US Army Corps
of Engineers®
Pittsburgh District

Planning and Environmental Branch
William S. Moorhead Federal Building
1000 Liberty Avenue
Pittsburgh, Pennsylvania 15222

Public Notice Date: 11 March 2022
Expiration Date: 26 March 2022

NOTICE OF AVAILABILITY

Draft Environmental Assessment

Village of Hanoverton Sanitary Sewer System Project
Columbiana County, OH

The U.S. Army Corps of Engineers, Pittsburgh District (USACE) is evaluating a Federal funding request for proposed construction of a new gravity-fed sanitary sewer collection system, lift station, and wastewater treatment plant expansion located in Columbiana County, Ohio.

The USACE invites submission of comments on the environmental impact of the approval of the request. The USACE will consider all submissions received before the expiration date of the public comment period. The nature or scope of the proposal may be changed upon consideration of the comments received.

The draft Environmental Assessment and draft Finding of No Significant Impact are available electronically at:

http://www.lrp.usace.army.mil/Missions/Planning-Programs-Project-Management/

Comments can be submitted to the address posted at the top of this notice or to Gabriella.Sykora@usace.army.mil. Comments must be received by 26 March 2022 to ensure consideration.

DRAFT FINDING OF NO SIGNIFICANT IMPACT

Village of Hanoverton Sanitary Sewer System Project
Hanoverton, Columbiana County, Ohio

The U.S. Army Corps of Engineers, Pittsburgh District (Corps) has prepared an environmental assessment (EA) in accordance with the National Environmental Policy Act of 1969, as amended. The Draft EA, dated 25 February 2022 evaluates potential environmental impacts associated with construction of a new gravity-fed sanitary sewer collection system and lift station proposed for federal funding under the Section 594 program for the Village of Hanoverton Sanitary Sewer System Project in Columbiana County, Ohio. The Water Resources Development Act (WRDA) of 1999 (Public Law 102-580), Section 594 allows the Corps to consider reimbursement for design and/or construction of environmental infrastructure in Ohio.

The Draft EA, incorporated herein by reference, evaluated various alternatives for collection and treatment of wastewater to replace failing private on-site septic systems and prevent continued discharge of untreated sewage into Sandy Creek resulting in health risks to the community. The preferred alternative, ultimately the Proposed Action is the construction of a new gravity-fed sanitary sewer collection system and includes:

- Construction of a new gravity-fed sanitary sewer collection system and lift (pump) station within the Village of Hanoverton. All collected wastewater within Hanoverton will be gravity-fed to the new lift station and subsequently pumped by force main to the Kensington Wastewater Treatment Plant (WWTP) located southwest of Hanoverton. The project will also include construction of a 50,000 gallon per day (gpd) modular treatment plant adjacent to the Kensington WWTP to expand the overall capacity of the treatment facility to 100,000 gpd to handle the anticipated additional wastewater from Hanoverton.

In addition to the preferred alternative, a “no action” alternative was evaluated. For the preferred alternative, the potential effects to the following resources were evaluated:

Environmental Resource	Minor Effect	No Effect
Aesthetics	☐	☒
Air quality	☒(Temporary)	☐
Aquatic resources/wetlands	☒(Beneficial)	☐
Invasive species	☐	☒
Fish and wildlife habitat	☒(Beneficial)	☐
Threatened/Endangered species	☒	☐
Historic properties	☐	☒
Other cultural resources	☐	☒
Floodplains	☒	☐
Hazardous, toxic & radioactive waste	☐	☒
Hydrology	☐	☒
Land use	☐	☒

Navigation	☐	☒
Noise levels	☒ (Temporary)	☐
Public infrastructure	☒ (Beneficial)	☐
Socioeconomics	☒ (Beneficial)	☐
Environmental justice	☒ (Beneficial)	☐
Soils	☐	☒
Tribal trust resources	☐	☒
Water quality	☒ (Beneficial)	☐
Climate change	☐	☒

All practical means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) during construction as detailed in the EA will be implemented to minimize impacts. Wetland and stream impacts have been avoided. No compensatory mitigation is required.

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers determined that the recommended plan is not likely to adversely affect the following federally listed species or their designated critical habitat: Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*). The U.S. Fish and Wildlife Service (FWS) concurred with the Corps' determination on 2 December 2021.

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers determined that the recommended plan will not affect historic properties. The Ohio Historic Preservation Office concurred with this determination on 14 August 2020.

Pursuant to the Clean Water Act of 1972, as amended, no discharge of dredged or fill material will occur, therefore the recommended plan has been found to be compliant with section 404(b)(1) Guidelines (40 CFR 230). A National Pollutant Discharge Elimination System (NPDES) for Stormwater Discharges Associated with Construction Activities and 401 Water Quality Certification will be obtained.

A 15-day public comment period occurred from 11 to 26 March 2022. _____ comments were received by the Corps.

Technical, environmental, economic, and cost effectiveness criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives.

Based on this report, the reviews by other Federal, State and local agencies, input of the public, and the review by my staff, it is my determination that the recommended plan would not significantly affect the human environment; therefore, preparation of an Environmental Impact Statement is not required.

Date

ADAM J. CZEKANSKI
Colonel, Corps of Engineers
District Commander

VILLAGE OF HANOVERTON SANITARY SEWER SYSTEM PROJECT

COLUMBIANA COUNTY

ENVIRONMENTAL ASSESSMENT

Date: 25 February 2022

Prepared By: Ohio Rural Community Assistance Program (RCAP)

1. Name of Project: Village of Hanoverton Sanitary Sewer System Project

2. Project Authority: Water Resources Development Act (WRDA) of 1999 (Public Law 106-53), Section 594 provides Federal assistance for design and construction of publicly owned water-related environmental infrastructure and resource protection and development projects in the State of Ohio.

3. Project Location – Village of Hanoverton, Columbiana County, Ohio (40.7512^{o}N, -80.937^{o}W)

4. Recommended Project Purpose and Need

The Village of Hanoverton, located in western Columbiana County, is currently served by private on-site septic systems and private drinking water wells. The Ohio Environmental Protection Agency (EPA) issued Findings and Orders against the Village of Hanoverton on December 19, 2005 for failing on-site sewage disposal systems which were documented as discharging raw or partially treated sewage to roadside ditches and storm sewers. The untreated sewage was ultimately discharging into adjacent Sandy Creek and its tributaries resulting in health risks to the community. Construction of the proposed sanitary sewer system is needed to comply with Ohio EPA standards and to address health risks associated with the existing failing on-site sewage disposal systems.

The Preferred Alternative (Proposed Action) includes construction of a new gravity-fed sanitary sewer collection system and construction of a lift (pump) station within the Village of Hanoverton. All collected wastewater within Hanoverton will be gravity-fed to the new lift station and subsequently pumped by force main to the Kensington Wastewater Treatment Plant (WWTP) located southwest of Hanoverton. The project will also include construction of a 50,000 gallon per day (gpd) modular treatment plant adjacent to the Kensington WWTP to expand the overall capacity of the treatment facility to 100,000 gpd to handle the anticipated additional wastewater from Hanoverton. Refer to maps provided in Appendix A and Appendix B.

Construction will include placement of approximately 33,000 linear feet of 8-inch polyvinyl chloride (PVC) sewer pipe; 3,300 linear feet of 4-inch high density polyethylene (HDPE) force main; 300 linear feet of 8-inch bore and jack gravity sewer; 3,200 linear feet of 6-inch sanitary sewer connection; and 126 manholes.

Construction of the gravity-fed sewer collection system will occur primarily in the rights of way of streets and alleys throughout the Village of Hanoverton and the force main will be constructed in the right of way

of US Route 30. For construction activities outside of the right of way, easements will be obtained. Columbiana County will obtain temporary easements to construct the proposed sanitary sewer system and permanent easements to provide access to the sewer line for future operation and maintenance activities.

A gas well sits on the parcel of land where the proposed lift station is planned to be constructed. A 0.12-acre parcel (not including the gas well) will be split from this 6.453 acre property and purchased by Columbiana County for construction of the proposed lift station. Construction at this site will consist of the lift station, a generator, and an access drive.

The Kensington WWTP is owned by Columbiana County and is operated and maintained by the Columbiana Water and Sewer District. After construction is completed, Columbiana County will be responsible for owning, operating and maintaining the proposed sanitary sewer collection and treatment system.

5. Environmental Setting

The project area is defined as the location where the proposed sanitary sewer lines, the lift station, and the wastewater modular treatment plant construction will occur and is shown as the red and green areas in Appendices A and B. Land use is typical of a small village including residential homes, small commercial businesses, a fire station, offices, a post office, and several churches. The terrain in the project area is generally flat to gradual slope. No steep hillsides or cliffs exist within the project area and there is no open space available for development within the project boundaries. Currently, village residents and businesses are served by private on-site water wells and septic systems. The area has a history of coal mining and several abandoned or inactive surface mines exist in the surrounding area. Water resources in the project area include Sandy Creek and unnamed tributaries to Sandy Creek.

The location of the proposed lift station is a small parcel of land along the south side of US Route 30 between the Village of Hanoverton and the unincorporated area of Kensington. The property is located between a Dollar General store and a residential home. The site is flat, grass covered, and is located within a floodplain. No trees or wetland areas exist at the proposed lift station site.

The Kensington WWTP is located approximately ¾-mile southwest of Hanoverton on U.S. Route 30. The treatment plant site is flat and located within a floodplain area. There are no trees or wetland areas at the plant site.

6. Alternatives

<u>No Action Alternative</u>

The No Action alternative was determined not to be a viable solution. Under the No Action alternative, Federal funding would not be provided, construction would not proceed, and failing on-site septic systems would remain in service within the project area. The Village of Hanoverton would continue to have issues with discharge of raw or partially treated sewage into stormwater sewers, affecting adjacent wetland and stream areas, and may continue to receive violations from Ohio EPA. The No Action Alternative represents the condition expected in the absence of implementing an action alternative. Under the No Action Alternative, construction of a new gravity-fed sanitary sewer collection system and construction of a pump station in Hanoverton is unlikely to proceed, and failing on-site septic systems are likely to continue serving the project area. The No Action Alternative would result in the least reduction in sewage

treatment and prevention. Minor long-term adverse impacts to water quality, vegetation and fish/wildlife habitat, threatened and endangered species, aquatic resources/wetlands, and child health and safety are expected to continue under the No Action alternative. The table below provides analysis of the No Action alternative.

Resource	**Determination**	**Basis for Determination**
Land Use and Soils	No Effect	No construction would occur under the No Action alternative and the Village of Hanoverton would continue to be served by private on-site septic systems. The No Action alternative will have no effect on land use or soils in the project area.
Socioeconomics	No Effect	No construction would occur under the No Action alternative and the Village of Hanoverton would continue to be served by failing private on-site septic systems.
Air Quality	No Effect	According to the U.S. Environmental Protection Agency (USEPA) website, Columbiana County is classified as "in attainment" for all criteria air pollutants. No construction would occur under the No Action alternative; there would be no short-term or permanent change in air quality under the No Action alternative.
Water Quality	Minor effect	The No Action alternative has the potential to result in a minor effect on water quality in the area by allowing continued contamination of Sandy Creek from failing on-site septic systems throughout the Village of Hanoverton. Sandy Creek, downstream of the village, was confirmed by Ohio EPA to have fecal coliform exceeding the fecal coliform criteria for primary contact recreation established in Ohio Administrative Code 3745-1-07. Ohio EPA issued Findings and Orders against the Village of Hanoverton on December 19, 2005, ordering the elimination of the contamination sources. Under the No Action Alternative, construction of a new gravity-fed sanitary sewer collection system and construction of a pump station in Hanoverton is unlikely to proceed, and failing on-site septic systems are likely to continue serving the project area, resulting in continued degradation of water quality. The No Action Alternative would result in the least reduction in sewage treatment and prevention. Minor long-term

		adverse impacts to water quality are expected to continue under the No Action alternative
Vegetation and Fish/Wildlife Habitat	Minor Effect	The No Action alternative will result in continued discharge of raw sewage to local steams and adjacent wetland areas producing a threat to vegetation and fish and wildlife habitat in the project area and further downstream. Under the No Action Alternative, construction of a new gravity-fed sanitary sewer collection system and construction of a pump station in Hanoverton is unlikely to proceed, and failing on-site septic systems are likely to continue serving the project area, resulting in continued impact to vegetation and fish/wildlife habitat. The No Action Alternative would result in the least reduction in sewage treatment and prevention. Moderate long-term adverse impacts to vegetation and fish/wildlife habitat are expected to continue under the No Action alternative.
Invasive Species	No Effect	No construction would occur under the No Action alternative. As a result, the No Action alternative will result in no effect on invasive species.
Floodplains	No Effect	No construction would occur under the No Action alternative. The No Action alternative will result in no effect to floodplain areas.
Noise, Recreation and Aesthetics	No effect	No construction would occur under the No Action alternative. The No Action alternative will have no effect on noise, recreation, or aesthetics in the project area.
Threatened/Endangered Species	Minor Effect	Due to continued discharge of raw sewage to local streams and adjacent wetland areas, the No Action alternative has the potential for adverse effects on aquatic species such as the threehorn wartyback, a state threatened mussel specie; state threatened fish such as the gilt darter, American eel, the Tippecanoe darter, the channel darter, and the river darter; a state endangered and federally threatened snake specie, the eastern massasauga; and the eastern hellbender, a state endangered and federal species of concern. The range of these species includes the location of the Proposed Action. Under the No Action Alternative, construction of a new gravity-fed sanitary sewer collection system and construction of a pump station in

		Hanoverton is unlikely to proceed, and failing on-site septic systems are likely to continue serving the project area, resulting in continued degradation of habitat suitable for threatened and endangered species. The No Action Alternative would result in the least reduction in sewage treatment and prevention. Minor long-term adverse impacts to threatened and endangered species are expected to continue under the No Action alternative.
Historic, Cultural and Archaeological Resources	No Effect	No construction would occur under the No Action alternative. The No Action alternative will pose no adverse effect on historic, cultural, or archaeological resources.
Traffic	No Effect	No construction would occur under the No Action alternative and the Village of Hanoverton would continue to be served by private on-site septic systems. The No Action alternative will pose no effect on transportation /traffic.
Public Safety	No Effect	No construction would occur under the No Action alternative and the Village of Hanoverton would continue to be served by private on-site septic systems. Current discharge of raw sewage to local streams and the environment would result in continued significant public health and safety concerns.
Public Infrastructure	No Effect	No construction would occur under the No Action alternative and the Village of Hanoverton would continue to be served by private on-site septic systems. The No Action alternative will not result in adverse effects to existing public infrastructure.
Aquatic Resources/Wetlands	Minor Effect	The No Action alternative will result in continued discharge of raw sewage into local streams and environment which may pose a threat to wetland areas and wildlife habitat in these areas. Under the No Action Alternative, construction of a new gravity-fed sanitary sewer collection system and construction of a pump station in Hanoverton is unlikely to proceed, and failing on-site septic systems are likely to continue serving the project area, resulting in continued degradation of aquatic resources and wetlands. The No Action Alternative would result in the least reduction in sewage treatment and prevention. Moderate long-

		term adverse impacts to aquatic resources and wetlands are expected to continue under the No Action alternative.
Hazardous, Toxic and Radioactive Waste	No Effect	No construction would occur under the No Action alternative. The No Action alternative will not result in adverse effects relating to potential hazardous, toxic and radioactive waste.
Environmental Justice	No Effect	No construction would occur under the No Action alternative and the Village of Hanoverton would continue to be served by private on-site septic systems. According to the 2019 American Community Statistics, the Village of Hanoverton has a population of 406. There is a 99% white population and approximately 163 households. The median household income for the village is $40,694. The village has a low-moderate income percentage of 48.6% and a per-capita income of $23,798.
Tribal Trust Resources	No Effect	No construction would occur under the No Action alternative. The No Action alternative will not result in effects to tribal trust resources.
Navigation	No Effect	No construction would occur under the No Action alternative. There are no navigable waters in the project area; the No Action alternative will not result in effects to navigation.
Climate Change	No Effect	No construction would occur under the No Action alternative and the Village of Hanoverton would continue to be served by private on-site septic systems. The No Action alternative will not result in effects to climate change.
Hydrology	No Effect	No construction would occur under the No Action alternative and the Village of Hanoverton would continue to be served by private on-site septic systems. The No Action alternative will not result in effects to hydrology.
Child Health and Safety	Minor Effect	No construction would occur under the No Action alternative and the Village of Hanoverton would continue to be served by private on-site septic systems. The No Action alternative has the potential to affect child health and safety with the continued contamination of local streams and private water wells

		used for drinking and household use. Under the No Action Alternative, construction of a new gravity-fed sanitary sewer collection system and construction of a pump station in Hanoverton is unlikely to proceed, and failing on-site septic systems are likely to continue serving the project area, resulting in continued degradation of water quality, including private water wells used for drinking and household use. The No Action Alternative would result in the least reduction in sewage treatment and prevention. Minor long-term adverse impacts to child health and safety would continue under the No Action alternative.

Other Alternatives Considered and Eliminated

Wastewater Treatment System Alternatives Considered: Feasibility studies were conducted for the Village of Hanoverton by Columbiana County in 2008 and 2012, prior to construction of the existing Kensington WWTP. Wastewater treatment options considered at that time for Hanoverton consisted of Extended Aeration, AdvanTex®, Algae-Wheel®, Cluster Systems, Aerated Lagoons and Non-aerated Lagoons. Prior to construction of the Kensington WWTP, it was determined that it would be more economically feasible to transport wastewater from Hanoverton via force main to the Kensington WWTP for treatment.

Construction of the Kensington WWTP resulted in a system that was designed to accommodate future expansion to handle additional wastewater from Hanoverton. Therefore, consideration of separate additional treatment options for Hanoverton were not advanced.

Collection System Alternatives Considered: Several collection system alternatives were considered in the 2012 engineering study for Hanoverton. Alternatives included conventional gravity, low-pressure sewer with grinder pumps, vacuum collection system, Septic Tank Effluent Pumping (STEP) system with low-pressure sewers, STEP system with shallow gravity sewers, and shallow gravity sewer with new septic tanks (also known as septic tank effluent gravity, or STEG). The low-pressure sewer with grinder pumps option was eliminated from consideration due to higher capital costs and higher operating and maintenance costs than those projected for a conventional gravity sewer collection system. The vacuum collection system was eliminated from consideration due to valve pits required for each property and the higher cost associated with construction and maintenance of this system. The STEP system with low-pressure sewers and STEP system with shallow gravity sewers were eliminated based on loading anticipated from the septic tanks which would have ultimately required redesign of the WWTP. The STEG system would have also required construction of new septic tanks at each property and was eliminated from consideration due to costs of private property construction activities and higher costs of construction and maintenance.

Preferred Alternative/Proposed Action

The Preferred Alternative (Proposed Action) is the construction of a conventional gravity sewer collection system throughout the Village of Hanoverton; construction of one lift station; construction of force main

to the existing Kensington WWTP; and construction of a 50,000 gallon per day (gpd) modular treatment plant adjacent to the Kensington WWTP to expand the overall capacity of the treatment facility.

7. Environmental Effects of the Proposed Action

Determination of how the Proposed Action would affect environmental parameters are noted in the table below.

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
Land Use and Soils	X			Land use in the service area is typical of a small village and rural area, with residential and commercial uses (Exhibit 1). Terrain ranges from flat to gradual sloping. There are no steep hillsides or cliffs in the project area. There are no open land areas within the village boundaries. All project areas have been previously disturbed by prior construction activities including placement of existing public utilities, roadways and construction of homes and businesses. Construction of the collection system will occur within the road rights of way, where possible, and on easements, as needed. Easements will consist of both temporary construction easement to construct the new sewers and a permanent easement to provide access to the sewer line for operation and maintenance in the future. The proposed lift station, generator, and access drive will require a property purchase at a site that currently includes a gas well. Approximately 0.12 acres of land (the portion of the property without the gas well) will be split from the parcel and purchased for the project. The site will be secured with fencing. The proposed treatment plant expansion will occur at the existing Kensington WWTP. No additional land purchase will be required for the expansion. At the time the WWTP was constructed, the site was prepared for anticipated future expansion. Minimal site preparation will be required for the proposed expansion. No additional fill materials will be required. There is no prime forestland or rangeland in Ohio. There are no Formally Classified Lands within the project area and there is no important farmland within the project area. Short term impacts to soils will occur during construction, however best management practices will be implemented for erosion and sedimentation control. No long-term impacts to land use or soils are anticipated as a result of the Proposed Action.

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
Socio-economics		X (beneficial)		According to the 2019 American Community Statistics, the Village of Hanoverton has a population of 406. There is a 99% white population and approximately 163 households. The median household income for the village is $40,694. The village has a low-moderate income percentage of 48.6% and a per-capita income of $23,798. Elimination of failing on-site septic systems is beneficial to the residents and businesses of the village by eliminating health risks associated with raw sewage discharge.
Air Quality		X (temporary)		Construction equipment exhausts have the potential to cause minor increase in emissions during construction activities. These impacts are anticipated to be short-term. According to Ohio EPA air quality records, Columbiana County is not located in non-attainment areas (Exhibit 2). The operation of the lift station and the WWTP will have no effect on air quality.
Vegetation and Fish/Wildlife Habitat (See Note 1)		X (beneficial)		Consultation with the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) indicate that project elements will have no adverse effect on vegetation or wildlife (Exhibit 5). The proposed sanitary sewer system will be located within the right of way of streets or on private easements. Aquatic life will not be adversely impacted as no in-water work is required. The ODNR advises that the Ohio Natural Heritage Database identifies no records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or federally listed species. In addition, the agency is unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges or other protected natural areas within the project area. The USFWS advised there are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. However, implementation of the Proposed Action would result in elimination of discharge of raw sewage into the environment, which will result in a beneficial impact to vegetation and fish/wildlife within the project area.

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
Invasive Species	X			Based on a review of Ohio Invasive Plants Council records (https://www.oipc.info/invasive-plants-of-ohio.html), no effects to invasive species are expected with implementation of the Proposed Action.
Water Quality		X (beneficial)		Adverse impacts to water quality or fisheries are not expected from proposed construction activities. A National Pollutant Discharge Elimination System (NPDES) for Stormwater Discharges Associated with Construction Activities will be obtained. Directional boring will occur at stream crossings, wetland areas, and floodplain areas to avoid impact to water resources and aquatic life. No in-water work or open-cut stream crossings will occur. Pipeline areas will be returned to preconstruction contours. No permanent impacts to streams are expected and best management practices to reduce erosion and stormwater run-off will be implemented during construction to protect water quality of streams. Operation of the new sanitary sewer system will include discharge of treated water to Sandy Creek under an Ohio EPA issued National Pollutant Discharge Permit (NPDES) currently maintained by Columbiana County for the Kensington WWTP. A long-term beneficial impact to water quality is expected by elimination of the existing failing on-site septic systems which have been shown to be a source of contamination of waterways within the project area.
Floodplains		X		Based on Flood Insurance Rate Map Numbers 39029C0168E, 39029C0164E and 39029C0300E, the floodplain of Sandy Creek is located within the project area (Exhibit 4). Construction of gravity sewers and the force main are not expected to adversely impact floodplain areas as directional boring will occur to avoid in-water or open cut construction activities in areas of Sandy Creek and its floodplain. The pipeline will be designed as to not obstruct flood flow and conversion of the floodplain will not occur for pipeline installation. The proposed lift station is in Zone A or "Special Flood Hazard Areas without Base Flood Elevation". The Columbiana Soil and Water Conservation District (SWCD) Floodplain Coordinator provided the following actions to minimize flood impact potential: (1) place the lift station near the southern property boundary to keep the project near the area where the "Zone

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
				A" and "Zone X" flood hazard designations meet; (2) construct the lift station so that the risers are above the Base Flood Elevation; and (3) use water-tight lids on the risers to minimize the potential for flood waters to enter the sanitary sewer system. Based on consultation with the Floodplain Coordinator, it is proposed that three feet of fill material will be used to elevate the lift station to 1,131 feet, which is the floor level of the nearby Dollar General that is outside Zone A. The casings and control panel will be above this level for protection from flooding. During construction of the existing Kensington WWTP, the 100-year high water elevation was determined to be 1,116.6 feet. The WWTP was constructed with a floor level of 1,119.0 feet, 2.4 feet above the 100-year high water elevation. The proposed expansion of the WWTP will not require additional fill materials and will be constructed at the same elevation as the existing plant. At the time the WWTP was constructed, the site was prepared for anticipated future expansion. Minimal site preparation will be required for the proposed expansion. It is not anticipated that construction of the proposed lift station or WWTP expansion will result in long-term adverse impacts to the floodplain area. The County will be responsible for obtaining appropriate floodplain permits prior to start of construction. This program is administered by the Columbiana County Soil and Water Conservation District.
Noise, Recreation, and Aesthetics		X (temporary)		Construction activities will produce noise, which will be short-term. Construction will occur during normal daylight working hours to minimize disturbance. Mufflers and other noise abatement devices will be used on large equipment, when practical. Upon completion, the wastewater collection system will produce no adverse impacts to noise, recreation, or aesthetics; all components of the collection system will be underground. Upon completion, the lift station will produce no adverse impacts to noise, recreation or aesthetics as the components will be compatible with the surrounding area. Wastewater pumped from the Village of Hanoverton will be treated at the existing Kensington WWTP. Expansion of the

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
				existing plant will be necessary and temporary increase in noise levels during construction are anticipated, however no long-term adverse noise, recreation, or visual impacts are anticipated. The site is currently landscaped and fenced to be aesthetically compatible with the surrounding area.
Threatened/ Endangered Species (See Note 1)		X		The Ohio Department of Natural Resources (ODNR) advised the Proposed Action is located within the range of the federally endangered Indiana bat (*Myotis sodalis*); the state endangered and federally threatened northern-long eared bat (*Myotis septentrionalis*); the little brown bat (*Myotis lucifugus*), a state endangered species and the tricolored bat (*Perimyotis subflavus*), a state endangered species (Exhibit 5). During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area and trees must be cut, the Department of Wildlife (DOW) recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with diameter at breast height (dbh) ≥ 20 if possible. If trees are present within the project area and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "Ohio Division of Wildlife Guidance for Bat Surveys and Tree Clearance". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31, however, limited summer tree cutting may be acceptable after consultation with DOW (Sarah Stankavich, sarah.stankavich@dnr.state.oh.us). The DOW also recommended that a desktop or field-based habitat assessment be conducted to determine if there are potential hibernaculum(a) present within the project area. Habitat assessments should be conducted in accordance with the current USFWS "Range-wide Indiana Bat Survey Guidelines" and submitted to Sarah Stankavich, sarah.stanavich@dnr.state.oh.us if potential hibernacula are present within ¼-mile of the project area. If a potential hibernaculum is found, the DOW recommends a ¼-mile cutting and subsurface disturbance buffer around the

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
				hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species. A desktop review of the ODNR mine viewer map indicates that several abandoned or inactive surface mines are located between the Village of Hanoverton and Kensington, along the proposed force main route. The abandoned surface mines do not provide potential hibernaculum in this area and no tree removal is anticipated therefore no impacts to the endangered or threatened bat species are anticipated. A review of the ODNR mine viewer map indicates an abandoned underground drift mine located 0.17 miles west of the existing Kensington WWTP. It is not anticipated that the proposed improvements at the treatment plant site will impact the area of the underground mine or any potential bat hibernaculum. A copy of the mine viewer map and recommendation of no impact was submitted to Sarah Stankavich at ODNR and concurrence was received that no impacts to bat species is anticipated as a result of the Proposed Action. ODNR also advises the project lies within the range of the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel. The DOW understands that streams will be crossed by directional boring, resulting in no in-water work. Therefore, impacts to this and other mussel species are not likely. The project is within the range of the gilt darter (*Percina evides*), a state endangered fish, the American eel (*Anguilaa restrata*), a state threatened fish, Tippecanoe darter (*Etheostoma Tippecanoe*), a state threatened fish, the channel darter (*Percina copelandi*), a state threatened fish and the river darter (*Percina shumardi*), a state threatened fish. The DOW understands that streams will be crossed by directional boring, resulting in no in-water work. Therefore, impacts to these and other aquatic species are not likely.

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
				The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens and other wetlands as well as drier upland habitat. According to the DOW, due to the location, the type of habitat within the project area and the type of work proposed, this project is not likely to impact this species. The project is within the range of the eastern hellbender (*Crypotobranshus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. Due to the location and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species. The project is within the range of the American bittern (*Botaurus lentiginosus*), a state endangered bird. Nesting bitterns prefer large undisturbed wetlands that have scattered small pools amongst dense vegetation. They occasionally occupy bogs, large wet meadows, and dense shrubby swamps. Based on the conditions in the project area, this habitat does not exist, therefore impacts to this species are not anticipated. The project is within the range of the least bittern (*Ixobrychus exilis*), a state threatened bird. This secretive marsh species prefers dense emergent wetlands with thick stands of cattails, sedges, sawgrass, or other semi-aquatic vegetation interspersed with woody vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species. Based on the conditions in the project area, this habitat does not exist, therefore impacts to this species are not anticipated. ODNR advised that the project lies within the range of the northern harrier (*Circus hudsonis*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. ODNR advises that if this type of habitat will be impacted, construction should be avoided in this habitat during species nesting period of May 15 to

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
				August 1. If this habitat will not be impacted, this project is not likely to impact this species. Based on the conditions in the project area, the habitat for the northern harrier does not exist, therefore, no impacts are anticipated. The project is within the range of the sandhill crane (*Grus Canadensis*), a state threatened species. Sandhill cranes are primarily a wetland-dependent species. On their wintering grounds, they will utilize agricultural fields; however, they roost in shallow, standing water or moist bottomlands. On breeding grounds, they require a rather large tract of wet meadow, shallow marsh, or bog for nesting. ODNR advises that if grasslands, prairie, or wetland habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to September 1. If this habitat will not be impacted, this project is not likely to have an impact on the species. Due to lack of suitable habitat in the project area, this species is not anticipated to be adversely impacted by the proposed action. The U.S. Fish and Wildlife Service (USFWS) reviewed the project description and concurs with the determination that the project, as proposed is not likely to adversely affect the Indiana bat (*Myotis sodalist*), the little brown bat (*Myotis lucifugus*), the tricolored bat (*Perimyotis subflavus*) or the northern long-eared bat (*Myotis septentrionalis*) (Exhibit 5). This is based on the commitment to cut all trees ≥ 3 inches dbh only between October 1 and March 31 to avoid adverse effects to the protected bat species. The U.S. Army Corps of Engineers requested concurrence from the USFWS for a not likely to adversely affect determination for both bat species, based upon implementation of the tree cutting restriction. The USFWS concurred with this determination via email dated 2 December 2021 (Exhibit 5). Construction of a new gravity-fed sanitary sewer collection system and construction of a pump station in Hanoverton will result in elimination of discharge of raw sewage into the environment, resulting in a beneficial impact to habitat suitable for threatened and endangered species.

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
Historic, Cultural and Archaeological Resources (See Note 2)	X			An online search of the State Historic Preservation Office (SHPO) records indicates four (4) Ohio Genealogical Society (OGS) Cemeteries; two (2) Phase 1 Survey Areas; eighty-three (83) historic structures; twenty-one (21) archaeological sites; one (1) National Register Boundary and one (1) National Register Listing (Hanoverton Canal Town District) within a one-mile radius of the project area. A determination of no-effect on historic or archaeological sites was made due to the nature of the project elements (Exhibit 6). The SHPO concurred, by letter dated 8/14/20, that construction activities related to the sanitary sewer system will not impact the significance or integrity of the National Register-listed Hanoverton Canal Town District (Ref. 77001050) in a way that would alter its National Register status. SHPO agrees that the project, as proposed, should have no adverse effect on historic properties. No further coordination is required with SHPO unless the project changes or additional archaeological remains are discovered during the project. No in-street construction activities will occur on Plymouth Street to avoid disturbance of brick streets and damage to large trees that line the street. Any excavation by the contractor that uncovers an historical or archaeological artifact shall be immediately reported to the Owner, SHPO, Indian Tribes listed for Columbiana County, and all funding agencies participating in the project financing. Construction shall be temporarily halted pending the notification process and further direction issued by the agencies after consultation with SHPO.
Traffic and Public Safety		X (temporary)		The Proposed Action will have no long-term adverse effect on transportation and public safety. It is not anticipated long-term modifications to transportation routes will be necessary. No new traffic patterns are expected to develop as a result of the Proposed Action. Temporary street or alley closures may be required during construction. However, appropriate public notification of affected routes will be provided and detour routes marked, as needed. The Proposed Action may result in increased traffic flow as a result of construction vehicles. Any increase in traffic flow is expected to be within the capacity of the existing highway and traffic control systems. All Ohio Department of Transportation (ODOT) requirements for traffic

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
				control will be implemented during construction activities. Public safety services are not anticipated to be affected by the Proposed Action.
Public Infrastructure		X (beneficial)		Construction of the collection system may have minor temporary impacts on street and alley surfaces in the Village of Hanoverton. Construction contracts will require contractors to repair damaged streets and alleys. The new sanitary sewer collection and treatment system will be an improvement to public utility infrastructure.
Aquatic Resources/ Wetlands (See Note 3)		X (beneficial)		Based on National Wetland Inventory Maps, there are designated wetland areas within the project area. Hydric soils also exist in the project area which may indicate the presence of wetlands. A Wetland Delineation was conducted by Collective Efforts in November 2020 and a revised investigation was conducted in June 2021 to capture the proposed lift station site and to include the Kensington WWTP site which was omitted from the first investigation (Exhibit 7). The investigation identified five wetlands and five streams within the project area. According to the report summary, four of the wetlands were identified along Lincoln Highway (State Route 30) and/or near Sandy Creek and ranged in size from 0.009 acres to 0.06 acres. These four wetlands were categorized as modified Ohio Rapid Assessment Method (ORAM) Category 2. The fifth wetland area was located along an unnamed tributary near 1st Street and Clinton Street. This wetland was approximately 0.03 acres and was classified as an ORAM Category 1. All five wetlands were classified as palustrine emergent wetlands. No wetlands were identified at the proposed lift station site or existing WWTP site. The five streams were located throughout the project area, some crossed multiple times. One of the streams was Sandy Creek and the other four streams were unnamed tributaries to Sandy Creek. The proposed sewer alignment crosses these streams at nine different locations. No streams were identified at the lift station or WWTP sites.

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
				Areas of designated wetlands along the force main route will be avoided by re-alignment of the pipeline or by utilizing directional bore construction techniques. Directional bore method of construction will also be used near streams. As a result, open-cut stream crossings will not occur as a result of the Proposed Action. The wetland delineation recommends that no construction equipment enter the streams and that no stream diversion occurs while constructing this improvement project. It is also recommended that special provisions state that no material will be allowed to enter or discharge into the streams and debris will be removed immediately if it occurs. The area to be disturbed for this project is expected to be greater than one acre. Therefore, a NPDES for Stormwater Discharges Associated with Construction Permit will be required. An erosion and sediment control plan also will be required. Erosion and sediment best management practices will be used to prevent any disturbed earth that results from construction activities from entering the streams and wetlands. Ohio EPA regulations requiring soil placement and encroachment or disturbance in streams and wetlands will be followed during the construction activities. No U.S. Army Corps of Engineer permits are required. A copy of the wetland delineation will be made available to contractors and wetland areas will be identified on construction plans. Based on the proposed construction best management practices and avoidance of stream and wetland areas, no adverse impact to wetlands or streams will occur as result of the Proposed Action. However, construction of a new gravity-fed sanitary sewer collection system and construction of a pump station in Hanoverton will result in elimination of discharge of raw sewage into the environment, resulting in a minor beneficial impact to aquatic resources and wetlands.
Hazardous, Toxic and Radioactive Waste	X			A Phase I Environmental Site Assessment (ESA) was prepared by Collective Efforts, LLC in December 2020 and revised in July 2021 to include the proposed lift station and Kensington WWTP site (Exhibit 9). The assessment identified several facilities listed under one or more the

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
(See Note 4)				environmental databases within one mile of the proposed project area. The facilities located in the assessment are listed below: 9889 1st Street (or State Route 9), less than ⅛ mile from project area – Sandis Oil owned this site from 1988 until 1993, after which the facility had several owners. Currently, the location is the site of Steel Valley Gas Mart, a gasoline service station and food mart. There are four registered underground storage tanks (USTs) currently in use at the site. The tanks include two 6,000-gallon gasoline tanks and two 6,000-gallon diesel fuel tanks. No leaks or spills have been noted in reporting databases and no staining or leaks were observed during the site visit. The tanks have secondary containment with automatic tank gauging, interstitial monitoring, and cathodic protection. This site is not considered a Recognized Environmental Condition (REC) at this time. 10201 1st Street, less than ⅛ mile from project area – In 1993, Winona Manufacturing was listed as a Small Quantity Generator of hazardous wastes of the Ohio EPA. Ignitable wastes and halogenated solvents, such as tetrachoroethylene, and carbon tetrachloride were handled. A compliance evaluation inspection was conducted by the Ohio EPA in 1994 and no violations were reported. The current facility at this location is Sea Legend Manufacturing, which is classified as a Non-Generator. Non- Generators do not generate hazardous waste. This site is not considered a REC at this time. 10324 1st Street, less than ⅛ mile from project area – This site is the former BP Site and Town Pumps Sohio. The service station operated as Town Pumps Sohio from 1986 through 1994. BP Oil purchased Sohio in 1987, and at some point, that was not specified in the environmental records, the service station became a BP gasoline station. In 1999, three USTs were reportedly removed from the location; two 1,000-gallon gasoline tanks and one 500-gallon heating oil tank. The site is listed on the leaking underground storage tank (LUST) database and was reportedly remediated. The location is listed as an inactive facility with “No Further Action”. Currently the site is a vacant lot. The site is considered to be an historical recognized environmental condition (HREC).

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
				29835 State Route 30, less than ⅛ mile from project area – This site is currently a restaurant called Avalon. This site was formerly known as Dalonzo's Italian Restaurant and appears in the LUST, UST, and Archive UST databases. The reports indicate that three gasoline tanks were installed at this location in 1945. The USTs were bare metal and stored gasoline. Reportedly, there were two 1,000-gallon tanks and one 2,000-gallon tank. The tanks were removed in 1992 and the facility is listed as inactive with no further action. This location is not considered a REC at this time. 10100 Plymouth Road, less than ⅛ mile from project area – This site is located at the corner of Plymouth Road and Carroll Street. The site is listed on the LUST database and is described as inactive. The Environmental Data Resources (EDR Report) lists the release as "disproved", meaning that this site was reported in error. Therefore, this location is not considered an REC. S&R Recycling, 29550 State Route 30 Kensington OH, between ⅛ to ¼ mile from project area– This site is listed as an historical landfill. Database records indicate the facility as in operation as a Resource Conservation & Recovery Act (RCRA) non-generator on December 23, 2002. After an Ohio EPA inspection in 2003, facility violations were noted in 2004, 2005 and 2014. S&R Recycling was listed on the United States EPA Watch List in 2012 and 2013. The Watch List is a management tool used to facilitate discussion between EPA, state, and local agencies on enforcement matters. The site was listed as "Not a Significant Non-Complier" in 2019. Further investigation, by Collective Efforts, revealed a Complaint from the Court of Common Pleas of Columbiana County, Ohio, between the State of Ohio and S&R Recycling, Inc. The proceedings of this case indicated that S&R Recycling is owned by Simon DiPasquale and Romeo Maffei and is a thirty-acre parcel located between State Routes 30 and 644, on Campbell Road in Kensington, OH. Prior to S&R Recycling, the property was owned by Tri-State Materials and was listed as a hazardous waste recycling landfill. S&R Recycling has also purchased an adjoining 120-acre property for the purpose of operating a construction debris landfill. Their permit was revoked by the Ohio EPA. Due to the lack of information regarding site investigation and/or cleanup activities, this site is considered a REC.

