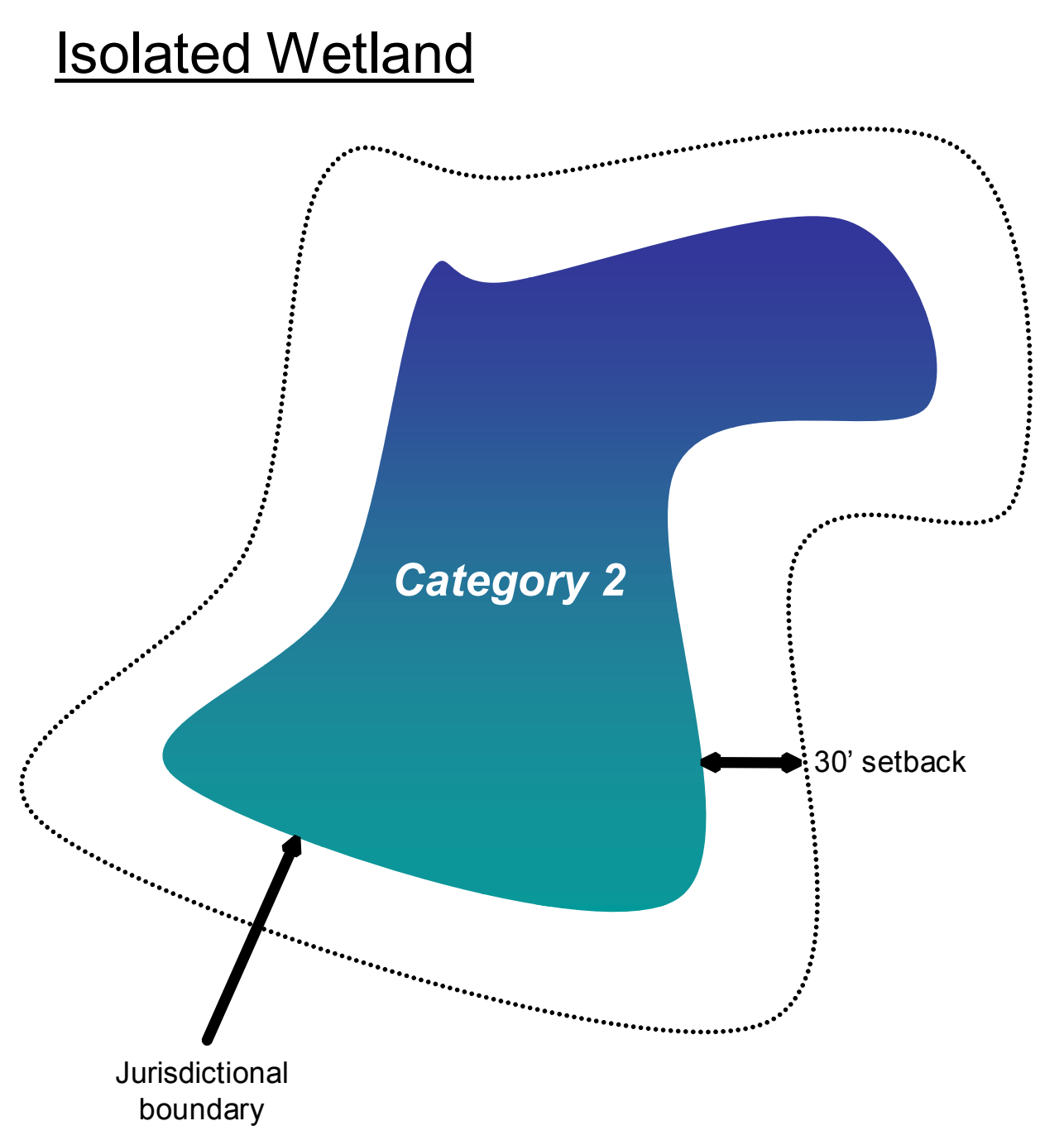
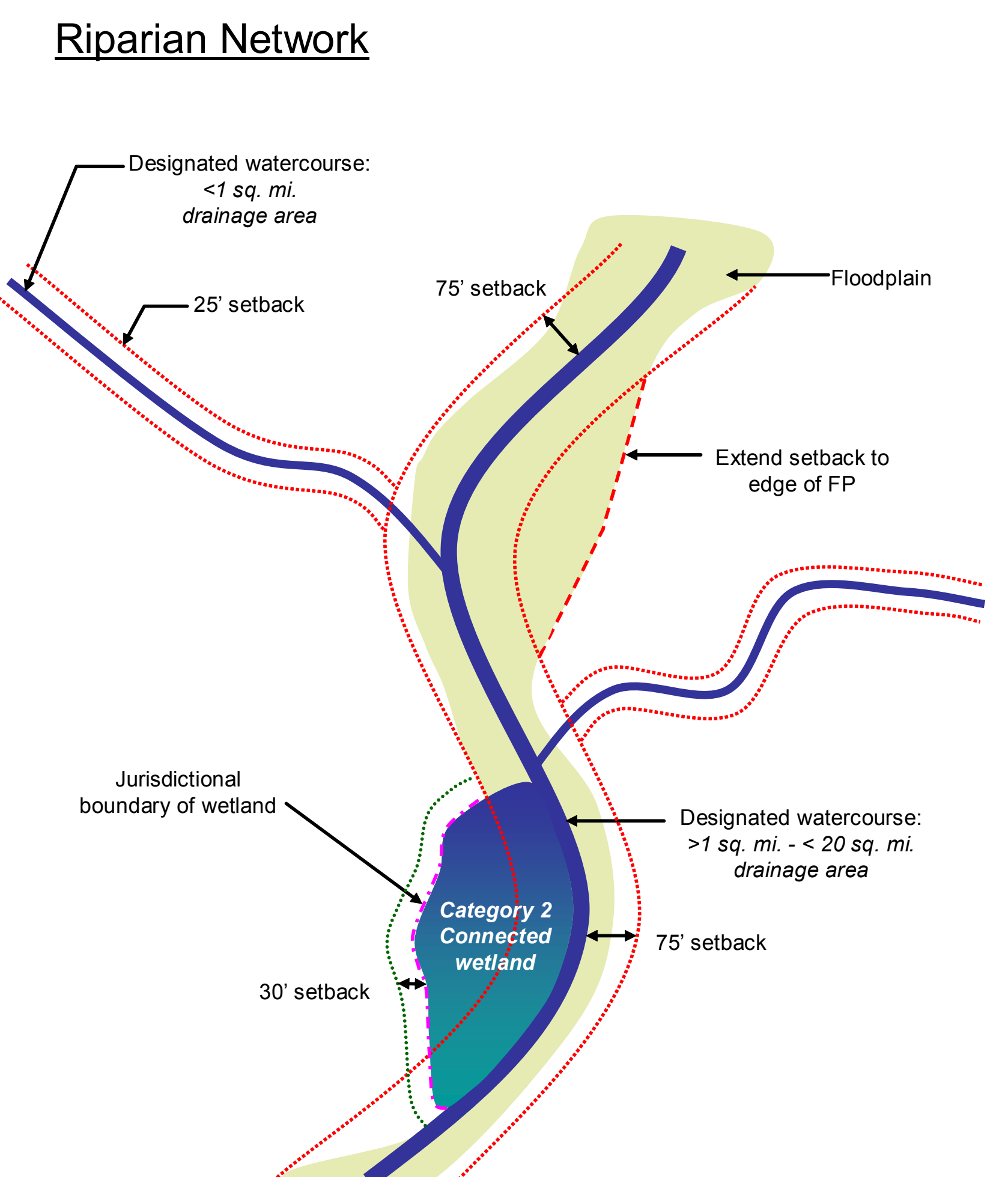
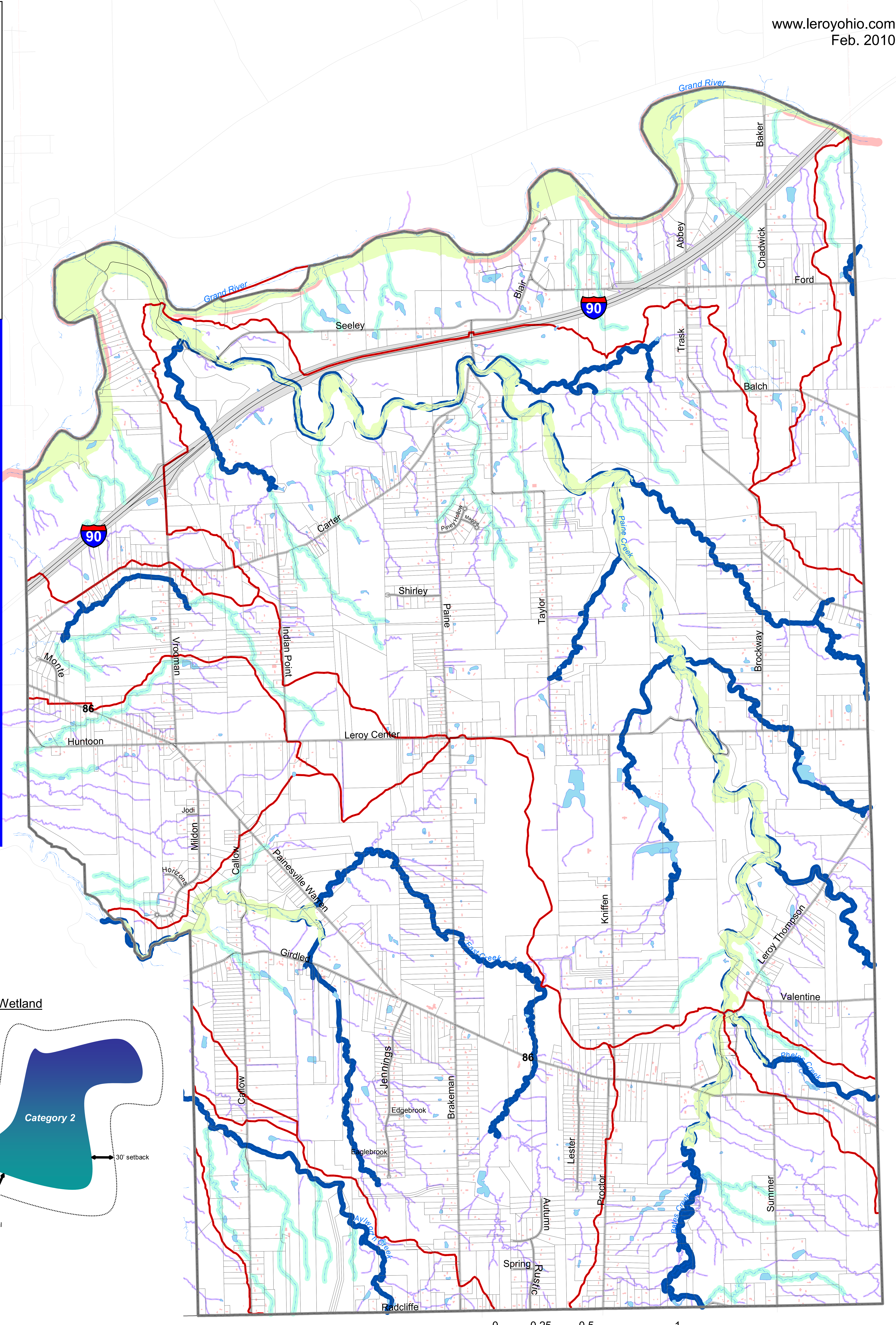
The riparian setback map may be utilized as a guide or reference document by the zoning inspector and the board of zoning appeals in determining when the riparian setback applies. This map is subject to amendments as necessary and is not an official zoning document. Due to scale and information available, all designated watercourses and setbacks may not be accurately identified on the riparian setback map. If any discrepancy is found between the riparian setback map and these regulations, or if any discrepancy is found between existing site conditions and these regulations, the criteria set forth in Section 31.1.4 shall prevail.

When making an application for a zoning certificate for a building, structure or use regulated by this resolution and proposing to impact the riparian setback, the owner shall be responsible for identifying riparian setbacks, proposed stream crossings and stream bank stabilizations as required by these regulations and shall indicate such setbacks on all site plans submitted to the zoning inspector. This is no different than identifying other required setbacks (front, side yard and rear yard).

The zoning inspector, may, in reviewing the site plan, consult with the Lake SWCD or such other expert(s) retained by the board of township trustees to make infield determinations and/or classification of the required setback distance on a designated watercourse. This may be required when reviewing the smaller watercourses.

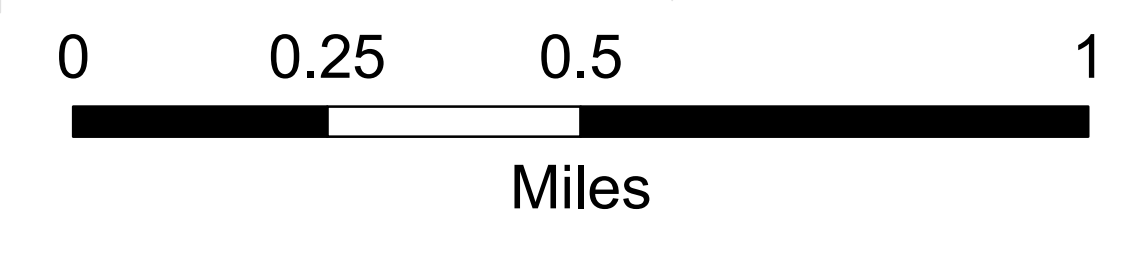
Riparian setbacks on designated watercourses shall be established as follows.

1. A minimum of 120 feet on each side of all designated watercourses draining an area equal to or greater than 20 square miles.
2. A minimum of 75 feet on each side of all designated watercourses draining an area equal to or greater than 1 square mile and up to 20 square miles.
3. A minimum of 25 feet on each side of all designated watercourses draining an area less than 1 square mile and having a defined bed and bank as determined in these regulations.
4. A minimum of 50 feet on each side of all designated watercourses determined to be a Class III primary headwater habitat stream



**NOTES:**

- Where floodplain or wetland area is wider than the minimum riparian setback on either or both sides of the designated watercourse, the setback is extended to the outermost boundary of the floodplain or jurisdictional wetland.
- Setbacks shall be measured in a horizontal direction outward from the ordinary high water mark of the designated watercourse.