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
				Hanover Township Landfill located south of Mardis Road, ½ to 1 mile from project area – This site is listed on the Division of Environmental Response and Revitalization (DERR) database. This database is an index containing basic site information for which Ohio EPA maintains the files. It includes sites with known or suspected contamination, but a site's inclusion in the database does not mean that it is now or has ever been contaminated. The property is located at a higher elevation, northwest of the project area in Hanoverton. The Hanover Township Landfill is not considered an REC at this time due to its distant location from the project area. 29029 State Route 30, less than ⅛ mile from project area – This site was reported in the Archive UST database for a UST from May 2006 under the facility name of Burton T. Manfull. The site reportedly still has four petroleum tanks currently in use. The site was also registered in the SPILLS database for a petroleum spill that occurred in December of 1997. This site was listed in the LUST and UST databases. The LUST release date occurred in October 1997 with the viable responsible party identified. By May 2006, the closure of regulated UST occurred with no further action reported. This status was last updated in March 2016. There were four USTs reported as removed in May 2006; a 550-gallon fiberglass reinforced plastic tank containing kerosene, two 4000-gallon fiberglass reinforced plastic tanks containing gasoline, and a 10,000-gallon fiberglass reinforced plastic tank containing gasoline. This site was also the location of an exclusive historical auto stations (EDR HIST AUTO) from 1996-2014. The site is considered a HREC due to the proximity to the project area, higher elevation, and past reported releases. Blum Coal Company and Blum Strip, less than ⅛ mile from project area – This site is registered in the US Mines and Abandoned Mines databases. The Blum Coal Company under the US mines database is listed as permanently closed since 1998. The mine type was surface, and the status description is listed as abandoned as of April 1998. An aerial map indicates the site is slowly becoming vegetated, with the land being used for farming and pastures. It appears the mine was reclaimed. A site visit verified that no mining activity is occurring, and no environmental issues were found. This site is not considered a REC.

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
				The proposed pump station site is not listed under any of the databases referenced for the ESA report. The pump station is in southwestern Hanoverton on a plot of land to the west of a Dollar General Store. The site covers 6.34 acres. A Beck Energy conventional gas well, an unconventional gas well and a 250-gallon condensate tank are located on the property. The proposed pump station will be located in the northwestern corner of the parcel. The County confirmed the split of this parcel, with the pump station to be on 0.116 acre within the road right-of-way. The Phase 1 ESA site reconnaissance discovered no staining, spills or distressed vegetation at the well site and storage tank that are located south-southeast of the proposed pump station location. The oil/gas wells are not considered RECs based on information from the site reconnaissance, property owner interview and no records of issues in the EDR report. Care should be taken during the construction activities when excavating in areas that previously contained or currently containing gas stations (USTs), in the vicinity of the former S&R Recycling, and near the existing gas well located adjacent to the proposed lift station site. These areas should be noted in construction plans for avoidance of underground structures.
Environmental Justice		X (beneficial)		The Proposed Action is designed to improve the environment and health conditions of all residents in the service area. Elimination of failing on-site septic systems and construction of a new sanitary sewer system will improve the quality of living in the area and will eliminate raw sewage discharging to local streams. All residents of the service area will benefit from access to public sewers. No minority or low-income areas will incur long-term adverse effects as a result of the Proposed Action.
Tribal Trust Resources	X			No effect to tribal trust resources is expected with implementation of the Proposed Action (Exhibit 8).
Navigation	X			No effect to navigation is expected with implementation of the Proposed Action. The project area does not include navigable waters.

Resource	No Effect	Minor Effect	Significant Effect	Basis for Determination
Climate Change	X			No effect to climate change is expected with implementation of the Proposed Action.
Hydrology	X			No effects to hydrology are expected with implementation of the Proposed Action (Exhibit 3).
Child Health and Safety		X (beneficial)		The Proposed Action will improve child health and safety by eliminating contamination of local streams and potential contamination of private wells for drinking and household uses.

Note 1 – The Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) were consulted regarding impacts to endangered, threatened or species of concern. See attached correspondence, Exhibit 5.

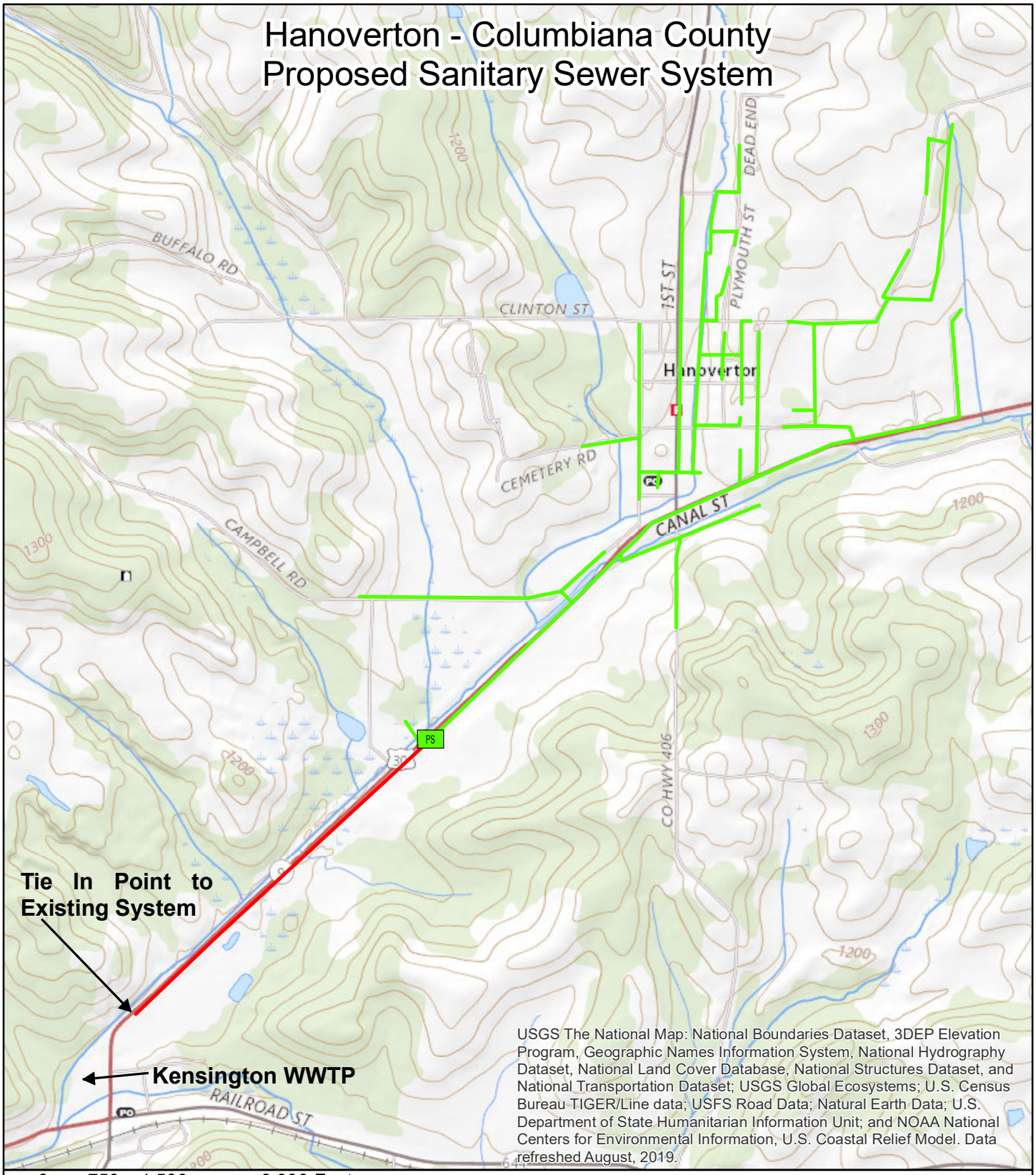
Note 2 – The State Historic Preservation Office (SHPO) was consulted and has advised the Proposed Action will have no effect on properties listed or eligible for listing on the National Register of Historic Places. See attached correspondence, Exhibit 6.

Note 3 – A wetland delineation report was conducted in November 2020 and a revised report completed in June 2021. See attached correspondence and Wetland Delineation Report with NWI map (Exhibit 7).

Note 4 – A Phase 1 Environmental Site Assessment/HTRW Assessment Report, was conducted in in July 2021. See attached report, Exhibit 9.

APPENDIX A

Hanoverton - Columbiana County
Proposed Sanitary Sewer System



USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed August, 2019.

0 750 1,500 3,000 Feet

N
W E
S

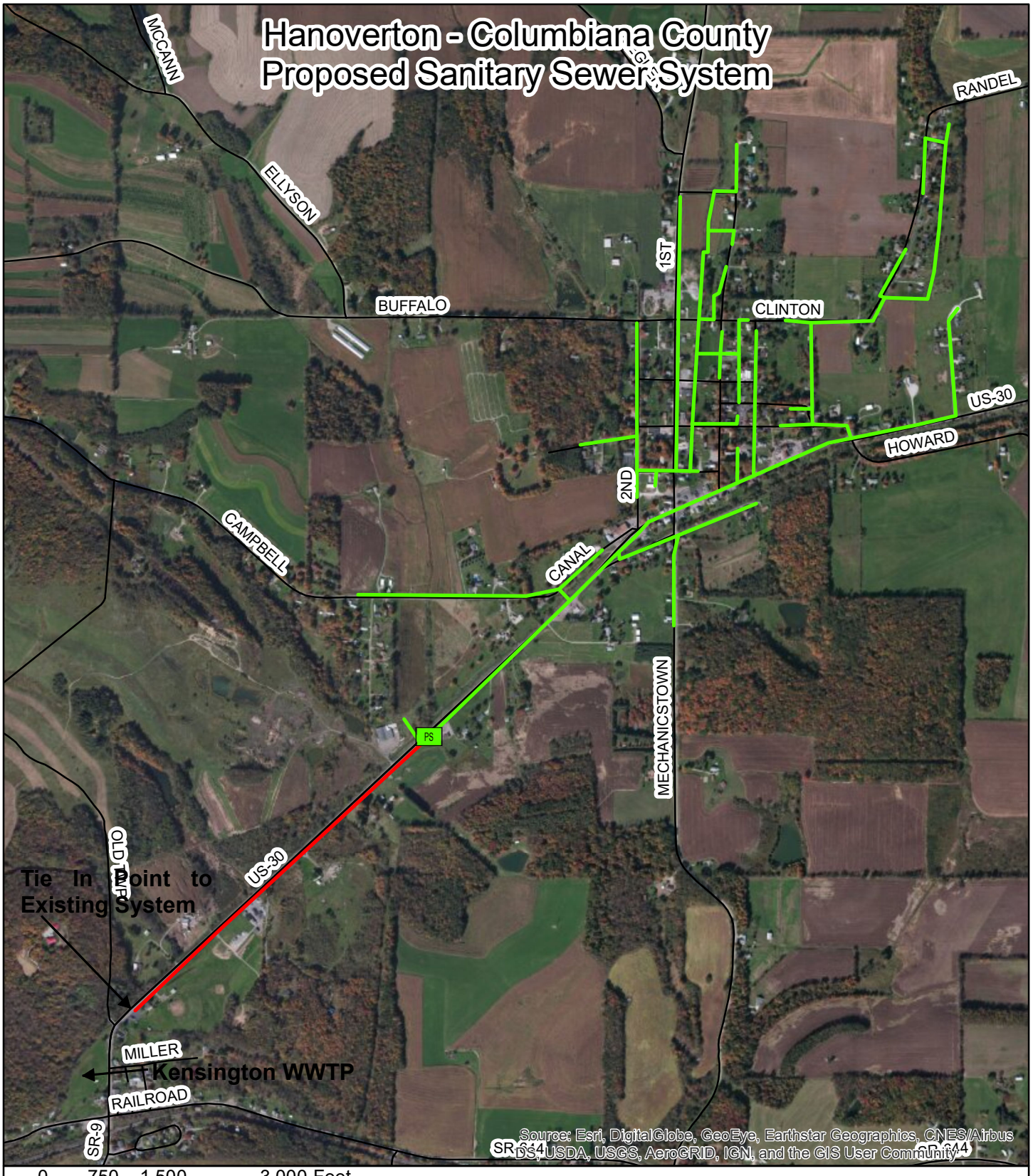
PS Proposed Pump Station

Force Main

Gravity Main

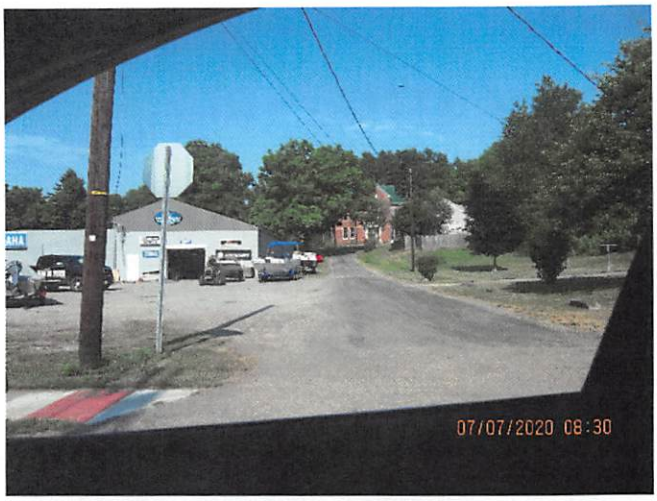
RCAP

APPENDIX B



APPENDIX C

Photographs of the
Village of Hanoverton
Sanitary Sewer System Project



1. Street Scene

2. Street Scene

3. Street Scene

4. Street Scene

5. Street Scene

6. Street Scene

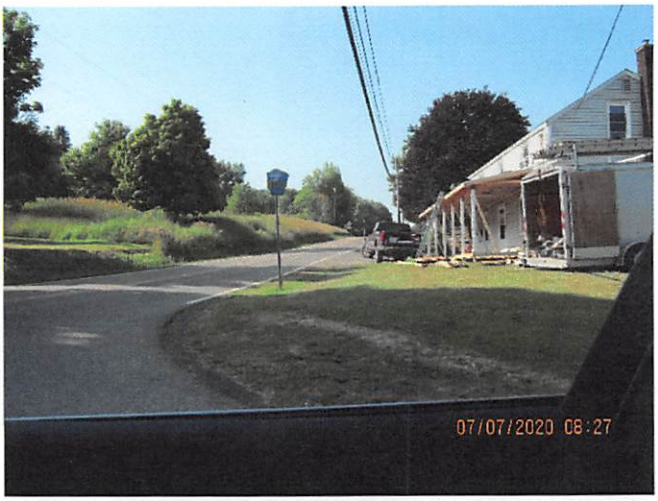
7. Street Scene

8. Street Scene

9. Street Scene

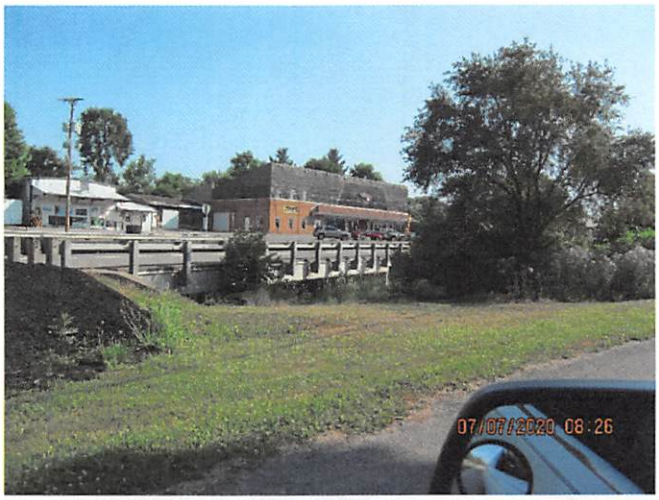
10. Street Scene

11. Route 9 & Route 30 Intersection



12. Street Scene

13. Street Scene



14. Route 30 Stream Crossing

15. Route 30

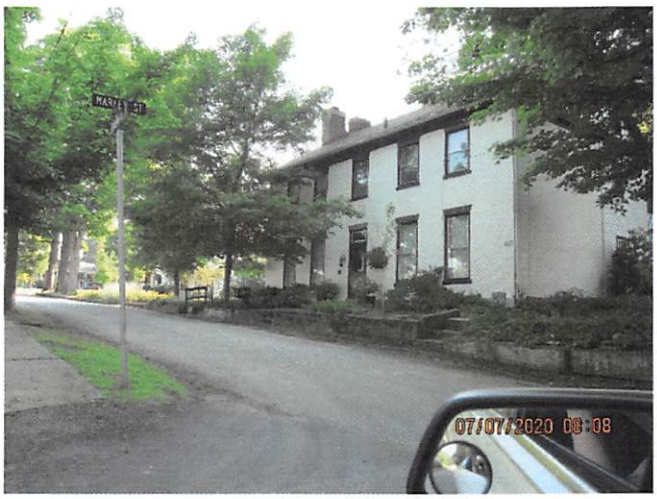
16. Stream Crossing to business (Route 30)

17. Street Scene

18. Plymouth Street (Historic District)

19. Street Scene

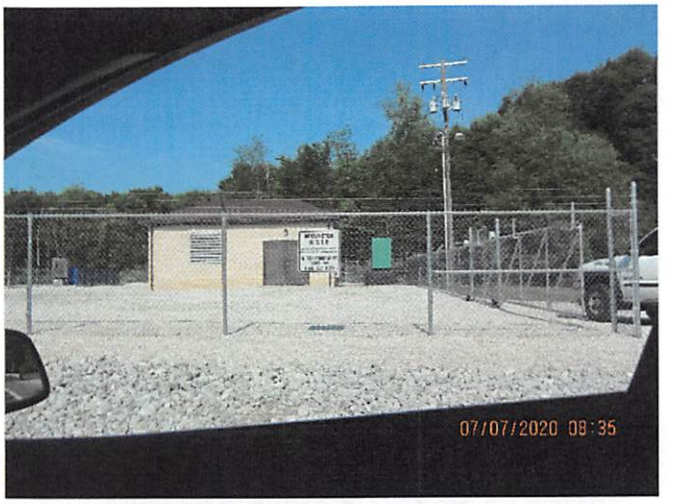
20. Plymouth Street (Historic District)



21. Plymouth Street (Historic District

22. State Route 9 (First Street)

23. State Route 9 (First Street)



24. Kensington Treatment Plant

25. Possible Easement Site

26. Street Scene

27. Pump Station Location – US 30

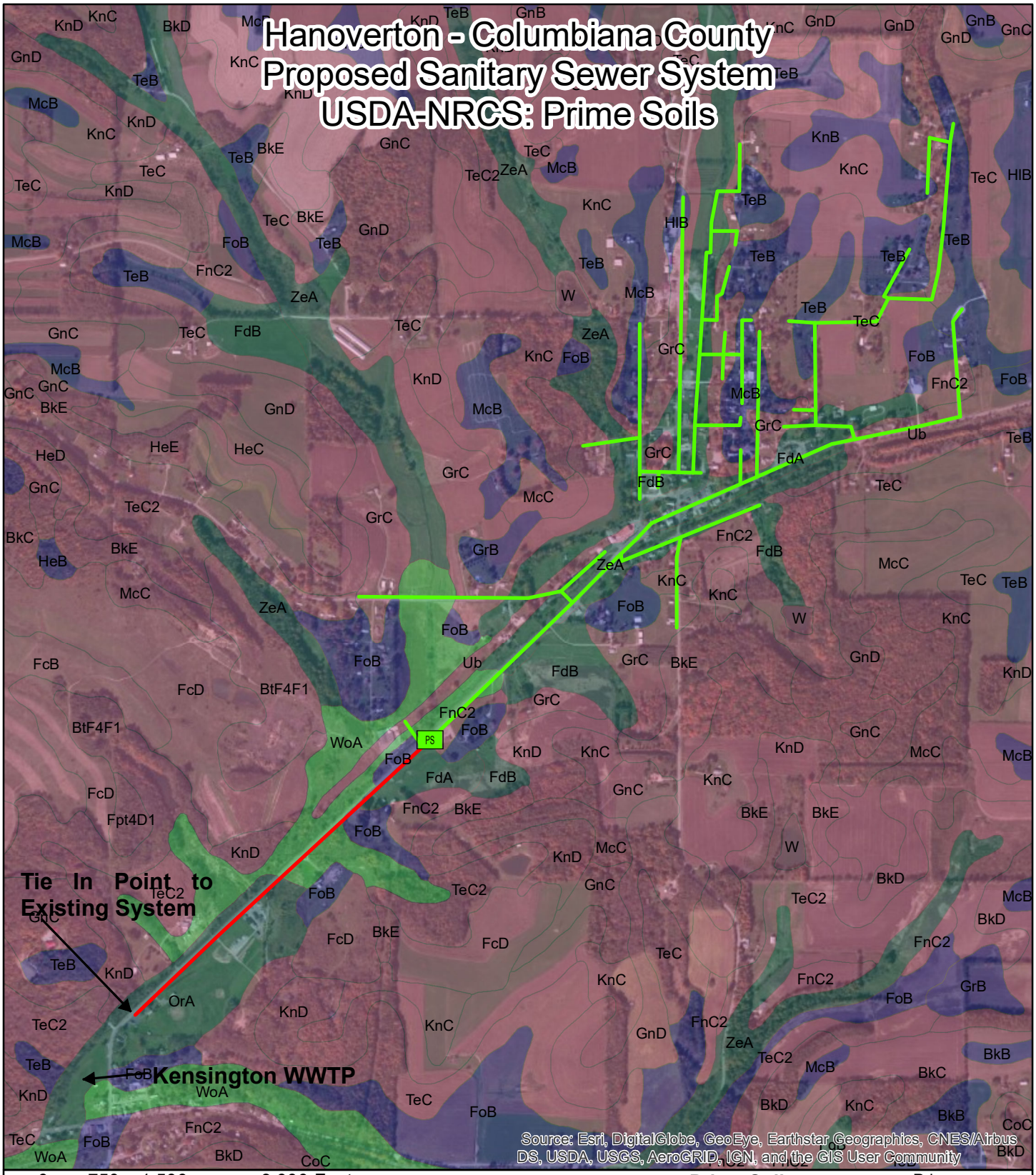
EXHIBIT 1

Plant Location: Lat: 40° 44' 49.32"
Long: 80° 56' 31.00"

Hanoverton Area Sanitary Sewer Project - Pump Station

Map Prepared by:
Columbiana County Sanitary Engineer's Office,
Bert Dawson, PE, PS

Hanoverton - Columbiana County
Proposed Sanitary Sewer System
USDA-NRCS: Prime Soils



0 750 1,500 3,000 Feet

PS Proposed Pump Station

Gravity Main

Force Main

N W E S

Prime Soils

All areas are prime farmland

Not prime farmland

Prime farmland if drained

Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

RCAP

From: "Glanville, Jeff - NRCS, Columbus, OH" <jeff.glanville@usda.gov>
To: PAM EWING <psewing@glcap.org>
Date: 7/21/2020 11:24
Subject: RE: Columbiana County Environmental Review
Attachments: Hanoverton_sewer_AD-1006.pdf; Hanoverton_sewer_CPA106.pdf

Pam

I've attached the completed AD-1006 and CPA-106 forms.

Please let me know if you need any additional information, or if something doesn't look right.

Jeff Glanville
Soil Scientist/Soil Database Manager and acting State Soil Scientist
USDA-NRCS
200 North High Street, Room 522
Columbus, OH 43215-2478

614-255-2507
855-867-9515 FAX

Jeff.Glanville@oh.usda.gov

-----Original Message-----
From: PAM EWING <psewing@glcap.org>
Sent: Monday, July 13, 2020 1:02 PM
To: Glanville, Jeff - NRCS, Columbus, OH <jeff.glanville@usda.gov>; Baker, Steven - NRCS, Columbus, OH <steven.baker@usda.gov>
Subject: Columbiana County Environmental Review

Steve & Jeff,

Attached is an environmental review for the proposed Hanoverton Sanitary Sewer System.

If you require additional information, please advise.

Pam

Pam Ewing, PCED, AWAM
Sr. Rural Development Specialist
Ohio Rural Community Assistance Program
1817 St. Rt. 83, Unit 423
Millersburg, OH 44654
PH: 330/674-9600
FAX: 330/674-4176
CELL: 419/651-0704
psewing@glcap.org
https://gcc02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fohiorcap.org%2F&data=02%7C01%7C%7C66a30e9370ba4c90681208d8274fb277%7Ced5b36e701ee4ebc867ee03cfa0d4697%7C0%7C0%7C637302571139763331&sdata=hTIltAZPmq4AChuknTsmyvG6Z2kGab1hCJH1KDW5gc0%3D&reserved=0

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 7/13/20
Name Of Project Hanoverton Sanitary Sewer Project	Federal Agency Involved U.S. Army Corps of Engineers
Proposed Land Use Wastewater Treatment	County And State Columbiana, Ohio
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 7/13/20

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply – do not complete additional parts of this form).*	Yes ☐	No ☑	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %		Amount Of Farmland As Defined in FPPA Acres: %	
Name Of Land Evaluation System Used	Name Of Local Site Assessment System		Date Land Evaluation Returned By NRCS	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	1.6	0.5		
B. Total Acres To Be Converted Indirectly	0.0			
C. Total Acres In Site	1.6	0.5	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	0	0	0	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use	15				
2. Perimeter In Nonurban Use	10				
3. Percent Of Site Being Farmed	20				
4. Protection Provided By State And Local Government	20				
5. Distance From Urban Builtup Area	15				
6. Distance To Urban Support Services	15				
7. Size Of Present Farm Unit Compared To Average	10				
8. Creation Of Nonfarmable Farmland	10				
9. Availability Of Farm Support Services	5				
10. On-Farm Investments	20				
11. Effects Of Conversion On Farm Support Services	10				
12. Compatibility With Existing Agricultural Use	10				
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	0	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection: Site A - existing Kensington WWTP; owned by Columbiana County

Site B - proposed lift station site

NRCS note: Sites are in urban/built-up areas. Not subject to FPPA.

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 – Federal agencies involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form.

Step 2 – Originator will send copies A, B and C together with maps indicating locations of site(s), to the Natural Resources Conservation Service (NRCS) local field office and retain copy D for their files. (Note: NRCS has a field office in most counties in the U.S. The field office is usually located in the county seat. A list of field office locations are available from the NRCS State Conservationist in each state).

Step 3 – NRCS will, within 45 calendar days after receipt of form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland.

Step 4 – In cases where farmland covered by the FPPA will be converted by the proposed project, NRCS field offices will complete Parts II, IV and V of the form.

Step 5 – NRCS will return copy A and B of the form to the Federal agency involved in the project. (Copy C will be retained for NRCS records).

Step 6 – The Federal agency involved in the proposed project will complete Parts VI and VII of the form.

Step 7 – The Federal agency involved in the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA and the agency's internal policies.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

Part I: In completing the "County And State" questions list all the local governments that are responsible for local land controls where site(s) are to be evaluated.

Part III: In completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them.

2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities) that will cause a direct conversion.

Part VI: Do not complete Part VI if a local site assessment is used.

Assign the maximum points for each site assessment criterion as shown in § 658.5 (b) of CFR. In cases of corridor-type projects such as transportation, powerline and flood control, criteria #5 and #6 will not apply and will, be weighed zero, however, criterion #8 will be weighed a maximum of 25 points, and criterion #11 a maximum of 25 points.

Individual Federal agencies at the national level, may assign relative weights among the 12 site assessment criteria other than those shown in the FPPA rule. In all cases where other weights are assigned relative adjustments must be made to maintain the maximum total weight points at 160.

In rating alternative sites, Federal agencies shall consider each of the criteria and assign points within the limits established in the FPPA rule. Sites most suitable for protection under these criteria will receive the highest total scores, and sites least suitable, the lowest scores.

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, adjust the site assessment points to a base of 160. Example: if the Site Assessment maximum is 200 points, and alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site "A."}$$

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 7/13/20 | 4. Sheet 1 of _____
1. Name of Project **Hanoverton Sanitary Sewer Project**	5. Federal Agency Involved **U.S. Army Corps of Engineers**
2. Type of Project **Sanitary Sewers**	6. County and State **Columbiana, Ohio**

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS **7/13/20**	2. Person Completing Form **J. Glanville**
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☐ NO ☑		4. Acres Irrigated | Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment _____			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	37			
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	37	0	0	0
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*				
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points				
1. Area in Nonurban Use — 15				
2. Perimeter in Nonurban Use — 10				
3. Percent Of Corridor Being Farmed — 20				
4. Protection Provided By State And Local Government — 20				
5. Size of Present Farm Unit Compared To Average — 10				
6. Creation Of Nonfarmable Farmland — 25				
7. Availablility Of Farm Support Services — 5				
8. On-Farm Investments — 20				
9. Effects Of Conversion On Farm Support Services — 25				
10. Compatibility With Existing Agricultural Use — 10				
TOTAL CORRIDOR ASSESSMENT POINTS — 160	0	0	0	0
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) — 100				
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)* — 260	0	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐

5. Reason For Selection:

NRCS note: Sites are in urban/built-up areas and/or are subsurface installations in rights-of-way. Not subject to FPPA.

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

(1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

(2) How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?
More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
Site is protected - 20 points
Site is not protected - 0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with $1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?
Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

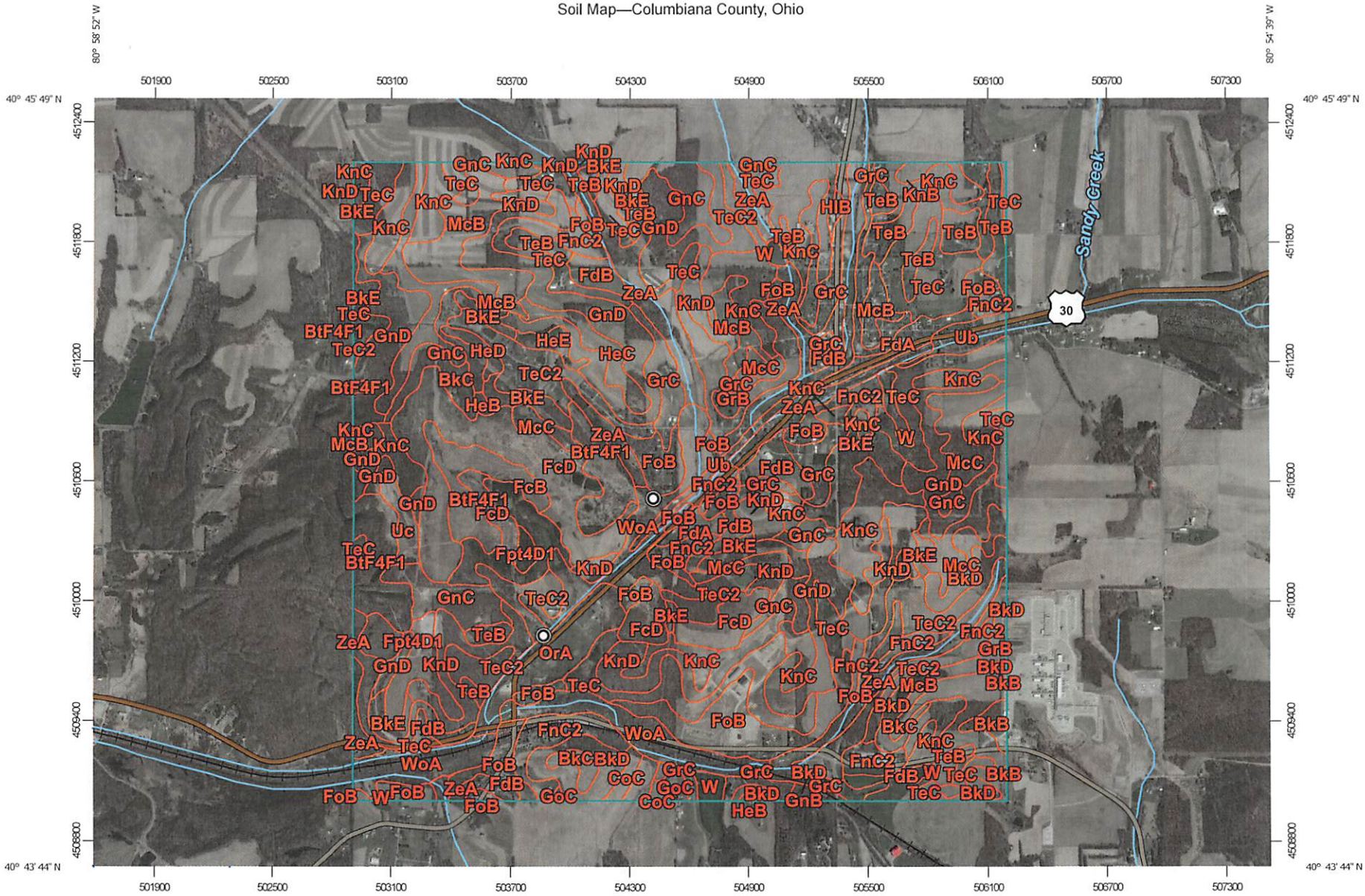
(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?
Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

Soil Map—Columbiana County, Ohio



Map Scale: 1:27,100 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 400 800 1600 2400

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: Columbiana County, Ohio
Survey Area Data: Version 17, Sep 16, 2019

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

Date(s) aerial images were photographed: Apr 3, 2019—Sep 19, 2019

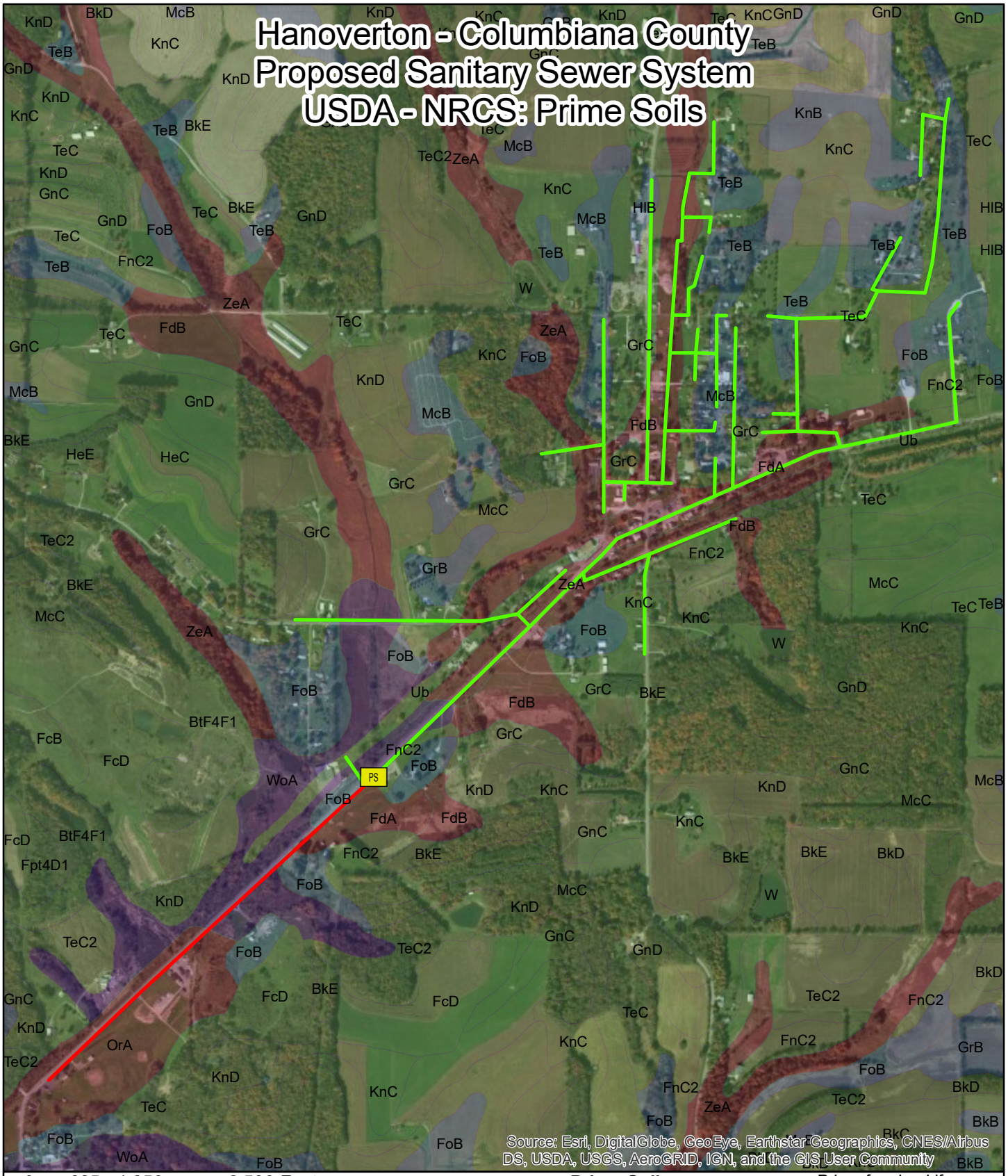
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BkB	Berks channery silt loam, 3 to 8 percent slopes	8.3	0.3%
BkC	Berks channery silt loam, 8 to 15 percent slopes	76.7	2.9%
BkD	Berks channery silt loam, 15 to 25 percent slopes	63.7	2.4%
BkE	Berks channery silt loam, 25 to 35 percent slopes	76.8	2.9%
BtF4F1	Bethesda and Fairpoint channery silt loams, 25 to 70 percent slopes	97.5	3.7%
CoC	Coshocton silt loam, 6 to 15 percent slopes	7.0	0.3%
FcB	Fairpoint silty clay loam, 0 to 8 percent slopes	34.7	1.3%
FcD	Fairpoint silty clay loam, 8 to 25 percent slopes	143.2	5.5%
FdA	Fitchville silt loam, 0 to 2 percent slopes	23.3	0.9%
FdB	Fitchville silt loam, 2 to 6 percent slopes	70.1	2.7%
FnC2	Fredericktown gravelly loam, 6 to 15 percent slopes, eroded	69.3	2.7%
FoB	Fredericktown silt loam, 2 to 6 percent slopes	146.2	5.6%
Fpt4D1	Fairpoint channery silt loam, 8 to 25 percent slopes	13.7	0.5%
GnB	Gilpin silt loam, 3 to 8 percent slopes	0.1	0.0%
GnC	Gilpin silt loam, 8 to 15 percent slopes	121.5	4.7%
GnD	Gilpin silt loam, 15 to 25 percent slopes	215.4	8.3%
GoC	Gilpin-Coshocton silt loams, 6 to 15 percent slopes	4.5	0.2%
GrB	Glenford silt loam, 2 to 6 percent slopes	9.7	0.4%
GrC	Glenford silt loam, 6 to 12 percent slopes	110.1	4.2%
HeB	Hazleton channery loam, 3 to 8 percent slopes	2.0	0.1%
HeC	Hazleton channery loam, 8 to 15 percent slopes	18.5	0.7%
HeD	Hazleton channery loam, 15 to 25 percent slopes	5.5	0.2%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HeE	Hazleton channery loam, 25 to 35 percent slopes	7.9	0.3%
HlB	Homewood silt loam, 2 to 6 percent slopes	2.4	0.1%
KnB	Kensington silt loam, 2 to 6 percent slopes	8.7	0.3%
KnC	Kensington silt loam, 6 to 15 percent slopes	218.3	8.4%
KnD	Kensington silt loam, 15 to 25 percent slopes	130.1	5.0%
McB	Mechanicsburg silt loam, 2 to 6 percent slopes	77.1	3.0%
McC	Mechanicsburg silt loam, 6 to 15 percent slopes	66.9	2.6%
OrA	Orrville silt loam, 0 to 3 percent slopes, occasionally flooded	41.7	1.6%
TeB	Teegarden silt loam, 2 to 6 percent slopes	68.9	2.6%
TeC	Teegarden silt loam, 6 to 15 percent slopes	202.0	7.8%
TeC2	Teegarden silt loam, 6 to 15 percent slopes, eroded	125.1	4.8%
Ub	Udorthents, refuse substratum, 2 to 25 percent slopes	24.6	0.9%
Uc	Udorthents-Pits complex, 0 to 70 percent slopes	11.3	0.4%
W	Water	13.5	0.5%
WoA	Wick silt loam, 0 to 2 percent slopes, frequently flooded	124.3	4.8%
ZeA	Zepernick silt loam, 0 to 2 percent slopes, occasionally flooded	164.5	6.3%
Totals for Area of Interest		**2,605.2**	**100.0%**

Hanoverton - Columbiana County
Proposed Sanitary Sewer System
USDA - NRCS: Prime Soils



0 625 1,250 2,500 Feet

PS Proposed Pump Station

Gravity Main

Force Main

N W E S

Prime Soils

All areas are prime farmland

Not prime farmland

Prime farmland if drained

Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

RCAP

"Improving the quality of life in rural communities"

July 13, 2020

Mr. Stephen Baker
NRCS
Columbus, OH 43215

RE: Columbiana County, Ohio
Hanoverton Sanitary Sewer Project

Dear Mr. Baker:

Columbiana County is in the process of performing an environmental review pursuant to the 40 CFR requirements of the National Environmental Policy Act (NEPA) and the U.S. Army Corps of Engineers Implementing regulation, ER 200-202, in order that it may assess the environmental impacts of construction of a sanitary sewer system in the Village of Hanoverton.