1 inch = 1,000 feet

• Not to scale, graphic purposes only.



Based on communication with local authorities, the Leroy Township floodplain is included in the project area and the Concord Township floodplain is excluded from the project area.

Step 1: Called Lake Soil and Water Conservation District

Permitting authority in the county for development and soil disturbing activities. Discussed carbon credit project to ask about permitting process for tree removal in the floodplain and riparian buffer.

Caution: This email originated outside of the organization. Think before you click!

Sarah,

Felling a tree with a chainsaw/axe and leaving the stump in place would be considered a timber harvest. The ORC gives jurisdiction for these activities (Silviculture) to the Ohio Department of Agriculture and local Soil and Water Conservation Districts. While **there is no requirement for a permit to be obtained prior to starting a harvest**; there is a voluntary permitting process through the local SWD. This is called a Timber Harvest Plan and is developed by the logger/forester. This plan would then be submitted to our office and can be approved by our Board of Directors.

The Ohio EPA has taken the position that mechanized land clearing, grubbing and stumping are the initiation of construction activities. All construction activities would need to be covered under the 'Construction General Permit' from the Ohio EPA as well as an 'Erosion and Sediment Control Plan' from our office. Mechanized land clearing in a wetland may also require a permit from the USACE and/or Ohio EPA under the 404/401 WQ rules. **Work in a mapped Zone A/AE (100 year floodplain) typically only requires a permit when grading changes will occur in that zone.**

I hope that this helps. Please let me know if you have any questions.

Regards,



Chad Edgar CPESC  
Resource Protection Specialist

**Direct:** 440-350-2032  
**Main:** 440-350-2730  
**Email:** [cedgar@lakecountyohio.gov](mailto:cedgar@lakecountyohio.gov)  
105 Main St, Suite B301, Painesville, OH 44077

[www.lakecountyohio.gov/swcd](http://www.lakecountyohio.gov/swcd)





**From:** Sarah Blakely <[sblakely@wrlandconservancy.org](mailto:sblakely@wrlandconservancy.org)>  
**Sent:** Thursday, June 8, 2023 4:04 PM  
**To:** Edgar, Chad <[Chad.Edgar@lakecountyohio.gov](mailto:Chad.Edgar@lakecountyohio.gov)>  
**Subject:** Permit requirements for tree removal in Lake County

Hi Chad,

Thanks so much for your time yesterday to discuss permitting requirements for tree removal in Lake County when it is within the floodplain, riparian buffer, or wetland. Based on our discussion, please confirm that no permit would be required to cut down trees within the setback zones of floodplain, riparian buffer, or wetland as long as the tree removal is not mechanized.

Thank you,  
Sarah

---

**Sarah Blakely** | Grants Manager  
Western Reserve Land Conservancy  
3850 Chagrin River Rd. | Moreland Hills, OH 44022  
440.528.4168 (direct) | 330.696.8021 (cell)  
[Website](#) | [Facebook](#) | [Twitter](#) | [Donate Now](#)



Step 2: Communicate with Zoning Commissioners for Leroy Township and Concord Township

Concord Township

Caution: This email originated outside of the organization. Think before you click!

Hi Sarah,

Thank you for your email. Concord Township does not require a permit for trees to be removed within a riparian buffer or floodplain.

Please note, if the property is part of any open space area in one of our Residential Conservation Development Districts, trees cannot be harvested in said area. Attached is the zoning map – these areas are zoned R-2, Residential Conservation Development.

Thank you,

Heather Freeman, AICP  
Planning & Zoning Director  
Concord Township  
7229 Ravenna Road  
Concord Twp, OH 44077  
440-354-7506

[www.concordtwp.com](http://www.concordtwp.com)

**From:** Sarah Blakely <[sblakely@wrlandconservancy.org](mailto:sblakely@wrlandconservancy.org)>  
**Sent:** Tuesday, June 20, 2023 9:50 AM  
**To:** Freeman, Heather <[HFreeman@ConcordTwp.com](mailto:HFreeman@ConcordTwp.com)>  
**Subject:** Permit requirement for tree removal - Concord Township

Hello Ms. Freeman,

I work with Western Reserve Land Conservancy, and we are working on a carbon crediting project for a property partially located in Concord Township. We are trying to prove that a section of timber in the floodplain and riparian buffer could be harvested. I have already verified with Lake Soil and Water Conservation District that there are no county requirements to obtain a permit for timber harvest within the riparian buffer and floodplain. We need confirmation that there are no township requirements for a permit for tree removal in the floodplain and riparian buffer as long as there is no planned development. Can you confirm that trees located within the riparian buffer and floodplain can be removed without a permit in Concord Township?

Please feel free to call me if you have any questions.

Thank you,  
Sarah

---

**Sarah Blakely** | Grants Manager  
Western Reserve Land Conservancy  
3850 Chagrin River Rd. | Moreland Hills, OH 44022  
440.528.4168 (direct) | 330.696.8021 (cell)

[Website](#) | [Facebook](#) | [Twitter](#) | [Donate Now](#)



**Western Reserve  
Land Conservancy**

land • people • community



Leroy Township

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I do not see how this detection would pertain as you are not installing a lawn or landscape you indicated you were harvesting trees. It would therefor not be maintained in its natural state.

I hope that helps clarify. You can harvest outside of the Riparian setback just not within it

---

**From:** Sarah Blakely <[sblakely@wrlandconservancy.org](mailto:sblakely@wrlandconservancy.org)>

**Sent:** Tuesday, June 27, 2023 9:09:50 AM

**To:** Zoning <[zoning@leroyohio.com](mailto:zoning@leroyohio.com)>

**Subject:** RE: Permit requirement for tree removal

Thank you Noell for the feedback.

As a follow up, I do want to verify how regulation 31.1.3C 2 interacts with 31.1.5A 4. When I spoke with Lake County Soil and Water, the contact specifically mentioned that because the regulation allows for cultivation of lawns and landscaping without a zoning certificate (31.1.5A 4) that trees could technically be cleared in the floodplain/riparian setback for the purpose of lawn cultivation. I wondered if the phrasing of 31.1.3C 2 of "except as otherwise provided in this Regulation" paired with 31.1.5A 4 allows for tree clearing for the purpose of cultivation of a lawn or landscaping. I just want to be sure I'm fully understanding the potential risk for tree removal without our protection.

Thank you,

Sarah

**From:** Zoning <[zoning@leroyohio.com](mailto:zoning@leroyohio.com)>

**Sent:** Monday, June 26, 2023 2:43 PM

**To:** Sarah Blakely <[sblakely@wrlandconservancy.org](mailto:sblakely@wrlandconservancy.org)>

**Subject:** Re: Permit requirement for tree removal

Caution: This email originated outside of the organization. Think before you click!

Hello Sarah

Sorry for the delay. I meant to reply sooner after I looked a few things up. And I forgot to send this along. Unfortunately per section 31.1.3C 2 of the Zoning Resolution the Riparian setback area must be maintained in its natural state. Therefore logging would NOT be permitted.

Only the removal of damaged or diseased trees and other associated debris is permitted.

I hope this answers your questions. Please feel free to contact me via this email or my cell is 440-376-2117

Noell Sivertsen

Zoning Inspector

---

**From:** Sarah Blakely <[sblakely@wrlandconservancy.org](mailto:sblakely@wrlandconservancy.org)>

**Sent:** Tuesday, June 20, 2023 9:46:56 AM



**To:** Zoning <[zoning@leroyohio.com](mailto:zoning@leroyohio.com)>

**Subject:** Permit requirement for tree removal

Hi Noell,

I work with Western Reserve Land Conservancy, and we are working on a carbon crediting project for a property partially located in Leroy Township. We are trying to prove that a section of timber in the floodplain and riparian buffer could be harvested. I have already verified with Lake Soil and Water Conservation District that there are no county requirements to obtain a permit for timber harvest within the riparian buffer and floodplain. We need confirmation that there are no township requirements for a permit for tree removal in the floodplain and riparian buffer as long as there is no planned development. Can you confirm that trees located within the riparian buffer and floodplain can be removed without a permit in Leroy Township?

Please feel free to call me if you have any questions.

Thank you,

Sarah

---

**Sarah Blakely** | Grants Manager

Western Reserve Land Conservancy

3850 Chagrin River Rd. | Moreland Hills, OH 44022

440.528.4168 (direct) | 330.696.8021 (cell)

[Website](#) | [Facebook](#) | [Twitter](#) | [Donate Now](#)



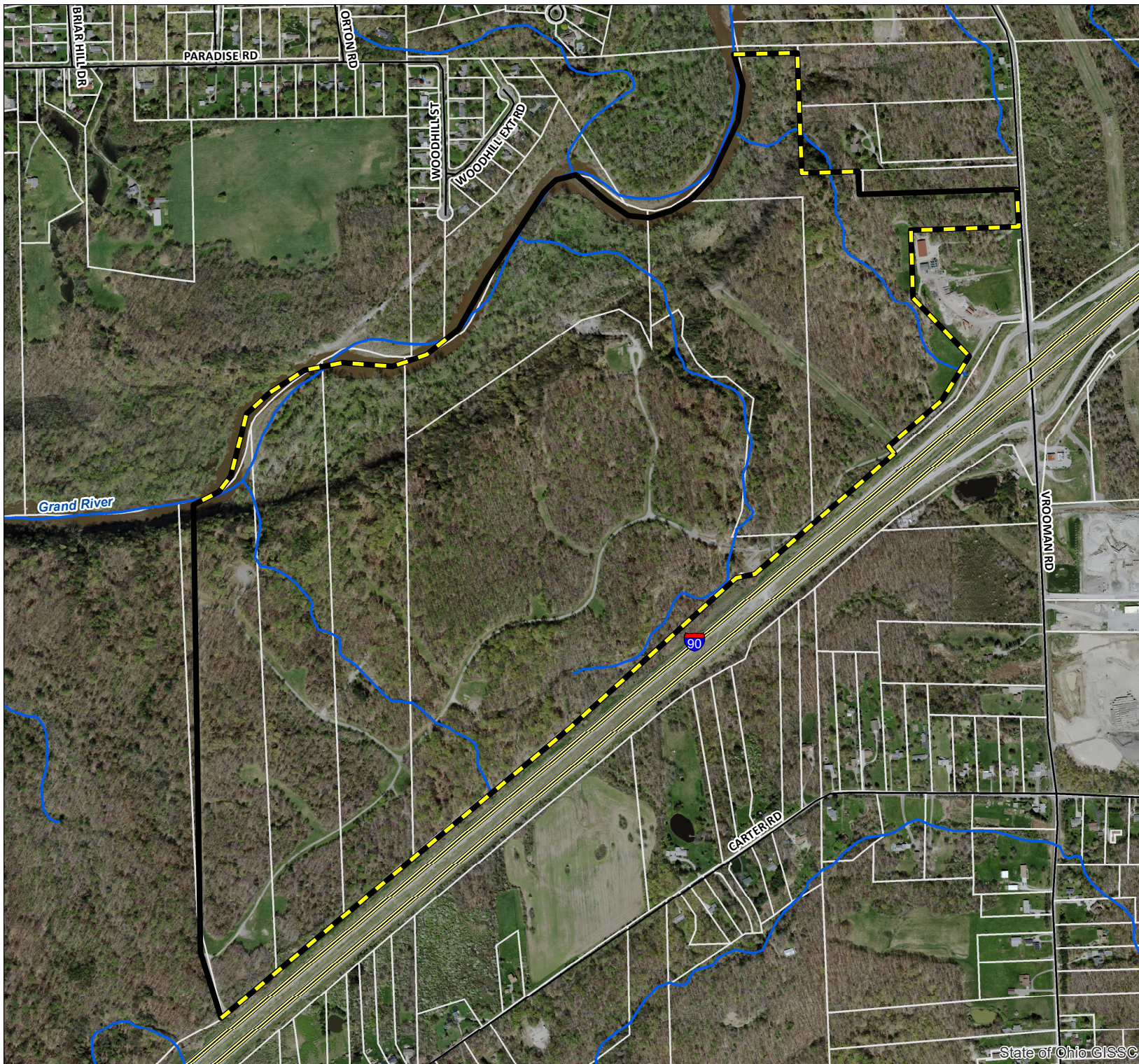
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**Threat of Loss Demonstration**

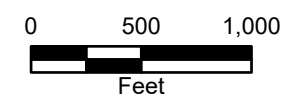




# Perimeter Development

-  Property Boundary Perimeter - 3.8 Miles
-  Parcels
-  Perimeter Development - 2.3 Miles
-  River/Stream
-  Interstate
-  County & Township Roads

60.5% of Perimeter is Developed



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## Attestation of No Double Counting and No Net Harm





## Hemlock Ridge Forest Attestation of No Double Counting of Credits & No Net Harm

I am the Assistant Secretary of Western Reserve Land Conservancy (WRLC) and make this attestation regarding the no double counting of credits and no net harm from this tree preservation project, Hemlock Ridge Forest.

### 1. Project Description

The Project that is the subject of this attestation is described more fully in both our Application and our Project Design Document (PDD), both of which are incorporated into this attestation.

### 2. No Double Counting by Applying for Credits from another Registry

WRLC has not and will not seek credits for CO<sub>2</sub> for the project trees or for this project from any other organization or registry issuing credits for CO<sub>2</sub> storage.

### 3. No Double Counting by Seeking Credits for the Same Trees or Same CO<sub>2</sub> Storage

WRLC has not and will not apply for a project including the same trees as this project nor will it seek credits for CO<sub>2</sub> storage for the project trees or for this project in any other project or more than once. WRLC checked the location of the Project Area against the Registry-provided geospatial database, which contains geospatial data on the project areas of all registered urban forest carbon preservation projects to date. Project Operator has determined that there is no overlap of Project Area or Project Trees with any registered urban forest carbon preservation project.

### 4. No Net Harm

The trees preserved in this project will produce many benefits, as described in our Application and PDD. Like almost all urban trees, the project trees are preserved for the benefits they deliver to people, communities, and the environment in a metropolitan area.

The project trees will produce many benefits and will not cause net harm. Specifically, they will not:

- Displace native or indigenous populations
- Deprive any communities of food sources
- Degrade a landscape or cause environmental damage

Signed on September 21, 2023, by Robert B. Owen, Assistant Secretary of Western Reserve Land Conservancy.

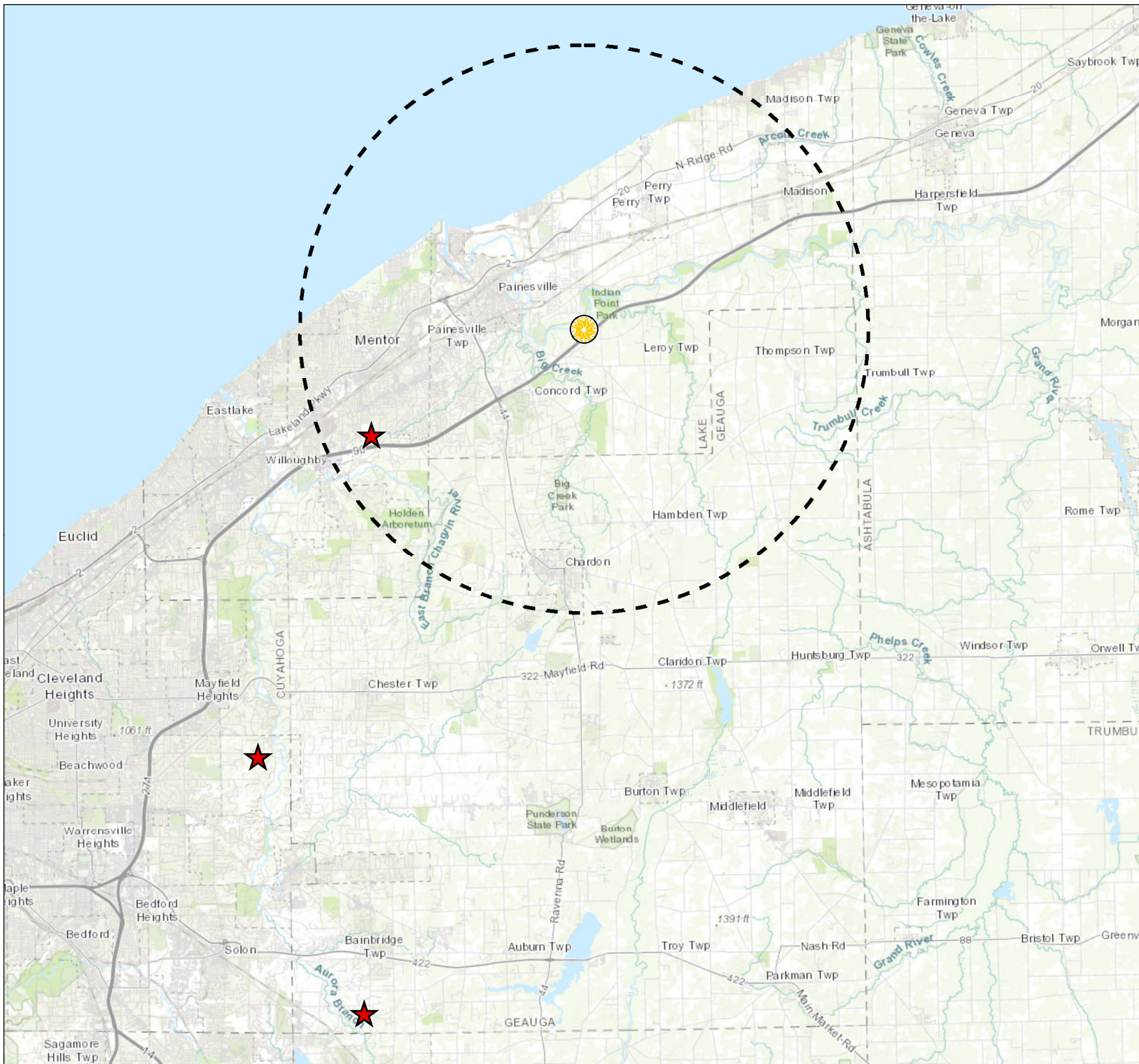
Signature

(440) 528-4150




Phone

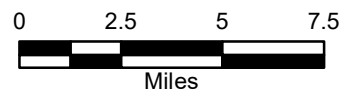
rowen@wrlandconservancy.org

Email



# No Double Counting Map

-  Project Location
-  Existing Preservation Projects
-  10-mile buffer



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**Attestation of Additionality**





## Hemlock Ridge Forest Attestation of Additionality

I am the Assistant Secretary of Western Reserve Land Conservancy (WRLC) and make this attestation regarding additionality from this tree preservation project, Hemlock Ridge Forest.

- Project Description
  - The Project that is the subject of this attestation is described more fully in the Application and the Project Design Document (PDD), both of which are incorporated into this attestation.
- Prior to the start of the project, the trees in the Project Area were not protected via easement or recorded encumbrance or in a protected zoning status that preserves the trees
- The zoning in the Project Area currently allows for a non-forest use
- The trees in the Project Area face a threat or risk of removal or conversion out of forest
- WRLC recorded in the public land records an easement, covenant, or deed restriction specifically protecting the trees for the project duration of 40 years
- Additionality is also embedded in the quantification methodology that our project followed. Projects cannot receive, and the project will not receive, credits for trees that would have remained had development occurred, nor can they receive soil carbon credits for soil that would have been undisturbed had development occurred. The project also had to apply a discount to credited carbon for potential displaced development due to the project.
- Project Implementation Agreement for Project Duration
  - WRLC signed a Project Implementation Agreement with City Forest Credits for 40 years.

Signed on September 21, 2023, by Robert B. Owen, Assistant Secretary of Western Reserve Land Conservancy.

Signature

ROBERT B. OWEN

Printed Name

(440) 528-4150

Phone

rowen@wrlandconservancy.org

Email



# Carbon Quantification Tool

# City Forest Credits - Preservation Protocol Carbon Quantification Calculator

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**Project Operator** Western Reserve Land Conservancy  
**Project Name** Hemlock Ridge  
**Project Location** Concord and Leroy Townships, Lake County, Ohio  
**Date** 9/1/2023

## Carbon Quantification Summary

192.8 Total Project Area Acres  
 72.29 Biomass tC/ac  
 265.06 Biomass tCO2e/ac  
 51,104 Accounting Stock, tCO2e  
 80% Fraction at risk of tree removal  
 40,883 Avoided Biomass Emissions, tCO2e  
 49% Avoided impervious surface, percent  
 94 Avoided impervious surface, acres  
 11,337 Avoided Soil Carbon Emissions, tCO2e  
 18.3% Displacement  
 7,482 Displaced Biomass Emissions, tCO2e  
 3,435 Displaced Soil Emissions  
 33,402 Credits from Avoided Biomass Emissions, tCO2e  
 7,902 Credits from Avoided Soil Emissions, tCO2e  
 41,303 Total Credits attributed to the project, tCO2e  
 4,130 Registry Reversal Pool Account (10%), tCO2e

## Protocol Section Supplemental information/notes

include project area for all parcels enrolled in carbon project  
 11.1.B An on-site plot sample inventory was performed at the project area. All trees within each plot that had a diameter at breast height of 5 inches or more, corresponding to method 11.1.B , were sampled. Include i-Tree eco results  
 11.1.B  
 11.1.B  
 11.2 Based on zoning - see 11.2 in preservation protocol  
 11.2  
 11.4 Based on zoning - see 11.4 in preservation protocol  
 11.4  
 11.4  
 11.5 Fraction of avoided development that cannot be served by development or re-development of existing non-treed properties within the urban area  
 Assumes that redevelopment causes increase in impervious surface on redeveloped parcels

<b>37,173 Total credits issued to the project, tCO2e</b>
<b>193 Total credits issued to the project, tCO2e/acre</b>

Year	Credits Issued This Year	Credits Issued
1	9,640	9,640
2	9,640	19,280
3	9,640	28,920
4	8,253	37,173
5	-	37,173

metric ton C total	SE	%SE	acreage	Biomass tC/acre
17147.35	1040.1	0.060657	222.8	72.29

**Trees Only: R4 Residential (Concord Twp)**

**Fraction at risk of tree removal (Section 11.2)**

<b>13.7</b> Total Project Area Acres	Fraction at Risk of Tree Removal	90%
<b>1</b> Acres per unit	Avoided Impervious Surface	0%
13.7 Max potential dwelling units, at .2 acres/unit		
27.4 clearing at 2 ac/unit		
-13.700 remaining area		
-1.37 Potentially cleared, 10% of remaining area		
26.03 Total potentially cleared area		
190% Fraction potentially cleared of total project		

**Trees and Soil: R4 Residential (Concord Twp)**

**Fraction at risk of tree removal (Section 11.2)**

<b>74.6</b> Total Project Area Acres	Fraction at Risk of Tree Removal	90%
<b>1</b> Acres per unit	Avoided Impervious Surface	50%
74.6 Max potential dwelling units, at .2 acres/unit		
149.2 clearing at 2 ac/unit		
-74.600 remaining area		
-7.46 Potentially cleared, 10% of remaining area		
141.74 Total potentially cleared area		
190% Fraction potentially cleared of total project		

**Trees and Soil R2 Residential (Leroy Twp)**

**Fraction at risk of tree removal (Section 11.2)**

<b>106.5</b> Total Project Area Acres	Fraction at Risk of Tree Removal	69.15%
<b>3</b> Acres per unit	Avoided Impervious Surface	50%
35 Max potential dwelling units, at .2 acres/unit		
70 clearing at 2 ac/unit		
36.500 remaining area		
3.65 Potentially cleared, 10% of remaining area		
73.65 Total potentially cleared area		
69.15% Fraction potentially cleared of total project		

**Trees and Soil: B2 Special Interchange (Leroy Twp)**

<b>28</b> Total Project Area Acres	Fraction at Risk of Tree Removal	90%
	Avoided Impervious Surface	70%
Per Protocol Section 11.2.A, 90% of the Account Stock is Avoided Biomass Emissions for commercial zoning		

<b>Total Project</b>	
Fraction at Risk of Tree Removal	80%
Avoided Impervious Surface	49%
Total Project Area	222.8
Creditable Area	192.8



# Benefits Summary of Trees by Stratum and Species

Location: Leroy township, Lake, Ohio, United States of America

Project: HemlockRidge, Series: HemlockRidge, Year: 2023

Generated: 11/14/2023



Stratum	Species	Trees		Carbon Storage	
		Number	SE	(metric ton)	SE
<b>Stand 1</b>	Freeman maple	587	±442	102.14	±92.52
	Red maple	1,409	±935	325.91	±229.63
	Sugar maple	1,291	±818	252.34	±127.34
	Pignut hickory	117	±117	97.48	±97.07
	Shagbark hickory	704	±556	561.75	±328.84
	American beech	939	±787	581.59	±570.83
	Ash spp	117	±117	6.27	±6.24
	Tulip tree	822	±671	325.87	±187.34
	Black tupelo	235	±135	11.53	±7.13
	Norway spruce	352	±351	171.08	±170.35
	Eastern white pine	117	±117	90.34	±89.96
	Black cherry	117	±117	17.54	±17.46
	White oak	470	±191	218.22	±126.28
	Swamp white oak	235	±135	22.30	±14.41
	Northern red oak	822	±224	403.48	±197.47
	Sassafras	2,582	±1,669	305.72	±186.74
Eastern hemlock	117	±117	15.30	±15.24	
	<b>Total</b>	<b>11,033</b>	<b>±1,951</b>	<b>3,508.86</b>	<b>±460.00</b>
<b>Stand 2</b>	Red maple	352	±234	29.72	±23.23
	Sugar maple	3,518	±1,771	1,137.27	±707.80
	Pignut hickory	352	±234	189.48	±135.35
	Shellbark hickory	235	±234	160.31	±159.62
	Shagbark hickory	352	±350	176.40	±175.65
	American beech	1,407	±987	107.19	±77.66
	Ash spp	117	±117	67.09	±66.80
	Tulip tree	2,462	±1,399	800.54	±337.35
	Eastern hophornbeam	117	±117	3.76	±3.75
American sycamore	117	±117	40.05	±39.87	

# Benefits Summary of Trees by Stratum and Species

Location: Leroy township, Lake, Ohio, United States of America

Project: HemlockRidge, Series: HemlockRidge, Year: 2023

Generated: 11/14/2023



Stratum	Species	Trees		Carbon Storage	
		Number	SE	(metric ton)	SE
	Black cherry	117	±117	10.56	±10.52
	Swamp white oak	1,290	±1,284	1,122.99	±1,118.19
	Northern red oak	1,642	±1,067	1,227.41	±700.41
	Sassafras	235	±234	24.08	±23.97
	Eastern hemlock	235	±234	10.61	±10.56
	<b>Total</b>	<b>12,547</b>	<b>±1,102</b>	<b>5,107.45</b>	<b>±664.16</b>
<b>Stand 3</b>	Freeman maple	96	±96	35.02	±34.84
	Red maple	3,651	±689	681.01	±214.27
	Sugar maple	288	±166	59.78	±31.74
	Tulip tree	2,786	±1,484	1,031.94	±287.95
	Eastern cottonwood	192	±191	73.79	±73.40
	Black cherry	96	±96	6.30	±6.27
	Northern red oak	96	±96	17.03	±16.94
	Sassafras	1,537	±833	349.92	±218.96
	<b>Total</b>	<b>8,742</b>	<b>±1,077</b>	<b>2,254.79</b>	<b>±382.48</b>
<b>Stand 4</b>	Norway maple	149	±148	76.28	±76.02
	Red maple	3,567	±1,429	1,454.24	±778.75
	Silver maple	297	±296	408.49	±407.12
	Sugar maple	149	±148	55.17	±54.98
	Ash spp	297	±148	111.87	±99.03
	Tulip tree	446	±257	302.26	±271.53
	Black tupelo	149	±148	9.67	±9.64
	Black cherry	149	±148	13.83	±13.79
	Sassafras	743	±296	281.76	±187.69
	American elm	595	±593	33.35	±33.24
	<b>Total</b>	<b>6,540</b>	<b>±971</b>	<b>2,746.93</b>	<b>±268.18</b>
<b>Stand 5</b>	Norway maple	500	±263	33.81	±16.82
	Red maple	900	±456	155.81	±102.79