Enclosed are project map(s) that depicts the proposal's construction activities, a description of the work involved and site photos for your review.

We are requesting information on the possible effects of the proposal on important farmland and any recommendations you have to minimize or avoid these effects. We also seek your assessment of the capability of the proposal with State and local government or any private programs and policies to protect important farmland.

Please return with your assessment, the completed Form AD-1006 and CPA-106.

We would appreciate a response within 30 days. If you need any further information or wish to discuss our project, please contact me at 330/674-9600.

Sincerely,

Pam Ewing

Pam Ewing
Sr. Rural Development Specialist
Rural Community Assistance Program (RCAP)

PROJECT DESCRIPTION

The proposed project will occur in the Village of Hanoverton, Columbiana County, Ohio.

The project includes the construction of approximately 33,000 linear feet of 8-inch PCV sewer pipe; 3,300 linear feet of 4-inch HDPE force main; 300 linear feet of 8-inch bore and jacking gravity sewer; 3,200 linear feet of 6-inch sanitary sewer connection; 126 manhole; one package pump station with fencing; back-up generator, 50,000 gpd treatment plant expansion; electrical, SCADA system, miscellaneous equipment purchases, dewatering and storm sewer repairs, as needed.

Sanitary sewers and force main will be constructed at a depth of approximately four feet in the right of way where possible and within private easements, as needed.

Construction activities will occur in the streets and rights of way of the Village of Hanoverton, where possible. Force main construction will occur within the right of way of US 30 between the Village of Hanoverton and the Kensington WWTP. Sanitary sewers within the historic district of the village will be placed in private easements at the rear of the properties to avoid impacts to the brick streets, large trees and historic buildings along Plymouth Street. Expansion of the Kensington WWTP will occur on land previous disturbed by original construction of the facility in 2014/2015. The proposed lift station will be located on US 30 between Hanoverton and Kensington and will have no impact on trees, wetlands or floodplain areas.

The floodplain of Sandy Creek exists in the project area. The existing Kensington wastewater treatment plant is located within the floodplain of Sandy Creek. The proposed expansion of this plant will also occur within the floodplain area on previously impacted area. Underground sanitary sewers and force main will temporarily impact the floodplain but no long-term adverse impacts are anticipated.

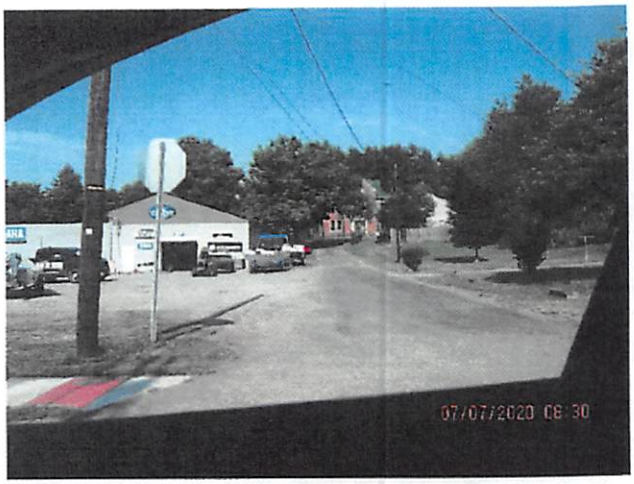
The proposed sanitary sewers will be installed by directional boring in the areas of all stream crossings. Small scrub brush will be disturbed or removed during this process.

Wetland areas also exist in the project area. These areas will be avoided by directional bore or relocation of the line to the opposite side of the road.

It is not anticipated that tree removal will occur. However, if during construction tree removal is deemed necessary, removal will be limited to between October 1 and March 31.

OHPO on-line records indicates four OGS cemeteries, two Phase 1 Survey Areas; eighty-three (83) historic structures; twenty-one (21) archaeological sites; one National Register Boundary and one NR Listing within a one-mile radius from the Village of Hanoverton. Due to the nature of the project elements being placed on disturbed ground and not being visible to historic structures, it is not anticipated these historic properties will be impacted by the proposed project.

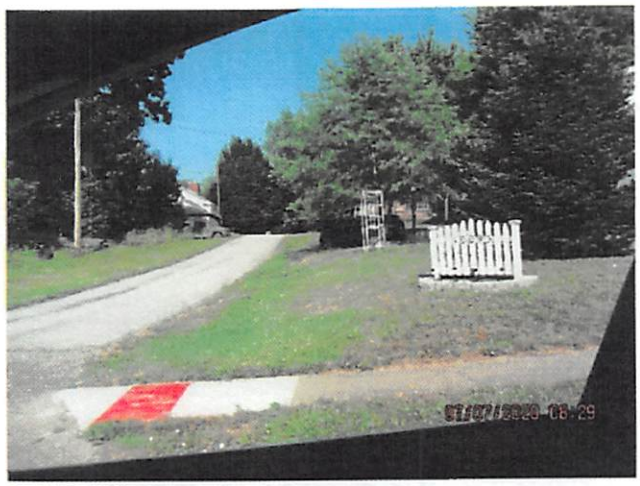
Photographs of the
Village of Hanoverton
Sanitary Sewer System Project



1. Street Scene


2. Street Scene


3. Street Scene

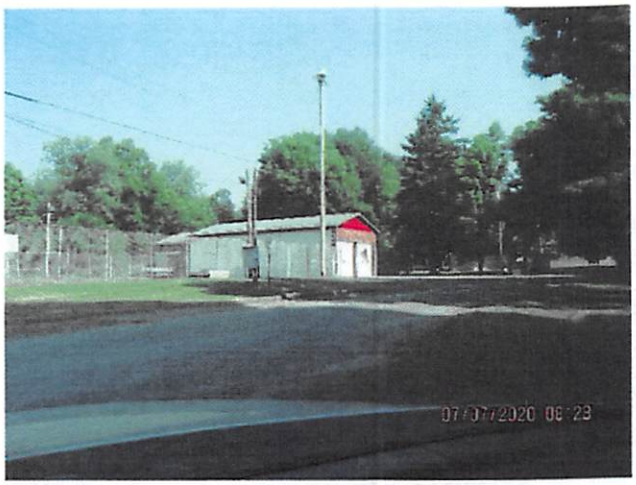

4. Street Scene


5. Street Scene


6. Street Scene

7. Street Scene

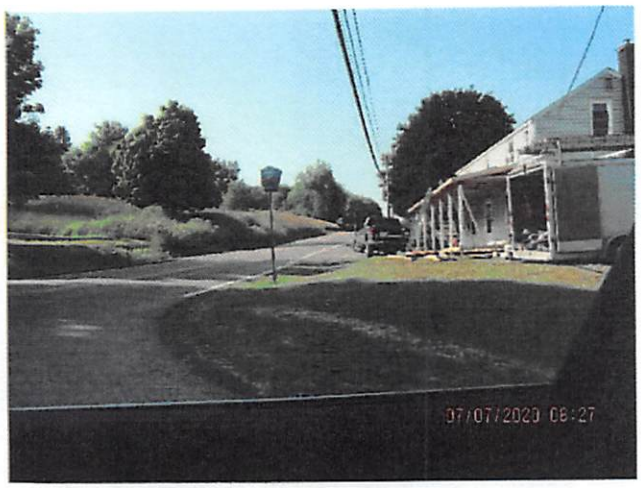
8. Street Scene



9. Street Scene

10. Street Scene

11. Route 9 & Route 30 Intersection



12. Street Scene


13. Street Scene


14. Route 30 Stream Crossing


15. Route 30


16. Stream Crossing to business (Route 30)

7. Stream Crossing – Campbell Road

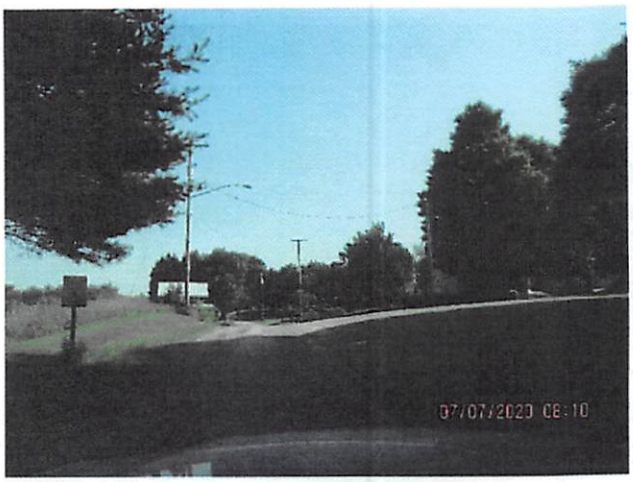
8. Plymouth Street (Historic District)

9. Street Scene

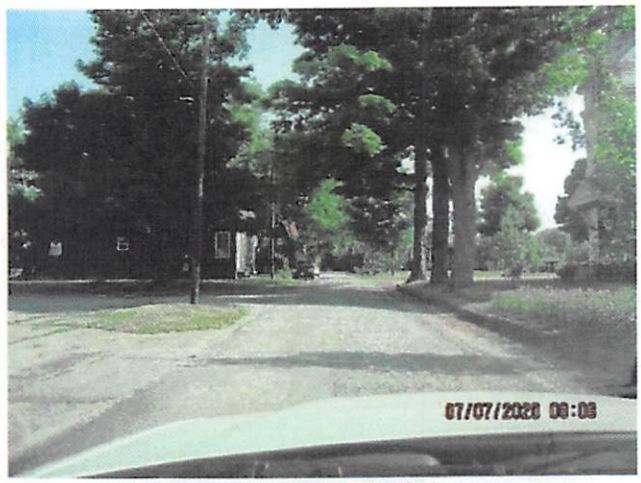
10. Stream Crossing

17. Street Scene

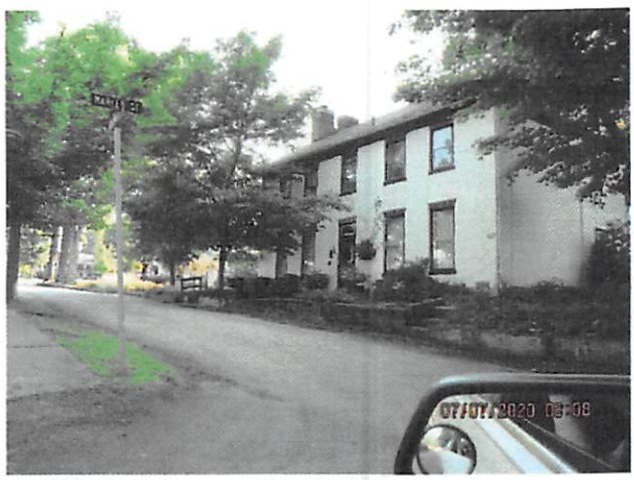
18. Plymouth Street (Historic District)



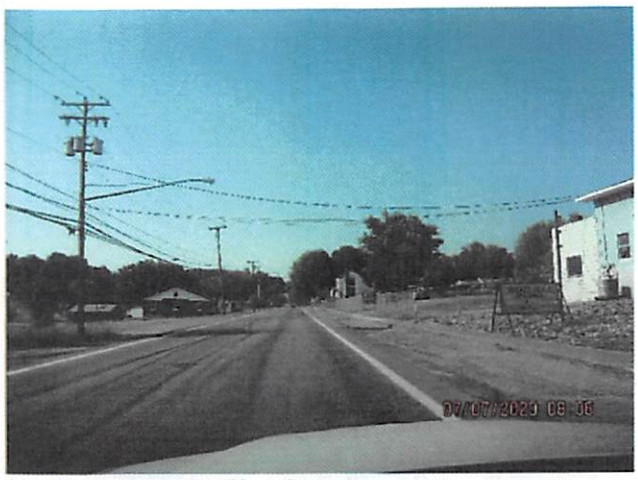
19. Street Scene



20. Plymouth Street (Historic District)

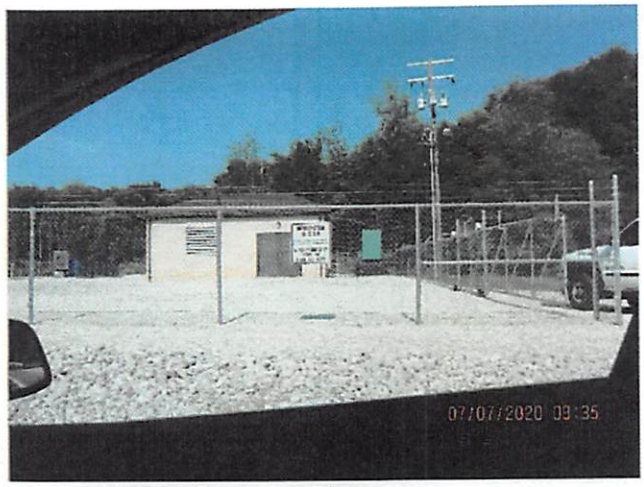


21. Plymouth Street (Historic District



22. State Route 9 (First Street)

23. State Route 9 (First Street)



24. Kensington Treatment Plant

25. Possible Easement Site

26. Street Scene

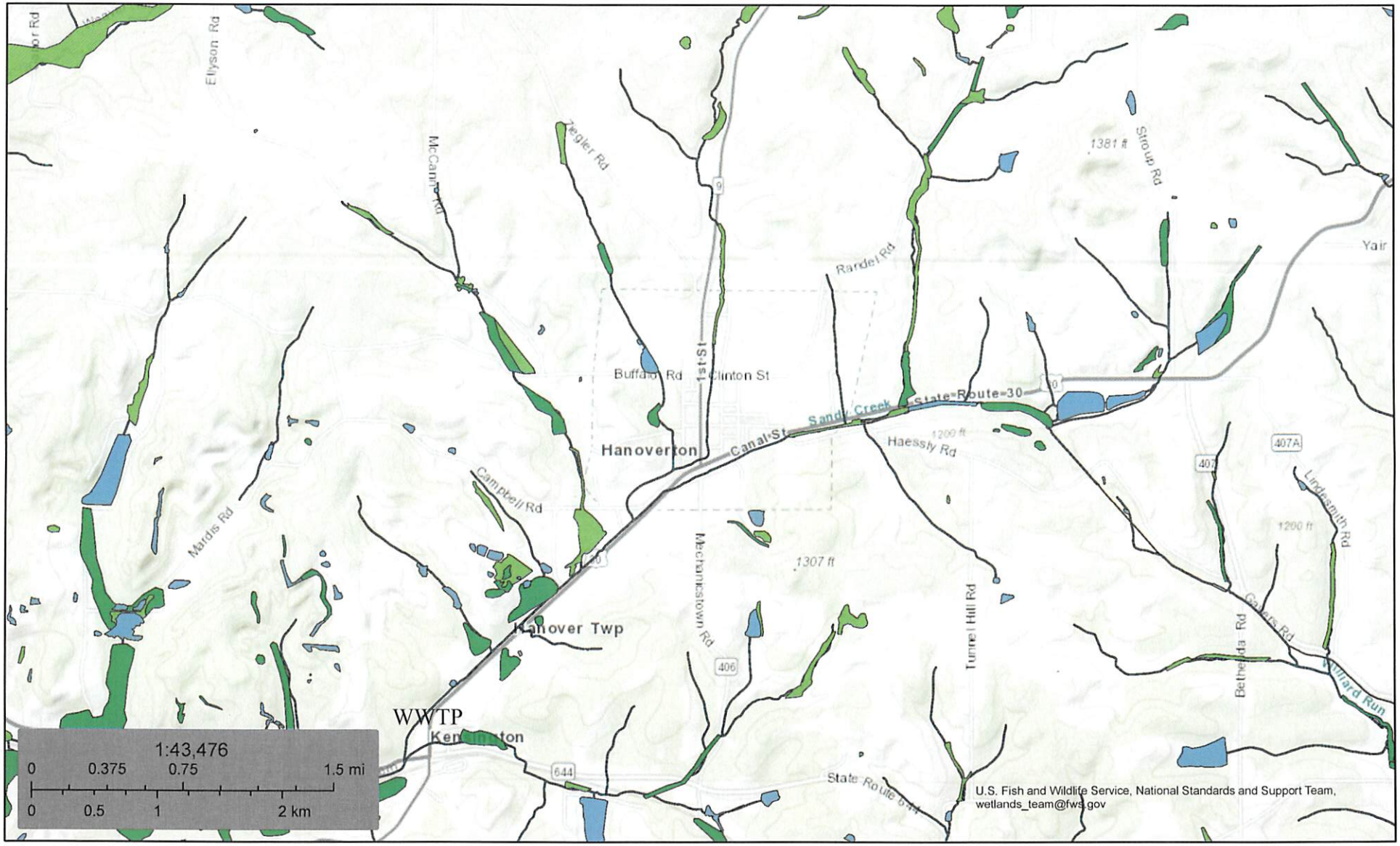
27. Pump Station Location – US 30


Google Earth Pro
File Edit View Tools Add Help
6/2019
725
729
811
816
826
9
30
538
Phase I Study Area
Village Limits
Hanoverton
Hanoverton
840
406
735
3035 ft
1994
Google Earth
Imagery Date: 6/30/2019

U.S. Fish and Wildlife Service

National Wetlands Inventory

Hanoverton Wetland Topo



June 29, 2020

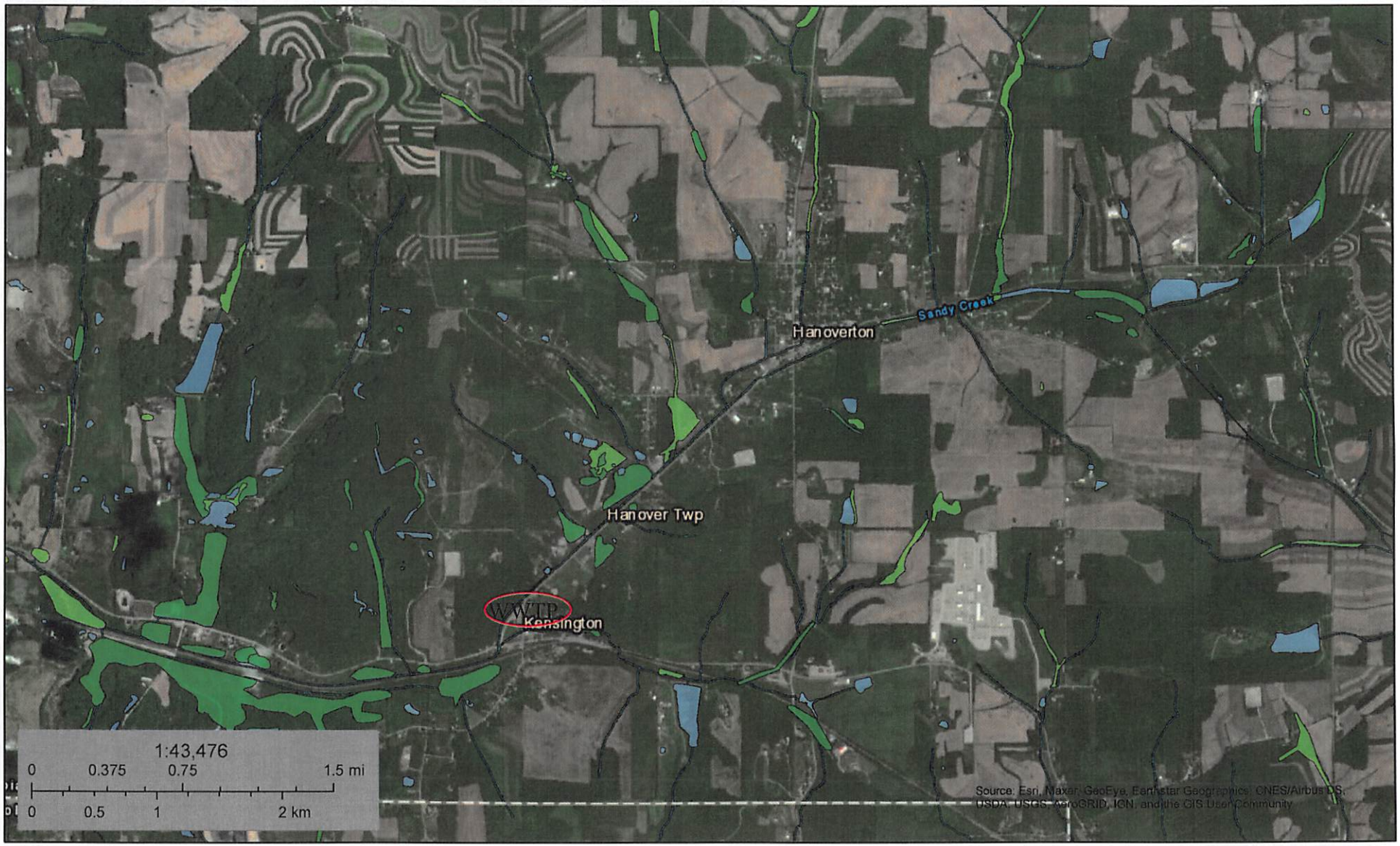
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

U.S. Fish and Wildlife Service

National Wetlands Inventory

Hanoverton Wetland



July 13, 2020

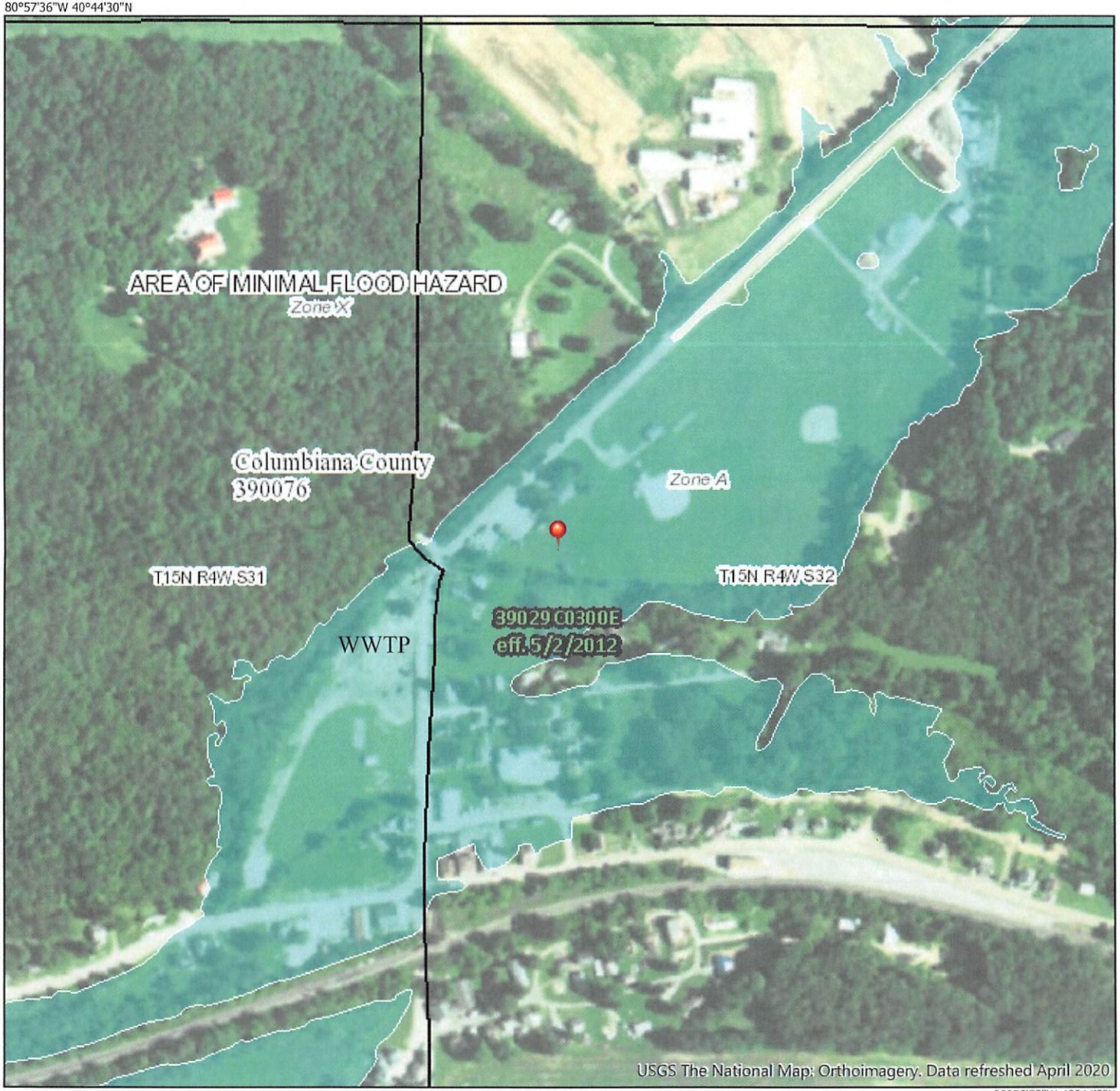
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

National Flood Hazard Layer FIRMette

FEMA

80°57'36"W 40°44'30"N



80°56'58"W 40°44'2"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile *Zone*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/29/2020 at 9:17 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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National Flood Hazard Layer FIRMette

FEMA

80°57'15"W 40°44'35"N

80°56'38"W 40°44'8"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
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OTHER AREAS
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- Effective LOMRs
- Area of Undetermined Flood Hazard Zone

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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National Flood Hazard Layer FIRMette

FEMA

80°56'26"W 40°45'27"N

80°55'49"W 40°45'N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
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- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
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GENERAL STRUCTURES
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OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/29/2020 at 9:14 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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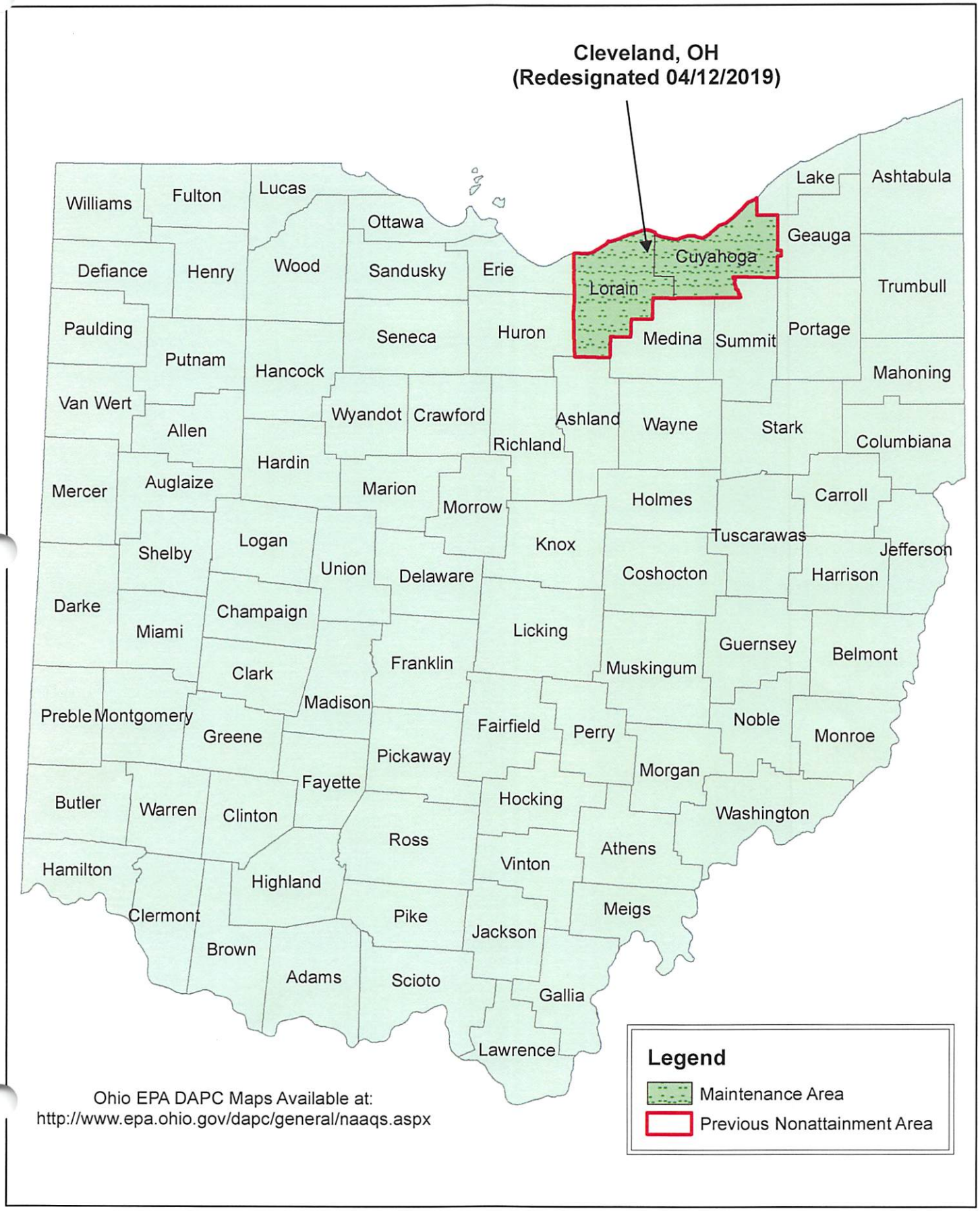
EXHIBIT 2

Ohio 2012 Annual PM2.5 (12.0 ug/m3)
Nonattainment Areas
Effective 04/15/2015

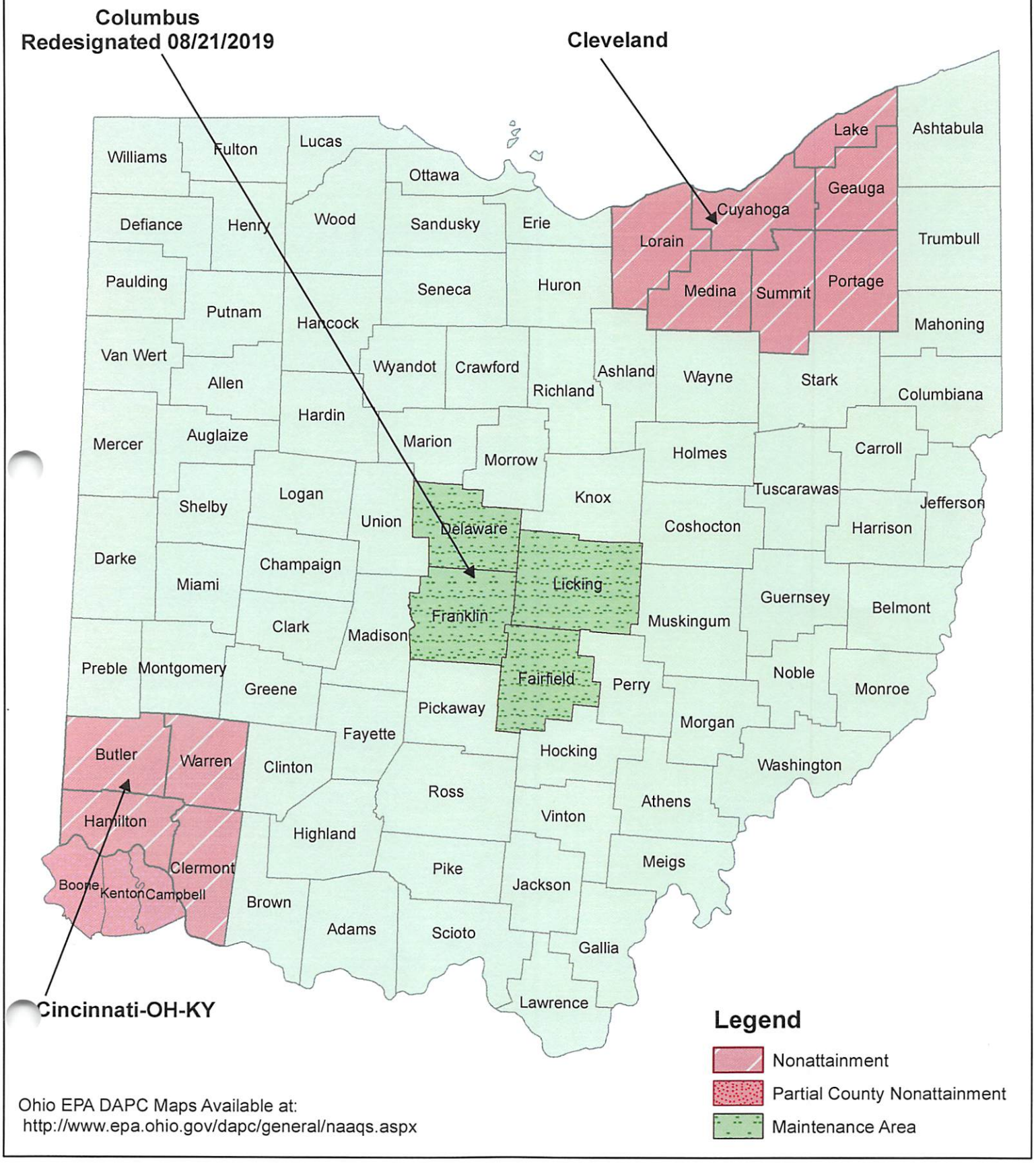


Ohio EPA DAPC Maps Available at:
http://www.epa.ohio.gov/dapc/general/naaqs.aspx

Ohio 2006 24-Hour PM2.5 (35 ug/m3)
Nonattainment Areas
Effective 12/14/2009

Ohio EPA DAPC Maps Available at:
http://www.epa.ohio.gov/dapc/general/naaqs.aspx

Ohio 2015 Eight-Hour Ozone (0.070 ppm) Nonattainment Areas Effective 08/03/2018

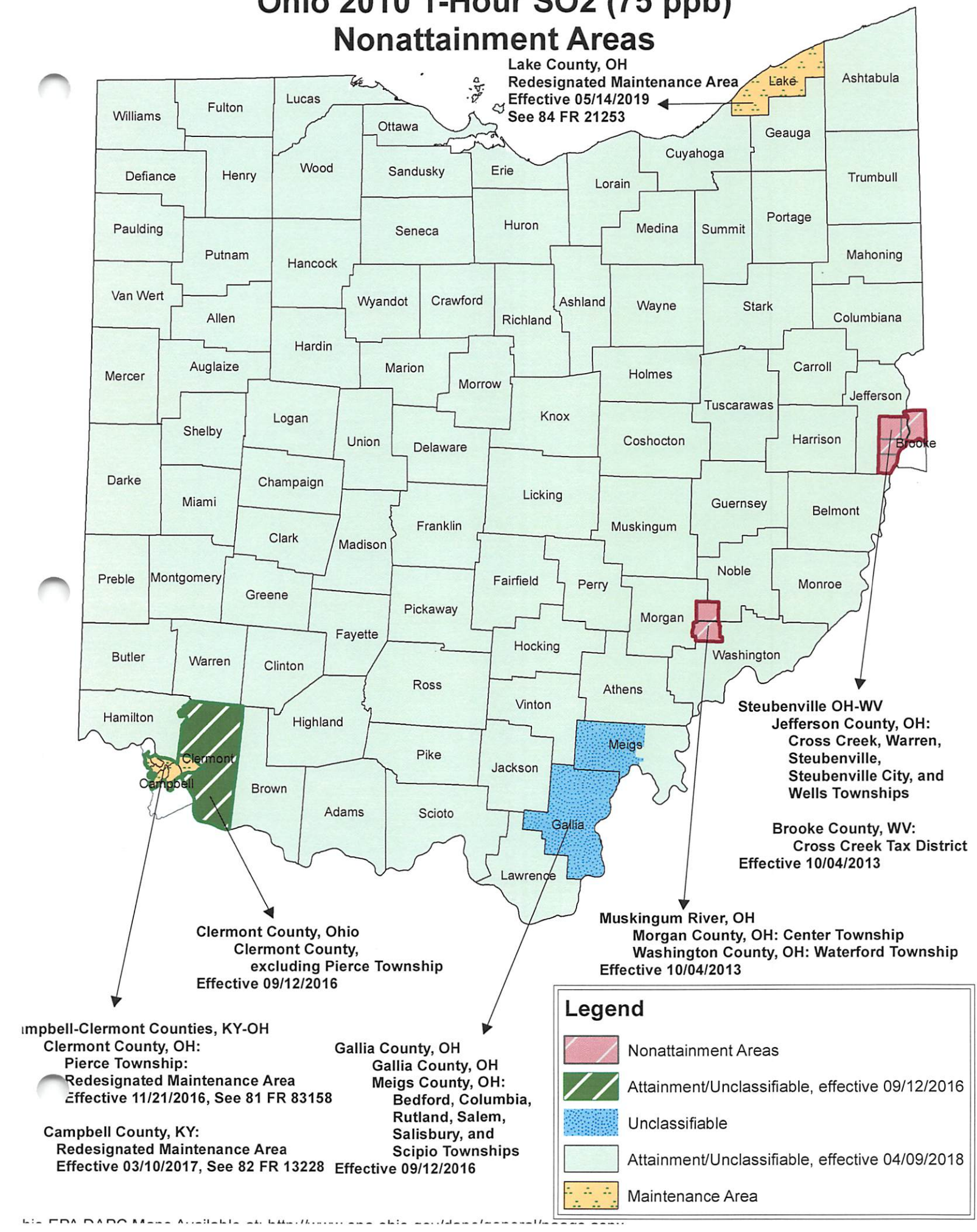


Ohio EPA DAPC Maps Available at:
http://www.epa.ohio.gov/dapc/general/naaqs.aspx

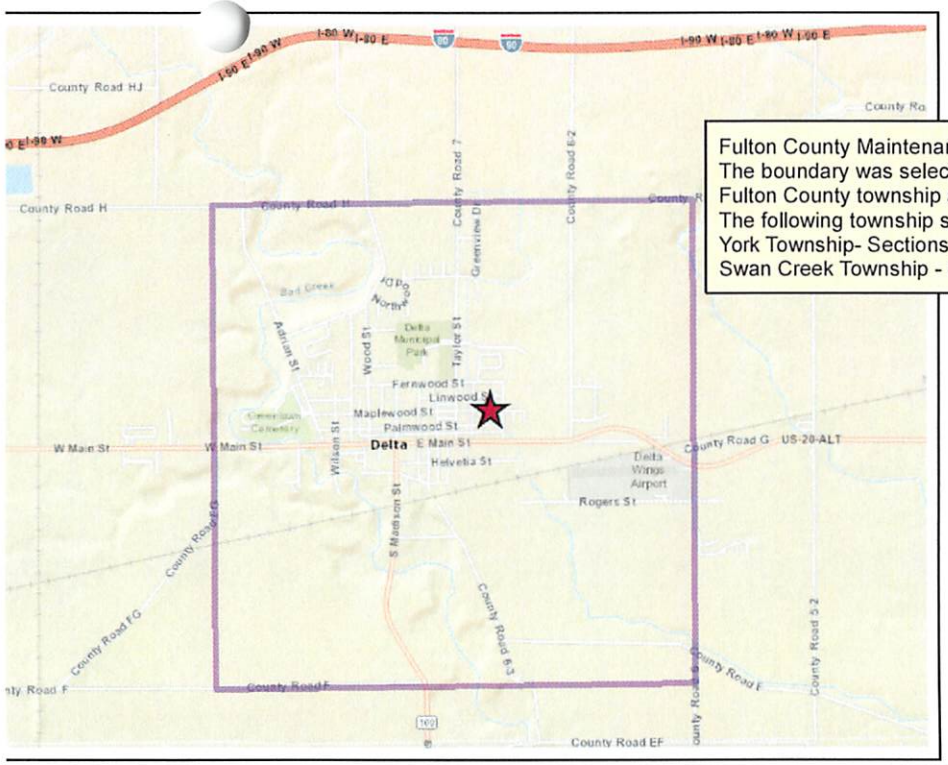
Ohio 2008 Eight-Hour Ozone (0.075 ppm) Nonattainment Areas Effective 07/20/2012