# Benefits Summary of Trees by Stratum and Species

Location: Leroy township, Lake, Ohio, United States of America

Project: HemlockRidge, Series: HemlockRidge, Year: 2023

Generated: 11/14/2023



Stratum	Species	Trees		Carbon Storage	
		Number	SE	(metric ton)	SE
	Silver maple	100	±99	91.10	±90.64
	Sugar maple	1,100	±359	172.57	±118.64
	Shellbark hickory	100	±99	12.06	±12.00
	American beech	200	±99	56.72	±50.19
	Ash spp	300	±172	59.34	±48.00
	Tulip tree	1,300	±995	433.36	±244.72
	American sycamore	100	±99	51.20	±50.94
	Black cherry	200	±99	11.00	±5.48
	Northern red oak	200	±199	655.62	±652.33
	Black locust	200	±199	32.71	±32.54
	Sassafras	1,599	±1,293	192.67	±149.07
	American elm	400	±263	11.61	±7.87
	<b>Total</b>	<b>7,198</b>	<b>±1,643</b>	<b>1,969.58</b>	<b>±172.16</b>
<b>Stand 6</b>	Maple spp	46	±28	49.90	±32.15
	Red maple	69	±67	40.01	±39.13
	Silver maple	391	±95	457.67	±142.26
	Sugar maple	46	±28	30.95	±29.15
	Ohio buckeye	23	±22	1.20	±1.18
	Yellow birch	138	±135	21.99	±21.51
	American beech	23	±22	10.59	±10.36
	Ash spp	23	±22	17.35	±16.97
	Tulip tree	69	±46	72.96	±46.08
	American sycamore	69	±46	101.71	±63.65
	Eastern cottonwood	115	±88	687.00	±497.71
	Northern red oak	46	±45	37.27	±36.45
	American basswood	23	±22	2.15	±2.10
	Eastern hemlock	92	±67	27.84	±25.90
	American elm	23	±22	1.15	±1.12

## Benefits Summary of Trees by Stratum and Species

Location: Leroy township, Lake, Ohio, United States of America

Project: HemlockRidge, Series: HemlockRidge, Year: 2023

Generated: 11/14/2023



Stratum	Species	Trees		Carbon Storage			Gross Carbon Sequestration			Avoided Runoff	
		Number	SE	(metric ton)	SE	(\$)	(metric ton/yr)	SE	(\$/yr)	(m <sup>3</sup> /yr)	(\$/yr)
<b>Total</b>		<b>1,196</b>	<b>±217</b>	<b>1,559.74</b>	<b>±425.74</b>	<b>293,231.14</b>	<b>14.85</b>	<b>±3.03</b>	<b>2,791.37</b>	<b>40.58</b>	<b>95.79</b>
<b>Study Area</b>		<b>47,256</b>	<b>±3,142</b>	<b>17,147.35</b>	<b>±1,040.10</b>	<b>3,223,701.36</b>	<b>422.41</b>	<b>±30.10</b>	<b>79,412.29</b>	<b>1,072.62</b>	<b>2,532.08</b>

Biomass tC/acre calculation: A plot sample forest assessment adhering to the standards set in CFC Tree Preservation Protocol Section 11.1.B was conducted. The sample established 24 sample plots sized at 1/10th-acre. Within every plot, each live tree at least 5" in diameter at 4.5' above the ground where the height above the ground is measured on the uphill side of the tree was inventoried. Species, diameter, and overall tree condition were recorded for each tree. i-Tree Eco was utilized to input the sample plot data to determine the carbon storage.

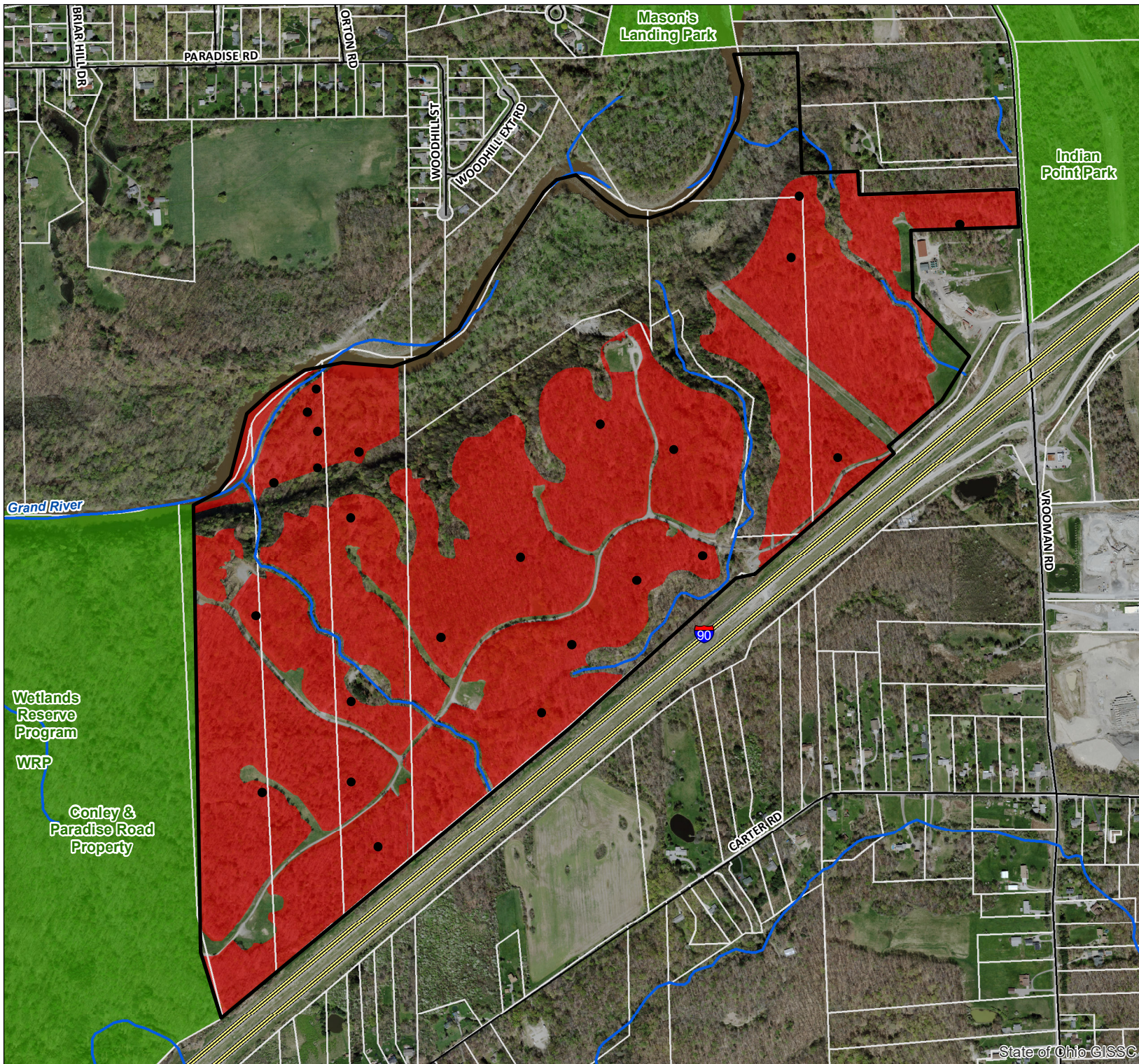
Carbon quantification is based on the sample plots. The metric tons of Carbon is 17,147.35. The standard error is 1,040.10.

Biomass tC/ac = (metric tons of carbon – standard error)/project area acres  
 $(17,147.35 - 1,040.10) / 222.8 = 72.29$  (cell B11 on carbon calculator)











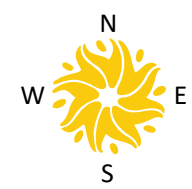
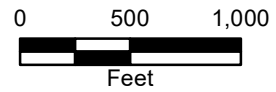
## Tree Inventory





# Plot Sampling Map

-  Property Boundary - 338 Acres
-  Plot Samples
-  Project Area - 222.8 Acres
-  Parcels
-  Parks and Managed Areas
-  River/Stream
-  Interstate
-  County & Township Roads



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ID	Stratum	Date	Crew	Contact	Ini Size (ac)	Photo ID	Stake	% Tree	% Measure	Notes	Complete?
1	Stand 1	#####	Lizzie		0.1		FALSE	85% - 90%	100	Stand 1 Plc	TRUE
2	Stand 1				0.1		FALSE	-- Not Ente	100		FALSE
3	Stand 1				0.1		FALSE	-- Not Ente	100		FALSE
4	Stand 1				0.1		FALSE	-- Not Ente	100		FALSE
5	Stand 1	#####	Lizzie		0.1		FALSE	70% - 75%	100	Stand 1 Plc	TRUE
6	Stand 1	#####	Lizzie		0.1		FALSE	70% - 75%	100	Stand 1 Plc	TRUE
7	Stand 1				0.1		FALSE	-- Not Ente	100		FALSE
8	Stand 1	#####	Lizzie		0.1		FALSE	55% - 60%	100	Stand 1 Plc	TRUE
9	Stand 1				0.1		FALSE	-- Not Ente	100		FALSE
10	Stand 1				0.1		FALSE	-- Not Ente	100		FALSE
11	Stand 2				0.1		FALSE	-- Not Ente	100		FALSE
12	Stand 2				0.1		FALSE	-- Not Ente	100		FALSE
13	Stand 2	#####	Lizzie		0.1		FALSE	65% - 70%	100	Stand 2 EA	TRUE
14	Stand 2				0.1		FALSE	-- Not Ente	100		FALSE
15	Stand 2				0.1		FALSE	-- Not Ente	100		FALSE
16	Stand 2	#####	Lizzie		0.1		FALSE	65% - 70%	100	Stand 2 plc	TRUE
17	Stand 2				0.1		FALSE	-- Not Ente	100		FALSE
18	Stand 2	#####	Lizzie		0.1		FALSE	85% - 90%	100	STAND 2 E	TRUE
19	Stand 2	#####	Lizzie		0.1		FALSE	70% - 75%	100	Stand 2 Plc	TRUE
20	Stand 2				0.1		FALSE	-- Not Ente	100		FALSE
21	Stand 3				0.1		FALSE	-- Not Ente	100		FALSE
22	Stand 3				0.1		FALSE	-- Not Ente	100		FALSE
23	Stand 3	#####	Lizzie		0.1		FALSE	75% - 80%	100	Stand 3 Plc	TRUE
24	Stand 3	#####	Lizzie		0.1		FALSE	70% - 75%	100	Stand 3 Plc	TRUE
25	Stand 3				0.1		FALSE	-- Not Ente	100		FALSE
26	Stand 3				0.1		FALSE	-- Not Ente	100		FALSE
27	Stand 3				0.1		FALSE	-- Not Ente	100		FALSE
28	Stand 3				0.1		FALSE	-- Not Ente	100		FALSE
29	Stand 3	#####	Lizzie		0.1		FALSE	90% - 95%	100	Stand 3 plc	TRUE
30	Stand 3				0.1		FALSE	-- Not Ente	100		FALSE
31	Stand 4	#####	Lizzie		0.1		FALSE	60% - 65%	100	Stand 4 Plc	TRUE
32	Stand 4				0.1		FALSE	-- Not Ente	100		FALSE
33	Stand 4				0.1		FALSE	-- Not Ente	100		FALSE
34	Stand 4	#####	Lizzie		0.1		FALSE	95% - 99%	100	Stand 4 Plc	TRUE
35	Stand 4	#####	Lizzie		0.1		FALSE	70% - 75%	100	Stand 4 Plc	TRUE
36	Stand 4				0.1		FALSE	-- Not Ente	100		FALSE
37	Stand 4				0.1		FALSE	-- Not Ente	100		FALSE
38	Stand 4				0.1		FALSE	-- Not Ente	100		FALSE
39	Stand 4				0.1		FALSE	-- Not Ente	100		FALSE
40	Stand 4				0.1		FALSE	-- Not Ente	100		FALSE
41	Stand 5	#####	Lizzie		0.1		FALSE	75% - 80%	100	Stand 5 Plc	TRUE
42	Stand 5	#####	Lizzie		0.1		FALSE	90% - 95%	100	Stand 5 Plc	TRUE
43	Stand 5				0.1		FALSE	-- Not Ente	100		FALSE
44	Stand 5	#####	Lizzie		0.1		FALSE	55% - 60%	100	Stand 5 Plc	TRUE
45	Stand 5				0.1		FALSE	-- Not Ente	100	Stand 5 Plc	FALSE
46	Stand 5				0.1		FALSE	-- Not Ente	100		FALSE
47	Stand 5				0.1		FALSE	-- Not Ente	100		FALSE
48	Stand 5				0.1		FALSE	-- Not Ente	100		FALSE
49	Stand 5				0.1		FALSE	-- Not Ente	100		FALSE
50	Stand 5				0.1		FALSE	-- Not Ente	100		FALSE
51	Stand 6	#####	Lizzie		0.1		FALSE	45% - 50%	100	Stand 6 plc	TRUE
52	Stand 6				0.1		FALSE	-- Not Ente	100		FALSE
53	Stand 6	#####	Lizzie		0.1		FALSE	30% - 35%	100	Stand 6 plc	TRUE
54	Stand 6	#####	Lizzie		0.1		FALSE	50% - 55%	100	Stand 6 plc	TRUE
55	Stand 6				0.1		FALSE	-- Not Ente	100		FALSE
56	Stand 6				0.1		FALSE	-- Not Ente	100		FALSE
57	Stand 6	#####	Lizzie		0.1	Yes	FALSE	70% - 75%	100	Stand 6 Plc	TRUE
58	Stand 6	#####	Lizzie		0.1		FALSE	20% - 25%	100	Stand 6 Plc	TRUE