Ohio EPA DAPC Maps Available at:
http://www.epa.ohio.gov/dapc/general/naaqs.aspx

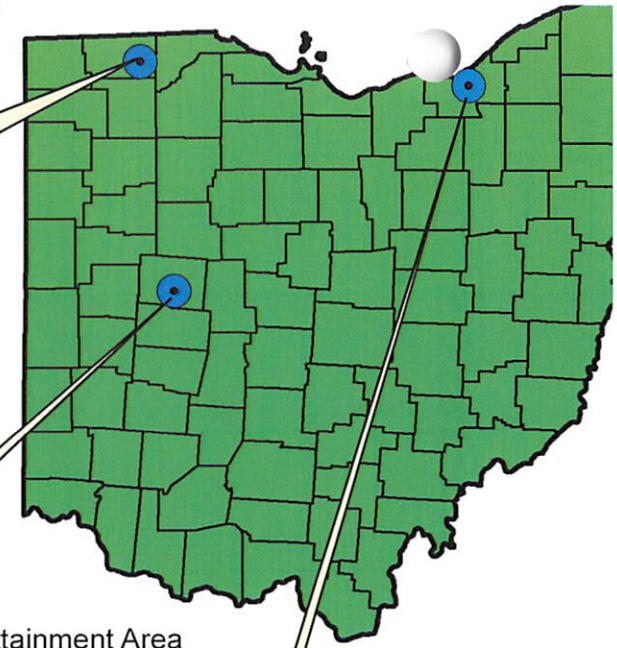
Ohio 2010 1-Hour SO2 (75 ppb) Nonattainment Areas



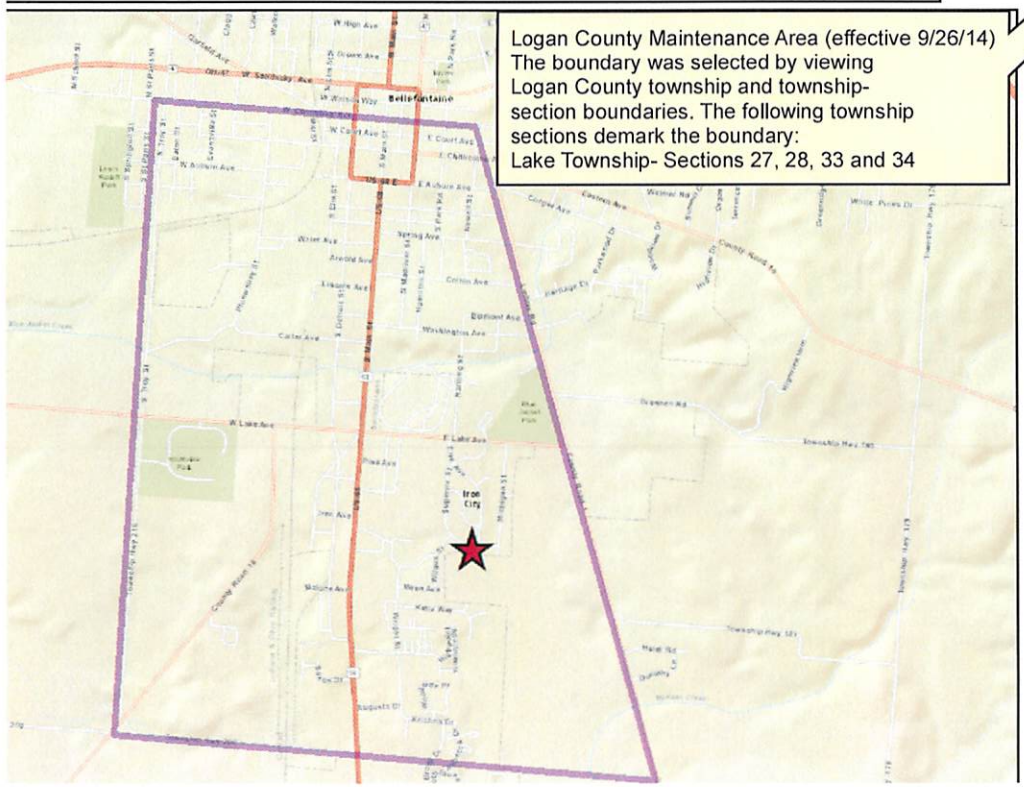
Ohio 2008 Lead (0.15 µg/m3) Nonattainment Areas Effective 12/31/2010



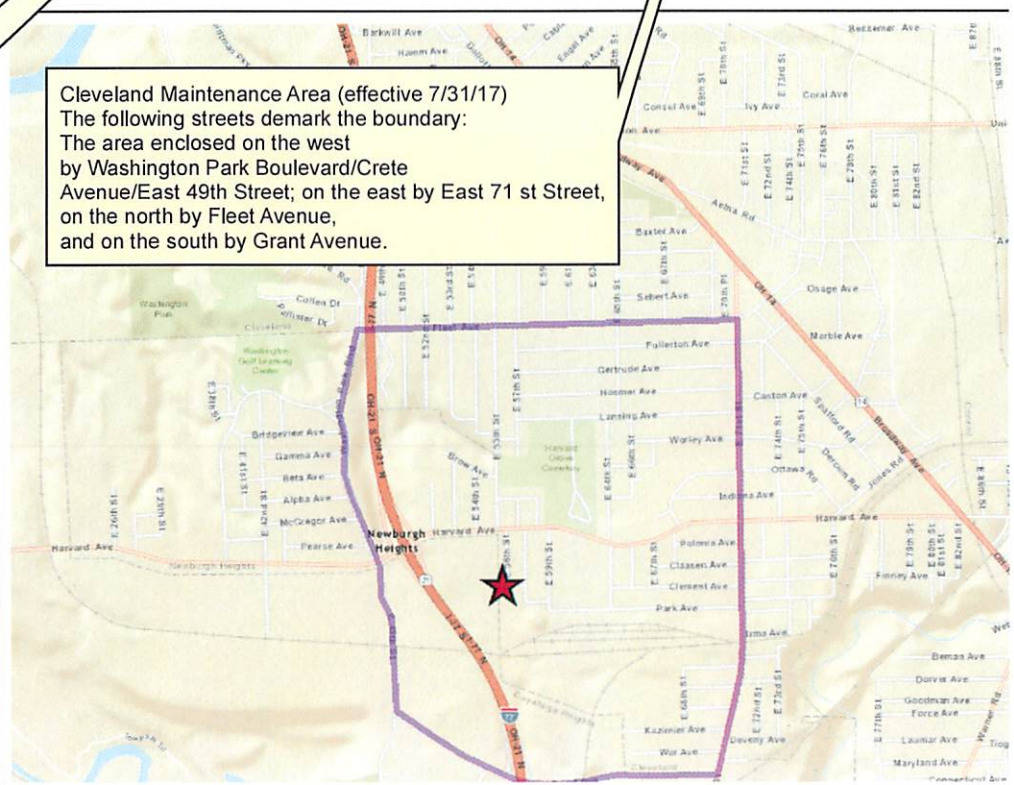
Fulton County Maintenance Area (effective 3/13/18)
The boundary was selected by viewing
Fulton County township and township-section boundaries.
The following township sections demark the boundary:
York Township- Sections 12 and 13
Swan Creek Township - Sections 7 and 18



Nonattainment Area
Maintenance Area
Ambient Air Monitor



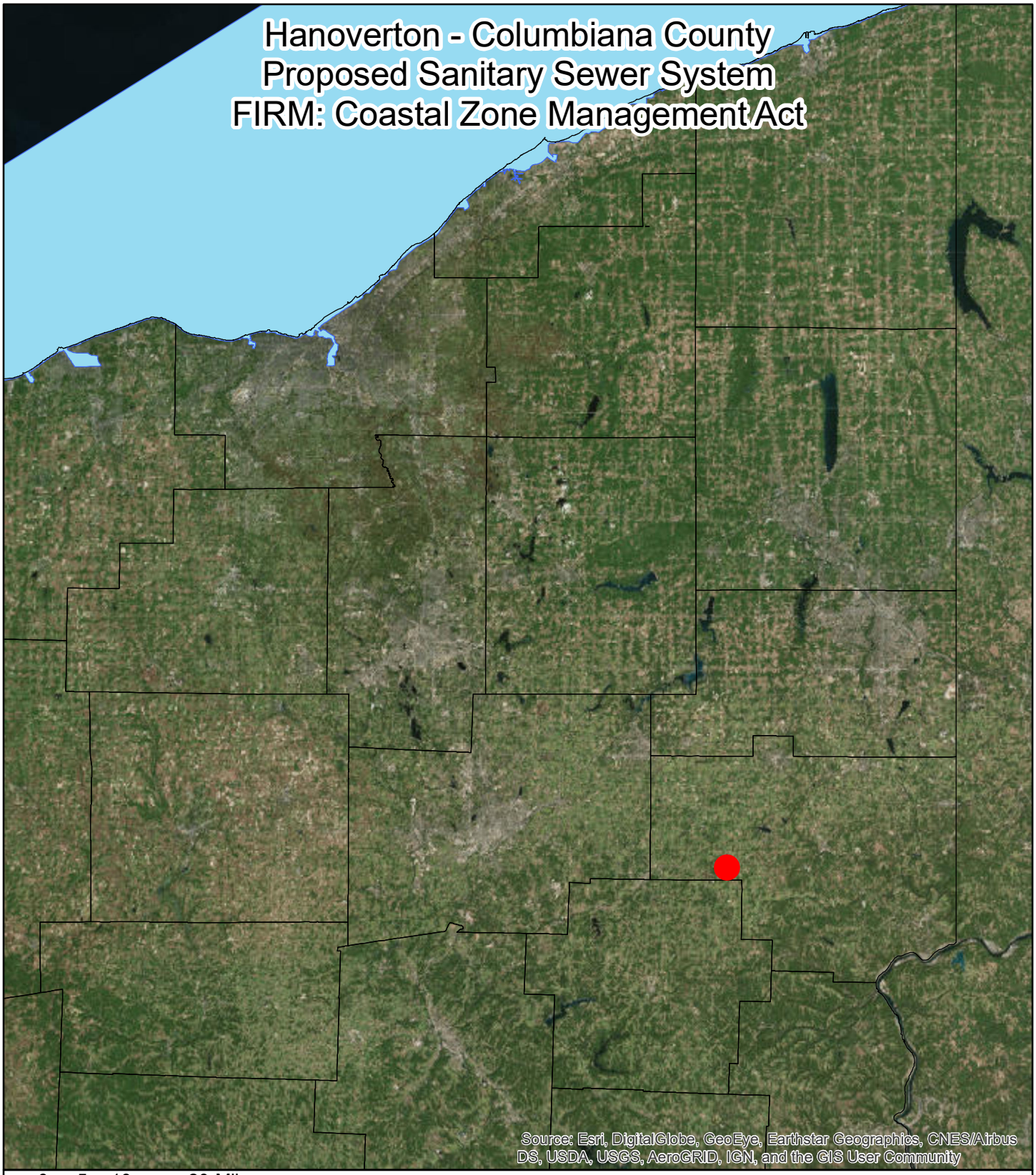
Logan County Maintenance Area (effective 9/26/14)
The boundary was selected by viewing
Logan County township and township-section boundaries. The following township sections demark the boundary:
Lake Township- Sections 27, 28, 33 and 34



Cleveland Maintenance Area (effective 7/31/17)
The following streets demark the boundary:
The area enclosed on the west
by Washington Park Boulevard/Crete
Avenue/East 49th Street; on the east by East 71 st Street,
on the north by Fleet Avenue,
and on the south by Grant Avenue.

EXHIBIT 3

Hanoverton - Columbiana County
Proposed Sanitary Sewer System
FIRM: Coastal Zone Management Act



0 5 10 20 Miles

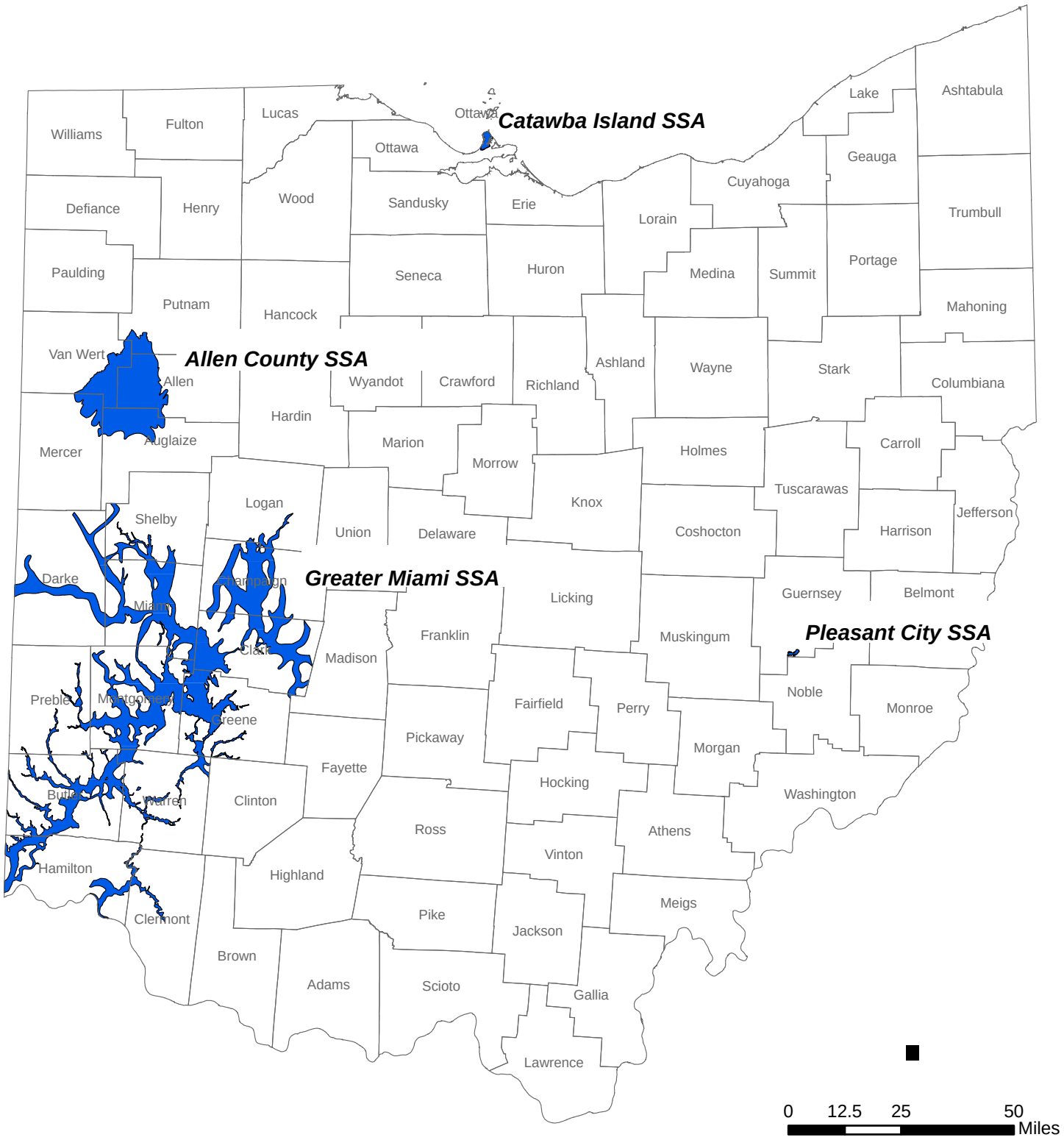
N
W E
S

Project Location

Coastal Zone Management Act Boundary

RCAP

Sole Source Aquifers in Ohio



Legend

Sole Source Aquifers

OhioEPA
Division of Drinking and Ground Waters

WILD AND SCENIC RIVER MAP

EXHIBIT 4

COLUMBIANA SWCD
1834 S LINCOLN AVE
SALEM, OH 44460
(330)332-8732

June 1, 2021

Columbiana County Engineer
Attention: Troy Graft
235 South Market Street
Lisbon, Ohio 44432

Mr. Graft:

This letter is in regard to the property located at: U.S. Route 30, Hanoverton, Ohio 44423.

You have requested that I research the property to determine which Flood Zone it is located in according to the Flood Insurance Rate Maps (FIRM) produced by Federal Emergency Management Agency (FEMA). According to the National Flood Insurance Program, Map Number 39029C0300E, Panel 300 of 431; it is evident that the property is located in "Zone A" or "Special Flood Hazard Areas without Base Flood Elevation".

The Flood Insurance Rate Map (FIRM) panel that was used to determine that the location is situated in "Zone A" is a revised map that has taken the place of the previous FIRM maps dated April 5, 2006. These revised maps took effect May 2, 2012.

Since the site has been chosen for a sanitary sewer lift station, I must refer you to Section 4.0 of the Columbiana County Flood Damage Reduction Resolution for Columbiana County.

Section 4.0: Use and Development Standards for Flood Hazard Reduction

4.2 Water and Wastewater Systems

The following standards apply to all water supply, sanitary sewage and waste disposal systems not otherwise regulated by the Ohio Revised Code:

A. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems:
B. New and replacement sanitary sewerage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters: and,
C. On site waste disposal systems shall be located to avoid impairment to or contamination from them during flooding.

Listed below are several options that you and I discussed during our site visit on May 20, 2021 for the Hanover Township project.

Suggestions to minimize flood impact potential:

1. Place the lift station near the Southern property boundary. This will keep the project near the area where the "Zone A" and "Zone X" flood hazard designations meet.
2. Construct the lift station so that the risers are above the Base Flood Elevation.
3. Use water-tight lids on the risers to minimize the potential for flood waters to enter the sanitary sewerage system.

By implementing these suggestions, Section 4.2 Water and Wastewater Systems of the Columbiana County Flood Damage Reduction Resolution will be satisfied.

Should you have any questions or would like to discuss the matter further, please contact me at the SWCD office, Monday through Friday; 7:30 a.m. until 4:00 p.m.

Best Regards,

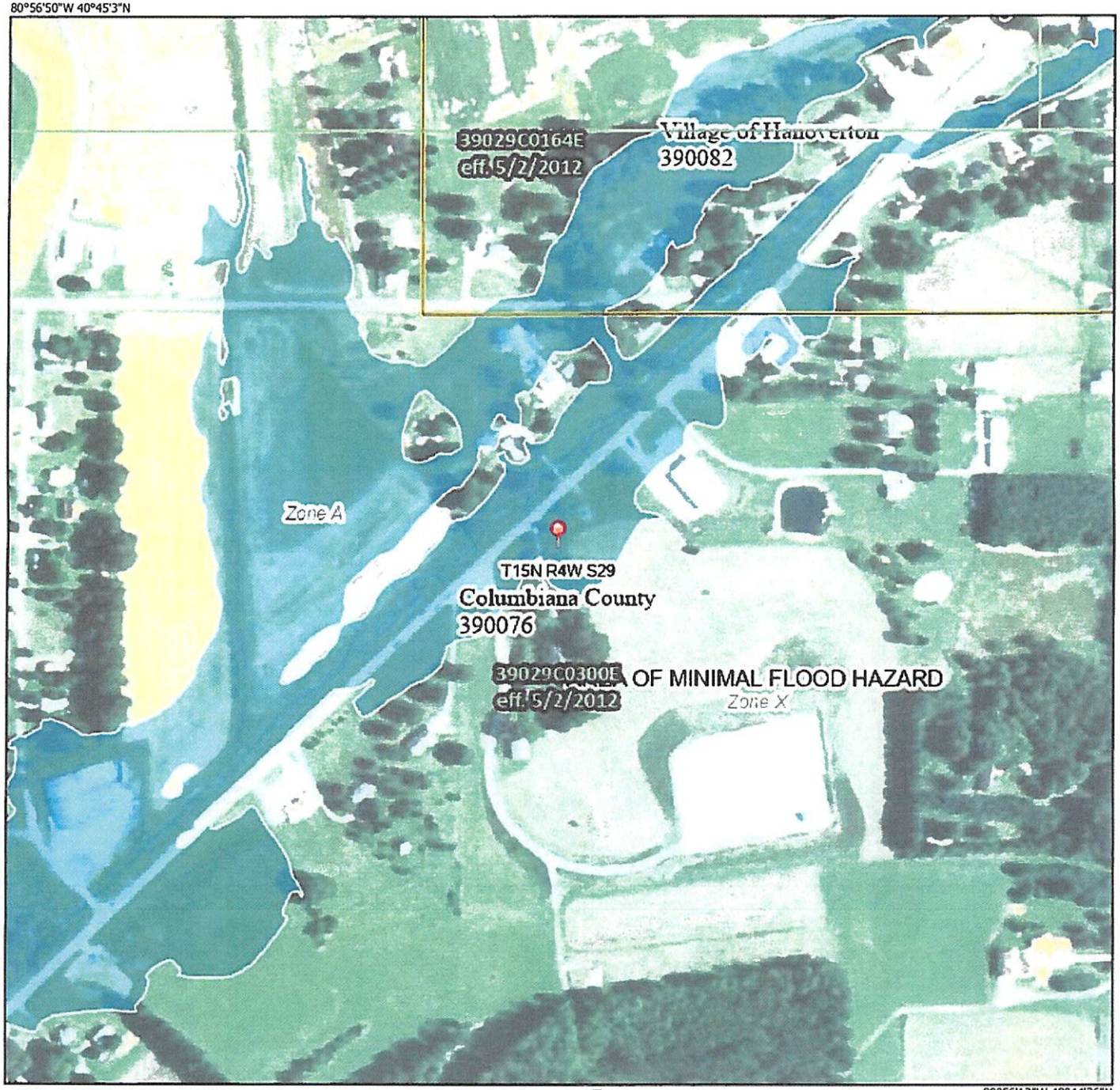
Pete Conkle
District Program Coordinator

Enclosures

National Flood Hazard Layer FIRMette

FEMA

80°56'50"W 40°45'3"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

80°56'12"W 40°44'36"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
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- With BFE or Depth Zone AE, AO, AH, VE, AR
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OTHER AREAS
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- Area of Undetermined Flood Hazard Zone

GENERAL STRUCTURES
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- Levee, Dike, or Floodwall

OTHER FEATURES
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- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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Plant Location: Lat: 40° 44' 49.32"
Long: 80° 56' 31.00"

Hanoverton Area Sanitary Sewer Project - Pump Station

Map Prepared by:
Columbiana County Sanitary Engineer's Office,
Bert Dawson, PE, PS

FW: Hanoverton Pump Station Base Flood Elevation

Troy Graft <tgraft@cceng.org>
Wed 3/31/2021 3:07 PM
To: Pamela Ewing <psewing@glcap.org>

Hi Pam,

The emails below are record of conversations I have had with the Design Engineer referring to conversations with Pete Conkle our flood plain coordinator.

That's about all that I have regarding this. (so far anyway).

Thanks,
Troy

From: Troy Graft <tgraft@cceng.org>
Sent: Thursday, February 11, 2021 3:57 PM
To: Chip Stephan (ccs@wequicksall.com) <ccs@wequicksall.com>; Matt Miller (amm@wequicksall.com) <amm@wequicksall.com>
Cc: Don Quicksall <doq@wequicksall.com>
Subject: FW: Hanoverton Pump Station Base Flood Elevation

Hi Chip,

Pete Conkle said that the Dollar Store, in-fact did move the location of the store site away from US-30 and outside of the flood zone.

So, we did some quick investigating and it looks like the Dollar General is about 1131 feet elevation.
Our Pump Station site is about 1126 feet elevation.
We can have our surveyor go out to the site to verify these elevations. We're probably looking at 4 to 5 feet of fill to raise up the pump station site, but I think that will be okay because that's what we normally do anyway.

You can let me know your thoughts. I'm supposed to have the property appraisal report by the end of this month.

Thanks,
Troy

From: Troy Graft <tgraft@cceng.org>
Sent: Thursday, February 11, 2021 11:18 AM
To: 'Chip Stephan' <ccs@wequicksall.com>
Cc: 'Matt Miller' <amm@wequicksall.com>; '1138' <1138@wequicksall.com>
Subject: RE: Hanoverton Pump Station Base Flood Elevation

Hi Chip,

Yes, I've had multiple conversations with our flood plain coordinator. Since we are in the flood zone, we will need to build up the site to be above the Base Flood Elevation.
We are hoping that the Dollar General store, near our site established the BFE and that we can use that elevation.
Pete Conkle is checking to see if he can find anything on that site. He was thinking that they may have just moved the structure back away from the road to be located outside the flood zone.

I think it is a good idea anyway to build up the site to raise the elevation above the flood zone. We normally do that with our pump stations. We can also elevate the control panels on the raised site well above the flood elevation to prevent water damage.
I will contact Pete again to see if he was able to determine anything from their plans.

I'll let you know what I find out soon.

Troy

Troy Graft, P.E.
Chief Deputy Sanitary Engineer
Columbiana County
(330) 424-1459 ext. 294
tgraft@cceng.org

From: Chip Stephan <ccs@wequicksall.com>
Sent: Thursday, February 11, 2021 10:53 AM
To: Troy Graft <tgraft@cceng.org>
Cc: Matt Miller <amm@wequicksall.com>; 1138 <1138@wequicksall.com>
Subject: Hanoverton Pump Station Base Flood Elevation

Good Morning, Troy.

Have you had a chance to speak to either the flood plain coordinator or the county health department on the Base Flood Elevation near the Dollar General Store?

I think we can put the pump station in this location without any site buildup if we use waterproof covers and hatches, but my concern is the electrical equipment. But, that equipment can be located remotely on a higher location if need be, Your thoughts?

Creston C. Stephan P.E.
Project Engineer
W.E. Quicksall and Associates, Inc.
"Since 1959"

E-mail: ccs@wequicksall.com
Phone: (330) 339-6676 ext. 315
Fax: (330) 339-2227

Shaneyfelt, Scott - RD, Columbus, OH

From: Troy Graft <tgraft@cceng.org>
Sent: Wednesday, January 28, 2015 2:12 PM
To: Shaneyfelt, Scott - RD, Columbus, OH
Cc: Sattler, Laura - RD, Massillon, OH; Donaldson, Jennifer - RD, MASSILLON, OH; Antonille, Michael - RD, Massillon, OH; therold@columbianacodev.org; Douglas, David - RD, Columbus, OH; McCoppin, Matthew - RD, Columbus, OH
Subject: RE: Columbiana County, Kensington Area
Attachments: Army Corp Appl & Documents - Kensington.pdf

Scott,

Please find the attached U.S. Army Corp application, correspondence, map and approval letter, per your request. You will see that in addition to the Army Corp. permit, we sent them a full set of plans at their request on June 12, 2014 prior to receiving their approval letter.

Concerning the flood plain you mention below in your request:

According to ODOT, the 100 year high water elevation for their bridge on US-30 just west of our project in Kensington is 1116.6 ft.
At the planned site of the new WWTP, the finished floor elevation of the rapid sand filter building and the top of the castings of the waste water treatment plant is 1119.0 ft.

Therefore, we should be 2.4 feet above the 100 year high water elevation.

Also, I will provide you with the possible sewer extensions very soon.

Thank you for your help.
Troy

Troy Graft, P.E.
Chief Deputy Sanitary Engineer
Columbiana County
(330) 424-1459 ext. 294
tgraft@cceng.org

From: Shaneyfelt, Scott - RD, Columbus, OH [mailto:Scott.Shaneyfelt@oh.usda.gov]
Sent: Wednesday, January 28, 2015 12:22 PM
To: tgraft@cceng.org
Cc: Sattler, Laura - RD, Massillon, OH; Donaldson, Jennifer - RD, MASSILLON, OH; Antonille, Michael - RD, Massillon, OH; therold@columbianacodev.org; Douglas, David - RD, Columbus, OH; McCoppin, Matthew - RD, Columbus, OH
Subject: Columbiana County, Kensington Area

Troy,

Understand you may want to extend some lines if funds are available, please email me a map showing these possible extensions (alternatives) for the Environmental

DEPARTMENT OF THE ARMY
HUNTINGTON DISTRICT, CORPS OF ENGINEERS
502 EIGHTH STREET
HUNTINGTON, WEST VIRGINIA 25701-2070

REPLY TO
ATTENTION OF

JUN 25 2014

Regulatory Division
North Branch
LRH-2014-338-TUS-Sandy Creek

NO PERMIT REQUIRED

Mr. Troy Graft
County of Columbiana Water & Sewer District II
Post Office Box 423
Lisbon, Ohio 44432

Dear Mr. Graft:

I refer to a Department of the Army permit application received in this office on April 17, 2014 and supplemental information received in this office on June 16, 2014 and June 24, 2014 concerning the Kensington Area Sanitary Sewer project. You have requested the United States Army Corps of Engineers (Corps) review your proposal for possible Department of the Army (DA) permit requirements. The proposed project is located within the Sandy Creek watershed, at the intersection of Ohio State Route (SR) 544, U.S. 30 and Ohio SR 9 in the Village of Kensington, Columbiana County, Ohio. The request has been assigned the following file number: LRH-2014-338-TUS-Sandy Creek. Please reference this file number on all future correspondence related to this request.

The Corps' authority to regulate waters of the United States is based on the definitions and limits of jurisdiction contained in 33 CFR 328 and 33 CFR 329. Section 404 of the Clean Water Act requires a DA permit be obtained prior to discharging dredged or fill material into waters of the United States, including wetlands. Navigable waters, their tributaries and adjacent wetlands are waters of the United States subject to the provisions of Section 404 of the Clean Water Act. Section 10 of the Rivers and Harbors Act of 1899 requires a DA permit be obtained in advance of any work in, on, over or under a navigable water of the United States.

Based on a review of the information provided, we have determined your proposal will neither result in a discharge of dredged or fill material into waters of the United States nor involve work in, on, over, or under a navigable water of the United States. Therefore, no DA permit is required from this office for the proposed activity.

We appreciate your concern for our nation's aquatic resources. If you have any questions concerning the above information, please contact Ms. Teresa Spagna of the North Branch at 304-399-5210, at the above address or by email at teresa.d.spagna@usace.army.mil.

Sincerely,

Lee A. Robinette
Regulatory Project Manager
North Branch

Troy Graft

From: Midkiff, Leah S LRH <Leah.S.Midkiff@usace.army.mil>
Sent: Wednesday, June 11, 2014 4:32 PM
To: Troy Graft
Cc: Spagna, Teresa D LRH
Subject: RE: [EXTERNAL] RE: Follow up for Kensington Area Sewer Project (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Thanks for the update! This project falls just barely inside Huntington's Regulatory Boundary, so that's probably why you're used to working with Pittsburgh.

-----Original Message-----
From: Troy Graft [mailto:tgraft@cceng.org]
Sent: Wednesday, June 11, 2014 3:29 PM
To: Midkiff, Leah S LRH
Subject: [EXTERNAL] RE: Follow up for Kensington Area Sewer Project (UNCLASSIFIED)

Dear Ms. Midkiff,

Thank you for the e-mail reminder. My designer has provided me with a set of plans for the Kensington project to send to you.

I will draft a cover letter to send with the plans and forward them to you.

We look forward to working with you on this project. In the past we've worked with the folks at the Pittsburgh office.

Sincerely,
Troy

Troy Graft, P.E.
Chief Deputy Sanitary Engineer
Columbiana County
(330) 424-1459 ext. 294
tgraft@cceng.org

-----Original Message-----
From: Midkiff, Leah S LRH [mailto:Leah.S.Midkiff@usace.army.mil]
Sent: Wednesday, June 11, 2014 12:56 PM
To: tgraft@cceng.org
Subject: Follow up for Kensington Area Sewer Project (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Mr. Graft,

Teresa Spagna of our office sent you an email on Thursday, April 17th concerning the Kensington Area Sewer Project. She requested information as to the presence or absence of aquatic resources (ie: wetlands and/or streams) at the site where the treatment plant and pump station will be constructed and advised that you provide a plan view and cross section view for the proposed project. You may submit this information via mail to ATTN: RD-N, 502 Eighth Street, Huntington, WV 25701 or by email to me or Teresa.

Thank you,

Leah Midkiff
Regulatory - North Branch
U.S. Army Corps of Engineers
Huntington District
304-399-5548

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

COUNTY OF COLUMBIANA
WATER & SEWER DISTRICT II

June 12, 2014

Dept. of the Army
Huntington Dist. Corp of Engineers
Attn: RD-N
502 Eighth Street
Huntington, WV 25701

Re: Columbiana County
Kensington Area Sanitary Sewer Project
Nationwide U.S. Army Corp Permit

Dear Ms. Spagna:

Please find the enclosed set of project plans per your request. Our desire is to obtain the approval for the Nationwide U.S. Army Corp. Permit for our project. The project involves installing a 100,000 gpd precast package treatment plant and collection system to satisfy Ohio EPA Director's Final Findings & Orders to eliminate septic sewage runoff in the area.

Feel free to contact me with any questions or comments at 330-424-1459 ext. 294.

Sincerely,

Troy Graft, P.E.
Chief Deputy Sanitary Engineer
For
Bert Dawson, P.E., P.S.
County Sanitary Engineer

P.O. BOX 423 LISBON, OHIO 44432 — (330) 222-1613 FAX (330) 222-2322 1-800-322-6228

COUNTY OF COLUMBIANA
WATER & SEWER DISTRICT II

March 24, 2014

Dept. of the Army
Pittsburgh Dist. Corp of Engineers
Attn: Nancy Mullen
William S. Moorhead Federal Building
1000 Liberty Avenue
Suite 2200
Pittsburgh, PA 15222

Re: Columbiana County
Kensington Area Sanitary Sewer Project
US Army Corp Permit

Dear Ms. Mullen:

Please find enclosed a Permit Application Form for the above referenced sanitary sewer project. The project involves installing a 100,000 gpd precast package treatment plant and collection system to satisfy Ohio EPA Director's Final Findings & Orders to eliminate septic sewage runoff in the area.

Feel free to contact me with any questions or comments at 330 424-1459 ext. 294.

Sincerely,

Troy Graff, P.E.
Asst. Sanitary Engineer
For
Bert Dawson, P.E., P.S.
County Sanitary Engineer

P.O. BOX 423 LISBON, OHIO 44432 — (330) 222-1613 FAX (330) 222-2322 1-800-322-6228

U.S. ARMY CORPS OF ENGINEERS

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved - OMB No. 0710-0003 Expires: 31-AUGUST-2013

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Troy Middle - A Last - Graft	First - Middle - Last -
Company - Columbiana County Sanitary Engineer's Office	Company -
E-mail Address - tgraft@cccng.org	E-mail Address -
6. APPLICANT'S ADDRESS:	**9. AGENT'S ADDRESS:**
Address- 105 South Market Street	Address-
City - Lisbon State - Ohio Zip - 4443 Country - U.S.	City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE	**10. AGENTS PHONE NOs. w/AREA CODE**
a. Residence b. Business 330-424-1459 c. Fax 330-424-0525	a Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ SIGNATURE OF APPLICANT _____ DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)

Kensington Area Sewer Project

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Sandy Creek	Address
15. LOCATION OF PROJECT Latitude: •N 40.7386 Longitude: •W 80.9564	City - Kensington State- OH Zip- 44427

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID Municipality Kensington, Ohio 44427

Section - 31,32 Township - 15 Range - IV

17. DIRECTIONS TO THE SITE

Intersection of Ohio SR 644, U.S. 30, and Ohio SR 9 in Village of Kensington. Project encompasses entire village limits.

18. Nature of Activity (Description of project, include all features)

The project consists of the installation of a 100,000 gpd extended aeration WWTP with E.Q., a pump station at the Plant headworks and the installation of 8999 lf of 8" gravity sewer. Any stream crossings will be bored. No open-cutting of streams will be permitted.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The project will provide sanitary sewer to approximately 90 households and businesses in and around the village of Kensington, Ohio. This will eliminate failing septic systems and ultimately improve the water quality in nearby Sandy Creek.

Approximate Start Date: May 2014
Approximate Completion Date: May 2015

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

24. Is Any Portion of the Work Already Complete? [ ] Yes [X] No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

a. Address-

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
Ohio EPA	NOI				
Ohio EPA	NPDES				
Ohio EPA	PTI				
Ohio EPA	Anti-degredation				

* Would include but is not restricted to zoning, building, and flood plain permits

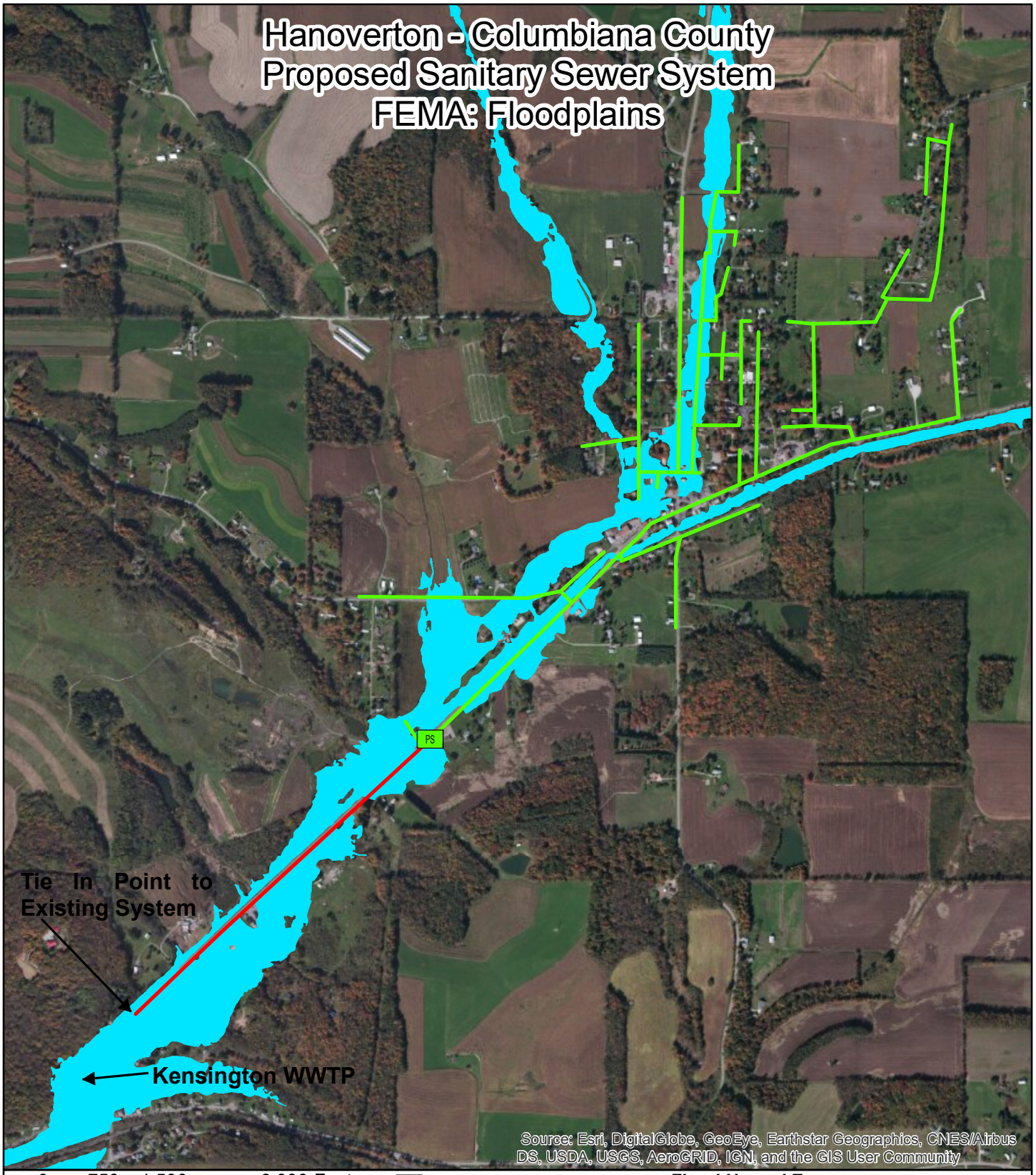
27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

P.E. 3/24/2014

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

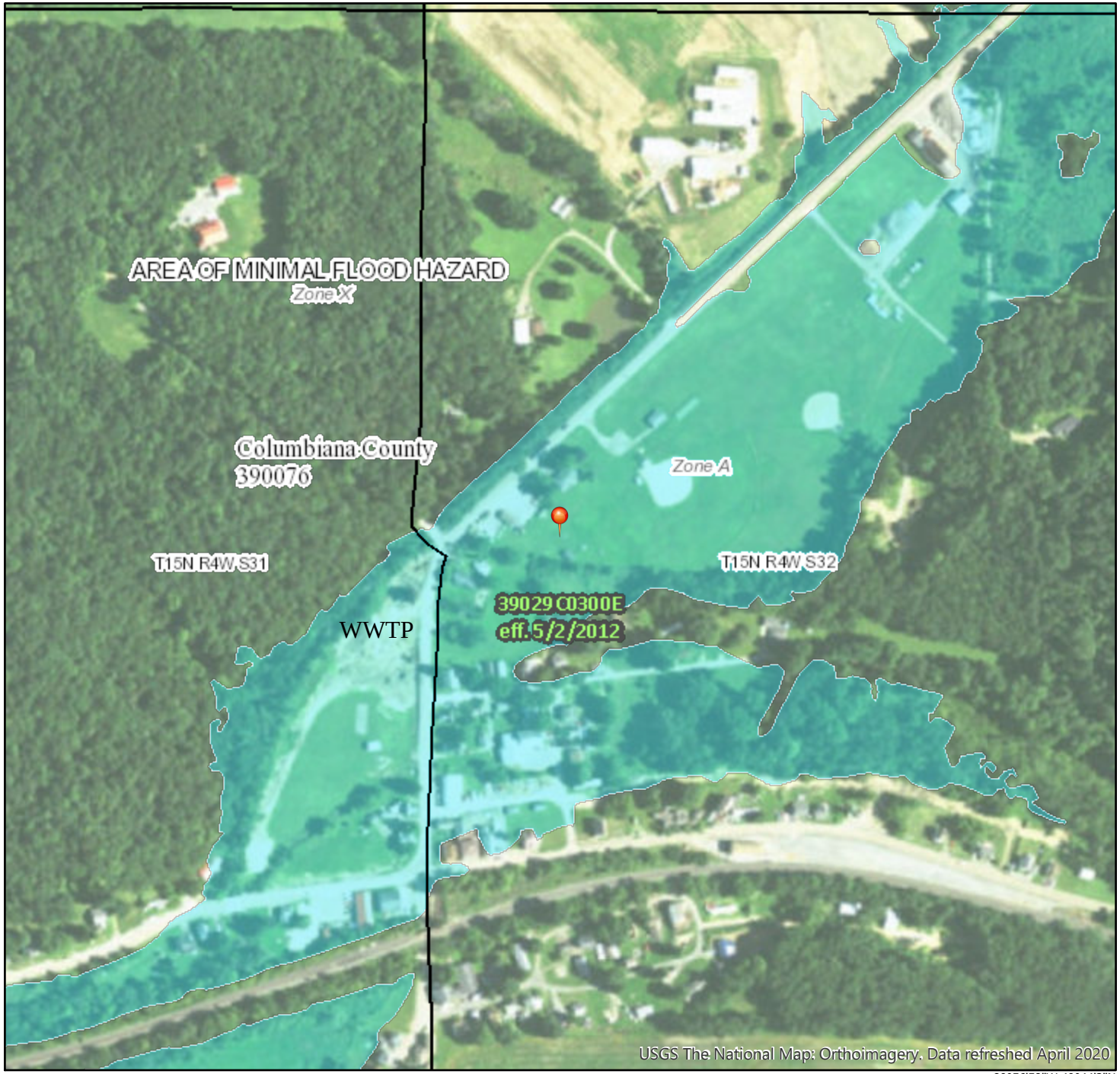


RCAP

National Flood Hazard Layer FIRMette

FEMA

80°57'36"W 40°44'30"N



80°56'58"W 40°44'2"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/29/2020 at 9:17 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette

FEMA

80°56'26"W 40°45'27"N

80°55'49"W 40°45'N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

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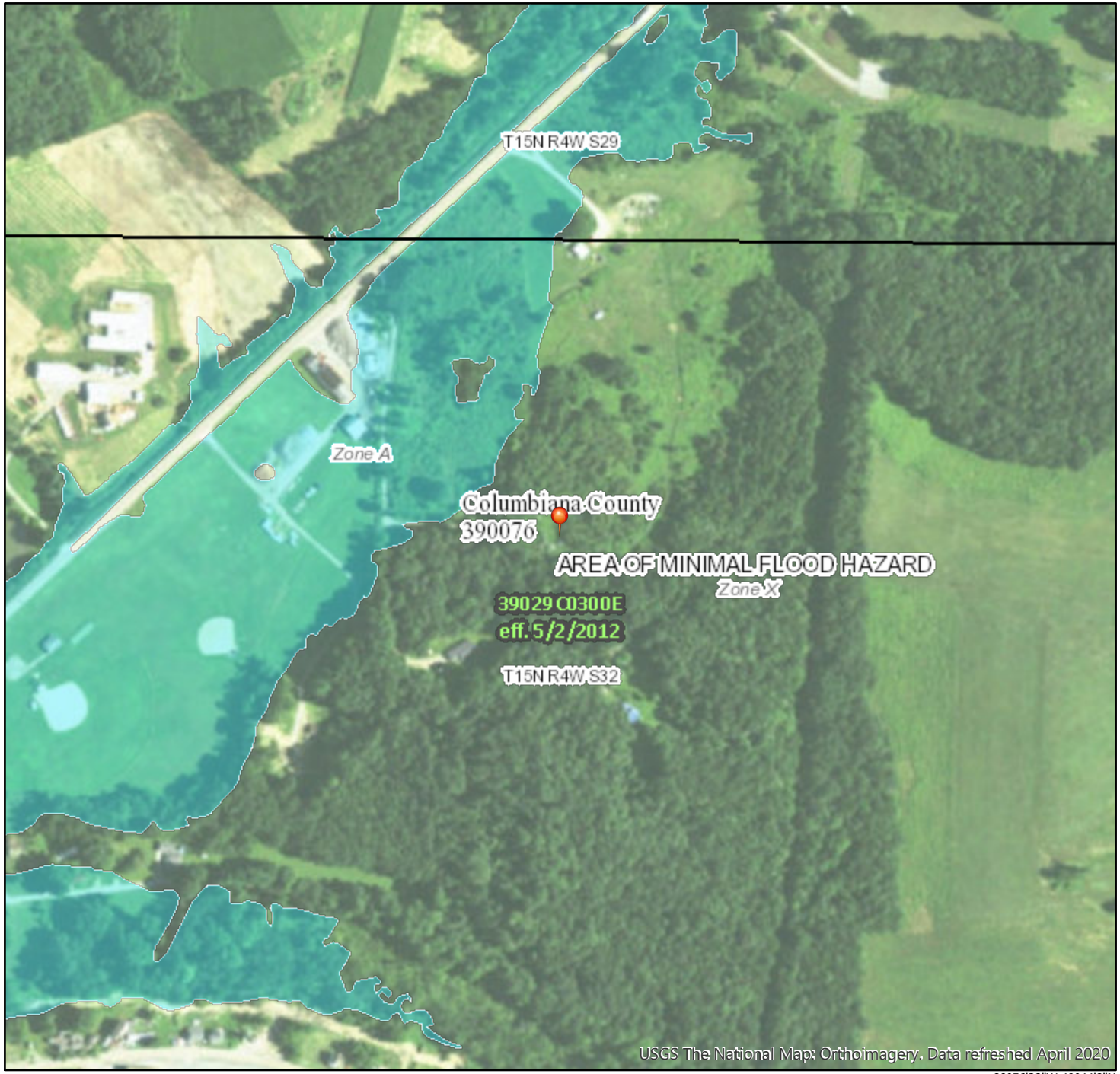
National Flood Hazard Layer FIRMette

FEMA

80°57'15"W 40°44'35"N



80°56'38"W 40°44'8"N

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1:6,000

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The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/29/2020 at 9:18 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

EXHIBIT 5

Sykora, Gabriella CIV USARMY CELRP (USA)

From: Ohio, FW3 <ohio@fws.gov>
Sent: Thursday, December 02, 2021 9:28 AM
To: Stuart, Erin E CIV USARMY CELRP (USA)
Cc: nathan.reardon@dnr.state.oh.us; Sykora, Gabriella CIV USARMY CELRP (USA)
Subject: [Non-DoD Source] Village of Hanoverton Sanitary Sewer Project, Columbiana County, Ohio

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994

TAILS# 03E15000-2020-I-1725

Dear Ms. Stuart,

The U.S. Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

The Service has reviewed your project description and concurs with your determination that the project, as proposed, is not likely to adversely affect any federally listed species.

This concludes consultation on this action as required by section 7(a)(2) of the ESA. Should, during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be reinitiated to assess whether the determinations are still valid.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Patrice Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW

Hanoverton Sanitary Sewer Project, Columbiana County

"Ohio, FW3" <ohio@fws.gov>

Wed 7/22/2020 10:25 AM

To: Pamela Ewing <psewing@glcap.org>

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994

TAILS #03E15000-2020-I-1725

Dear Ms. Ewing,

We have received your recent correspondence regarding the above-referenced project. You have requested concurrence with your determination of effects to federally listed species, pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) has reviewed your project description and concurs with your determination that the project, as proposed, is not likely to adversely affect the federally listed endangered Indiana bat (*Myotis sodalis*) or threatened northern long-eared bat (*Myotis septentrionalis*). This is based on the commitment to cut all trees ≥3 inches dbh only between October 1 and March 31 to avoid adverse effects to the Indiana bat and northern long-eared bat.

This concludes consultation on this action as required by section 7(a)(2) of the ESA. Should, during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be reinitiated to assess whether the determinations are still valid.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Patrice M. Ashfield
Field Office Supervisor

July 13, 2020

Patrice Ashfield, Field Office Supervisor
U.S. Fish and Wildlife Service
4625 Morse Road, Suite 104
Columbus, OH 43230

RE: Columbiana County (Consultation Code: 03E15000-2020-SL1-1725)
Hanoverton Sanitary Sewer System

Dear Ms. Ashfield:

Columbiana County is completing an Environmental Assessment for the U.S. Army Corps of Engineers, Section 594, and is submitting a determination of effect to your office relative to the impacts associated with construction of a sanitary sewer collection and treatment system for the Village of Hanoverton.

According to an IPaC review completed on June 29, 2020, the project lies within the range of the following species: the Indiana bat and Northern Long-eared bat.

Mitigation Measure – Tree removal, if needed, will occur only between October 1 and March 31 to protect the bat species.

Based on the above analysis, we conclude that financial assistance for this project is not likely to adversely affect the endangered species listed for the project area. With this letter, we request your participation in formal consultation per Section 7 of the Endangered Species Act and seek your concurrence in our finding.

We would appreciate a response within 30 days. If you need any further information or wish to discuss our project, please contact me at 330/674-9600.

Sincerely,

Pam Ewing

Pam Ewing
Sr. Rural Development Specialist
Rural Community Assistance Program (RCAP)

Enclosures: USFWS Consultation Letter
Project Description
Photos
Project Map

1817 SR 83, Unit 423 **330-674-9600** **www.glcap.org**
Millersburg, OH 44654
psewing@glcap.org

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
Phone: (614) 416-8993 Fax: (614) 416-8994

In Reply Refer To:
Consultation Code: 03E15000-2020-SLI-1725
Event Code: 03E15000-2020-E-02628
Project Name: Hanoverton Sanitary Sewer Project

June 29, 2020

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see http://www.fws.gov/migratorybirds/RegulationsandPolicies.html.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/BirdHazards.html.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit http://www.fws.gov/migratorybirds/AboutUS.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
(614) 416-8993

Project Summary

Consultation Code: 03E15000-2020-SLI-1725

Event Code: 03E15000-2020-E-02628

Project Name: Hanoverton Sanitary Sewer Project

Project Type: WASTEWATER PIPELINE

Project Description: Construction of sanitary sewers within the Village of Hanoverton and force main the Kensington WWTP

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/40.74764586537434N80.94592543727109W

Counties: Columbiana, OH

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Incidental take of the northern long-eared bat is not prohibited at this location. Federal action agencies may conclude consultation using the streamlined process described at https://www.fws.gov/midwest/endangered/mammals/nleb/s7.html Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

PROJECT DESCRIPTION

The proposed project will occur in the Village of Hanoverton, Columbiana County, Ohio.

The project includes the construction of approximately 33,000 linear feet of 8-inch PCV sewer pipe; 3,300 linear feet of 4-inch HDPE force main; 300 linear feet of 8-inch bore and jacking gravity sewer; 3,200 linear feet of 6-inch sanitary sewer connection; 126 manhole; one package pump station with fencing; back-up generator, 50,000 gpd treatment plant expansion; electrical, SCADA system, miscellaneous equipment purchases, dewatering and storm sewer repairs, as needed.

Sanitary sewers and force main will be constructed at a depth of approximately four feet in the right of way where possible and within private easements, as needed.

Construction activities will occur in the streets and rights of way of the Village of Hanoverton, where possible. Force main construction will occur within the right of way of US 30 between the Village of Hanoverton and the Kensington WWTP. Sanitary sewers within the historic district of the village will be placed in private easements at the rear of the properties to avoid impacts to the brick streets, large trees and historic buildings along Plymouth Street. Expansion of the Kensington WWTP will occur on land previous disturbed by original construction of the facility in 2014/2015. The proposed lift station will be located on US 30 between Hanoverton and Kensington and will have no impact on trees, wetlands or floodplain areas.

The floodplain of Sandy Creek exists in the project area. The existing Kensington wastewater treatment plant is located within the floodplain of Sandy Creek. The proposed expansion of this plant will also occur within the floodplain area on previously impacted area. Underground sanitary sewers and force main will temporarily impact the floodplain but no long-term adverse impacts are anticipated.

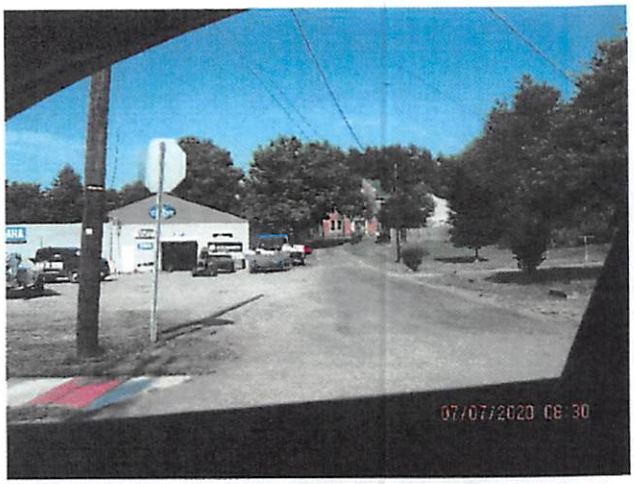
The proposed sanitary sewers will be installed by directional boring in the areas of all stream crossings. Small scrub brush will be disturbed or removed during this process.

Wetland areas also exist in the project area. These areas will be avoided by directional bore or relocation of the line to the opposite side of the road.

It is not anticipated that tree removal will occur. However, if during construction tree removal is deemed necessary, removal will be limited to between October 1 and March 31.

OHPO on-line records indicates four OGS cemeteries, two Phase 1 Survey Areas; eighty-three (83) historic structures; twenty-one (21) archaeological sites; one National Register Boundary and one NR Listing within a one-mile radius from the Village of Hanoverton. Due to the nature of the project elements being placed on disturbed ground and not being visible to historic structures, it is not anticipated these historic properties will be impacted by the proposed project.

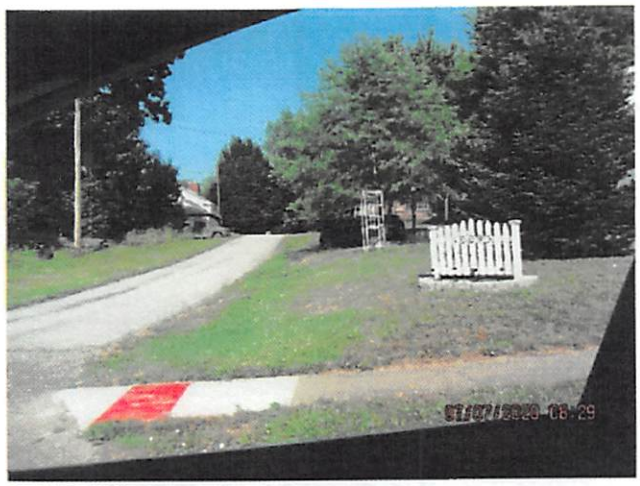
Photographs of the
Village of Hanoverton
Sanitary Sewer System Project



1. Street Scene


2. Street Scene


3. Street Scene

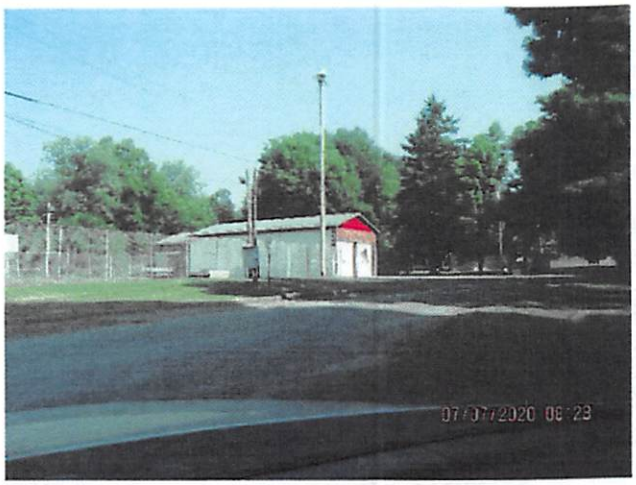

4. Street Scene


5. Street Scene


6. Street Scene

7. Street Scene

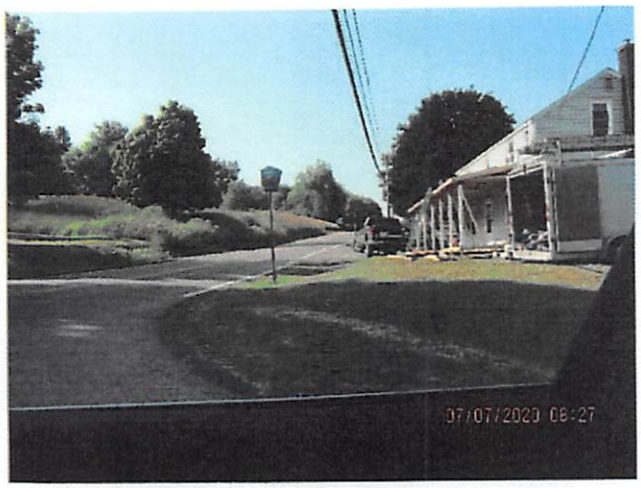
8. Street Scene



9. Street Scene

10. Street Scene

11. Route 9 & Route 30 Intersection



12. Street Scene


13. Street Scene


14. Route 30 Stream Crossing


15. Route 30


16. Stream Crossing to business (Route 30)

7. Stream Crossing – Campbell Road

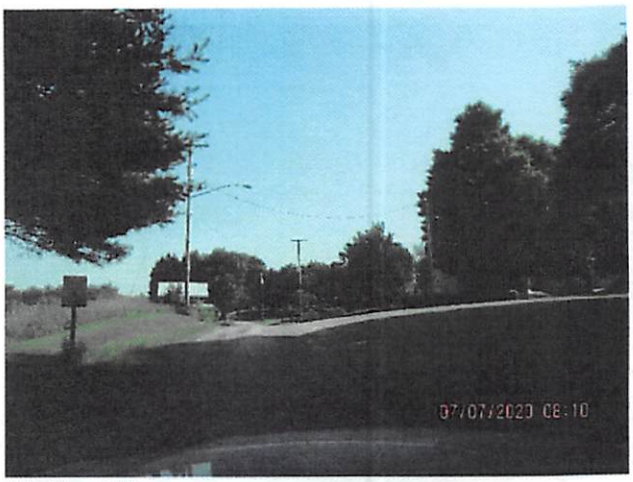
8. Plymouth Street (Historic District)

9. Street Scene

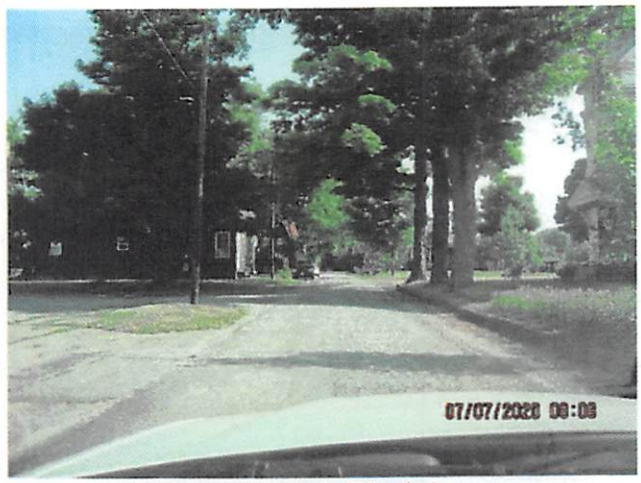
10. Stream Crossing

17. Street Scene

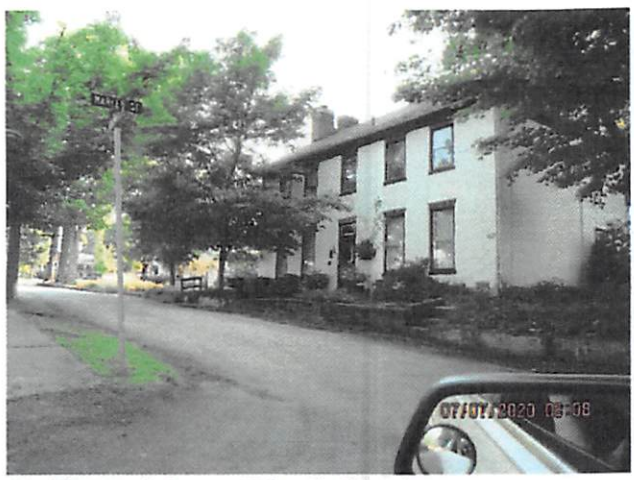
18. Plymouth Street (Historic District)



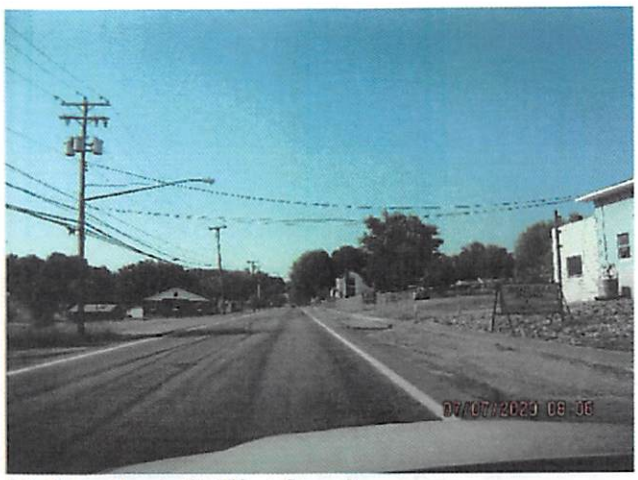
19. Street Scene



20. Plymouth Street (Historic District)

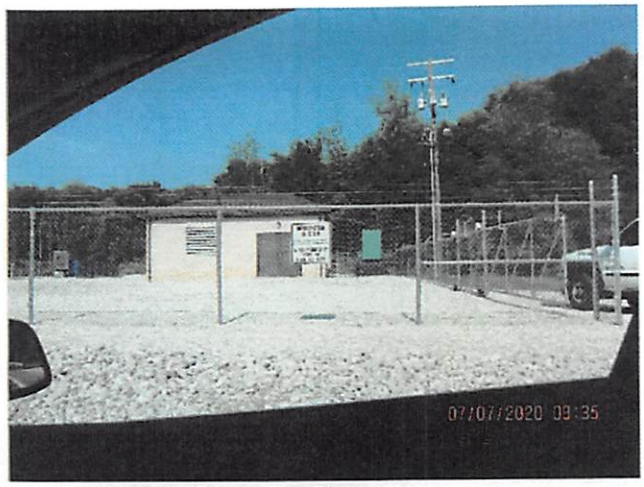


21. Plymouth Street (Historic District



22. State Route 9 (First Street)

23. State Route 9 (First Street)



24. Kensington Treatment Plant

25. Possible Easement Site

26. Street Scene

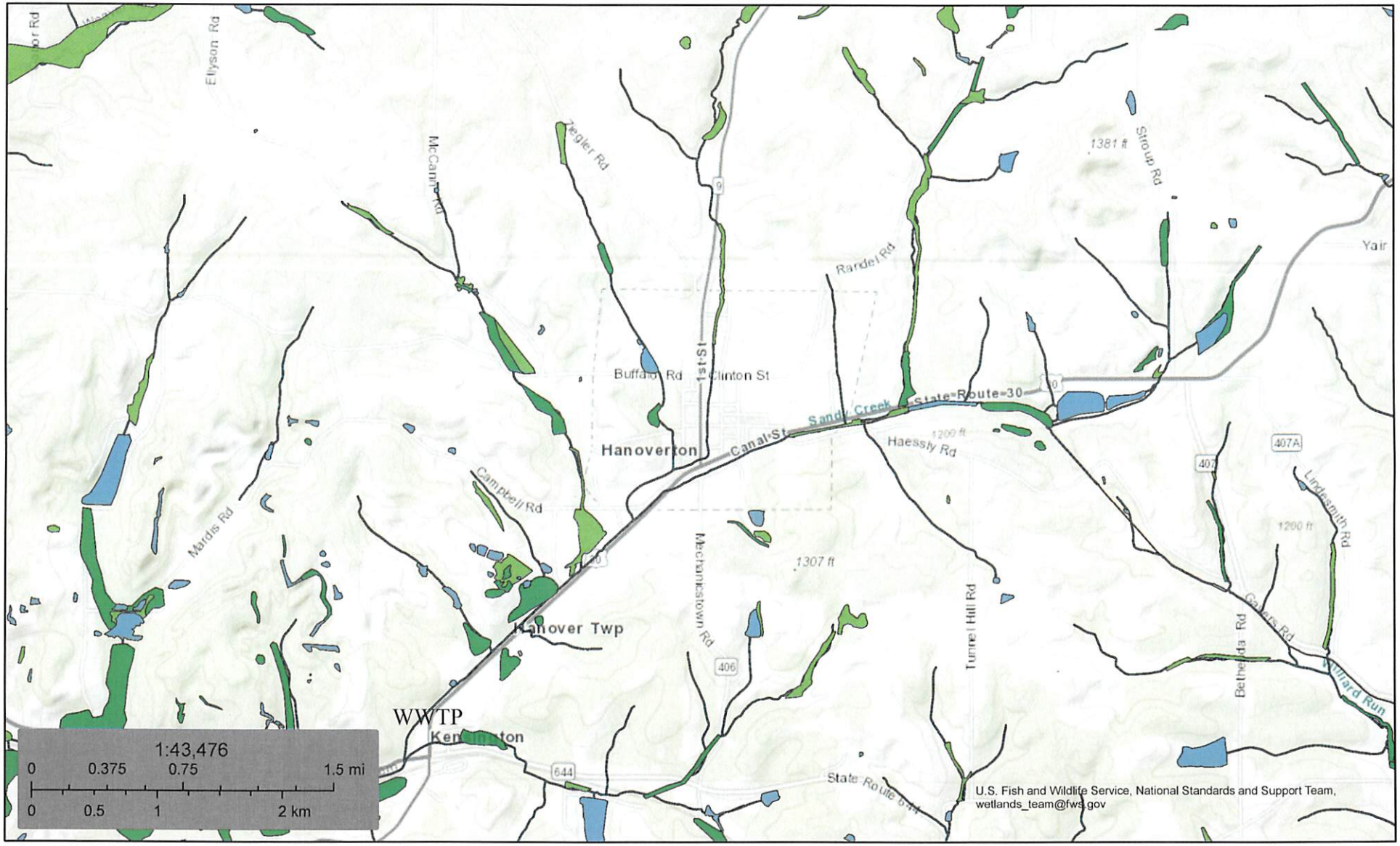
27. Pump Station Location – US 30


Google Earth Pro
File Edit View Tools Add Help
6/2019
725
729
811
816
826
9
30
538
Phase I Study Area
Village Limits
Hanoverton
Hanoverton
840
406
735
3035 ft
1994
Google Earth
Imagery Date: 6/30/2019

U.S. Fish and Wildlife Service

National Wetlands Inventory

Hanoverton Wetland Topo



June 29, 2020

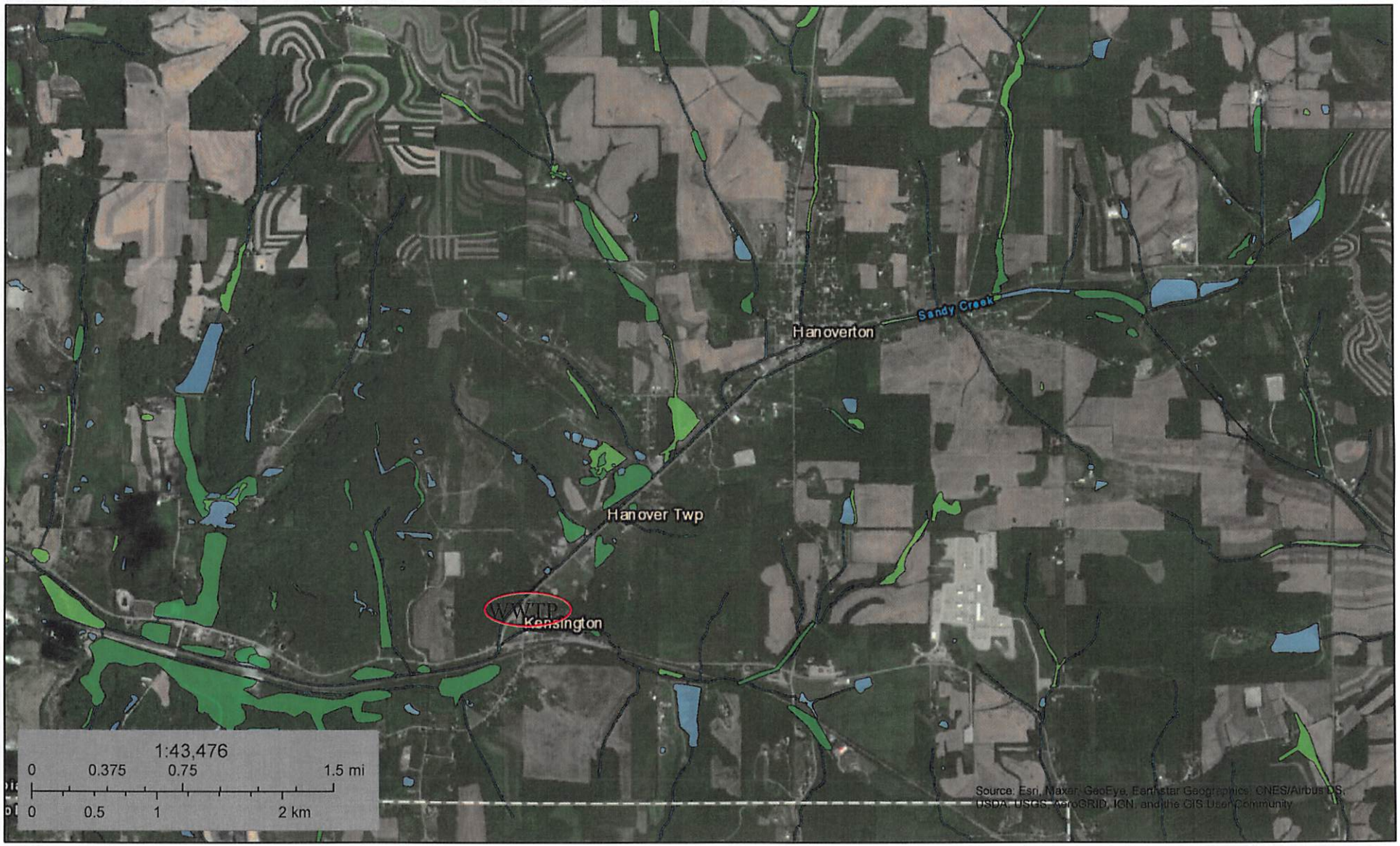
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

U.S. Fish and Wildlife Service

National Wetlands Inventory

Hanoverton Wetland



July 13, 2020

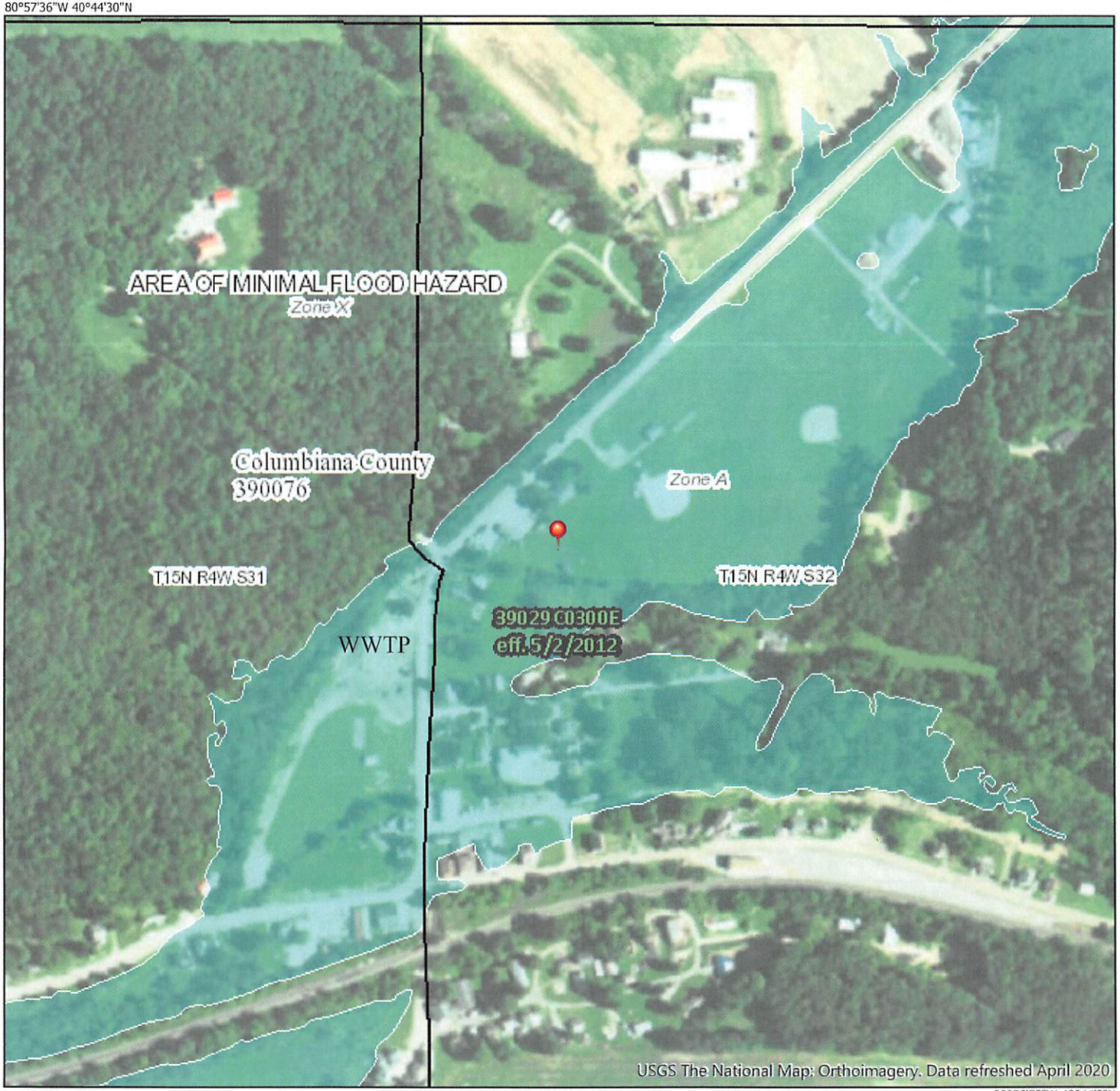
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

National Flood Hazard Layer FIRMette

FEMA

80°57'36"W 40°44'30"N



80°56'58"W 40°44'2"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile *Zone*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/29/2020 at 9:17 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette

FEMA

80°57'15"W 40°44'35"N

80°56'38"W 40°44'8"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile Zone
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/29/2020 at 9:18 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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National Flood Hazard Layer FIRMette

FEMA

80°56'26"W 40°45'27"N

80°55'49"W 40°45'N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile *Zone*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

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The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/29/2020 at 9:14 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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RE: Columbiana County - Hanoverton Sewer - Bat

Sarah.Stankavich@dnr.ohio.gov <Sarah.Stankavich@dnr.ohio.gov>

Tue 9/29/2020 2:23 PM

To: Pamela Ewing <psewing@glcap.org>

Hi Pamela – If the maximum digging depth for the project is around 4 feet, then I agree that there should not be any significant impacts to underground hibernacula that may be nearby. Thanks for sending this info!