59	Stand 6		0.1	FALSE	-- Not Ente	100	FALSE
60	Stand 6	##### Lizzie	0.1	FALSE	35% - 40%	100	Stand 6 Plc TRUE
61	Stand 1		0.1	FALSE	-- Not Ente	100	FALSE
62	Stand 1		0.1	FALSE	-- Not Ente	100	FALSE
63	Stand 1		0.1	FALSE	-- Not Ente	100	FALSE
64	Stand 1		0.1	FALSE	-- Not Ente	100	FALSE
65	Stand 1		0.1	FALSE	-- Not Ente	100	FALSE
66	Stand 2		0.1	FALSE	-- Not Ente	100	FALSE
67	Stand 2		0.1	FALSE	-- Not Ente	100	FALSE
68	Stand 2		0.1	FALSE	-- Not Ente	100	FALSE
69	Stand 2		0.1	FALSE	-- Not Ente	100	FALSE
70	Stand 2	##### Lizzie	0.1	FALSE	65% - 70%	100	STAND 2 P TRUE
71	Stand 2		0.1	FALSE	-- Not Ente	100	FALSE
72	Stand 2		0.1	FALSE	-- Not Ente	100	FALSE
73	Stand 2		0.1	FALSE	-- Not Ente	100	FALSE
74	Stand 2		0.1	FALSE	-- Not Ente	100	FALSE
75	Stand 2		0.1	FALSE	-- Not Ente	100	FALSE
76	Stand 3		0.1	FALSE	-- Not Ente	100	FALSE
77	Stand 3		0.1	FALSE	-- Not Ente	100	FALSE
78	Stand 3		0.1	FALSE	-- Not Ente	100	FALSE
79	Stand 3		0.1	FALSE	-- Not Ente	100	FALSE
80	Stand 3		0.1	FALSE	-- Not Ente	100	FALSE
81	Stand 4		0.1	FALSE	-- Not Ente	100	FALSE
82	Stand 4		0.1	FALSE	-- Not Ente	100	FALSE
83	Stand 4		0.1	FALSE	-- Not Ente	100	FALSE
84	Stand 4		0.1	FALSE	-- Not Ente	100	FALSE
85	Stand 4		0.1	FALSE	-- Not Ente	100	FALSE
86	Stand 5		0.1	FALSE	-- Not Ente	100	FALSE
87	Stand 5		0.1	FALSE	-- Not Ente	100	FALSE
88	Stand 5		0.1	FALSE	-- Not Ente	100	FALSE
89	Stand 5		0.1	FALSE	-- Not Ente	100	FALSE
90	Stand 5		0.1	FALSE	-- Not Ente	100	FALSE
91	Stand 6		0.1	FALSE	-- Not Ente	100	FALSE
92	Stand 6		0.1	FALSE	-- Not Ente	100	FALSE
93	Stand 6		0.1	FALSE	-- Not Ente	100	FALSE
94	Stand 6		0.1	FALSE	-- Not Ente	100	FALSE
95	Stand 6		0.1	FALSE	-- Not Ente	100	FALSE



Stand	Plot	ID	Survey Date	Species	Land Use	DBH 1 (in)	DBH 1: He	DBH 1: Me	DBH 2 (in)	DBH 2: He	DBH 2: Me	DBH 3 (in)	DBH 3: He	DBH 3: Me	DBH 4 (in)	DBH 4: He	DBH 4: Me	DBH 5 (in)	DBH 5: He	DBH 5: Me	DBH 6 (in)	DBH 6: He	DBH 6: Me	Crown: Co	Comments
Stand 1	1	1		1	Pignut hcl Forest	17.6																			TRUE 75% - 80%
Stand 1	1	2		2	Sugar map Forest	5.3																			TRUE 75% - 80%
Stand 1	1	3		3	Sugar map Forest	8.4																			TRUE 75% - 80%
Stand 1	1	4		4	Swamp w/ Forest	7.4																			TRUE 75% - 80%
Stand 1	1	5		5	Red maple Forest	5																			TRUE 70% - 75%
Stand 1	1	6		6	Sugar map Forest	10.3																			TRUE 75% - 80%
Stand 1	1	7		7	Shagbark l Forest	22																			TRUE 80% - 85%
Stand 1	1	8		8	Shagbark l Forest	7.4																			TRUE 70% - 75%
Stand 1	1	9		9	Northern r Forest	7.1																			TRUE 70% - 75%
Stand 1	1	10		10	White oak Forest	22.3																			TRUE 70% - 75%
Stand 1	1	11		11	Sugar map Forest	5			3.8			4.8													TRUE 75% - 80%
Stand 1	1	12		12	Shagbark l Forest	15.9																			TRUE 75% - 80%
Stand 1	1	13		13	Northern r Forest	7.6																			TRUE 55% - 60%
Stand 1	1	14		14	Sugar map Forest	8.7																			TRUE 80% - 85%
Stand 1	1	15		15	Sugar map Forest	7.7																			TRUE 70% - 75%
Stand 1	1	16		16	Sugar map Forest	5																			TRUE 75% - 80%
Stand 1	1	17		17	Shagbark l Forest	14.7																			TRUE 75% - 80%
Stand 1	1	18		18	Shagbark l Forest	7																			TRUE 75% - 80%
Stand 1	1	19		19	Sugar map Forest	7.7			3.5			3.2													TRUE 80% - 85%
Stand 1	5	1		1	Tulip tree Forest	26																			TRUE 30% - 35%
Stand 1	5	2		2	Sassafras Forest	7.6																			TRUE 0%
Stand 1	5	3		3	Sassafras Forest	9.9																			TRUE 0%
Stand 1	5	4		4	Sassafras Forest	11.4																			TRUE 0%
Stand 1	5	5		5	Black tupe Forest	6.9																			TRUE 65% - 70%
Stand 1	5	6		6	Red maple Forest	6.7																			TRUE 70% - 75%
Stand 1	5	7		7	Red maple Forest	5.7																			TRUE 70% - 75%
Stand 1	5	8		8	White oak Forest	7.9																			TRUE 65% - 70%
Stand 1	5	9		9	Eastern w/ Forest	25.7																			TRUE 65% - 70%
Stand 1	5	10		10	White oak Forest	12.2																			TRUE 70% - 75%
Stand 1	5	11		11	Sassafras Forest	5.8																			TRUE 0%
Stand 1	5	12		12	Ash spp (F Forest	6.3																			TRUE 0%
Stand 1	5	13		13	Sassafras Forest	5.2																			TRUE 0%
Stand 1	5	14		14	Sassafras Forest	9.6																			TRUE 0%
Stand 1	5	15		15	Sugar map Forest	6.2																			TRUE 70% - 75%
Stand 1	5	16		16	Red maple Forest	14.6																			TRUE 65% - 70%
Stand 1	5	17		17	Sassafras Forest	6.4																			TRUE 0%
Stand 1	5	18		18	Red maple Forest	11.1																			TRUE 65% - 70%
Stand 1	5	19		19	Red maple Forest	7.2																			TRUE 70% - 75%
Stand 1	5	20		20	Red maple Forest	7.4																			TRUE 70% - 75%
Stand 1	5	21		21	Red maple Forest	8																			TRUE 65% - 70%
Stand 1	5	22		22	Red maple Forest	5.3																			TRUE 65% - 70%
Stand 1	5	23		23	Red maple Forest	12			16.2																TRUE 80% - 85%
Stand 1	5	24		24	Northern r Forest	10.3																			TRUE 60% - 65%
Stand 1	5	25		25	Freeman r Forest	5.9																			TRUE 75% - 80%
Stand 1	5	26		26	Swamp w/ Forest	5																			TRUE 70% - 75%
Stand 1	6	1		1	Northern r Forest	6.4																			TRUE 70% - 75%
Stand 1	6	2		2	Shagbark l Forest	25.9																			TRUE 75% - 80%
Stand 1	6	3		3	American l Forest	18.3			2.7																TRUE 50% - 55% BLD
Stand 1	6	4		4	Eastern he Forest	11																			TRUE 85% - 90%
Stand 1	6	5		5	American l Forest	19.7																			TRUE 45% - 50% BLD
Stand 1	6	6		6	American l Forest	11.4																			TRUE 40% - 45%
Stand 1	6	7		7	American l Forest	15.5																			TRUE 60% - 65% BLD
Stand 1	6	8		8	American l Forest	11.1																			TRUE 0%
Stand 1	6	9		9	American l Forest	13.5			17.7																TRUE 55% - 60% BLD
Stand 1	6	10		10	Sugar map Forest	20																			TRUE 80% - 85%
Stand 1	6	11		11	American l Forest	13.6																			TRUE 60% - 65%
Stand 1	6	12		12	Northern r Forest	26.5																			TRUE 85% - 90%
Stand 1	6	13		13	Black cher Forest	9.1																			TRUE 75% - 80%
Stand 1	6	14		14	Northern r Forest	5.4																			TRUE 70% - 75%
Stand 1	6	15		15	Red maple Forest	7.2																			TRUE 65% - 70%
Stand 1	8	1		1	Sassafras Forest	7																			TRUE 0%
Stand 1	8	2		2	Sassafras Forest	6.2			6.4																TRUE 0%
Stand 1	8	3		3	Sassafras Forest	7																			TRUE 0%
Stand 1	8	4		4	Black tupe Forest	5.4																			TRUE 80% - 85%
Stand 1	8	5		5	Tulip tree Forest	6																			TRUE 65% - 70%
Stand 1	8	6		6	Tulip tree Forest	18.4																			TRUE 65% - 70%
Stand 1	8	7		7	Sassafras Forest	7.8																			TRUE 0%
Stand 1	8	8		8	Tulip tree Forest	13.4																			TRUE 70% - 75%
Stand 1	8	9		9	Sassafras Forest	6.7																			TRUE 0%
Stand 1	8	10		10	Sassafras Forest	5.5																			TRUE 0%
Stand 1	8	11		11	Sassafras Forest	5.8																			TRUE 0%
Stand 1	8	12		12	Sassafras Forest	9																			TRUE 0%
Stand 1	8	13		13	Northern r Forest	22.4																			TRUE 70% - 75%
Stand 1	8	14		14	American l Forest	5.5																			TRUE 20% - 25% BLD
Stand 1	8	15		15	Sassafras Forest	9.6																			TRUE 25% - 30%
Stand 1	8	16		16	Freeman r Forest	11.3																			TRUE 70% - 75% Red silver hybrid
Stand 1	8	17		17	Norway sp Forest	25.9																			TRUE 35% - 40%
Stand 1	8	18		18	Sugar map Forest	6.2																			TRUE 75% - 80%
Stand 1	8	19		19	Sassafras Forest	6.3																			TRUE 0%
Stand 1	8	20		20	Sassafras Forest	8																			TRUE 0%
Stand 1	8	21		21	Freeman r Forest	5.8																			TRUE 55% - 60%
Stand 1	8	22		22	White oak Forest	11.6																			TRUE 75% - 80%
Stand 1	8	23		23	Red maple Forest	15.5																			TRUE 75% - 80%
Stand 1	8	24		24	Tulip tree Forest	6.9																			TRUE 70% - 75%
Stand 1	8	25		25	Sassafras Forest	9.2																			TRUE 35% - 40%
Stand 1	8	26		26	Sassafras Forest	6.1																			TRUE 0%
Stand 1	8	27		27	Freeman r Forest	8.4																			TRUE 65% - 70%
Stand 1	8	28		28	Norway sp Forest	5.3		</																	