Sarah

From: Pamela Ewing <psewing@glcap.org>
Sent: Tuesday, September 29, 2020 12:58 PM
To: Stankavich, Sarah <Sarah.Stankavich@dnr.ohio.gov>
Subject: Columbiana County - Hanoverton Sewer - Bat

Sarah,

Columbiana County is proposing to construct a sanitary sewer collection system throughout the Village of Hanoverton and a force main from the Village of Hanoverton to the existing wastewater treatment plant in the unincorporated area of Kensington. The existing treatment plant will require expansion on the existing site location. The force main will be installed at an approximate depth of 4 feet; no trees greater than 3 inches in diameter will require removal. It is not anticipated that subsurface disturbance will impact the endangered or threatened species.

I have reviewed "Mines of Ohio" mapping site and the project area contains several surface mines along the force main route between Hanoverton and Kensington. I do not anticipate impacts to endangered bat species along the force main route, due to the lack of trees and potential hibernaculum. There is an abandoned underground, drift, mine (C-149) located west, (.17 miles) of the Kensington treatment plant. Construction activity will be confined to the treatment plant site and no tree removal is required at this location.

Consultation with the U.S. Fish and Wildlife Service (USFWS) indicates that the proposed project is not likely to adversely affect the Indiana bat or northern long-eared bat. This is based on the commitment to cut all trees equal to or greater than 3 inches dbh only between October 1 and March 31 to avoid impacts.

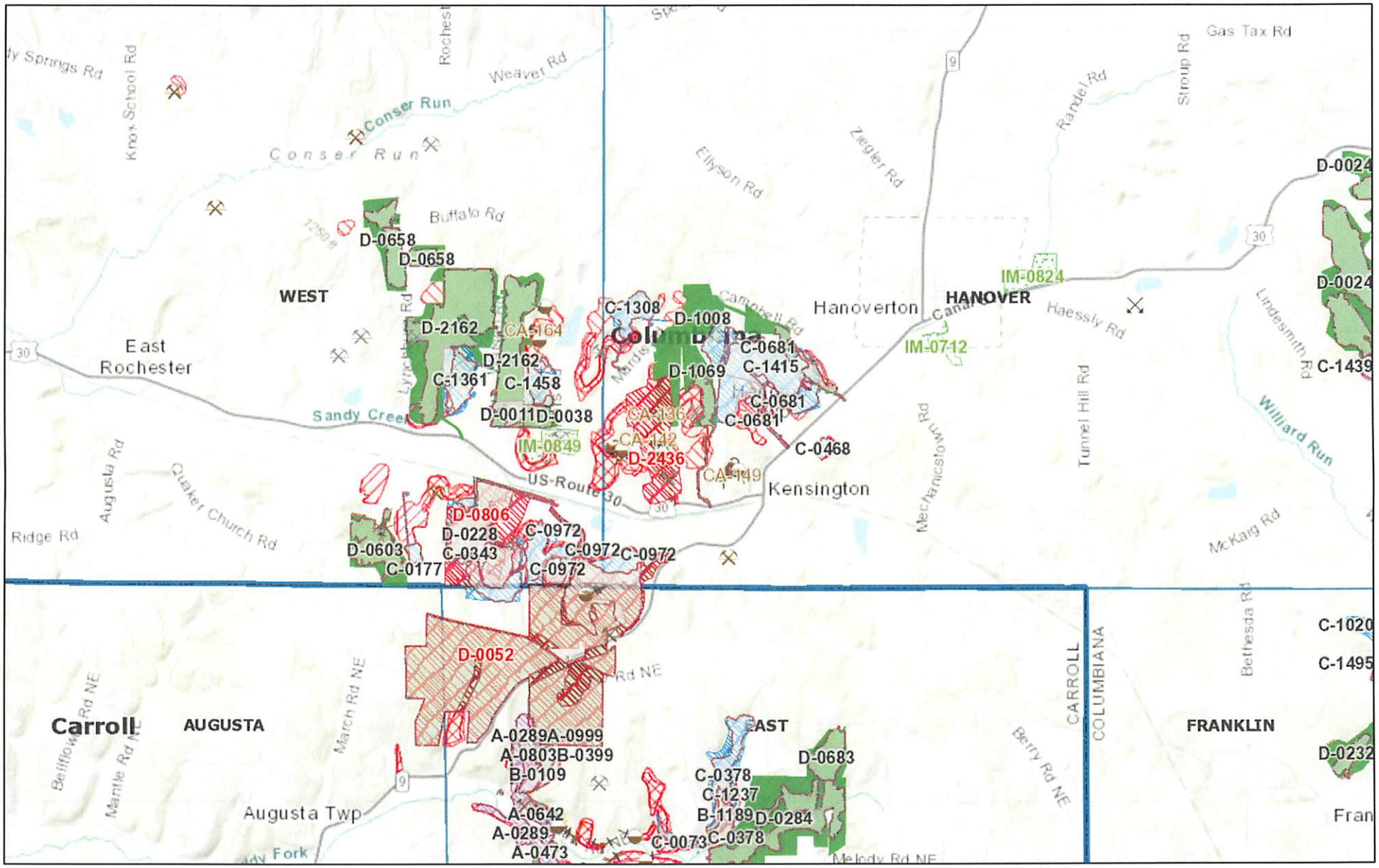
Please advise if further investigation into the existence of bat species is recommended or if potential impacts are associated with the proposed project. If you require additional information, please advise.

Thank you,

Pam

Pam Ewing| Senior Rural Development Specialist-Ohio RCAP
Great Lakes Community Action Partnership (GLCAP)
330-674-9600 office | 419-651-0704 mobile
1817 State Route 83, Unit 423, Millersburg, OH 44654
www.glcap.org
Follow us: Facebook | Twitter | Instagram | LinkedIn

Mines of Ohio



September 28, 2020

Current

- Air Shaft
- Drift Entry
- Vertical Mine Shaft
- Slope Entry

Past

- Air Shaft
- Drift Entry
- Vertical Mine Shaft
- Slope Entry
- Locations

N

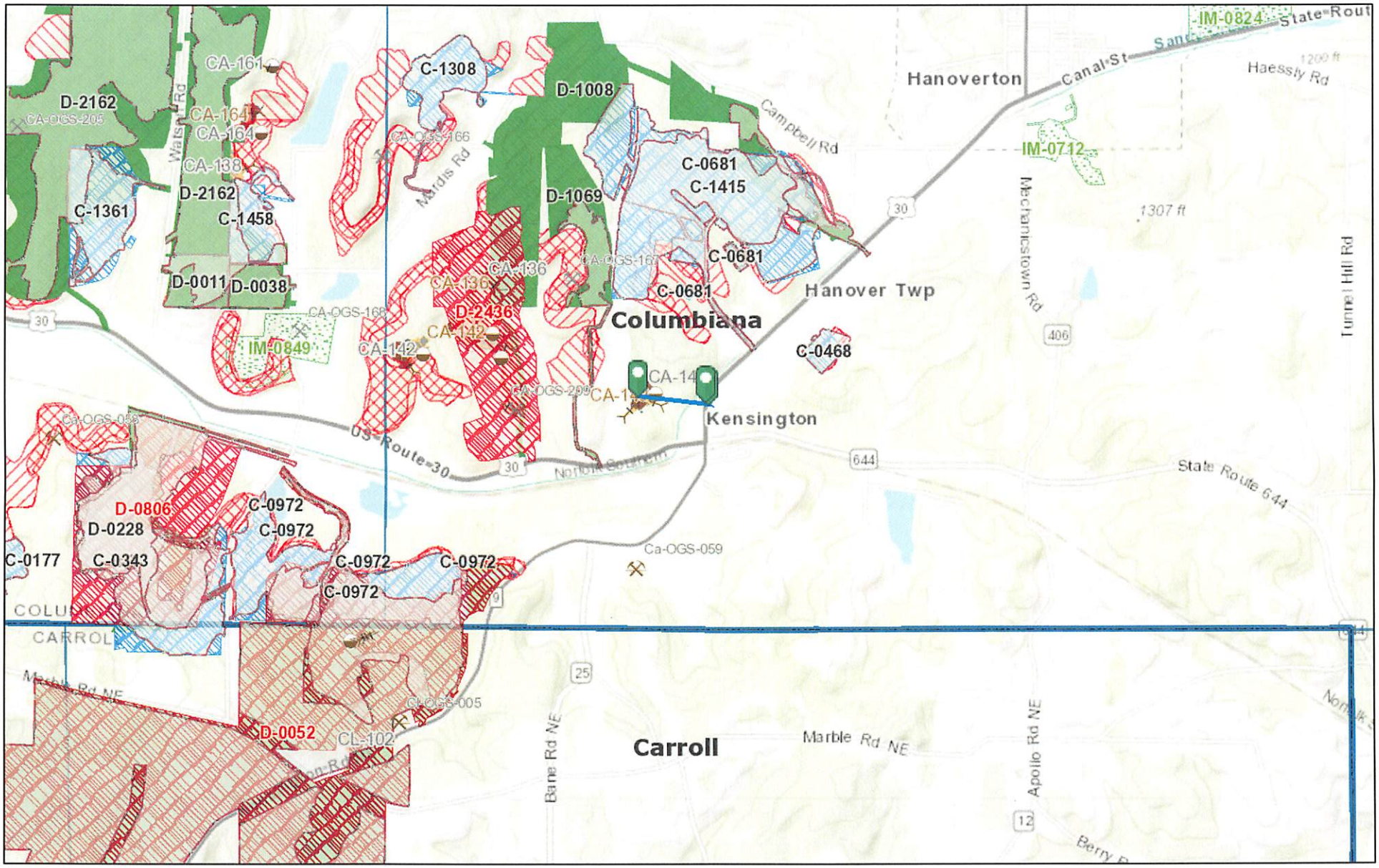
0 0.5 1 2 mi

0 1 2 4 km

1:72,224

Division Of Mineral Resources & Geological Survey
Ohio Dept. of Natural Resources

Mines of Ohio



September 29, 2020

Current

- Air Shaft
- Drift Entry
- Vertical Mine Shaft
- Slope Entry

Past

- Air Shaft
- Drift Entry
- Vertical Mine Shaft
- Slope Entry
- Locations

N

0 0.3 0.6 1.2 mi

0 0.5 1 2 km

1:36,112

Division Of Mineral Resources & Geological Survey
Ohio Dept. of Natural Resources

Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR MARY MERTZ, DIRECTOR

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

September 25, 2020

Pam Ewing
Ohio RCAP
1817 St. Rt. 83, Unit 423
Millersburg, OH 44654

Re: 20-721; Hanoverton Sanitary Sewer System

Project: The proposed project involves the construction of two new raw sewage pumps and a maintenance building, as well as the installation of approximately 22,047 feet of 8-inch force main at the existing Cinnamon Lake wastewater treatment plant site.

Location: The proposed project is located in the Village of Hanoverton, Columbiana County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has no records at or within a one-mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no other records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH $\geq$ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31, however, limited summer tree cutting may be acceptable after consultation with DOW (contact Sarah Stankavich, sarah.stankavich@dnr.state.oh.us).

The DOW also recommends that a desktop or field-based habitat assessment is conducted to determine if there are potential hibernaculum(a) present within the project area. Habitat assessments should be conducted in accordance with the current USFWS "*Range-wide Indiana Bat Survey Guidelines*" and submitted to Sarah Stankavich, sarah.stankavich@dnr.state.oh.us if potential hibernacula are present within .25 miles of the project area. If a potential hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel. The DOW understands that streams will be crossed by directional boring, resulting in no in-water work. Therefore, impacts to this and other mussel species are not likely.

The project is within the range of the gilt darter (*Percina evides*), a state endangered fish, the American eel (*Anguilla rostrata*), a state threatened fish, the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish, the channel darter (*Percina copelandi*), a state threatened fish, and the river darter (*Percina shumardi*), a state threatened fish. The DOW understands that streams will be crossed by directional boring, resulting in no in-water work. Therefore, impacts to these and other aquatic species are not likely.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. Due to the location,

and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is within the range of the American bittern (*Botaurus lentiginosus*), a state endangered bird. Nesting bitterns prefer large undisturbed wetlands that have scattered small pools amongst dense vegetation. They occasionally occupy bogs, large wet meadows, and dense shrubby swamps. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the least bittern (*Ixobrychus exilis*), a state threatened bird. This secretive marsh species prefers dense emergent wetlands with thick stands of cattails, sedges, sawgrass or other semiaquatic vegetation interspersed with woody vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus hudsonis*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the sandhill crane (*Grus canadensis*), a state threatened species. Sandhill cranes are primarily a wetland-dependent species. On their wintering grounds, they will utilize agricultural fields; however, they roost in shallow, standing water or moist bottomlands. On breeding grounds they require a rather large tract of wet meadow, shallow marsh, or bog for nesting. If grassland, prairie, or wetland habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to September 1. If this habitat will not be impacted, this project is not likely to have an impact on this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or Sarah.Tebbe@dnr.state.oh.us if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING
JUNE 2020

Agency Contacts:

ODNR-DOW Permit Coordinator: Wildlife.Permits@dnr.state.oh.us, (614) 265-6315
ODNR-DOW Bat Survey Coordinator: Sarah Stankavich, sarah.stankavich@dnr.state.oh.us, (614) 265-6764

Due to the evolving situation with COVID-19, we are temporarily suspending bat-handling activities until more is known about the risk to North American bats. This document has been updated with new state guidance for the 2020 field season only, or until bat-handling activities are reinstated. These guidelines replace previous guidelines released in March 2020.

This guidance applies to state recommendations only. Contact the USFWS to determine if federal consultation is also necessary to comply with federal law.

Ohio Mist Net Surveys:
Mist-netting for presence/absence surveys, education events, or research activities will not be authorized for the 2020 season.

Ohio Acoustic Surveys:
Acoustic bat surveys for presence/absence will be accepted by ODNR for the 2020 season. Surveys should follow guidelines laid out in the USFWS Range-wide Indiana Bat Survey Guidelines (March 2020) with the following exceptions:

- Ohio survey dates are June 1 – August 15, 2020
- After conducting automated analyses using one or more of the currently available 'approved' acoustic bat ID programs[1], qualitative analysis (i.e., manual vetting) of any calls recorded from state-endangered species (*Myotis sodalis, M. septentrionalis*[2], *M. lucifugus*[2], and *Perimyotis subflavus*[2]) must be completed.
    - At a minimum, for each detector site/night a program considered presence of state-listed bats likely, review all files (including no IDs) from that site/night. If more than one acoustic bat ID program is used, qualitative analysis must also include a comparison of the results of each program by site and night.

During Field Season:

- **Prior to initiation of field work (a minimum of two weeks in advance)**, permittees must provide proposed survey plans to ODNR-DOW via e-mail. **Plans must be reviewed and approved by ODNR-DOW before ANY surveys take place**. Study plans must specify objectives, location details, dates of proposed work, and all other relevant details.

[1] https://www.fws.gov/midwest/Endangered/mammals/inba/surveys/inbaAcousticSoftware.html
[2] State listing as endangered effective July 1, 2020

After Field Season:

- By March 15, you must submit your final ODNR-DOW report(s) from the previous summer. You are not required to fill out the ODNR-DOW Wildlife Diversity Bat Excel Spreadsheet; instead, please forward your USFWS Midwestern US Spreadsheet (found here: http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html) to the ODNR-DOW Bat Survey Coordinator and ODNR-DOW Permit Coordinator and include your state permit number along with an electronic copy of the project report. Electronic summaries emailed during the field season are NOT considered as full compliance of this reporting requirement.

Ohio Environmental Review Recommendations for projects involving disturbance near potential/known bat hibernacula (cliffs, caves, mines) or tree cutting:

Step 1: Coordinate with Ohio Division of Wildlife (DOW) regarding existing records for state-listed endangered bat summer and/or winter occurrence information.

If project site contains a known bat hibernaculum(a) –

- For state-listed endangered species other than the Indiana bat, a recommendation of 0.25-mile tree cutting buffer around all known entrances to protect existing conditions at the hibernaculum(a). If the project involves subsurface disturbance, consultation with DOW is required.
- Limited summer and winter tree cutting may be permitted within the buffer following guidelines detailed below. Coordinate with DOW before cutting.

If a project site does not contain known bat hibernaculum(a)

- Conduct a habitat assessment (desktop or field-based, using methods detailed in current USFWS Range-wide Indiana Bat Guidelines) to determine if a potential hibernaculum(a) is present within the action area.

Step 2: When conducted, a presence/absence survey must follow current DOW guidelines.

Step 3: If a state-listed endangered bat is captured or recorded during the survey:

- Recommendation of no summer tree cutting, or limited cutting following guidelines detailed below, within 5 miles of the capture site if a roost is not located.
- Recommendation of no summer tree cutting, or limited cutting following guidelines detailed below, within 2.5 miles of a roost tree if located.

If no state-listed endangered bat is captured or recorded during the survey:

- Summer tree cutting may proceed for 5 years before a new survey is needed under state guidance.

Limited summer tree cutting guidance for bats that are only state-listed endangered: Limited tree cutting in summer may be permitted after consultation with DOW, but clearing trees with the following characteristics should be avoided unless they pose a hazard: dead or live trees of any size with loose, shaggy bark; crevices, holes, or cavities; live trees of any species with DBH $\geq$ 20.

FREQUENTLY ASKED QUESTIONS

When does the Bat Survey protocol have to be used?

This protocol should be used anytime Indiana bat, northern long-eared bat, little brown bat, or tricolored bat summer presence/probable absence surveys are conducted in the state of Ohio. For 2020 only, acoustic surveys will meet the ODNR-DOW requirements unless new guidance allowing for the handling of bats during presence/absence surveys is released from USFWS.

How many net surveys are required for presence/probably absence?

As described in the current USFWS Range-wide Indiana Bat Guidelines: Linear projects: a minimum of 2 detector nights per km (0.6 miles) of suitable summer habitat
Non-linear projects: a minimum of 8 detector nights per 123 acres (0.5 km^2) of suitable summer habitat. At least 2 detector locations per 123 acre "site" shall be sampled until at least 8 detector nights has been completed over the course of at least 2 calendar nights (may be consecutive). For example:

- 4 detectors for 2 nights each (can sample the same location or move within the site)
- 2 detectors for 4 nights each (can sample the same location or move within the site)
- 1 detector for 8 nights (must sample at least 2 locations and move within the site)

How long are the results of the surveys valid for an assessment of an area?

Mist-net or acoustic surveys documenting probable absence of state-listed endangered bats are valid for five years.

When can acoustic surveys occur in Ohio?

In Ohio, acoustic surveys may only be conducted from June 1 through August 15 unless indicated otherwise in your state permit. Any surveys outside of the June 1 - August 15 timeframe cannot be used in Ohio to assess the presence/probable absence of state-listed bats.

Can a presence/probable absence survey be conducted within a known Indiana bat and/or northern long-eared bat capture/detection buffer?

Surveys generally cannot be used to document presence/probable absence of state-listed endangered bats bat where presence of the species has already been confirmed by prior surveys.

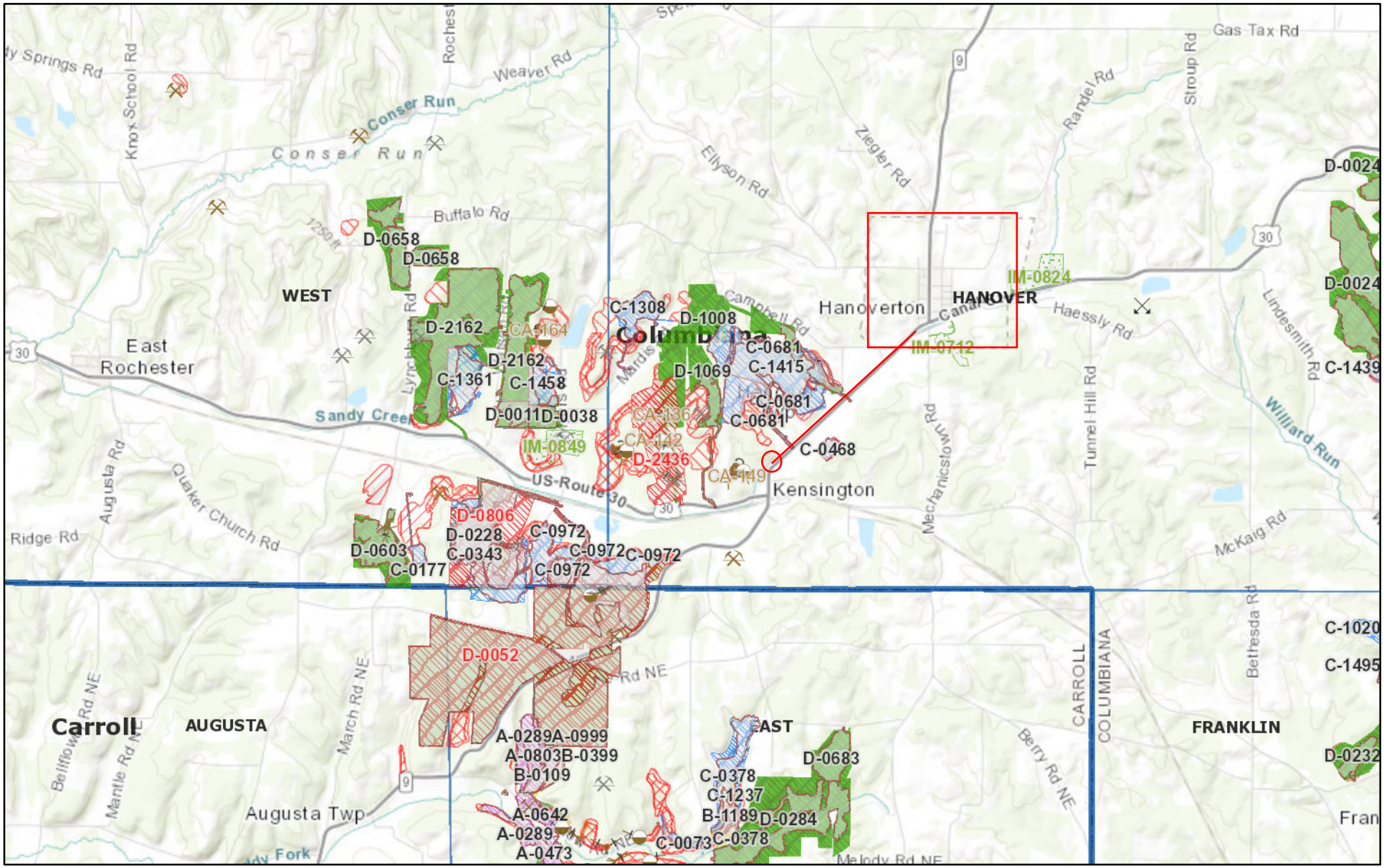
What if a project is proposing to clear trees between April 1 and September 30 when bats may be present but no bat records exist in the project area?

Any Ohio project that is not within a known bat record buffer, and tree clearing between April 1 and September 31 is being proposed, may have a presence/absence survey conducted between June 1 and August 15 following the range-wide guidance. If a presence/absence survey is not performed, presence of listed bats is assumed.

How does take of northern long-eared bats differ from Indiana bats?

Under Ohio law, there is no exemption for take of any listed bat species.

Mines of Ohio



September 28, 2020

Current

- Air Shaft
- Drift Entry
- Vertical Mine Shaft
- Slope Entry

Past

- Air Shaft
- Drift Entry
- Vertical Mine Shaft
- Slope Entry
- Locations

N

0 0.5 1 2 mi

0 1 2 4 km

1:72,224

Division Of Mineral Resources & Geological Survey
Ohio Dept. of Natural Resources

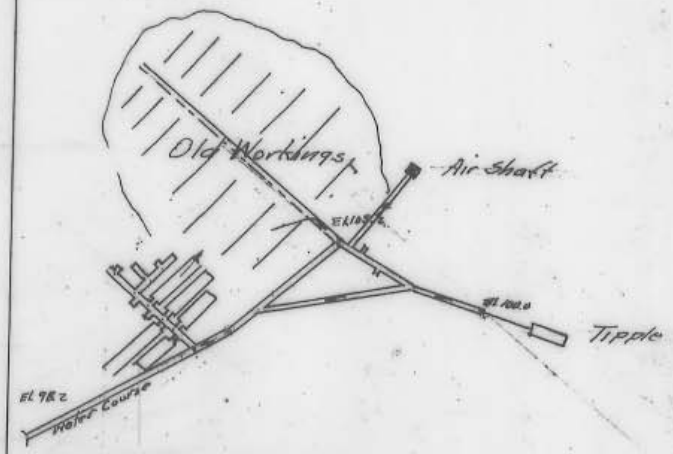
H. Sharp & C. Ruble

McClelland

H.O. Reeder

L. Brenner

N



CERTIFICATE OF MINE FOREMAN

I, the undersigned, hereby certify that I am [illegible] of the mine represented by this map and to the best of my knowledge and belief, the same correctly represents the excavations of the same for period ending [illegible]

[illegible]
MINE FOREMAN

Acknowledged before me a Notary Public this [illegible] day of [illegible]

CERTIFICATE OF ENGINEER

I, the undersigned, hereby certify that this map is correct and shows all the information required by Section 78 Ohio Mine Laws and covers period ending [illegible]

[illegible]
ENGINEER

Acknowledged before me a Notary Public this [illegible] day of [illegible]

Ca-149

Horsh

REEDER & SON COAL CO.
Part NE 1/4 Sec. 31. Hanover Th.
Columbiana, Ohio
Surveyed B.W. Wilson Malvern, O.
Scale 1"=100' - Seam No. 7

2000'

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

September 25, 2020

Pam Ewing
Ohio RCAP
1817 St. Rt. 83, Unit 423
Millersburg, OH 44654

Re: 20-721; Hanoverton Sanitary Sewer System

Project: The proposed project involves the construction of two new raw sewage pumps and a maintenance building, as well as the installation of approximately 22,047 feet of 8-inch force main at the existing Cinnamon Lake wastewater treatment plant site.

Location: The proposed project is located in the Village of Hanoverton, Columbiana County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has no records at or within a one-mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no other records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH $\geq$ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31, however, limited summer tree cutting may be acceptable after consultation with DOW (contact Sarah Stankavich, sarah.stankavich@dnr.state.oh.us).

The DOW also recommends that a desktop or field-based habitat assessment is conducted to determine if there are potential hibernaculum(a) present within the project area. Habitat assessments should be conducted in accordance with the current USFWS "*Range-wide Indiana Bat Survey Guidelines*" and submitted to Sarah Stankavich, sarah.stankavich@dnr.state.oh.us if potential hibernacula are present within .25 miles of the project area. If a potential hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel. The DOW understands that streams will be crossed by directional boring, resulting in no in-water work. Therefore, impacts to this and other mussel species are not likely.

The project is within the range of the gilt darter (*Percina evides*), a state endangered fish, the American eel (*Anguilla rostrata*), a state threatened fish, the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish, the channel darter (*Percina copelandi*), a state threatened fish, and the river darter (*Percina shumardi*), a state threatened fish. The DOW understands that streams will be crossed by directional boring, resulting in no in-water work. Therefore, impacts to these and other aquatic species are not likely.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. Due to the location,

and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is within the range of the American bittern (*Botaurus lentiginosus*), a state endangered bird. Nesting bitterns prefer large undisturbed wetlands that have scattered small pools amongst dense vegetation. They occasionally occupy bogs, large wet meadows, and dense shrubby swamps. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the least bittern (*Ixobrychus exilis*), a state threatened bird. This secretive marsh species prefers dense emergent wetlands with thick stands of cattails, sedges, sawgrass or other semiaquatic vegetation interspersed with woody vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus hudsonis*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the sandhill crane (*Grus canadensis*), a state threatened species. Sandhill cranes are primarily a wetland-dependent species. On their wintering grounds, they will utilize agricultural fields; however, they roost in shallow, standing water or moist bottomlands. On breeding grounds they require a rather large tract of wet meadow, shallow marsh, or bog for nesting. If grassland, prairie, or wetland habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to September 1. If this habitat will not be impacted, this project is not likely to have an impact on this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or Sarah.Tebbe@dnr.state.oh.us if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

"Improving the quality of life in rural communities"

July 13, 2020

Ms. Sarah Tebbe
Ohio Department of Natural Resources
Division of Wildlife
2045 Morse Road, Bldg. G-3
Columbus, OH 43229

RE: Columbiana County, Ohio
Hanoverton Sanitary Sewer System

Dear Ms. Tebbe:

Columbiana County is in the process of performing an environmental review pursuant to the 40 CFR requirements of the National Environmental Policy Act (NEPA) and the U.S. Army Corps of Engineers Implementing regulation, ER 200-202, in order that it may assess the environmental impacts of construction of a sanitary sewer system in the Village of Hanoverton.

Enclosed is a completed Data Request Form with attached project map(s) that depicts the proposal's construction activities and a description of the work involved.

We request that your office review the proposal for any State and Federally-listed threatened and endangered species, including Migratory Bird, and any other important State natural resources that may occur in the project area. Please provide any recommendations you may have to mitigate or avoid these impacts.

We would appreciate a response within 30 days. If you need any further information or wish to discuss this project, please contact me at 330/674-9600 or psewing@glcap.org.

Sincerely,

Pam Ewing

Pam Ewing
Sr. Rural Development Specialist
Rural Community Assistance Program (RCAP)

Enclosures

1817 SR 83, Unit 423 • Millersburg, OH • Phone 330.674.9600 • Fax 330.674.4176 • psewing@glcap.org •
www.glrcap.org

DATA REQUEST FORM

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF NATURAL AREAS AND PRESERVES
OHIO NATURAL HERITAGE PROGRAM
2045 MORSE RD., BLDG. F-1
COLUMBUS, OHIO 43229-6693
PHONE: 614-265-6453; FAX: 614-267-3096

INSTRUCTIONS:
Please complete both sides of this form, sign and return it to the address or fax number given above along with: **(1)** a brief letter describing your project, and **(2)** a map detailing the boundaries of your project site. A copy of the pertinent portion of a USGS 7.5 minute topographic map is preferred but other maps are acceptable. Our turnaround time is two weeks, although we can often respond more quickly. If you fax in your request you do not need to mail the original unless otherwise requested.

FEES:
Fees are determined by the amount of time it takes to complete your project. The charge is $50.00 per half hour with a one hour minimum. A cost estimate can be provided upon request. An invoice will be included with our response.

WHAT WE PROVIDE: The Natural Heritage Database is the most comprehensive source of information on the location of Ohio's rare species and significant natural features. Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Records for the following will be provided from the Natural Heritage Database: plants and animals (state and federal listed species), high quality examples of natural plant communities, geologic features, breeding animal concentrations, and unprotected natural areas. In addition, we report locations for managed areas including federal, state, county, local and non-profit areas, as well as state and national scenic rivers. Natural Heritage Data can be provided in many formats, including GIS shapefiles, spreadsheets, printed reports or maps. A minimum one mile radius around the project site will automatically be searched. Because Natural Heritage data is sensitive information, it is our policy to provide only the data needed to complete your project.

****

Date: July 13, 2020

Company name: Ohio RCAP

Your name: Pam Ewing

Address: 1817 St. Rt. 83, Unit 423,

City/State/Zip: Millersburg, OH 44654

Phone: 330-674-9600 Fax: 330-674-4176

E-mail address: **psewing@glcap.org**

Project Name: **Hanoverton Sanitary Sewer Project**

Project Number: _____

Project Site Address:

Project County: **Columbiana County**

Project Township: **Hanover**

Project site is located on the following USGS 7.5 minute topographic quad(s):

Hanoverton Quad

Description of project: See attached Project Description

How do you want your data reported? Printed list and map x GIS shapefile _____

Other format (please specify): _____

Additional information required: _____

How will the information be used? Environmental Report

I certify that data supplied by the Ohio Natural Heritage Program will not be published without crediting the ODNR Division of Natural Areas and Preserves as the source of the material. In addition, I certify that electronic datasets will not be distributed to others without the consent of the Division of Natural Areas and Preserves, Ohio Natural Heritage Program.

Signature Pam Ewing

Date: 7-13-20

DNR 5203
REV 2/2008

PROJECT DESCRIPTION

The proposed project will occur in the Village of Hanoverton, Columbiana County, Ohio.

The project includes the construction of approximately 33,000 linear feet of 8-inch PCV sewer pipe; 3,300 linear feet of 4-inch HDPE force main; 300 linear feet of 8-inch bore and jacking gravity sewer; 3,200 linear feet of 6-inch sanitary sewer connection; 126 manhole; one package pump station with fencing; back-up generator, 50,000 gpd treatment plant expansion; electrical, SCADA system, miscellaneous equipment purchases, dewatering and storm sewer repairs, as needed.

Sanitary sewers and force main will be constructed at a depth of approximately four feet in the right of way where possible and within private easements, as needed.

Construction activities will occur in the streets and rights of way of the Village of Hanoverton, where possible. Force main construction will occur within the right of way of US 30 between the Village of Hanoverton and the Kensington WWTP. Sanitary sewers within the historic district of the village will be placed in private easements at the rear of the properties to avoid impacts to the brick streets, large trees and historic buildings along Plymouth Street. Expansion of the Kensington WWTP will occur on land previous disturbed by original construction of the facility in 2014/2015. The proposed lift station will be located on US 30 between Hanoverton and Kensington and will have no impact on trees, wetlands or floodplain areas.

The floodplain of Sandy Creek exists in the project area. The existing Kensington wastewater treatment plant is located within the floodplain of Sandy Creek. The proposed expansion of this plant will also occur within the floodplain area on previously impacted area. Underground sanitary sewers and force main will temporarily impact the floodplain but no long-term adverse impacts are anticipated.

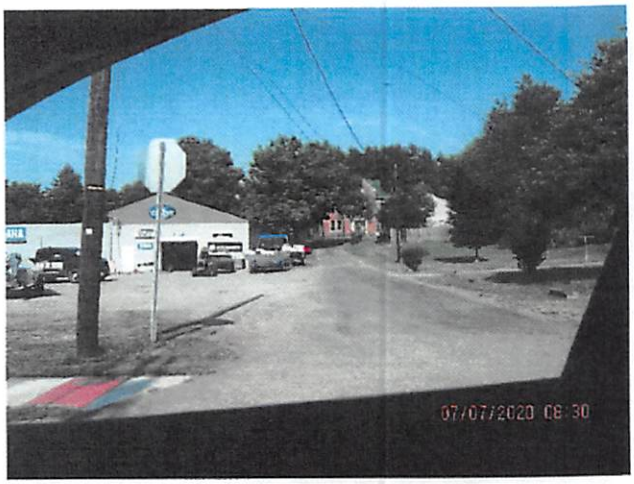
The proposed sanitary sewers will be installed by directional boring in the areas of all stream crossings. Small scrub brush will be disturbed or removed during this process.

Wetland areas also exist in the project area. These areas will be avoided by directional bore or relocation of the line to the opposite side of the road.

It is not anticipated that tree removal will occur. However, if during construction tree removal is deemed necessary, removal will be limited to between October 1 and March 31.

OHPO on-line records indicates four OGS cemeteries, two Phase 1 Survey Areas; eighty-three (83) historic structures; twenty-one (21) archaeological sites; one National Register Boundary and one NR Listing within a one-mile radius from the Village of Hanoverton. Due to the nature of the project elements being placed on disturbed ground and not being visible to historic structures, it is not anticipated these historic properties will be impacted by the proposed project.

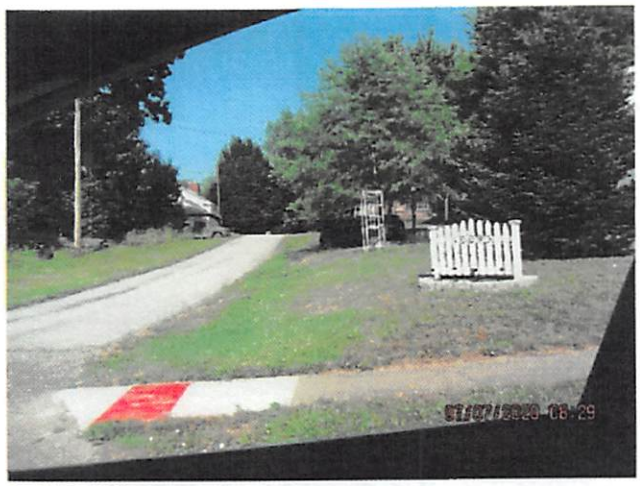
Photographs of the
Village of Hanoverton
Sanitary Sewer System Project



1. Street Scene


2. Street Scene


3. Street Scene

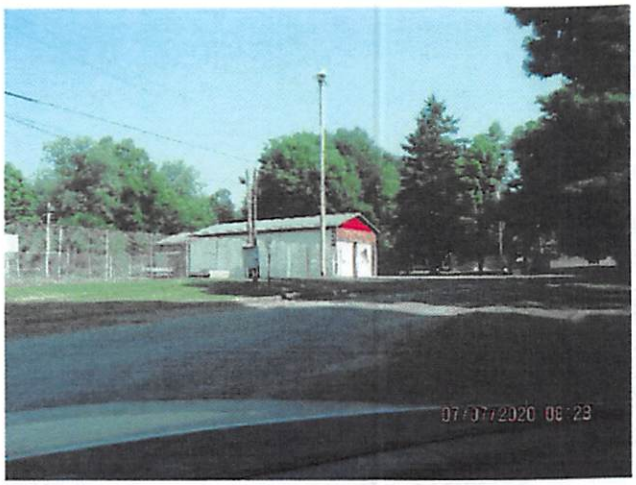

4. Street Scene


5. Street Scene


6. Street Scene

7. Street Scene

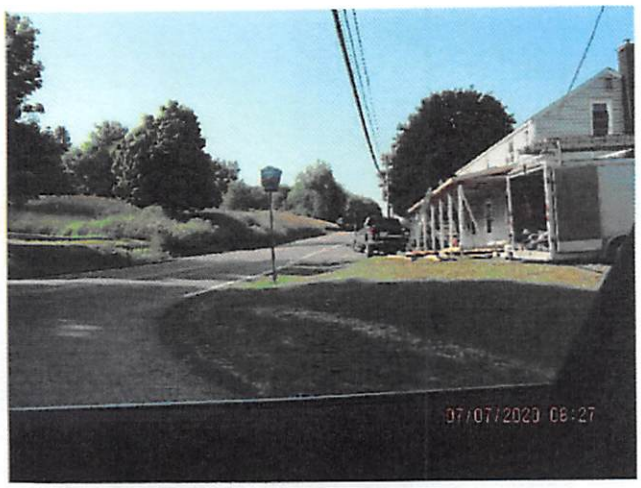
8. Street Scene



9. Street Scene

10. Street Scene

11. Route 9 & Route 30 Intersection



12. Street Scene


13. Street Scene


14. Route 30 Stream Crossing


15. Route 30


16. Stream Crossing to business (Route 30)

7. Stream Crossing – Campbell Road

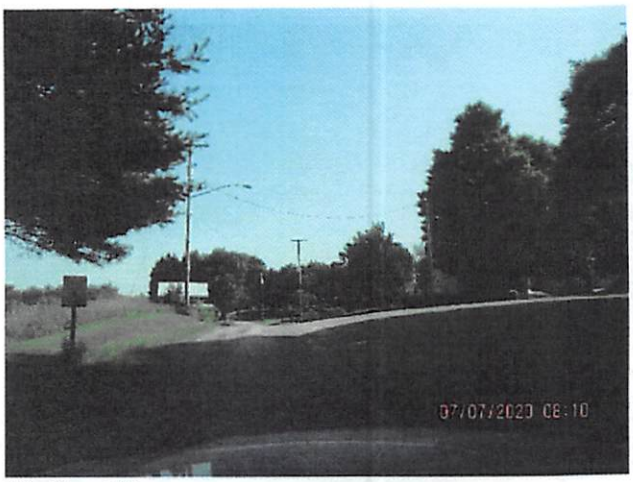
8. Plymouth Street (Historic District)

9. Street Scene

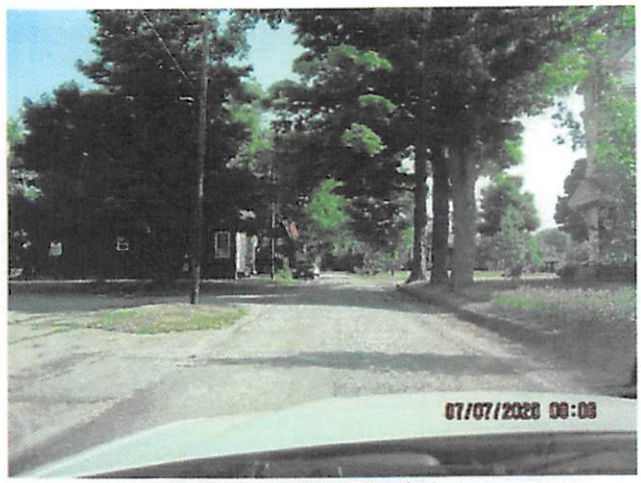
10. Stream Crossing

17. Street Scene

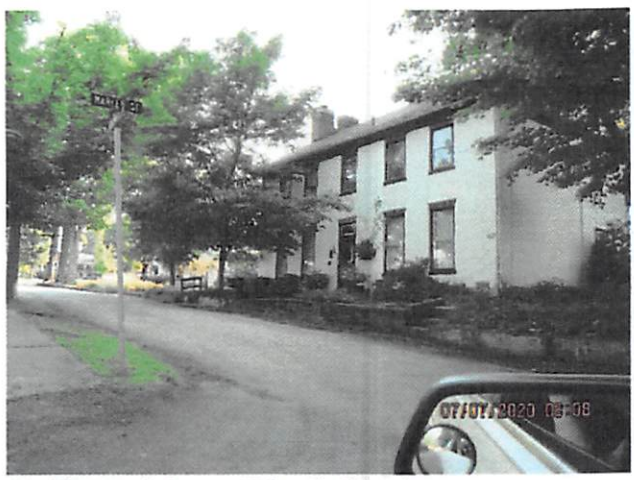
18. Plymouth Street (Historic District)



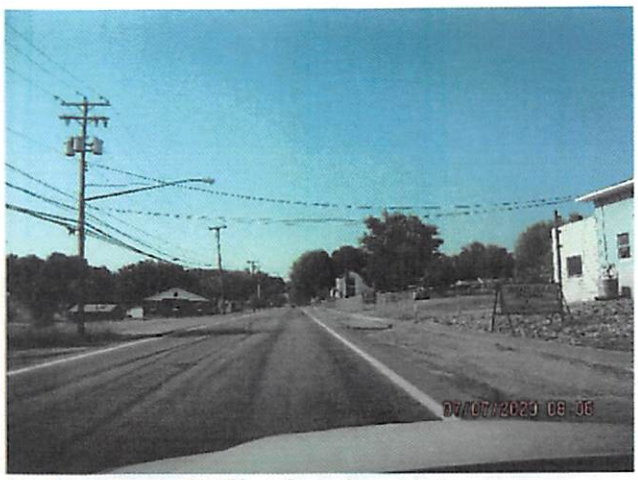
19. Street Scene



20. Plymouth Street (Historic District)

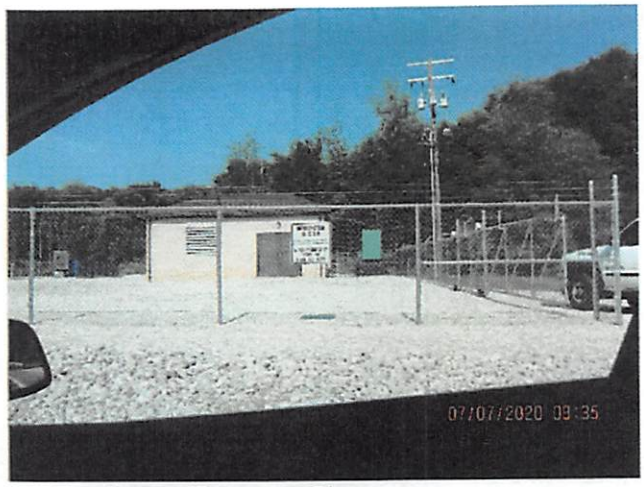


21. Plymouth Street (Historic District



22. State Route 9 (First Street)

23. State Route 9 (First Street)



24. Kensington Treatment Plant

25. Possible Easement Site

26. Street Scene

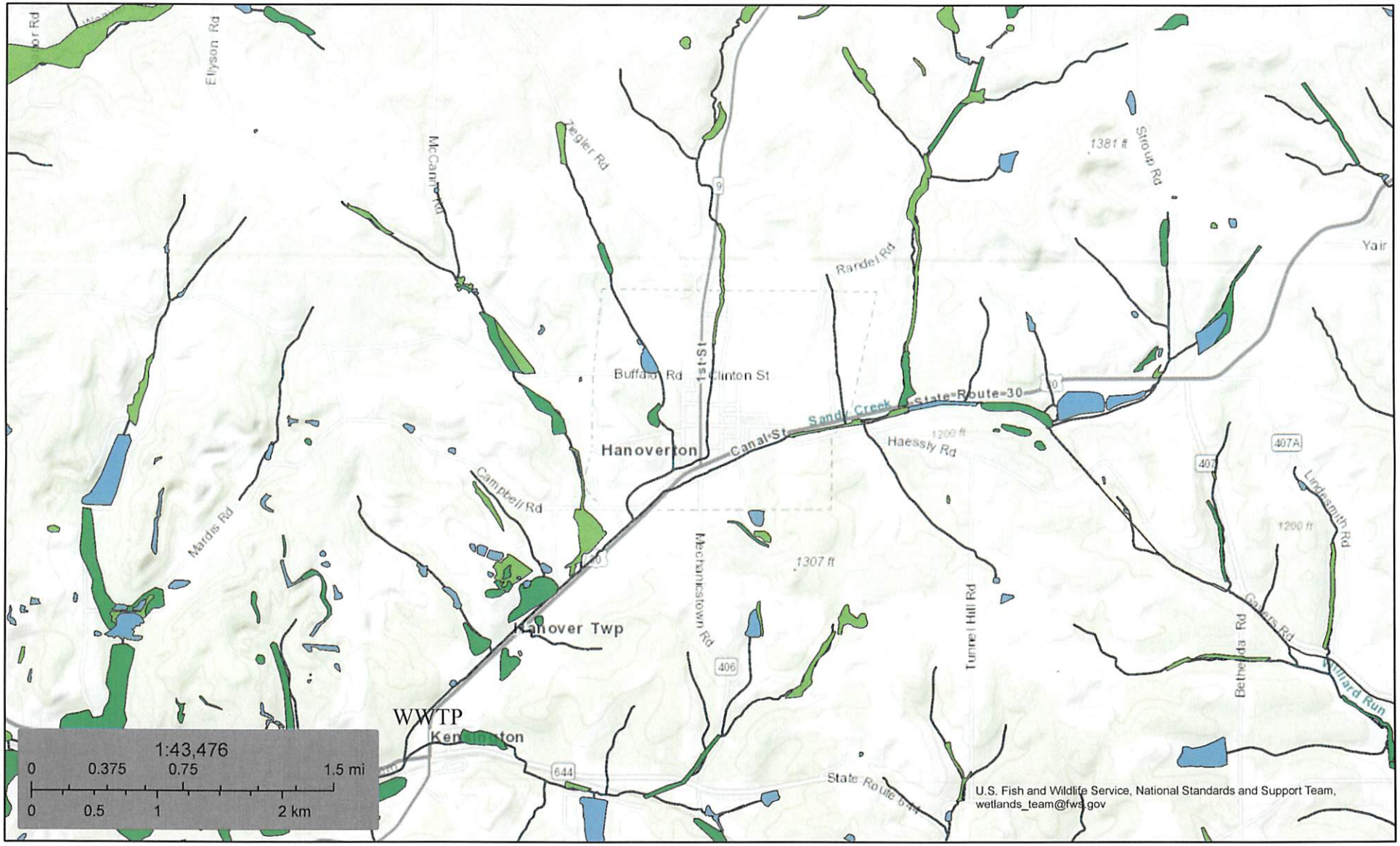
27. Pump Station Location – US 30


Google Earth Pro
File Edit View Tools Add Help
6/2019
725
729
811
816
826
9
30
538
Phase I Study Area
Village Limits
Hanoverton
Hanoverton
840
406
735
3035 ft
1994
Google Earth
Imagery Date: 6/30/2019

U.S. Fish and Wildlife Service

National Wetlands Inventory

Hanoverton Wetland Topo



June 29, 2020

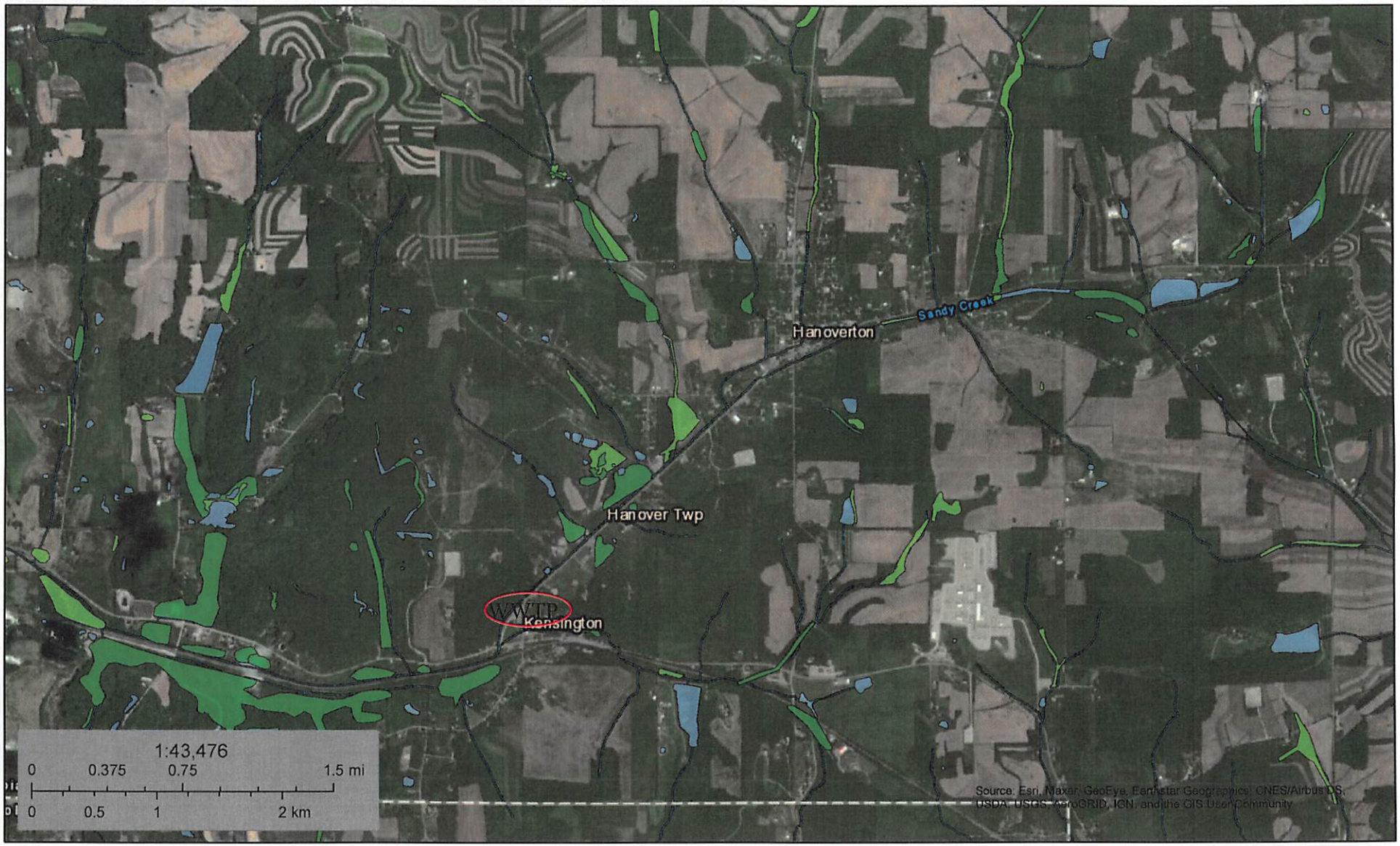
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

U.S. Fish and Wildlife Service

National Wetlands Inventory

Hanoverton Wetland



July 13, 2020

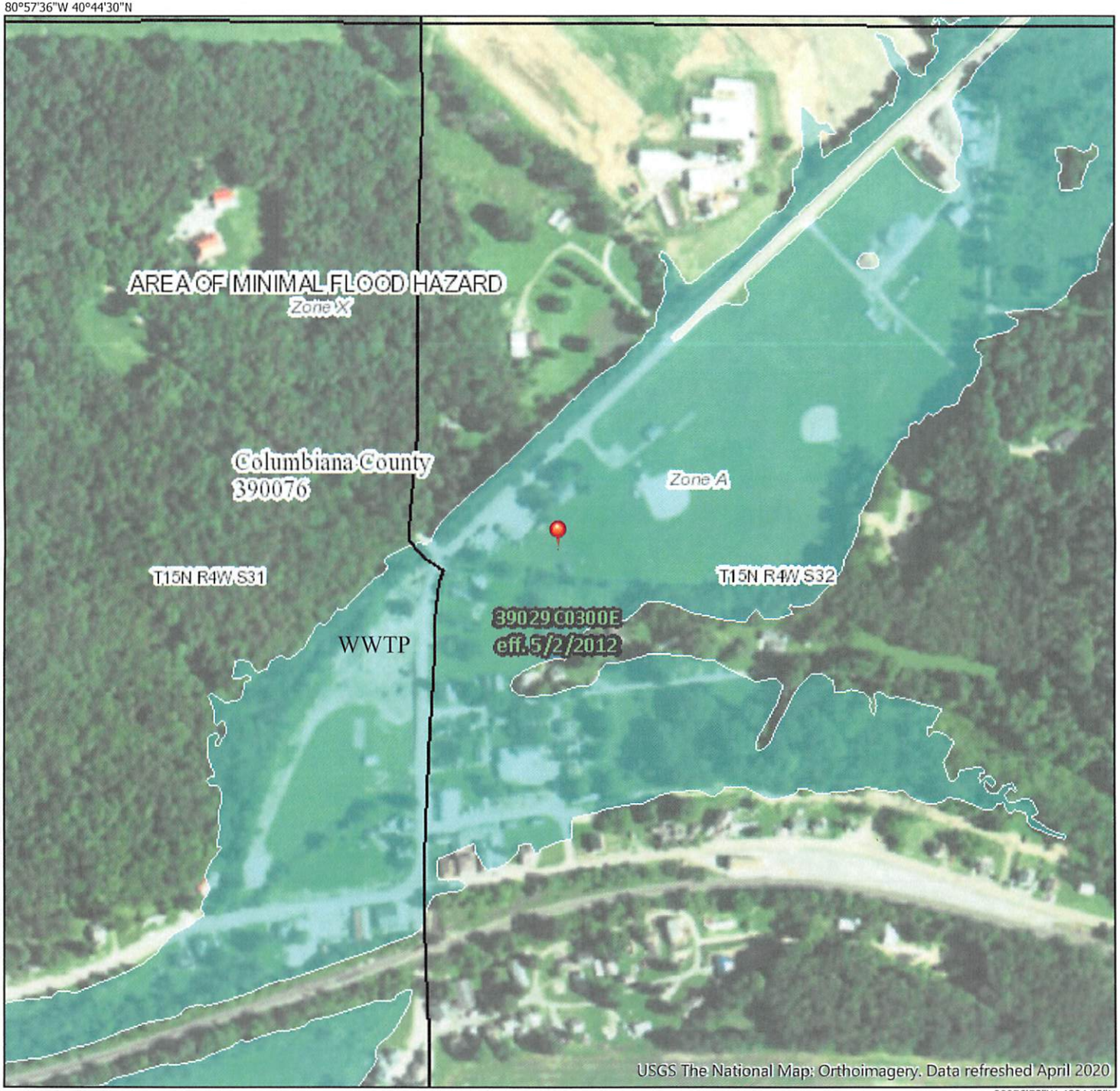
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

National Flood Hazard Layer FIRMette

FEMA

80°57'36"W 40°44'30"N



80°56'58"W 40°44'2"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile *Zone*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/29/2020 at 9:17 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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National Flood Hazard Layer FIRMette

FEMA

80°57'15"W 40°44'35"N

80°56'38"W 40°44'8"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile Zone
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

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National Flood Hazard Layer FIRMette

FEMA

80°56'26"W 40°45'27"N

80°55'49"W 40°45'N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile *Zone*
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- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/29/2020 at 9:14 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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EXHIBIT 7

WETLAND DELINEATION AND STREAM EVALUATION REPORT

for the

VILLAGE OF HANOVERTON SEWER COLLECTION SYSTEM IMPROVEMENT PROJECT

located in

HANOVERTON TOWNSHIP
COLUMBIANA COUNTY, OHIO

July 27, 2021

Prepared for:

Village of Hanoverton & Columbiana County
Hanoverton, OH

Prepared by:

Collective Efforts, LLC
Pittsburgh, Pennsylvania

Project Number: 20-47601

TECHNICAL REPORT

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for the
VILLAGE OF HANOVERTON
SEWER COLLECTION SYSTEM IMPROVEMENT PROJECT

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1.0 INTRODUCTION

Collective Efforts, LLC was retained by Columbiana County to conduct a wetland and stream (aquatic resources) investigation for the Hanoverton Sewer Collection System Improvements Project. The Village of Hanoverton, Ohio is under a United States Environmental Protection Agency (USEPA) order to complete sanitary sewer collection system improvements. The Village of Hanoverton is applying for a Rural Community Assistance Program (RCAP) Grant from the United States Army Corps of Engineers (USACE) to help fund these required improvements. For grant funding, the USACE requires that a wetland delineation and stream investigation be conducted for the project area.

This report is divided into eight sections. Section 1.0 contains the introduction. Section 2.0 contains the project description. Section 3.0 contains the site background information. Section 4.0 outlines the methods and procedures used to conduct the investigation. Section 5.0 presents the results and conclusions. Section 6.0 presents a summary. Section 7.0 discusses the impacts to resources that may occur as a result of this project. Section 8.0 cites the references used for completing this report. Figures are included after the report text. Appendix A presents the site photographs. Appendix B includes the wetland data forms. Appendix C includes stream data forms. Appendix D presents Collective Efforts' wetland delineation and stream evaluation qualifications.

2.0 PROJECT DESCRIPTION

The project area is located within the Village of Hanoverton in Columbiana County, Ohio near the intersection of State Route 9 (1st Street) and State Route 30 (Lincoln Highway). The Village of Hanoverton is located in Hanover Township, approximately 23 miles east of Canton, Ohio and 40 miles northeast of New Philadelphia, Ohio. The Village of Hanoverton is a small rural community that primarily consists of single-family homes, small businesses, a gas station, a fire house, a post office, a municipal office building, and a few churches. Sandy Creek runs throughout the Village of Hanoverton. Figure 1 shows the general location of the proposed sewer lines on a United States Geological System (USGS) map.

The proposed sanitary sewer system project includes the construction of approximately 33,000 linear feet of 8-inch gravity sewer and 3,300 linear feet of 4-inch sanitary force main running in or along existing roads (primarily Lincoln Highway and 1st Street), and occasionally cutting through farmland to other existing roadways in the Village of Hanoverton (see Figure 2). A newly proposed pump station will be constructed to link the sewer system to the Kensington Wastewater Treatment Plant. The initial proposed location of the pump station was eliminated from evaluation due to property acquisition issues. The newly proposed pump station location is located along the Lincoln Highway on parcel #2701988.004 (Photographs 1 and 2). The proposed pump station is located between Dollar General and the neighboring property's driveway. The land is slightly sloping/flat land that is currently used for farming. The proposed pump station location is shown on Figure 1. The Kensington Wastewater Treatment Plant is located on State Route 30 just west of the Kensington Dairy Bar, as shown on Figure 1 (Photographs 3 and 4).

3.0 BACKGROUND REVIEW

Prior to conducting the wetland and stream field investigation, a background review was conducted. This consisted of reviewing National Wetland Inventory (NWI) mapping, the Natural

Resources Conservation Service (NRCS) Web Soil Survey, and Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) mapping. The results of the background review are discussed in the following subsections.

3.1 NWI Mapping Results

The wetland information was reviewed on the NWI website (www.fws.gov/wetlands). The NWI mapping is not an all-inclusive summary of existing wetlands. Typically, only larger wetlands tend to be shown on this mapping. Field verification is required to determine the presence of wetlands.

As shown on the NWI mapping for the area of Hanoverton (Figure 3), there are numerous identified wetlands located within 30 feet of the proposed sewer lines spanning throughout the Village of Hanoverton. Approximately 20 feet from the start of the proposed sewer line on the southwestern portion of State Route 30 (Lincoln Highway), the NWI mapping shows a 2.63-acre riverine system with an unknown perennial subsystem, unconsolidated bottom class, and a permanently flooded water regime (R5UBH). Heading northeast up State Route 30 across from R5UBH, 30 feet from the proposed sewer line addition, is a 0.56-acre freshwater forest/shrub wetland. This wetland is classified as a palustrine system with a scrub-shrub class, broad-leaved deciduous subclass, and seasonally flooded water regime (PSS1C). Continuing northeast up State Route 30 is a 6.83-acre riverine with the R5UBH classification located approximately 23 feet from the proposed State Route 30 sewer line, crossing the proposed sewer line in multiple locations. Another riverine habitat with the classification R5UBH is 1.82-acres and located 5 feet from proposed sewer line. Lastly, a 3.18-acre freshwater emergent wetland is located on the right side of State Route 30 approximately 30 feet from the proposed sewer line that continues further east with the road. This freshwater emergent wetland is classified as a palustrine system characterized by an emergent class, persistent subclass, and seasonally flooded water regime (PEM1C).

3.2 Columbiana County Soil Survey Results

The NRCS Web Soil Survey (www.nrcs.usda.gov) was reviewed to identify soil mapping units within the project area. Fifteen soil mapping units were identified, and they are summarized on Table 1 and described below. Table 1 also indicates if the individual soil type is listed on the county, state, or national hydric soils lists. The specific soil types found at the individual wetland sampling stations will be discussed in Section 5.0 “Results and Conclusions.” Figure 4 identifies the location of the soil types throughout the project site and the surrounding area.

Table 1
Summary of NRCS Soil Types Identified in the Project Area

Soil Symbol	Soil Type	Slope (%)	Texture	Soil Listed on Hydric Soils List		
				County	State	National
FdA	Fitchville silt loam	0 to 2	Silt loam to silty clay loam	X	-	X
FdB	Fitchville silt loam	2 to 6	Silt loam to silty clay loam	X	-	X

Table 1
Summary of NRCS Soil Types Identified in the Project Area

Soil Symbol	Soil Type	Slope (%)	Texture	Soil Listed on Hydric Soils List		
				County	State	National
FnC2	Fredericktown gravelly loam	6 to 15	Gravelly loam, loam, gravelly sandy loam	-	-	-
FoB	Fredericktown silt loam	2 to 6	Silt loam to gravelly loamy coarse sand	-	-	-
GrC	Glenford silt loam	6 to 12	Silt loam to silty clay loam	-	-	X
HIB	Homewood silt loam	2 to 6	Silt loam to loam	-	-	-
KnB	Kensington silt loam	2 to 6	Silt loam to silty clay loam	-	-	-
KnC	Kensington silt loam	6 to 15	Silt loam to channery loam	-	-	-
McB	Mechanicsburg silt loam	2 to 6	Silt loam, gravelly loam, to very channery silt loam	-	-	-
OrA	Orrville silt loam	0 to 3	Silt loam, loam, to stratified gravelly loamy sand	X	-	-
TeB	Teegarden silt loam	0 to 3	Silt loam, silty clay loam, to channery silty clay loam	-	-	-
TeC	Teegarden silt loam	6 to 15	Silt loam to clay loam	-	-	-
Ub	Udorthents, refuse substratum	2 to 25	Channery loam to variable	-	-	-
WoA	Wick silt loam	0 to 2	Silt loam to silty clay loam	X	-	-

Table 1
Summary of NRCS Soil Types Identified in the Project Area

Soil Symbol	Soil Type	Slope (%)	Texture	Soil Listed on Hydric Soils List		
				County	State	National
ZeA	Zepernick silt loam (occasionally flooded)	0 to 2	Silt loam	X	-	-

Fitchville Silt Loam, 0 to 2 Percent Slopes (FdA)
This soil is generally found in terrace and relic lakebed landforms that are concave and linear in shape. This soil is somewhat poorly drained consisting of 85 percent Fitchville soils, 10 percent Sebring, and 5 percent Glenford soils. The depth to the water table is roughly 6 to 14 inches below ground surface. The Sebring minor soil component is considered as a hydric soil. This soil type as a whole is listed on the Columbiana County and National Hydric Soils List, but not considered hydric by the State Hydric Soils List or Map Unit Description found on the Web Soil Survey website.

Fitchville Silt Loam, 2 to 6 Percent Slopes (FdB)
This soil is generally found in terrace and relict lakebed landforms that are concave and linear in shape. This soil is somewhat poorly drained consisting of 85 percent Fitchville soils, 10 percent Sebring, and 5 percent Glenford soils. The depth to the water table is roughly 6 to 14 inches below ground surface. The Sebring minor soil component is considered as a hydric soil. This soil type is listed on the Columbiana County and National Hydric Soils List, but not considered hydric by the State Hydric Soils List or Map Unit Description found on the Web Soil Survey website.

Fredericktown Gravelly Loam, 6 to 15 Percent Slopes (FnC2)
Fredericktown gravelly loam is 90 percent Fredericktown and similar soils with minor components consisting of 10 percent Conotton soils. This soil type is typically found in kame and stream terrace landforms with riser landform positions. This soil type has a medium runoff class and considered well drained. The depth to the water table in this soil is more than 80 inches. None of the components of this soil type are considered hydric according to the National, State, and County Hydric Soils List. The Map Unit Description also confirms that this soil type is not hydric.

Fredericktown Silt Loam, 2 to 6 Percent Slopes (FoB)
Fredericktown silt loam is 90 percent Fredericktown and similar soils with minor components consisting of 10 percent Conotton soils. This soil is typically found in kame and stream terrace landforms with riser landform position. The runoff class is considered low with a drainage class of well drained. The water table is typically located more than 80 inches below ground surface. FoB soils are not considered hydric according to the National, State, and County Hydric Soils List. The Map Unit Description also confirms that this soil type is not hydric.

Glenford Silt Loam, 15 to 25 Percent Slopes (GrC)
Glenford silt loam is 90 percent Glenford and similar soils with minor components consisting of 10 percent Fitchville soils. This soil is typically found in terrace landforms with riser landform

position and convex shape. The drainage class of this soil is considered moderately well drained with a water table that is typically located 12 to 24 inches below ground surface. GrC soils are not considered hydric according to the Map Unit Description, and the State and County Hydric Soils List. GrC is considered hydric according to the National Hydric Soils List.

Homewood Silt Loam, 2 to 6 Percent Slopes (HIB)
Homewood silt loam is 90 percent Homewood and similar soils with minor components consisting of 10 percent Teegarden soils. This soil type is typically found in backslope, side slope, and summit till plains. This soil type has a medium runoff class and considered moderately well drained. The depth to the water table is 18 to 28 inches below ground surface. None of the components of this soil type are considered hydric according to the National, State, and County Hydric Soils List. The Map Unit Description also confirms that this soil type is not hydric.

Kensington Silt Loam, 2 to 6 Percent Slopes (KnB)
Kensington silt loam is 85 percent Kensington and similar soils with minor components consisting of 15 percent Mechanicsburg soils. This soil type is typically found in summit till plains. This soil type has a medium runoff class and considered moderately well drained. The depth to the water table is 18 to 42 inches below ground surface. None of the components of this soil type are considered hydric according to the National, State, and County Hydric Soils List. The Map Unit Description also confirms that this soil type is not hydric.

Kensington Silt Loam, 6 to 15 Percent Slopes (KnC)
Kensington silt loam is 85 percent Kensington and similar soils with minor components consisting of 15 percent Mechanicsburg soils. This soil type is typically found in backslope, shoulder, and summit till plains. This soil type has a medium runoff class and considered moderately well drained. The depth to the water table is 18 to 42 inches below ground surface. None of the components of this soil type are considered hydric according to the National, State, and County Hydric Soils List. The Map Unit Description also confirms that this soil type is not hydric.

Mechanicsburg Silt Loam, 2 to 6 Percent Slopes (McB)
This soil is 90 percent Mechanicsburg and similar soils with a minor component of 15 percent Mechanicsburg soils. This soil type is typically found in summit till plains. This soil type has a low runoff class and considered well drained. The depth to the water table is more than 80 inches below ground surface. None of the components of this soil type are considered hydric according to the National, State, and County Hydric Soils List. The Map Unit Description also confirms that this soil type is not hydric.

Orrville Silt Loam, 0 to 3 Percent Slopes (OrA)
This soil is 85 percent Orrville and similar soil, 5 percent Nolin soils, 5 percent Melvin soils, and 5 percent Lobdell soils. This soil is typically found in flood plains that are concave and linear in shape. The drainage class is considered somewhat poorly drained with occasional flooding and a water table located about 10 to 15 inches below ground surface. OrA soils are not considered hydric according to the Map Unit Description, and the State and National Hydric Soils List. OrA is considered hydric according to the Columbiana County Hydric Soils List.

Teegarden Silt Loam, 2 to 6 Percent Slopes (TeB)
This soil is 90 percent Teegarden and similar soils with a minor component of 10 percent of somewhat poorly drained soils without a fragipin. This soil type is typically found in backslope, shoulder, and summit till plains. This soil type has a medium runoff class and considered

moderately well drained. The depth to the water table is 12 to 24 inches below ground surface. None of the components of this soil type are considered hydric according to the National, State, and County Hydric Soils List. The Map Unit Description also confirms that this soil type is not hydric.

Teegarden Silt Loam, 6 to 15 Percent Slopes (TeC)
This soil is 90 percent Teegarden and similar soils with a minor component of 10 percent of Gilpin. This soil type is typically found in backslope, shoulder, and summit till plains. This soil type has a high runoff class and considered moderately well drained. The depth to the water table is 12 to 24 inches below ground surface. None of the components of this soil type are considered hydric according to the National, State, and County Hydric Soils List. The Map Unit Description also confirms that this soil type is not hydric.

Udorthents, Refuse Substratum, 2 to 25 Percent Slopes (Ub)
This soil is 90 percent Udorthents, refuse and similar soils with minor components consisting of 10 percent of areas that have not been excavated. This soil type is typically found in hills, terraces, and till plains. This soil type has a very high runoff class and considered moderately well drained. The depth to the water table is more than below ground surface. None of the components of this soil type are considered hydric according to the National, State, and County Hydric Soils List. The Map Unit Description also confirms that this soil type is not hydric.

Wick Silt Loam, 0 to 2 Percent Slopes (WoA)
This soil is 90 percent Wick and similar soils with minor components consisting of 4 percent Zepernick, 4 percent somewhat poorly drained soils, and 2 percent Carlisle soils. This soil type is typically found in toeslope and flat flood plains. This soil type has a low runoff class and considered very poorly drained. The depth to the water table is about 0 inches below ground surface. The Map Unit Description and Columbiana County Hydric Soils List consider this soil type hydric. State and National Hydric Soils List do not consider this soil type hydric.

Zepernick Silt Loam, 0 to 2 Percent Slopes (ZeA)
This soil is 85 percent Zepernick and similar soils with minor components consisting of 13 percent of Wick soils and 2 percent moderately well drained soils. This soil type is typically found in toeslope and flat flood plains. This soil type has a low runoff class and considered somewhat poorly drained. The depth to the water table is 6 to 12 inches below ground surface. Columbiana County Hydric Soils List considers this soil type hydric. The Map Unit Description, State, and National Hydric Soils List do not consider this soil type hydric.

3.3 FEMA FIRM Map Results

As part of the background review, FEMA FIRM map numbers 39029C0168E, 39029C0164E, 39029C0300E under the FEMA Map Service Center (www.fema.gov) were reviewed for the project area. This source identifies limits of the 100-year floodplain. The results of the search identified that the majority of the project is located within special flood hazard areas, subject to inundation by the one percent annual chance flood (100-year flood, also known as the base flood). This finding is identified on Figure 5.

4.0 METHODS AND PROCEDURES

Collective Efforts completed the wetland and stream investigation field efforts at the project site in November 2020 that included the approximately 33,000 linear feet of 8-inch gravity sewer and 3,300 linear feet of 4-inch sanitary force main. As the project developed, it was requested that

an additional evaluation of a newly proposed pump station location and the Kensington Wastewater Treatment Plant location be completed. The site visit for these additional areas was completed on June 8, 2021. It should be noted that the proposed sewer alignment shown on Figures 1 and 2 are estimated from preliminary design drawings and the alignment could shift slightly once the design is finalized. The project area investigated under this evaluation included a 20-foot buffer from the proposed sewer line if no roadway was present, and the property boundaries of the Kensington Wastewater Treatment Plant and the newly proposed pump station property. When the proposed sewer line followed a roadway, it was assumed that the project area included the road and 15 feet from the edge of pavement on both sides of the road. The methods and procedures that Collective Efforts used to conduct the wetland delineation and stream evaluation are discussed in the following subsections, respectively.

4.1 Wetland Delineation

The wetland delineation was conducted using the protocols established in the 1987 Corps of Engineers Wetlands Delineation Manual (Corps Manual) and with supplemental guidance based on the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region January 2012. Based upon the Corps Manuals, three factors must be present for an area to be considered a wetland: wetland vegetation, wetland hydrology, and wetland soil.

The wetlands were also assessed using the Ohio Assessment Method for Wetlands (ORAM) with the protocols established in the Ohio EPA manual Ohio Rapid Assessment Method for Wetlands February 2001 (Version 5.0). The ORAM is used to evaluate and score a wetland based on six metrics which includes wetland size, upland buffers and surrounding land use, hydrology, habitat special wetland communities, and plant communities, interspersion, and microtopography. Information on both of these assessment procedures is presented below.

4.1.1 Corps Wetland Procedures

As previously mentioned, based on the Corps procedures, three factors described below must be present for an area to be considered a wetland:

- Wetland vegetation (hydrophytic, or water-loving vegetation)
- Wetland hydrology (capable of sustaining wetland vegetation)
- Wetland soil (hydric)

Wetland Vegetation

The vegetation at a site is evaluated to determine if it is hydrophytic, which occurs in areas where frequent flooding is a controlling influence on the plant species present. The existing vegetation is identified and then assigned an “indicator category,” as specified in the Corps Manual. The indicator categories classify the plant as typically occurring in a wetland or typically occurring in an upland. The indicator categories are listed and defined on the following table.

Table 2
Wetland Vegetation Indicator Categories

Indicator Category	Indicator Symbol	Definition
Obligate Wetland Plants	OBL	Plants that occur in wetlands 99%
Facultative Wetland Plants	FACW	Plants that occur in wetlands 67% to 99%
Facultative Plants	FAC	Plants that occur in wetlands 33% to 67% or plants that occur in uplands 33% to 67%
Facultative Upland Plants	FACU	Plants that occur in uplands 67% to 99%
Obligate Upland Plants	UPL	Plants that occur in uplands 99%

The Corps-approved methods for determining hydrophytic vegetation include the following:

- Rapid Test for Hydrophytic Vegetation – all dominant plant species observed are either OBL or FACW.
- Dominance Test – greater than 50 percent of the dominant plant species are classified as OBL, FACW, or FAC.
- Prevalence Index – the prevalence index (PI) is a weighted average of the wetland indicator status of all species in a sample plot. The vegetation is considered to be hydrophytic if the PI is 3.0 or less.
- Morphological Adaptations – physical characteristics of plants that have adapted to living in wetlands, including buttressed trunks, multi-stemmed trunks, shallow root systems, etc.

If a sampling station "passes" one of these methods, it meets the criteria for wetland vegetation.

Wetland Hydrology

The hydrology at each sampling station at a site is evaluated to identify if the site shows signs of periodic inundation or if the surrounding soil appears to be saturated for some period during the growing season. Sources of water and hydrologic indicators are identified. Some primary hydrologic indicators include surface water, soil that is saturated in the upper 12 inches, watermarks, drift lines, algal mats, iron deposits, aquatic fauna, true aquatic plants, sulfidic odor, and oxidized rhizospheres on living roots. Secondary hydrologic indicators include surface soil cracks, crayfish borrows, stunted or stressed plants, geomorphic position, etc.

If a sampling station exhibits one or more of the primary hydrologic indicators or two or more of the secondary hydrologic indicators, it meets the criteria for wetland hydrology.

Wetland Soil

Wetland soil or hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions. Through time, the anaerobic or oxygen-free

soil favors the growth of hydrophytic vegetation. Hydric soils may be classified into two categories: organic and mineral. Organic soils develop under conditions of nearly continuous saturation or inundation. These types of soils are typically called peats and mucks. Mineral hydric soils have a wide range of textures and colors. They are composed mainly of clay, silt, and/ or sand with varying amounts of organic matter. These soils are saturated long enough to produce soil properties associated with a reducing or oxygen-deficient environment.

Hydric soils are indicated regionally by national and local classifications developed by the United States Department of Agriculture. There are many field indicators of hydric soils including: organic soils (organic horizon greater than 16 inches in the upper 32 inches – peats or mucks); histic epipedon (an eight to 16-inch organic horizon at or near the surface that is saturated for 30 or more consecutive days); sulfidic material (contains hydrogen sulfide with its characteristic rotten egg odor); loamy gley matrix; etc.

If a sampling station exhibits one or more of the hydric soil indicators, it meets the criteria for a wetland soil.

During a wetland delineation, sampling stations are established within the site to evaluate the presence of the three wetland factors. Upland sampling stations are also established to determine the wetland-upland (non-wetland) boundary. Upland sampling stations are evaluated using the wetland delineation protocol above.

4.1.2 ORAM Procedures

The ORAM is used to evaluate and score a wetland based on six metrics which includes wetland size, upland buffers and surrounding land use, hydrology, habitat special wetland communities, and plant communities, interspersion, and microtopography. Each metric is individually scored and then summed to provide a score representative of the wetland. The final score is used to determine whether the wetland can be classified as a Category 1, Category 2, or Category 3 wetland. The ORAM is used to determine the category of a wetland as defined by the Wetland Antidegradation Rule, OAC Rule 3745-1-54.

Category 1 Wetlands

The Ohio Rapid Assessment Method for Wetlands manual uses the Ohio Administrative Code Rule 3745-1-54(C)(1) definition to describe a Category 1 wetland as wetlands which "…support minimal wildlife habitat, and minimal hydrological and recreational functions," and as wetlands which "… do not provide critical habitat for threatened or endangered species or contain rare, threatened or endangered species." Additional characteristics of a Category 1 wetland include, hydrologically isolated, low species diversity, no significant habitat, limited potential to achieve beneficial wetland functions, and/or a predominance of non-native species. Category 1 wetlands may be wetlands that have been subjected to human disturbance or have been degraded.