Stand 2	18	3	##### Northern r Forest	18.8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 2	18	4	##### Northern r Forest	20.6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 2	18	5	##### Shagbark l Forest	11.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 2	18	6	##### Shagbark l Forest	18	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 2	18	7	##### Eastern hc Forest	5.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	85% - 90%
Stand 2	18	8	##### Pignut hcl Forest	12.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	85% - 90%
Stand 2	18	9	##### Pignut hcl Forest	17.6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 2	18	10	##### Northern r Forest	5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	0%
Stand 2	18	11	##### Shagbark l Forest	12.8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 2	18	12	##### Northern r Forest	12	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 2	18	13	##### American l Forest	7.3	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70% BLD
Stand 2	18	14	##### Northern r Forest	11.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 2	18	15	##### American l Forest	5.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	35% - 40% BLD
Stand 2	18	16	##### Northern r Forest	12	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 2	18	17	##### Northern r Forest	19.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 2	18	18	##### Northern r Forest	30.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 2	19	1	##### Tulip tree l Forest	10.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 2	19	2	##### Tulip tree l Forest	17.6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 2	19	3	##### Tulip tree l Forest	10	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 2	19	4	##### Sugar map Forest	11.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 2	19	5	##### Red maple Forest	5.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 2	19	6	##### Sugar map Forest	5.6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 2	19	7	##### Sugar map Forest	8.8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	85% - 90%
Stand 2	19	8	##### Sugar map Forest	7.4	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 2	19	9	##### Sugar map Forest	10.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 2	19	10	##### Tulip tree l Forest	8.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 2	19	11	##### Tulip tree l Forest	13.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 2	19	12	##### Tulip tree l Forest	12.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 2	19	13	##### Sugar map Forest	6.5	TRUE	3.5	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 2	19	14	##### Tulip tree l Forest	7.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 2	19	15	##### Tulip tree l Forest	7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	35% - 40%
Stand 2	19	16	##### Sassafras l Forest	6.6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 2	19	17	##### Sassafras l Forest	8.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	45% - 50%
Stand 2	19	18	##### Tulip tree l Forest	7.8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 2	19	19	##### Tulip tree l Forest	10.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	30% - 35%
Stand 2	19	20	##### Tulip tree l Forest	13.8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 2	19	21	##### Tulip tree l Forest	6.3	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	35% - 40%
Stand 2	19	22	##### Tulip tree l Forest	19	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 2	19	23	##### Sugar map Forest	10.9	TRUE	11	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	23	1	##### Sugar map Forest	9.6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	23	2	##### Sassafras l Forest	7.2	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 3	23	3	##### Sassafras l Forest	12.3	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 3	23	4	##### Red maple Forest	6.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	45% - 50%
Stand 3	23	5	##### Red maple Forest	7.4	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 3	23	6	##### Red maple Forest	5.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	23	7	##### Sassafras l Forest	8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 3	23	8	##### Tulip tree l Forest	13.9	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 3	23	9	##### Sassafras l Forest	8.6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	0%
Stand 3	23	10	##### Tulip tree l Forest	12.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	23	11	##### Red maple Forest	11.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 3	23	12	##### Red maple Forest	6.3	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	23	13	##### Tulip tree l Forest	21.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	23	14	##### Tulip tree l Forest	15.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 3	23	15	##### Tulip tree l Forest	14.2	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	23	16	##### Red maple Forest	7.3	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	85% - 90%
Stand 3	23	17	##### Red maple Forest	7.9	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	23	18	##### Sugar map Forest	5.9	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	23	19	##### Eastern co Forest	14.3	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	23	20	##### Black cher Forest	6.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	23	21	##### Eastern co Forest	14.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 3	23	22	##### Sassafras l Forest	6.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 3	23	23	##### Sassafras l Forest	10.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 3	23	24	##### Red maple Forest	10.3	TRUE	4.9	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	24	1	##### Red maple Forest	6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 3	24	2	##### Tulip tree l Forest	19	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	24	3	##### Red maple Forest	14.2	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	24	4	##### Tulip tree l Forest	11.6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 3	24	5	##### Red maple Forest	11.4	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 3	24	6	##### Tulip tree l Forest	9.9	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	24	7	##### Red maple Forest	5.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 3	24	8	##### Tulip tree l Forest	9.8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	24	9	##### Tulip tree l Forest	13.8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	24	10	##### Red maple Forest	7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 3	24	11	##### Red maple Forest	9.4	TRUE	5.8	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	24	12	##### Tulip tree l Forest	11	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 3	24	13	##### Red maple Forest	9.3	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	24	14	##### Red maple Forest	7.2	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	24	15	##### Tulip tree l Forest	12.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 3	24	16	##### Tulip tree l Forest	9.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 3	24	17	##### Red maple Forest	6.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	24	18	##### Tulip tree l Forest	13.8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 3	24	19	##### Tulip tree l Forest	12.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	45% - 50%
Stand 3	24	20	##### Tulip tree l Forest	13.4	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 3	24	21	##### Red maple Forest	22.8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	24	22	##### Tulip tree l Forest	8.5	TRUE	13.1	TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 3	24	23	##### Sugar map Forest	13	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	24	24	##### Tulip tree l Forest	16	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	24	25	##### Tulip tree l Forest	7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	24	26	##### Tulip tree l Forest	13	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 3	24	27	##### Tulip tree l Forest	15.9	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 3	24	28	##### Red maple Forest	6.2	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	24	29	##### Tulip tree l Forest	6.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	24	30	##### Tulip tree l Forest	5.5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	24	31	##### Red maple Forest	10.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	24	32	##### Tulip tree l Forest	19.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	24	33	##### Red maple Forest	5.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	24	34	##### Red maple Forest	11.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	24	35	##### Red maple Forest	8.4	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 3	24	36	##### Tulip tree l Forest	16.3	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 3	24	37	##### Red maple Forest	9.2	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	29	1	##### Red maple Forest	11.6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	29	2	##### Northern r Forest	10.2	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	29	3	##### Red maple Forest	7.6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	29	4	##### Sassafras l Forest	7.9	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	29	5	##### Tulip tree l Forest	23.8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	29	6	##### Red maple Forest	5.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	0%
Stand 3	29	7	##### Red maple Forest	6.6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	29	8	##### Red maple Forest	5.3	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	29	9	##### Red maple Forest	17	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	29	10	##### Tulip tree l Forest	16.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	29	11	##### Red maple Forest	14.2	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	29	12	##### Tulip tree l Forest	24.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	29	13	##### Red maple Forest	6.9	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	85% - 90%
Stand 3	29	14	##### Red maple Forest	5	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	0%
Stand 3	29	15	##### Red maple Forest	5.9	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 3	29	16	##### Sassafras l Forest	6.9	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	0%
Stand 3	29	17	##### Sassafras l Forest	10.4	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 3	29	18	##### Sassafras l Forest	17.7	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 3	29	19	##### Red maple Forest	12.2	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 3	29	20	##### Sassafras l Forest	10.9	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 3	29	21	##### Tulip tree l Forest	15.8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	29	22	##### Red maple Forest	5.7	TRUE	4.1	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	29	23	##### Sassafras l Forest	11.4	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 3	29	24	##### Sassafras l Forest	7.4	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	30% - 35%
Stand 3	29	25	##### Sassafras l Forest	5.9	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	0%
Stand 3	29	26	##### Red maple Forest	8.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 3	29	27	##### Red maple Forest	12.6	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 3	29	28	##### Sassafras l Forest	6.6	TRUE	9.8	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 3	29	29	##### Sassafras l Forest	11.8	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 3	29	30	##### Freeman r Forest	13	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 4	31	1	##### Red maple Forest	7.6	TRUE	9.4	TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 4	31	2	##### Red maple Forest	13.1	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 4	31	3	##### Red maple Forest	12.2	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	70% - 75%

Stand 4	31	10	#####	Sassafras (Forest	19.5	TRUE		TRUE	TRUE	TRUE	TRUE	0%
Stand 4	31	11	#####	Red mapleForest	5.1	TRUE	3	TRUE	TRUE	TRUE	TRUE	45% - 50%
Stand 4	31	12	#####	Tulip tree Forest	21.6	TRUE		TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 4	31	13	#####	Sassafras (Forest	11.6	TRUE		TRUE	TRUE	TRUE	TRUE	25% - 30%
Stand 4	34	1	#####	Red mapleForest	8.8	TRUE		TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 4	34	2	#####	Red mapleForest	7.3	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 4	34	3	#####	Red mapleForest	14.7	TRUE		TRUE	TRUE	TRUE	TRUE	85% - 90%
Stand 4	34	4	#####	Red mapleForest	14.8	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 4	34	5	#####	Red mapleForest	15.5	TRUE		TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 4	34	6	#####	Ash spp (F Forest	6.5	TRUE		TRUE	TRUE	TRUE	TRUE	0%
Stand 4	34	7	#####	Red mapleForest	13.2	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 4	34	8	#####	Sugar mapForest	9.7	TRUE	8.5	TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 4	34	9	#####	Red mapleForest	17.9	TRUE		TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 4	34	10	#####	Red mapleForest	17.3	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 4	34	11	#####	Red mapleForest	13.3	TRUE		TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 4	34	12	#####	Red mapleForest	6.8	TRUE		TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 4	34	13	#####	Red mapleForest	23.3	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 4	34	14	#####	Red mapleForest	19.8	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 4	34	15	#####	Red mapleForest	8.7	TRUE		TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 4	34	16	#####	Black tupe Forest	7	TRUE		TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 4	34	17	#####	Red mapleForest	11.9	TRUE		TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 4	34	18	#####	Sassafras (Forest	5	TRUE		TRUE	TRUE	TRUE	TRUE	45% - 50%
Stand 4	34	19	#####	Tulip tree Forest	10	TRUE		TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 4	35	1	#####	Red mapleForest	11.9	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 4	35	2	#####	Ash spp (F Forest	15.3	TRUE	11.9	TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 4	35	3	#####	American Forest	5.7	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 4	35	4	#####	Sassafras (Forest	13.1	TRUE		TRUE	TRUE	TRUE	TRUE	0%
Stand 4	35	5	#####	Red mapleForest	16.2	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 4	35	6	#####	Silver map Forest	13.9	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 4	35	7	#####	American Forest	9.6	TRUE		TRUE	TRUE	TRUE	TRUE	0%
Stand 4	35	8	#####	Silver map Forest	33.7	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 4	35	9	#####	Red mapleForest	7	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 4	35	10	#####	Norway m Forest	15.4	TRUE		TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 4	35	11	#####	American Forest	5.4	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 4	35	12	#####	American Forest	6.3	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 5	41	1	#####	Sugar mapForest	6.9	TRUE		TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 5	41	2	#####	Tulip tree Forest	8.5	TRUE		TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 5	41	3	#####	Sugar mapForest	10.8	TRUE		TRUE	TRUE	TRUE	TRUE	15% - 20%
Stand 5	41	4	#####	Norway m Forest	6.7	TRUE		TRUE	TRUE	TRUE	TRUE	45% - 50% Grape vine and top dieback
Stand 5	41	5	#####	Black cher Forest	6	TRUE		TRUE	TRUE	TRUE	TRUE	65% - 70% Grape vine
Stand 5	41	6	#####	Norway m Forest	5	TRUE		TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 5	41	7	#####	Tulip tree Forest	12.5	TRUE		TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 5	41	8	#####	Sugar mapForest	5.9	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 5	41	9	#####	Sassafras (Forest	6.4	TRUE		TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 5	41	10	#####	Sugar mapForest	7.8	TRUE		TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 5	41	11	#####	American Forest	14.7	TRUE		TRUE	TRUE	TRUE	TRUE	30% - 35% BLD
Stand 5	41	12	#####	Sugar mapForest	18	TRUE		TRUE	TRUE	TRUE	TRUE	25% - 30%
Stand 5	41	13	#####	Tulip tree Forest	9.3	TRUE		TRUE	TRUE	TRUE	TRUE	45% - 50%
Stand 5	41	14	#####	Tulip tree Forest	16.9	TRUE		TRUE	TRUE	TRUE	TRUE	45% - 50%
Stand 5	41	15	#####	Red mapleForest	6.3	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 5	41	16	#####	Tulip tree Forest	17.7	TRUE		TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 5	41	17	#####	Tulip tree Forest	15.2	TRUE		TRUE	TRUE	TRUE	TRUE	30% - 35%
Stand 5	41	18	#####	Sugar mapForest	5.5	TRUE		TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 5	41	19	#####	Tulip tree Forest	10.1	TRUE		TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 5	41	20	#####	Red mapleForest	5.6	TRUE		TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 5	41	21	#####	Tulip tree Forest	12.5	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 5	41	22	#####	Red mapleForest	7	TRUE		TRUE	TRUE	TRUE	TRUE	35% - 40%
Stand 5	41	23	#####	Tulip tree Forest	13.1	TRUE		TRUE	TRUE	TRUE	TRUE	20% - 25%
Stand 5	41	24	#####	Tulip tree Forest	5.8	TRUE		TRUE	TRUE	TRUE	TRUE	15% - 20%
Stand 5	41	25	#####	Norway m Forest	5.5	TRUE		TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 5	41	26	#####	Tulip tree Forest	17.1	TRUE		TRUE	TRUE	TRUE	TRUE	35% - 40%
Stand 5	41	27	#####	American Forest	20.5	TRUE		TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 5	41	28	#####	Ash spp (F Forest	7.4	TRUE		TRUE	TRUE	TRUE	TRUE	0%
Stand 5	41	29	#####	Red mapleForest	10.4	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 5	42	1	#####	Sugar mapForest	3.3	TRUE	5.8	TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 5	42	2	#####	Tulip tree Forest	13	TRUE		TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 5	42	3	#####	Northern Forest	5.1	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 5	42	4	#####	Sassafras (Forest	10.1	TRUE		TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 5	42	5	#####	American Forest	5	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55% BLD
Stand 5	42	6	#####	Sugar mapForest	5.5	TRUE		TRUE	TRUE	TRUE	TRUE	25% - 30%
Stand 5	42	7	#####	Black cher Forest	6.1	TRUE		TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 5	42	8	#####	Northern Forest	4.5	TRUE		TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 5	42	9	#####	Norway m Forest	6	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 5	42	10	#####	American Forest	5.2	TRUE		TRUE	TRUE	TRUE	TRUE	65% - 70%
Stand 5	42	11	#####	Norway m Forest	7.8	TRUE		TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 5	42	12	#####	Shellbark Forest	8.2	TRUE		TRUE	TRUE	TRUE	TRUE	20% - 25%
Stand 5	42	13	#####	Sugar mapForest	8.1	TRUE		TRUE	TRUE	TRUE	TRUE	30% - 35%
Stand 5	44	1	#####	Sassafras (Forest	7.5	TRUE		TRUE	TRUE	TRUE	TRUE	85% - 90%
Stand 5	44	2	#####	Silver map Forest	21.3	TRUE		TRUE	TRUE	TRUE	TRUE	35% - 40%
Stand 5	44	3	#####	Sassafras (Forest	9	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 5	44	4	#####	Sugar mapForest	6	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 5	44	5	#####	American Forest	5.5	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 5	44	6	#####	Ash spp (F Forest	15.4	TRUE		TRUE	TRUE	TRUE	TRUE	0%
Stand 5	44	7	#####	Sugar mapForest	5.3	TRUE		TRUE	TRUE	TRUE	TRUE	25% - 30%
Stand 5	44	8	#####	Sassafras (Forest	9.4	TRUE		TRUE	TRUE	TRUE	TRUE	35% - 40%
Stand 5	44	9	#####	Sassafras (Forest	5.3	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 5	44	10	#####	Black locu:Forest	9	TRUE		TRUE	TRUE	TRUE	TRUE	45% - 50%
Stand 5	44	11	#####	Black locu:Forest	10.5	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 5	44	12	#####	Red mapleForest	11.1	TRUE		TRUE	TRUE	TRUE	TRUE	30% - 35%
Stand 5	44	13	#####	Red mapleForest	10	TRUE		TRUE	TRUE	TRUE	TRUE	25% - 30%
Stand 5	44	14	#####	Ash spp (F Forest	8.5	TRUE		TRUE	TRUE	TRUE	TRUE	0%
Stand 5	44	15	#####	Red mapleForest	5	TRUE		TRUE	TRUE	TRUE	TRUE	35% - 40%
Stand 5	44	16	#####	American Forest	5.4	TRUE		TRUE	TRUE	TRUE	TRUE	25% - 30%
Stand 5	44	17	#####	American Forest	5.3	TRUE		TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 5	44	18	#####	Sassafras (Forest	6.5	TRUE		TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 5	44	19	#####	Tulip tree Forest	23.3	TRUE		TRUE	TRUE	TRUE	TRUE	15% - 20%
Stand 5	44	20	#####	Sassafras (Forest	10.3	TRUE		TRUE	TRUE	TRUE	TRUE	25% - 30%
Stand 5	44	21	#####	Sassafras (Forest	6.3	TRUE		TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 5	44	22	#####	Sassafras (Forest	8.8	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 5	44	23	#####	Sassafras (Forest	6.1	TRUE		TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 5	44	24	#####	Sassafras (Forest	6	TRUE		TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 5	44	25	#####	Sassafras (Forest	6.9	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 5	44	26	#####	Sassafras (Forest	8.5	TRUE		TRUE	TRUE	TRUE	TRUE	35% - 40%
Stand 5	44	27	#####	Red mapleForest	9.5	TRUE		TRUE	TRUE	TRUE	TRUE	30% - 35%
Stand 5	44	28	#####	Sassafras (Forest	10	TRUE		TRUE	TRUE	TRUE	TRUE	25% - 30%
Stand 5	44	29	#####	Red mapleForest	15.8	TRUE		TRUE	TRUE	TRUE	TRUE	25% - 30%
Stand 5	44	30	#####	Sassafras (Forest	5.2	TRUE		TRUE	TRUE	TRUE	TRUE	15% - 20%
Stand 6	51	1	#####	Ohio buck:Forest	6	TRUE		TRUE	TRUE	TRUE	TRUE	45% - 50%
Stand 6	51	2	#####	Silver map Forest	25.2	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 6	51	3	#####	Eastern coForest	54.8	TRUE		TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 6	51	4	#####	Silver map Forest	14.7	TRUE	16.3	TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 6	51	5	#####	Silver map Forest	12.2	TRUE		TRUE	TRUE	TRUE	TRUE	20% - 25%
Stand 6	51	6	#####	Silver map Forest	19.9	TRUE		TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 6	51	7	#####	Silver map Forest	15.6	TRUE		TRUE	TRUE	TRUE	TRUE	10% - 15%
Stand 6	53	1	#####	Silver map Forest	16.5	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 6	53	2	#####	Eastern coForest	47.5	TRUE		TRUE	TRUE	TRUE	TRUE	40% - 45%
Stand 6	53	3	#####	Eastern coForest	49.5	TRUE		TRUE	TRUE	TRUE	TRUE	50% - 55%
Stand 6	53	4	#####	Silver map Forest	22.7	TRUE		TRUE	TRUE	TRUE	TRUE	80% - 85%
Stand 6	53	5	#####	Silver map Forest	14.2	TRUE		TRUE	TRUE	TRUE	TRUE	55% - 60%
Stand 6	53	6	#####	Maple spp Forest	18.6	TRUE		TRUE	TRUE	TRUE	TRUE	0% Dead and unknown
Stand 6	53	7	#####	Silver map Forest	15	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%
Stand 6	53	8	#####	Eastern coForest	36.8	TRUE		TRUE	TRUE	TRUE	TRUE	45% - 50% Some dieback and dead branches
Stand 6	53	9	#####	Eastern coForest	35.6	TRUE		TRUE	TRUE	TRUE	TRUE	55% - 65%
Stand 6	54	1	#####	American Forest	22.5	TRUE		TRUE	TRUE	TRUE	TRUE	35% - 40%
Stand 6	54	2	#####	American Forest	34.5	TRUE		TRUE	TRUE	TRUE	TRUE	45% - 50%
Stand 6	54	3	#####	Silver map Forest	13.2	TRUE		TRUE	TRUE	TRUE	TRUE	25% - 30% Die back in crown
Stand 6	54	4	#####	American Forest	6.7	TRUE		TRUE	TRUE	TRUE	TRUE	60% - 65%
Stand 6	54	5	#####	Eastern heForest	13.8	TRUE		TRUE	TRUE	TRUE	TRUE	0%
Stand 6	54	6	#####	Tulip tree Forest	26	TRUE		TRUE	TRUE	TRUE	TRUE	70% - 75%
Stand 6	54	7	#####	Eastern heForest	24.3	TRUE		TRUE	TRUE	TRUE	TRUE	75% - 80%

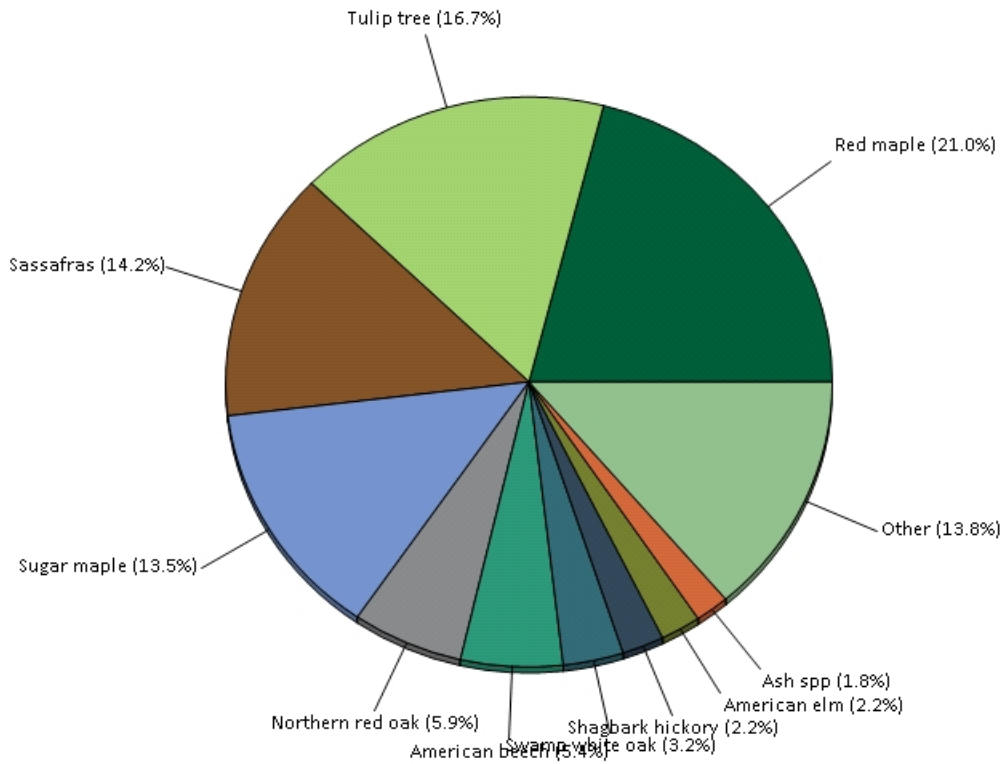




## Tree Characteristics Chart(s)

# I. Tree Characteristics of the Urban Forest

The urban forest of HemlockRidge has an estimated 47,260 trees with a tree cover of 73.8 percent. The three most common species are Red maple (21.0 percent), Tulip tree (16.7 percent), and Sassafras (14.2 percent).



**Figure 1. Tree species composition in HemlockRidge**

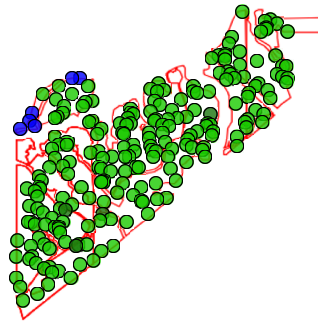
The overall tree density in HemlockRidge is 524 trees/hectare (see Appendix III for comparable values from other cities). For stratified projects, the highest tree densities in HemlockRidge occur in Stand 3 followed by Stand 5 and Stand 1.

# iTree Canopy Report

# i-Tree Canopy

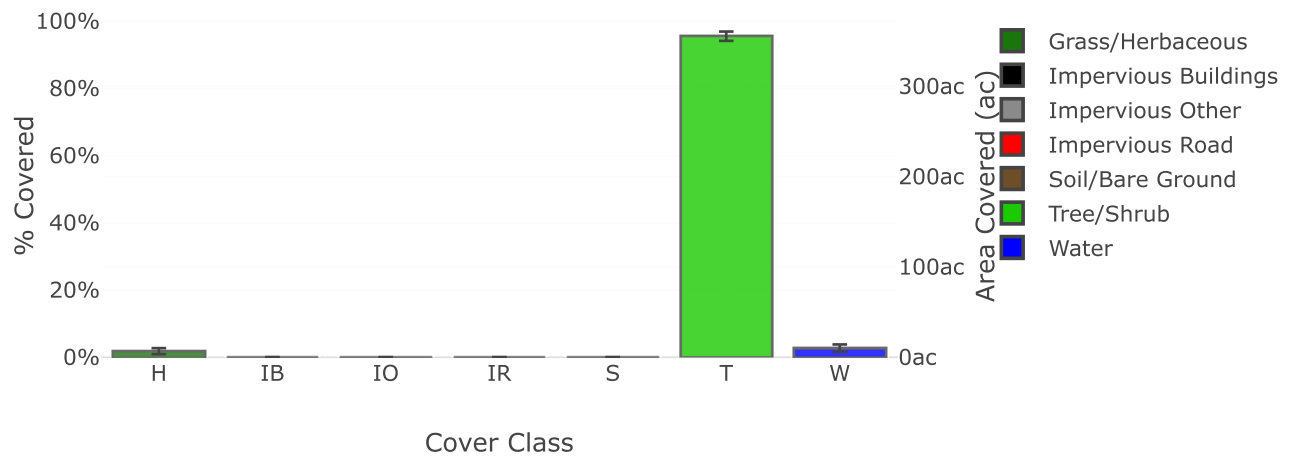
## Cover Assessment and Tree Benefits Report

Estimated using random sampling statistics on 11/21/2023



Google

### Land Cover





Abbr.	Cover Class	Description	Points	% Cover ± SE	Area (ac) ± SE
H	Grass/Herbaceous		4	1.80 ± 0.90	6.71 ± 3.35
IB	Impervious Buildings		0	0.00 ± 0.00	0.00 ± 0.00
IO	Impervious Other		0	0.00 ± 0.00	0.00 ± 0.00
IR	Impervious Road		0	0.00 ± 0.00	0.00 ± 0.00
S	Soil/Bare Ground		0	0.00 ± 0.00	0.00 ± 0.00
T	Tree/Shrub		212	95.50 ± 1.39	355.47 ± 5.18
W	Water		6	2.70 ± 1.10	10.06 ± 4.11
<b>Total</b>			<b>222</b>	<b>100.00</b>	<b>372.23</b>

### Tree Benefit Estimates: Carbon (English units)

Description	Carbon (T)	±SE	CO <sub>2</sub> Equiv. (T)	±SE	Value (USD)	±SE
Sequestered annually in trees	485.22	±7.07	1,779.16	±25.93	\$82,755	±1,206
Stored in trees (Note: this benefit is not an annual rate)	12,185.81	±177.63	44,681.31	±651.30	\$2,078,299	±30,294

Currency is in USD and rounded. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Amount sequestered is based on 1.365 T of Carbon, or 5.005 T of CO<sub>2</sub>, per ac/yr and rounded. Amount stored is based on 34.281 T of Carbon, or 125.697 T of CO<sub>2</sub>, per ac and rounded. Value (USD) is based on \$170.55/T of Carbon, or \$46.51/T of CO<sub>2</sub> and rounded. (English units: T = tons (2,000 pounds), ac = acres)

### Tree Benefit Estimates: Air Pollution (English units)

Abbr.	Description	Amount (lb)	±SE	Value (USD)	±SE
CO	Carbon Monoxide removed annually	401.59	±5.85	\$268	±4
NO <sub>2</sub>	Nitrogen Dioxide removed annually	2,218.55	±32.34	\$485	±7
O <sub>3</sub>	Ozone removed annually	17,137.59	±249.81	\$22,260	±324
SO <sub>2</sub>	Sulfur Dioxide removed annually	1,090.60	±15.90	\$73	±1
PM <sub>2.5</sub>	Particulate Matter less than 2.5 microns removed annually	875.49	±12.76	\$46,602	±679
PM <sub>10</sub> *	Particulate Matter greater than 2.5 microns and less than 10 microns removed annually	4,864.01	±70.90	\$15,245	±222
<b>Total</b>		<b>26,587.84</b>	<b>±387.56</b>	<b>\$84,933</b>	<b>±1,238</b>

Currency is in USD and rounded. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Air Pollution Estimates are based on these values in lb/ac/yr @ \$/lb/yr and rounded:

CO 1.130 @ \$0.67 | NO<sub>2</sub> 6.241 @ \$0.22 | O<sub>3</sub> 48.211 @ \$1.30 | SO<sub>2</sub> 3.068 @ \$0.07 | PM<sub>2.5</sub> 2.463 @ \$53.23 | PM<sub>10</sub>\* 13.683 @ \$3.13 (English units: lb = pounds, ac = acres)

### Tree Benefit Estimates: Hydrological (English units)

Abbr.	Benefit	Amount (Kgal)	±SE	Value (USD)	±SE
AVRO	Avoided Runoff	2.94	±0.04	\$26	±0
E	Evaporation	66.12	±0.96	N/A	N/A
I	Interception	66.55	±0.97	N/A	N/A
T	Transpiration	62.61	±0.91	N/A	N/A
PE	Potential Evaporation	425.24	±6.20	N/A	N/A
PET	Potential Evapotranspiration	350.71	±5.11	N/A	N/A

Currency is in USD and rounded. Standard errors of removal and benefit amounts are based on standard errors of sampled and classified points. Hydrological Estimates are based on these values in Kgal/ac/yr @ \$/Kgal/yr and rounded:

AVRO 0.008 @ \$8.94 | E 0.186 @ N/A | I 0.187 @ N/A | T 0.176 @ N/A | PE 1.196 @ N/A | PET 0.987 @ N/A (English units: Kgal = thousands of gallons, ac = acres)

#### About i-Tree Canopy

The concept and prototype of this program were developed by David J. Nowak, Jeffery T. Walton, and Eric J. Greenfield (USDA Forest Service). The current version of this program was developed and adapted to i-Tree by David Ellingsworth, Mike Binkley, and Scott Maco (The Davey Tree Expert Company)

#### Limitations of i-Tree Canopy

The accuracy of the analysis depends upon the ability of the user to correctly classify each point into its correct class. As the number of points increase, the precision of the estimate will increase as the standard error of the estimate will decrease. If too few points are classified, the standard error will be too high to have any real certainty of the estimate.

# Cobenefit Calculator

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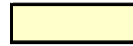
Using the information you provide on tree canopy cover, the tool provides estimates of co-benefits in Resource Units and \$ per year.

**Table 2. Co-Benefits per year with current tree canopy cover.**

Ecosystem Services	Resource Units Totals	Total \$
Rain Interception (m3/yr)	109,630.2	\$231,715.02
Air Quality (t/yr)		
O3	3.8216	\$7,956.49
NOx	1.6412	\$3,417.02
PM10	1.8890	\$7,120.50
Net VOCs	0.2496	\$261.49
Air Quality Total	7.6014	\$18,755.49
Energy (kWh/yr & kBtu/yr)		
Cooling - Elec.	331,252	\$46,408.46
Heating - Nat. Gas	13,687,740	\$191,440.73
Energy Total (\$/yr)		\$237,849.19
Grand Total (\$/yr)		\$488,319.70

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Light yellow background denotes an input cell ->



Directions
1) Use i-Tree Canopy, or another tool, to estimate the amount of deciduous and coniferous tree cover area (acres) (Cell C20 and D20).
2) Use i-Tree Canopy, or another tool, to estimate the amount of non-tree cover area (acres) (Cell F20) in the project area.
3) In Cell G20 the total area of the project is calculated (acres). Prompt i-Tree Canopy to provide an estimate of the project area by clicking on the gear icon next to the upper right portion of the image and selecting "Report By Area."
4) Total Project Area, cell G17 should equal 100%.

Table 1. Tree Cover

	Deciduous Tree Cover	Coniferous Tree Cover	Total Tree Cover	Non-Tree	Total Project Area
Percent (%)	94%	1%	95%	5%	100%
Area (sq miles)	0.329	0.004	0.332	0.016	0.35
Area (m2)	851,857	9,105	860,962	40,671	901,633
Area (acres)	210.50	2.25	212.75	10.05	222.80



# Social Impacts

# City Forest Carbon Project

## Social Impacts



### *UN Sustainable Development Goals*

The 17 United Nations Sustainable Development Goals (SDGs) are an urgent call for action and global partnership among all countries, representing key benchmarks for creating a better world and environment for everyone. Well-designed and managed urban forests make significant contributions to the environmental sustainability, economic viability and livability of cities. They help mitigate climate change and natural disasters, reduce energy costs, poverty and malnutrition, and provide ecosystem services and public benefits. See more details in the CFC Carbon Project Social Impact Reference Guide.

### *Instructions*

This template sets out all relevant SDGs and lists various urban forest project activities that fall within each SDG. Evaluate the SDGs to determine how your carbon project provides social impacts that may contribute towards achievement of the global goals. Check the box(es) that contain one of your project activities and describe in no fewer than two sentences how your project activities align with the corresponding SDG. On page 12, select the icon for three to five of the most relevant SDGs to your project and provide any additional information.

## SDG 3 - Good Health and Well Being

Goal: Ensure healthy lives and promote well-being for all at all ages.

Examples of project activities include, but are not limited to:

- Plant or protect trees to reduce or remove air pollutants
- If planting trees, select trees for reduced pollen counts and irritant production
- Plant or protect trees to create shade, provide UV exposure protection, reduce extreme heat negative effects, and/or reduce temperatures to relieve urban heat effects
- Design project to buffer sounds, optimize biodiversity, or create nature experiences
- Locate project near vulnerable populations, such as children or elderly
- Locate project near high volume roads to screen pollutants
- Locate project near people to encourage recreation, provide new parks or green space, or otherwise promote an active lifestyle
- Locate project near schools, elderly facilities, or mental health services to promote nature-based wellness, attention restoration, or other mental well-being
- Locate project in area with conditions of project-defined high inequity to trees, such as at schools, affordable or subsidized housing, formerly redlined neighborhoods, areas with high property vacancy rates, or area with high proportion of renters
- Reduce stormwater runoff or improve infiltration rates
- Design project to reduce human exposure to specific pollutants or toxins
- Other

The Project Area is located along a major interstate, and the trees protected for the Hemlock Ridge Forest Preservation project will continue to screen pollutants from this highly-trafficked road. Protecting the forest that is upland from streams and the Grand River will reduce stormwater runoff and protect the water resources from pollutants.

## SDG 6 - Clean Water and Sanitation

Goal: Ensure availability and sustainable management of water and sanitation for all

Examples of project activities include, but are not limited to:

- Research and assess environmental injustices related to water in project area
- Locate project near high-traffic roads or to otherwise improve, mitigate, or remediate toxic landscapes near water
- Protect or plant trees to improve historically or culturally important sites related to water that have been degraded and/or neglected
- Reduce stormwater by planting or protecting trees
- Plant forested buffers adjacent to streams, rivers, wetlands, or floodplains
- Prevent soil erosion by protect steep slopes
- Improve infiltration rates
- Improve, mitigate, or remediate toxic landscapes and human exposure to risk
- Drought resistance, such as selecting appropriate water-efficient trees for project climate zone
- Other

The Project Area is located along a major interstate and the trees provide a buffer between the high-traffic road and the Grand River, a critical tributary to Lake Erie. The forested property also provides protection of the steep slopes that buffer tributaries to the Grand River and the Grand River floodplain. Ensuring the forested upland in protected will preserve the steep slopes from soil erosion.



## SDG 8 - Decent Work and Economic Growth

Goal: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Examples of project activities include, but are not limited to:

- Community participation in project implementation, including such things as providing access to financial resources for ongoing community-based care
- Emphasize local hiring and support small businesses
- Promote local economic opportunities through workforce training, career pathway development, or other employment
- Other

## SDG 10 - Reduced Inequalities

Goal: Reduce inequalities within and among countries

Examples of project activities include, but are not limited to:

- Provide connections and cohesion for social health, such as create or reinforce places that promote informal interactions, engage local residents and users in tree management, include symbolic or cultural elements, or other events
- Research, understand, and design to address understand historic and current sociocultural inequities, community health conditions, environmental injustices, or prior local greening efforts in community
- Locate project near vulnerable populations, such as children or elderly, to provide air quality improvements or buffer against extreme heat effects
- Locate project in high-density residential areas or where there is a lack of trees to improve access and promote an active lifestyle
- Locate project near schools, elderly facilities, or mental health services to promote nature-based wellness, attention restoration, or other mental well-being
- Locate project in area with conditions of project-defined high inequity to trees, such as at schools, affordable or subsidized housing, formerly redlined neighborhoods, areas with high property vacancy rates, or area with high proportion of renters
- Locate project near high-traffic roads or to otherwise improve, mitigate, or remediate toxic landscapes
- Protect or plant trees to improve historically or culturally important sites that have been degraded and/or neglected
- Community engagement in project design, including such things as engaging and respecting existing relationships and social networks, community cultural traditions, and public participation methods that are empowering and inclusive
- Community participation in project implementation, including such things as addressing and removing barriers to participation, promote ongoing community-based care and access to financial resources
- Emphasize local hiring and support small businesses
- Research and consider potential for gentrification and displacements
- Promote local economic opportunities through workforce training, career pathway development, or other employment
- Other

## SDG 11 - Sustainable Cities and Communities

Overall: Make cities inclusive, safe, resilient, and sustainable.

Examples of project activities include, but are not limited to:

- Plant or protect trees to reduce or remove air pollutants
- If planting trees, select trees for reduced pollen counts and irritant production
- Locate project near high volume roads to screen pollutants
- Locate project near vulnerable populations, such as children or elderly
- Plant or protect trees to create shade, provide UV exposure protection, reduce extreme heat negative effects, and/or reduce temperatures to relieve urban heat effects
- Locate project near people to encourage recreation, provide new parks or green space, or otherwise promote an active lifestyle
- Design project to improve wellness and mental health, such as planting trees to buffer sounds, optimize biodiversity, optimize views from buildings, or create nature experiences
- Locate project near schools, elderly facilities, or mental health services to promote nature-based wellness, attention restoration, or other mental well-being
- Provide connections and cohesion for social health, such as create or reinforce places that promote informal interactions, engage local residents and users in tree management, include symbolic or cultural elements, or other events
- Research, understand, and design to address understand historic and current sociocultural inequities, community health conditions, environmental injustices, or prior local greening efforts in community
- Locate project in area with conditions of project-defined high inequity to trees, such as at schools, affordable or subsidized housing, formerly redlined neighborhoods, areas with high property vacancy rates, or area with high proportion of renters
- Community engagement in project design, including such things as engaging and respecting existing relationships and social networks, community cultural traditions, and public participation methods that are empowering and inclusive
- Community participation in project implementation, including such things as addressing and removing barriers to participation, promote ongoing community-based care and access to financial resources
- Other

The property is near the City of Painesville and will provide increased access for outdoor recreation. The addition of this new green space will also provide access to the adjacent properties owned and managed by Lake Metroparks that are currently not accessible. Protecting the habitat will reduce air pollutants that reach the Grand River, buffer the high-volume road that runs along the southern boundary of the property, and provide shade for the streams that run through the property to the Grand River.

## SDG 12 - Responsible Production and Consumption

Goal: Ensure sustainable consumption and production patterns

Examples of project activities include, but are not limited to:

- Plant or protect trees to create shade or reduce temperatures to relieve urban heat effects
- Provide cooling benefits and energy savings by shading impervious surfaces such as streets or parking lots, or planting trees on south and west sides of buildings
- Other

## SDG 13 - Climate Action

Goal: Take urgent action to combat climate change and its impacts.

Examples of project activities include, but are not limited to:

- Plant or protect trees to reduce or remove air pollutants
- Plant or protect trees to create shade or reduce temperatures to relieve urban heat effects
- Promote community capacity for social and climate resilience by engaging local residents or users in tree management, or other events to connect people to the project
- Reflect cultural traditions and inclusive engagement for climate resilience
- Design project to improve soil health
- Provide cooling benefits and energy savings by shading impervious surfaces such as streets or parking lots, or planting trees on south and west sides of buildings
- Plant or protect trees to reduce stormwater runoff
- Select water-efficient trees for climate zone and drought resistance
- Create and/or enhance wildlife habitat
- Other

Preserving the Project Area in perpetuity ensures that these trees can continue to mitigate urban heat island effect for neighboring communities, while also reducing air pollution and stormwater runoff.



## SDG 14 - Life Below Water

Goal: Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Examples of project activities located in areas with marine ecosystems include, but are not limited to:

- Locate project near high-traffic roads or to otherwise improve, mitigate, or remediate toxic landscapes near water
- Plant or protect trees in project areas to reduce stormwater runoff
- Plant forested buffers adjacent to streams, rivers, wetlands, or floodplains
- Prevent soil erosion into by protecting steep slopes
- Improve infiltration rates
- Improve, mitigate, or remediate toxic landscapes and human exposure to risk
- Drought resistance, such as selecting appropriate water-efficient trees for project climate zone
- Enhance wildlife habitat, such as riparian habitat for fish, birds, and other animals
- Other

The Project Area is located along a major interstate and the trees provide a buffer between the high-traffic road and the Grand River, a critical tributary to Lake Erie. The Grand River is along the northern boundary of the property, and the steep slopes on the property will be protected from erosion by protecting the forest habitat. Without protection, development of the site would impact water quality of the streams, wetlands, and Grand River that are protected by existing resources. This section of the Grand River is known to contain threatened and endangered mussels, and protection of the habitat buffering the river will protect habitat and water quality for these and other aquatic species.

## SDG 15 - Life on Land

Goal: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Examples of project activities include, but are not limited to the following with increased functionality of green infrastructure:

- Plant or protect trees to reduce stormwater runoff
- Select water-efficient trees for climate zone and drought resistance
- Create and/or enhance wildlife habitat to improve local biodiversity
- Plant forested buffers adjacent to streams, rivers, wetlands, or floodplains
- Prevent soil erosion by protect steep slopes
- Improve infiltration rates
- Other

The Project Area borders steep slopes around stream and river edges. Preserving the trees will prevent soil erosion and enhance water quality. The forest also provided critical habitat for wildlife and promotes local biodiversity.

## SDG 17 - Partnerships for the Goals

Overall: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Examples of project activities include, but are not limited to:

- Promote community connections and capacity for social resilience by engaging local residents or users in tree management, or other events to connect people to the project
- Community engagement in project design, including such things as engaging and respecting existing relationships and social networks, community cultural traditions, and public participation methods that are empowering and inclusive
- Community participation in project implementation, including such things as addressing and removing barriers to participation, promote ongoing community-based care and access to financial resources
- Other

## Summary of Project Social Impacts



The Project Area is located along a major interstate, and the trees protected for the Hemlock Ridge Forest Preservation project will continue to screen pollutants from this highly-trafficked road. Protecting the forest that is upland from streams and the Grand River will reduce stormwater runoff and protect the water resources from pollutants.



The property is near the City of Painesville and will provide increased access for outdoor recreation. The addition of this new green space will also provide access to the adjacent properties owned and managed by Lake Metroparks that are currently not accessible. Protecting the habitat will reduce air pollutants that reach the Grand River, buffer the high-volume road that runs along the southern boundary of the property, and provide shade for the streams that run through the property to the

Grand River.

The Project Area is located along a major interstate and the trees provide a buffer between the high-traffic road and the Grand River, a critical tributary to Lake Erie. The Grand River is along the northern boundary of the property, and the steep slopes on the property will be protected from erosion by protecting the forest habitat. Without protection, development of the site would impact water quality of the streams, wetlands, and Grand River that are protected by existing resources. This section of the Grand River is known to contain threatened and endangered mussels, and protection of the habitat buffering the river will protect habitat and water quality for these and other aquatic species.