Category 2 Wetlands

Category 2 wetlands are defined by the Ohio Administrative Code Rule 3745-1-54(C)(2) as wetlands which "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Category 2 wetlands are considered as good quality and usually do not provide habitat for rare, threatened, or

endangered species.

Category 3 Wetlands

Category 3 wetlands are defined as "... superior habitat, or superior hydrological or recreational functions." Characteristics of a Category 3 wetland may include high levels of species diversity, high percentage of native species, and/or high functional values and may provide habitat for threatened or endangered species. Examples provided in the manual of Category 3 wetlands include high quality mature forested wetlands, vernal pools, bogs, or fens.

4.2 Stream Evaluation

Collective Efforts conducted the stream evaluation by characterizing the stream habitat within the study area using the stream evaluation protocols published by the Ohio EPA. According to the Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams (October 2018, Version 4.0), there are two methods of evaluation; the selection of the method used depends on the size of the drainage area and the depth of the pools. Streams with drainage areas greater than 1.0 square mile (mi^2) or with pools having depths over 40 centimeters (cm) were evaluated using the Qualitative Habitat Evaluation Index (QHEI) evaluation form protocols established in the Ohio EPA manual Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI) (June 2006). A Headwater Habitat Evaluation Index (HHEI) evaluation was completed for streams with a drainage area less than 1.0 mi^2, or where the pools of water were less than 40 cm in depth using the protocols established in the Ohio EPA manual Field Methods for Evaluating Primary Headwater Streams in Ohio (October 2018, Version 4.0). Drainage areas for the watershed upstream of the evaluated stream reaches were determined by desktop analysis using the interactive USGS StreamStats mapping tool.

The HHEI was used to evaluate the physical habitat and biological potential of a Primary Headwater Stream by evaluating three metrics within a 200-foot stream reach. The three metrics included in the HHEI score include stream channel substrate, maximum pool depth, and average bankfull width. Each metric was individually calculated and then summed to calculate the final HHEI score.

The QHEI was used to evaluate the physical habitat of a larger streams in Ohio by assessing six metrics which include substrate, instream cover, channel morphology, bank erosion and riparian zone, pool/glide and riffle/run quality, and gradient. Each metric was individually scored and then summed to provide a score representative of the total evaluated stream reach.

5.0 RESULTS AND CONCLUSIONS

The results and conclusions of the wetland delineation and stream evaluation are presented below.

5.1 Wetland Delineation Results

The wetland delineation field investigation (site walk) for the sewer alignment was conducted on November 18, 20, and 24, 2020 by Ms. Rachel Galloway and Ms. Brianna Shea of Collective Efforts, and on November 25, 2020 by Ms. Rachel Galloway and Mr. Dominic Costantini of Collective Efforts. The additional study areas for the proposed pump station location and Kensington Wastewater Treatment Plant were evaluated during a site walk conducted on June 8, 2021, by Ms. Cindy Zuch and Ms. Rachel Galloway of Collective Efforts. The purpose of the

site walk was to determine if wetland conditions existed within the study area. During the site walk, the project area in its entirety was evaluated for indications of wetland hydrology, hydrophytic vegetation, and hydric soils. Generally, the area was comprised of vegetated roadsides with streams crossing at multiple locations and wetlands located on streambanks or along the edge of slope on Lincoln Highway. Photographs were taken throughout the study area during of the site walk and are presented in Appendix A. The field observations were documented on USACE wetland data sheets and ORAM Forms for Wetland Categorization (Appendix B).

Collective Efforts identified five wetlands within the study area and labeled them as WET-1 through WET-5. Some of the identified wetlands run parallel to the proposed sewer alignment and potentially extend beyond the limits of the study area. Therefore, if the final sewer alignment shifts, additional wetland acres could be impacted. An overall view of the identified wetlands is presented on Figure 6, with individual features presented on Figures 7 through 9. Table 3 summarizes the identified wetlands, the type (category) of wetland, the figures the individual wetland is shown on, the sample identification and location, the associated upland point sample identification and location, and the approximate size of the wetland (within the study area boundary).

Table 3
Summary of Wetlands Identified

Wetland Name	Category	Figure	Sample Point ID	Sample Point Lat/Long	Upland Sample Point ID	Upland Sample Point Lat/Long	Approximate Delineated Area of Wetland Within the Study Area (acres)
WET-1	PEM[1]	6, 7	WET-1SP	40.749292, -80.939919	WET-1/2UP	40.749399, -80.939807	0.06[3]
WET-2	PEM	6, 7	WET-2SP	40.748867, -80.94029	WET-1/2UP	40.749399, -80.939807	0.03[3]
WET-3	PEM[2]	6, 8	WET-3SP	40.741588, -80.95007	WET-3UP	40.74134, -80.950489	0.010[3]
WET-4	PEM[2]	6, 8	WET-4SP	40.742912, -80.948215	WET-4UP	40.742734, -80.948528	0.009[3]
WET-5	PEM	6, 9	WET-5SP	40.756281, -80.935675	WET-5UP	40.756153, -80.935612	0.03

1. PEM is a palustrine emergent wetland.
2. Wetlands extend outside of the study area. Based on observations made in the field there is a potential change in vegetation outside of the study area. Categories assigned are based on vegetation observed within the study area; note that vegetation may be different outside of the study area.
3. Estimated acreage is only for the area within the study area. Wetlands extend outside of the study area.

5.1.1 Wetland Study WET-1 (WET-1SP)

A sampling station designated as WET-1SP (Photograph 5) was located on a flat area of the right down streambank of Sandy Creek in the area between Campbell Road and Canal Street

(Figure 7). The vegetation, hydrology, and soil identified in this sampling station are discussed below.

Vegetation

In general, vegetation in this study area was typically wet. There was no vegetation to record in the tree, sapling/shrub, or woody vine strata. The dominant vegetation within the herb stratum included *Phalaris arundinacea* (FACW) with 60 percent cover and *Typha latifolia* (OBL) with 40 percent cover. Using the dominance test for hydrophytic vegetation, the review of the vegetation indicated that the dominant plants were hydrophytic. WET-1SP met the criteria for wetland vegetation.

Hydrology

WET-1SP lies on a flat area of the right downstream bank of Sandy Creek, which lies at the bottom of the roadside slope of Campbell Road. Stormwater runoff flows down this roadside slope of Campbell Road to this flat area, along with being periodically inundated by Sandy Creek at times of flooding. During the investigation, the soil was saturated at the ground surface at the sampling point location with standing water. Iron deposits were observed in standing water (Photograph 6). Primary hydrologic indicators included the presence of standing water, high water table and saturation. Secondary hydrologic indicators included the geomorphic position and the FAC-Neutral Test. WET-1SP met the wetland criteria for hydrology.

Soil

The first 12 inches of soil at the sampling location consisted of dark wet, mucky, clayey silt, characterized by a 10YR 3/1 hue, value and chroma in the Munsell Color Chart with redox features present as a 10YR 4/3 hue, value and chroma. At 12 inches, the saturation of the soil prevented the soils to be characterized further. This soil qualifies as the hydric soil indicator Redox Dark Surface (F6). The location of WET-1SP lies within the Zepernick silt loam (ZeA), which is described as occasionally flooded. The Zepernick silt loam is included on the county hydric soil list. The soil met the wetland criteria.

Field Findings

WET-1SP met all three of the criteria for wetland determination. Hydrophytic vegetation was present within the dominate species found in the herb stratum. Field observations met primary wetland hydrology indicator criteria as well as criteria for hydric soils. Overall, the climatic/hydrological conditions on the site were typical for this time of year. It was determined that this sampling area is part of a wetland identified as WET-1 with the associated upland sample point as WET-1/2UP (Photograph 7). The upland sample point WET-1/2UP is representative of both Wetland WET-1 and Wetland WET-2 (discussed later). WET-1 extends outside of the study area with approximately 0.06 acres located within the study area. Wetland WET-1 is located on the right bank of Sandy Creek and Wetland WET-2 located on the left bank (Photograph 8) and extends out. The approximate limits of the wetland area and sample points were recorded using GPS and are shown on Figure 7.

Wetland WET-2 was categorized as a PEM wetland. Wetland WET-1 was further evaluated using the ORAM. WET-1 received a final score of 31, which falls within the Category 1 or 2

gray zone. WET-1 was assigned the higher of the two categories as a Modified Category 2 wetland.

5.1.2 Wetland Study Area WET-2 (WET-2SP)

A sampling station designated as WET-2SP (Photograph 9) was located on the left bank of Sandy Creek in the area between Campbell Road and Canal Street (Figure 7). The vegetation, hydrology, and soil identified in this sampling station are discussed below.

Vegetation

In general, vegetation in this study area was typically wet. There was no vegetation to record in the tree, sapling/shrub, or woody vine strata. The dominant vegetation within the herb stratum included *Phalaris arundinacea* (FACW) with 60 percent cover and *Typha latifolia* (OBL) with 40 percent cover. Using the dominance test for hydrophytic vegetation, the review of the vegetation indicated that the dominant plants were hydrophytic. WET-2SP met the criteria for wetland vegetation.

Hydrology

WET-2SP lies on a flat area of the left downstream bank of Sandy Creek which lies at the bottom of the roadside slope of Canal Street. Stormwater runoff flows down this roadside slope off Canal Street to this flat area, along with being periodically inundated by Sandy Creek at times of flooding. The soil was saturated at the ground surface at the sampling point location with pockets of standing water. Primary hydrologic indicators included the presence of surface water, a high-water table, and saturation. Iron deposits were observed in standing water (Photograph 10). Secondary hydrologic indicators included the geomorphic position and the FAC-Neutral Test. WET-2SP met the wetland criteria for hydrology.

Soil

The first 14 inches of soil at this sampling location consisted of dark wet, mucky, clayey silt, characterized by a 10YR 3/1 hue, value and chroma in the Munsell Color Chart with redox features present as a 10YR 4/3 hue, value and chroma. At approximately 14 inches, the saturation of the soil prevented the soils to be characterized further. This soil qualifies as the hydric soil indicator Redox Dark Surface (F6). The location of WET-2SP lies within the Zepernick silt loam (ZeA), which is described as occasionally flooded. The Zepernick silt loam included on the county hydric soil list but is not listed on the state or national hydric soils lists. The soil present at WET-2SP met wetland criteria.

Field Findings

WET-2SP met all three of the criteria for wetland determination. Hydrophytic vegetation was present within the dominate species found in the herb stratum. Field observations met primary wetland hydrology indicator criteria as well as criteria for hydric soils. Overall, the climatic/hydrological conditions on the site were typical for this time of year. It was determined that this sampling area is part of a wetland identified as WET-2 with the associated upland sample point as WET-1/2UP (Photograph 7). WET-2 extends outside of the study area with approximately 0.03 acres located within the study area. WET-2 is located on the left bank (looking in the downstream direction) of Sandy Creek and extends outside of the limits of the

study area (Photograph 8). The approximate limits of the wetland area and sample points were recorded using GPS and are shown on Figure 7.

Wetland WET-2 was categorized as a PEM wetland. Wetland WET-2 was further evaluated using the ORAM. WET-2 received a final score of 31, which falls within the Category 1 or 2 gray zone. WET-2 was assigned the higher of the two categories and was categorized as a Modified Category 2 wetland.

5.1.3 Wetland Study Area WET-3 (WET-3SP)

A sampling station designated as WET-3SP (Photographs 11 and 12) was located at the edge of the roadside slope of Lincoln Highway at the edge of the proposed sewer line buffer (Figure 8).

Vegetation

There was no vegetation to record in the tree, sapling/shrub, or woody vine strata. *Cornus sericea* was observed in the area. The dominant vegetation within the herb stratum included *Phalaris arundinacea* (FACW) with 60 percent cover and *Typha latifolia* (OBL) with 30 percent cover. Other species noted included *Scirpus cyerinus* (OBL) with 10 percent cover. Using the dominance test for hydrophytic vegetation, the review of the vegetation indicated that the dominant plants were hydrophytic. WET-3SP met the criteria for wetland vegetation.

Hydrology

WET-3SP was located at the edge of the roadside slope of the Lincoln Highway. Runoff from the road flows down this roadside slope to this flat area, along with receiving water from precipitation. The soil was saturated at the ground surface at the sampling point location with standing water present. Primary hydrologic indicators included the presence of surface water, a high water table, and saturation. Secondary hydrologic indicators included the FAC-Neutral Test. WET-3SP met the wetland criteria for hydrology.

Soil

The first 14 inches of soil consisted of clayey silt, characterized by a 10YR 3/2 hue, value and chroma in the Munsell Color Chart with redox features present as a 7.5YR 4/6 hue, value and chroma. At approximately 14 inches, the saturation of the soil prevented the soils to be characterized further. This soil qualifies as the hydric soil indicator Redox Dark Surface (F6). The location of WET-3SP lies within the Orrville silt loam (OrA). The Orrville silt loam is listed on the county hydric soil list but is not listed on the state or national hydric soils lists. The soil present at WET-3SP met wetland criteria.

Field Findings

WET-3SP met all three of the criteria for wetland determination. Hydrophytic vegetation was present within the dominate species found in the herb stratum. Field observations met primary wetland hydrology indicator criteria as well as criteria for hydric soils. Overall, the climatic/hydrological conditions on the site were typical for this time of year. It was determined that this sampling area is part of wetland identified as WET-3 with approximately 0.010 acres within the study area. WET-3 potentially extends outside of the study area in the southeast direction and may be larger than the approximate acreage. The outer boundary closest to the

proposed sewer line buffer (study area) and sample points were recorded using GPS and shown on Figure 8. The associated upland sample point was identified as WET-3UP (Photograph 13).

Wetland WET-3 was categorized as a PEM wetland based on the vegetation present within the study area, however the vegetation present appears to change as the wetland extends outside of the study area. Wetland WET-3 was further evaluated using the ORAM. WET-3 is located at the edge of the study area and potentially extends in the southeast direction outside of the study area. WET-3 was scored based on the field observations made in the WET-3SP sample area. Based on these observations, WET-3 received a final score of 34, which falls within the Category 1 or 2 gray zone. WET-3 was assigned the higher of the two categories and was categorized as a Modified Category 2 wetland.

5.1.4 Wetland Study Area WET-4 (WET-4SP)

A sampling station designated as WET-4SP (Photograph 14) was located at the edge of the roadside slope of Lincoln Highway at the edge of the proposed sewer line buffer (Figure 8). The vegetation, hydrology, and soil identified in this sampling station are discussed below.

Vegetation

There was no vegetation recorded in the tree, sapling/shrub, or woody vine strata. The dominant vegetation within the herb stratum included *Phalaris arundinacea* (FACW) with 70 percent cover and *Solidago gigantea* (FACW) with 20 percent cover. Other species noted included *Scirpus cyerinus* (OBL) with 10 percent cover. Using the dominance test for hydrophytic vegetation, the review of the vegetation indicated that the dominant plants were hydrophytic. WET-4SP met the criteria for wetland vegetation.

Hydrology

WET-4SP was located at the edge of the roadside slope of Lincoln Highway. Runoff from the road flows down this roadside slope to this depression area, along with receiving water from precipitation. The soil was saturated at the ground surface. Standing water was not observed at the sample points but was observed in the area outside of the study area (Photograph 15). Primary hydrologic indicators included the presence of a high water table and saturation. Secondary hydrologic indicators included the FAC-Neutral Test. WET-4SP met the wetland criteria for hydrology.

Soil

The first two inches of soil consisted of saturated clayey silt, characterized by a 10YR 4/2 hue, value and chroma in the Munsell Color Chart with redox features present as a 10YR 5/6 hue, value and chroma. The next 10 inches of soil consisted of saturated clayey silt, characterized by a 10YR 5/1 hue, value and chroma in the Munsell Color Chart with redox features present as a 10YR 6/6 hue, value and chroma. This soil qualifies as the hydric soil indicator Depleted Matrix (F3). The location of WET-4SP lies within the Orrville silt loam (OrA). The Orrville silt loam is listed on the county hydric soil list but is not listed on the state or national hydric soils lists. The soil present at WET-4SP met wetland criteria.

Field Findings

WET-4SP met all three of the criteria for wetland determination. Hydrophytic vegetation was present within the dominate species found in the herb stratum. Field observations met primary wetland hydrology indicator criteria as well as criteria for hydric soils. Overall, the climatic/hydrological conditions on the site were typical for this time of year. It was determined that this sampling area is part of wetland identified as WET-4 with approximately 0.009 acres within the study area. WET-4 potentially extends outside of the study area in the southeast direction and may be larger than the approximate acreage. The outer boundary closest to the proposed sewer line and sample points were recorded using GPS and shown on Figure 8. The associated upland sample point was identified as WET-4UP (Photograph 16).

Wetland WET-4 was categorized as a PEM wetland based on the vegetation present within the study area, however the vegetation present appears to change as the wetland extends outside of the study area. Wetland WET-4 was further evaluated using the ORAM. WET-4 lies at the edge of the proposed sewer line buffer and potentially extends in the southeast direction outside of the study area. WET-4 was scored based off the field observations made in the WET-4SP sample area. Based on these observations, WET-4 received a final score of 34, which falls within the Category 1 or 2 gray zone. WET-4 was assigned the higher of the two categories and was categorized as a Modified Category 2 wetland.

5.1.5 Wetland Study Area WET-5 (WET-5SP)

A sampling station designated as WET-5SP (Photograph 17) was located in a flat area of the left downstream bank of an unnamed tributary east of 1st Street (Figure 9). The vegetation, hydrology, and soil identified in this sampling station are discussed below.

Vegetation

There was no vegetation recorded in the tree, sapling/shrub, or woody vine strata. The dominant vegetation within the herb stratum included *Phalaris arundinacea* (FACW) with 90 percent cover. Other species noted included *Eutrochium maculatum* (OBL) with 5 percent cover and *Vernonia noveboracensis* (FACW) with 5 percent cover. Using the dominance test for hydrophytic vegetation, the review of the vegetation indicated that the dominant plants were hydrophytic. WET-5SP met the criteria for wetland vegetation.

Hydrology

WET-5SP was located in a flat area of the streambank of an unnamed tributary and is saturated at times of precipitation or flooding. The soil was saturated at the ground surface at the time of the investigation. Primary hydrologic indicators included the presence of a high water table and saturation. Secondary hydrologic indicators included the FAC-Neutral Test and geomorphic position. WET-5SP met the wetland criteria for hydrology.

Soil

The first two inches of soil consisted of saturated clayey silt, characterized by a 10YR 3/2 hue, value and chroma in the Munsell Color Chart with redox features present as a 10YR 4/6 hue, value and chroma. The next 10 inches of soil consisted of saturated clayey silt, characterized by a 10YR 3/1 hue, value and chroma in the Munsell Color Chart with redox features present as

a 10YR 4/6 hue, value and chroma. This soil qualifies as the hydric soil indicator Redox Dark Surface (F6). The location of WET-5SP lies within the Zepernick silt loam (ZeA), which is described as occasionally flooded. The Zepernick silt loam included on the county hydric soil list but is not listed on the state or national hydric soils lists. The soil present at WET-5SP met wetland criteria.

Field Findings

WET-5SP met all three of the criteria for wetland determination. Hydrophytic vegetation was present within the dominate species found in the herb stratum. Field observations met primary wetland hydrology indicator criteria as well as criteria for hydric soils. Overall, the climatic/hydrological conditions on the site were typical for this time of year. It was determined that this sampling area is part of an approximate 0.03-acre wetland within the study area identified as WET-5 with the associated upland sample point as WET-5UP (Photograph 18). The approximate limits of the wetland area and sample points were recorded using GPS and shown on Figure 9.

Wetland WET-5 was evaluated as a PEM wetland. Wetland WET-5 was further evaluated using the ORAM. WET-5 received a final score of 25, which falls within the Category 1 criteria. WET-1 was categorized as a Category 1 wetland.

5.1.6 Wetland Study Area (SP-A)

A sampling station designated as SP-A (Photograph 19) was located in the flat area of the left downstream bank of Sandy Creek at the edge of the roadside slope of Canal Street. The sample point was collected during the site visit based on the close proximity to the proposed sewer line buffer and the dominant presence of *Phalaris arundinacea* (FACW). The flat area lies at the edge of the proposed sewer line buffer and based on further desktop analysis ultimately falls outside of the study area (Figure 7). Descriptions of the observed vegetation, hydrology, and soil are presented below.

Vegetation

There was no vegetation to record in the tree, sapling/shrub, or woody vine strata. The dominant vegetation within the herb stratum included Phalaris arundinacea (FACW) with 90 to 100 percent cover. Using the dominance test for hydrophytic vegetation, the review of the dominance of Phalaris arundinacea (FACW) indicated that SP-A met the criteria for wetland vegetation.

Hydrology

SP-A lies on a flat area of the left downstream bank of Sandy Creek which lies at the bottom of the roadside slope of Canal Street. Runoff flows down this roadside slope off Canal Street to this flat area, along with being periodically inundated by Sandy Creek at times of flooding. There was no surface water, water table, or saturation visible at this point. No primary indicators of wetland hydrology were present. Geomorphic position and FAC-Neutral Test were present representing secondary indications of wetland hydrology. With two secondary indication criteria being met, SP-A met the criteria of wetland hydrology.

Soil

From 0 to 12 inches below ground surface, the soil at this sampling station consisted of a dry, crumbly silty clay, characterized by a 100 percent 10YR 4/3 hue, value, and chroma in the Munsell Soil Color Chart. This does not meet the criteria of any of the hydric soil indicators. The location of SP-A lies within the Zepernick silt loam (ZeA), which is described as occasionally flooded. The Zepernick silt loam included on the county hydric soil. The soil present at does not meet the criteria of hydric soil.

Field Findings

Based on only two of the three criteria being met, no wetlands were identified within the sampling station of SP-A. Overall, the climatic/hydrological conditions on the site were typical for this time of year. The approximate location of this sampling station was recorded using a GPS and is shown on Figure 7.

5.1.7 Wetland Study Area (SP-B)

A sampling station designated as SP-B (Photograph 20) was located in the flat field area located within the newly proposed pump station study area. The land is slightly sloping/flat land that is currently used for farming. There appeared to be a small drainage ditch east of the proposed pump station study area located outside the study area limits (Photograph 21). The site includes an oil or gas well and an electric transmission tower. The sample point was collected during the site visit based on the close proximity to the drainage feature and the ground being slightly damp at the time of the site visit, which could have been due to the recent rain event before the site visit. Descriptions of the observed vegetation, hydrology, and soil are presented below.

Vegetation

There was no vegetation to record in the tree, sapling/shrub, or woody vine strata. The dominant vegetation within the herb stratum included an unidentified grass species. The area was recently mowed at the time of the site visit making plant identification difficult for the grass species present. SP-B did not meet the criteria for wetland vegetation.

Hydrology

SP-B lies on a flat mowed area of the Lincoln Highway. Runoff flows down this roadside slope off Lincoln Highway to this flat field area. There is a small drainage channel located east of the sample point outside of the study area. There was no surface water, water table, or saturation visible at this sample point. No primary indicators of wetland hydrology were present. Secondary hydrologic indicators included geomorphic position. No primary hydrology indicators were observed at the time of the site visit. The presence of two secondary indicators or one primary indicator are required to meet hydrology criteria. Therefore, SP-B did not meet the criteria of wetland hydrology.

Soil

From 0 to 10 inches below ground surface, the soil at this sampling station consisted of a slightly damp, compacted silty clay, characterized by a 100 percent 10YR 4/4 hue, value, and

chroma in the Munsell Soil Color Chart. Due to a restrictive layer of compacted soils, soils below 10 inches were not observed. This does not meet the criteria of any of the hydric soil indicators. The location of SP-B lies within the Zepernick silt loam (ZeA), which is described as occasionally flooded. The Zepernick silt loam included on the county hydric soil. The soil present at SP-B does not meet the criteria of hydric soil.

Field Findings

Based on the absence of three wetland criteria, no wetlands were identified within the sampling station of SP-B. Overall, the climatic/hydrological conditions on the site were typical for this time of year. The approximate location of this sampling station was recorded using a GPS and is shown on Figure 14.

5.2 Stream Evaluation Results

Collective Efforts performed the stream field investigation for the sewer alignment on November 18, 20, 24 and 25, 2020 by Ms. Galloway, Ms. Shea, and/or Mr. Costantini of Collective Efforts. An additional field investigation of the newly proposed pump station location and the Kensington Wastewater Treatment Plant location was completed on June 8, 2021, by Ms. Galloway and Ms. Zuch. They walked the length of the identified streams within or crossing the study area and documented the findings on data forms for each stream (Appendix C). Photographs taken during the field investigation are presented in Appendix A.

Collective Efforts identified five streams within or crossing the study area and labeled them as STREAM-1 through STREAM-5. The general locations of the identified streams are presented on Figure 6, with individual features presented on Figures 7 through 13. As shown on Figures 14 and 15, no streams were identified at the new pump station location or the Kensington Water Treatment Facility. Table 4 below summarizes the identified streams, approximate drainage area, the figures that the streams are shown on, sample identification, sample location, and the applicable data form (QHEI or HHEI).

Table 4
Summary of Streams Identified

Stream Name	Drainage Area of Stream (mi^2)	Figure	Sample Point ID	Sample Point Lat/Long	Stream Data Form Used
STREAM-1	2.44	6, 7, 9, 10	STREAM-1SP	40.748739, -80.941735	QHEI[1]
STREAM-2	3.57	6, 7, 8, 10, 11	STREAM-2SP	40.750572, -80.936768	QHEI
STREAM-3	0.54	6, 10	STREAM-3SP	40.752868, -80.938592	HHEI[2]
STREAM-4	0.081	6, 12	STREAM-4SP	40.752663, -80.931986	HHEI
STREAM-5	0.14	6, 13	STREAM-5SP	40.758051, -80.92694	HHEI

1. QHEI – Qualitative Habitat Evaluation Index and Use Assessment Field Sheet
2. HHEI – Primary Headwater Habitat Field Evaluation Index Form

5.2.1 STREAM-1 (STREAM-1SP)

During the site walk and from the desktop analysis, a stream (an unnamed tributary to Sandy Creek) was identified crossing the proposed sewer line in three locations. The furthest downstream crossing of this unnamed tributary was on Campbell Road (Photographs 22 and 23) and shown on Figure 7. As shown on Figure 10, the second crossing is at Market Street (Photograph 24) and the third crossing is underneath Clinton Street (Photograph 25) as shown on Figure 9. The stream was observed to have flowing water throughout the entire length of the project area at the time of the site visit and flows into Sandy Creek. The stream is an unnamed tributary located within the Tuscarawas (05040001) basin watershed. The evaluation findings for this unnamed tributary are presented below.

A sampling station was designated as STREAM-1SP (Photographs 22 and 23) and was located near the proposed sewer line crossing the stream under a bridge on Campbell Road. This sample point was chosen as a representative section of the stream. A QHEI Field Sheet was completed for STREAM-1. STREAM-1 received a final score of 56.

STREAM-1 was flowing south in a gently sinuous pattern with vegetated hillslopes on both banks. The stream channel was approximately ten feet wide (top of bank to top of bank) and one foot deep (top of bank to toe of bank) with a flow width of seven to eight feet and a flow depth of three to four inches at the time of observation. The substrate consisted of mostly gravel with some sand, silt, and cobble in the pools and riffles. The left bank and right bank (looking in the downstream direction) had some steep banks with slightly undercut banks with exposed roots. The stream was shaded by 55 to 85 percent canopy cover. The location of this stream sampling station is shown as STREAM-1SP on Figure 7.

5.2.2 STREAM-2 (STREAM-2SP)

During the site walk and based on the desktop analysis, a stream was identified running parallel to the Lincoln Highway at the edge of the study area, as shown in Figure 7, 8, 10, and 11 (Photograph 26). STREAM-2 is identified as Sandy Creek within the Tuscarawas (05040001) basin watershed. STREAM-2 crosses the proposed sewer line at three locations. This stream crosses the proposed sewer line in the area between Canal Street and Campbell Road and crosses underneath the bridge structure carrying Canal Street (Photographs 27 and 28). The stream crosses the proposed sewer line again under the bridge structure carrying 1st street (Photographs 29 and 30). The stream had flowing water throughout the entire length of the project area at the time of the site visit. The evaluation findings for STREAM-2 are presented below.

A sampling station was designated as STREAM-2SP (Photographs 29 and 30) and was located near the proposed sewer line crossing the stream under a bridge structure carrying 1st Street. This sample point was chosen as a representative section of the stream. A QHEI Field Sheet was completed for STREAM-2SP. STREAM-2SP received a final score of 54.

STREAM-2 was flowing west in a gently sinuous pattern with vegetated hillslopes on both banks. The stream channel was approximately 12 feet wide (top of bank to top of bank) and 2 feet deep (top of bank to toe of bank) with a flow width of approximately 10 feet and a flow depth of one foot at the time of observation. The substrate consisted of mostly gravel with some sand, silt, and cobble in the pools and riffles. The left bank had a general flat incline vegetation. The

right bank had gradual slope into a residential yard. The stream was shaded by 55 to 85 percent canopy cover. The location of this stream sampling station is shown as STREAM-2SP on Figure 10.

5.2.3 STREAM-3 (STREAM-3SP)

During the site walk and based on the desktop analysis, a stream (unnamed tributary to Sandy Creek) was identified crossing the proposed sewer line at Cemetery Road (off of 2nd Street) as shown on Figure 10. The stream had flowing water throughout the entire length of the study area at the time of the site visit. The stream is unnamed tributary flowing south into STREAM-1, which flows into Sandy Creek within the Tuscarawas (05040001) basin watershed. The evaluation findings for STREAM-3 are presented below.

A sampling station designated as STREAM-3SP (Photographs 31 and 32) crossed the study area under a bridge structure carrying Cemetery Road. This sample point was chosen as a representative section of the stream. A HHEI form was completed for STREAM-3SP. STREAM-3SP received a final score of 66.

STREAM-3 was flowing south into STREAM-1 in a gently sinuous pattern with vegetated hillslopes on both banks. The stream channel was approximately 10 feet wide (top of bank to top of bank) and 1.5 feet deep (top of bank to toe of bank) with a flow width of approximately six feet and a flow depth of four inches deep at the time of observation. The substrate consisted of mostly gravel with some silt, and leaf debris. Both banks had a gradual slope into a residential yard. The stream was shaded by 85 percent open canopy. The location of this stream sampling station is shown as STREAM-3SP on Figure 10.

5.2.4 STREAM-4 (STREAM-4SP)

During the site walk, a stream (an unnamed tributary to Sandy Creek) was identified at the edge of the study area at the edge of pavement on the Lincoln Highway with a concrete headwall. The stream had no flowing water in the channel at the time of the site visit. The channel wraps around a parking lot and appears to flow through the concrete headwall at times of flow and discharges into Sandy Creek within the Tuscarawas (05040001) basin watershed. The evaluation findings for the STREAM-4 are presented below.

A sampling station was designated as STREAM-4SP (Photographs 33 and 34) and located at the edge of the Lincoln Highway pavement. This sample point was chosen as a representative section of the stream. A HHEI form was completed for STREAM-4SP. STREAM-4SP received a final score of 34.

The stream flowed south into a concrete headwall. The stream channel was approximately 4.5 feet wide (top of bank to top of bank) and two feet deep (top of bank to toe of bank) with no flow at the time of evaluation. The substrate consisted of mostly cobble, gravel, and leaf debris. Both banks were steep with some erosion present. The stream was shaded by 90 percent open canopy. The location of this stream sampling station is shown as STREAM-4SP on Figure 12.

5.2.5 STREAM-5 (STREAM-5SP)

During the site walk, a stream (an unnamed tributary to Sandy Creek) was identified crossing the study area in the field east of Randel Road, running parallel to the tree line at the edge of the field. The stream had no flowing water in the channel at the time of the site visit, but a small

bed and bank was observed (Photographs 35 through 37). The channel appeared to end near the edge of the field and tree line. The channel flows south through the field at times of heavy precipitation and meets with a culvert that discharges into Sandy Creek within the Tuscarawas (05040001) basin watershed. The evaluation findings for the STREAM-5 are presented below.

A sampling station was designated as STREAM-5SP (Photographs 35-37) and was located in the field east of Randel Road running parallel to the tree line at the edge of the field. This sample point was chosen as a representative section of the stream. A HHEI form was completed for STREAM-5SP. STREAM-5SP received a final score of 25.

STREAM-5 flows south at the edge of the field, parallel to the tree line in a with minimal sinuosity. The stream channel at the sample point was approximately three feet wide (top of bank to top of bank) and 0.5 feet deep (top of bank to toe of bank) with no water flow at the time of observation. The predominant substrate types present consisted of silt and leaf pack/woody debris, with some gravel and sand present. Both banks were flat with the tree line parallel to the right bank and the field on the left bank. The stream was shaded by 90 to 100 percent open canopy. The location of this stream sampling station is shown as STREAM-5SP on Figure 13.

6.0 SUMMARY

Five wetlands and five streams were identified within the project area for the Hanoverton Sewer Collection System Improvements Project. Four of the wetlands were identified along Lincoln Highway and/or near Sandy Creek and ranged in size from approximately 0.009 acres to 0.06 acres. These four wetlands were categorized as a modified ORAM Category 2. The fifth wetland area was located along an unnamed tributary near 1st Street and Clinton Street. This wetland was approximately 0.03 acres and was categorized as an ORAM Category 1. All five wetlands were classified as palustrine emergent wetlands. The general locations of the five wetlands are shown on Figure 6.

The five streams were located throughout the study area, some crossed multiple times. One of the streams was Sandy Creek and the other four streams were unnamed tributaries to Sandy Creek. The proposed sewer alignment crosses these streams at nine different locations. The streams had associated drainage areas ranging from approximately 0.081 to 3.57 square miles. The first two streams had calculated QHEI scores of 54 and 56. The other three streams had calculated HHEI scores ranging from 25 to 66. The general locations of the five streams are shown on Figure 6.

The conclusions from this wetland delineation are valid for one year. The conclusions may no longer apply if significant land disturbances occur at or near this site before project construction.

7.0 IMPACT ASSESSMENT AND RECOMMENDATIONS

An assessment of potential impacts (temporary and permanent) caused by this sewer improvement project is presented below. The assessment is based on the findings of the wetland delineation and stream evaluation. Five wetlands were identified within the study area. The wetlands run parallel to the proposed sewer alignment and extend beyond the study area, therefore, if the sewer alignment shifts, additional wetland acres could be impacted. It is preferrable that wetlands be avoided if possible so that direct and indirect impacts are not incurred. If it is not possible to avoid a wetland, installation of a pipeline in a wetland will result in temporary impacts. Permanent impacts can be avoided if wetlands are restored to original condition after construction is completed and hydrologic and hydraulic conditions are not

disturbed.

Five streams were identified within the study area. The streams run parallel to or cross the proposed sewer alignment and extend beyond the study area, therefore, if the sewer alignment shifts, additional stream impacts could occur. It is recommended that no construction equipment enter the streams and that no stream diversion occurs while constructing this improvement project. It is also recommended that special provisions state that no material will be allowed to enter or discharge into the streams, and debris will be removed immediately if it occurs.

The area to be disturbed for this project is expected to be greater than one acre. Therefore, a National Pollutant Discharge Elimination System (NPDES) for Stormwater Discharges Associated with Construction Permit will be required. An erosion and sediment control (ES&C) plan will be required. ES&C best management practices (BMPs) should be used to prevent any disturbed earth that results from construction activities from entering the streams and wetlands.

If these construction methods are used and ES&C BMPs are installed correctly, there should be little to no temporary or permanent impacts to the streams from this project.

Collective Efforts recommends that Ohio EPA regulations regarding soil placement and encroachment or disturbance in streams and wetlands be followed during the construction activities.

8.0 REFERENCES

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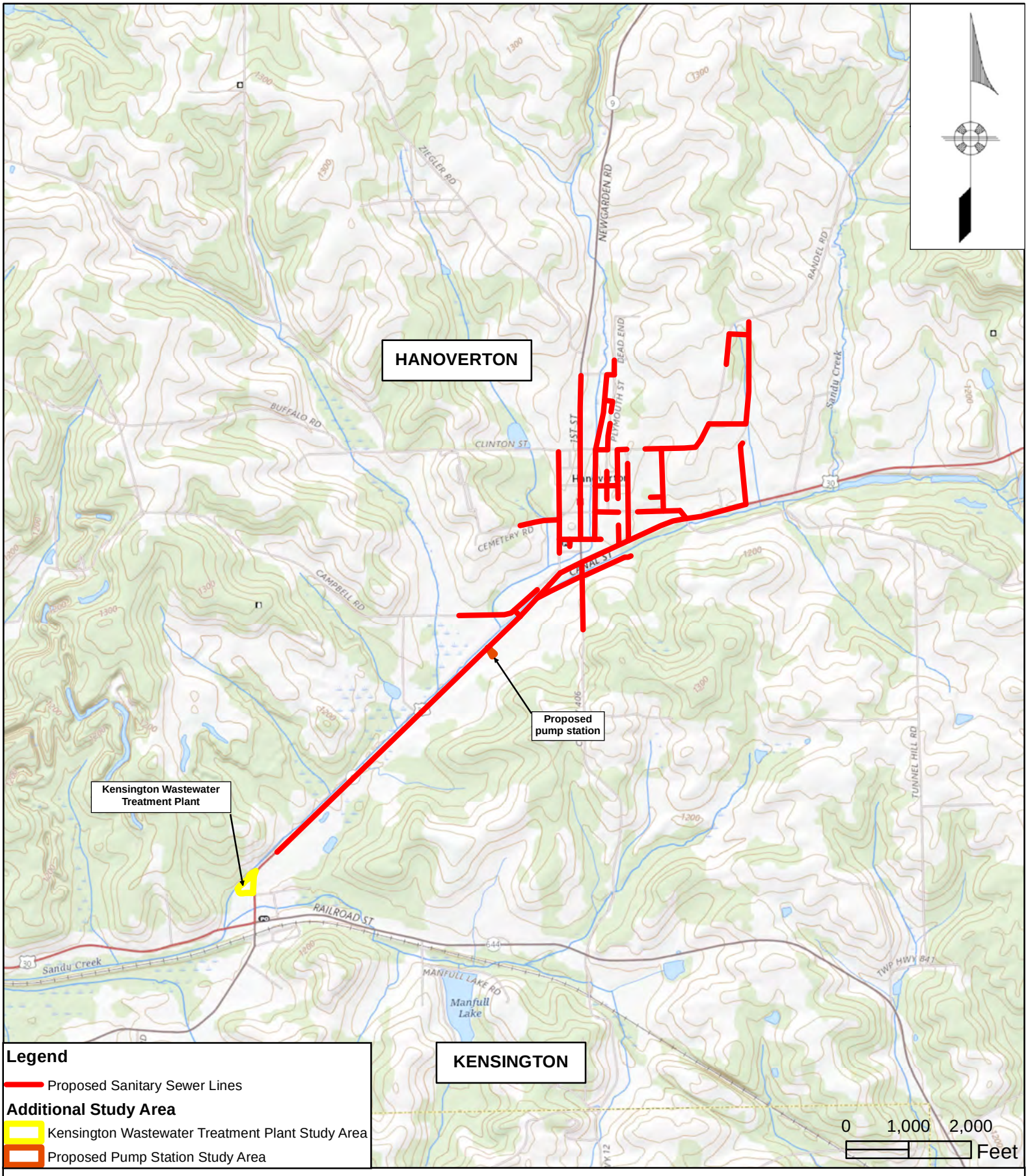
FIGURES



Map Sources: USGS National Map, Hanoverton 2019 and Kensington 2019 - Scale: 1 "=2,000 '

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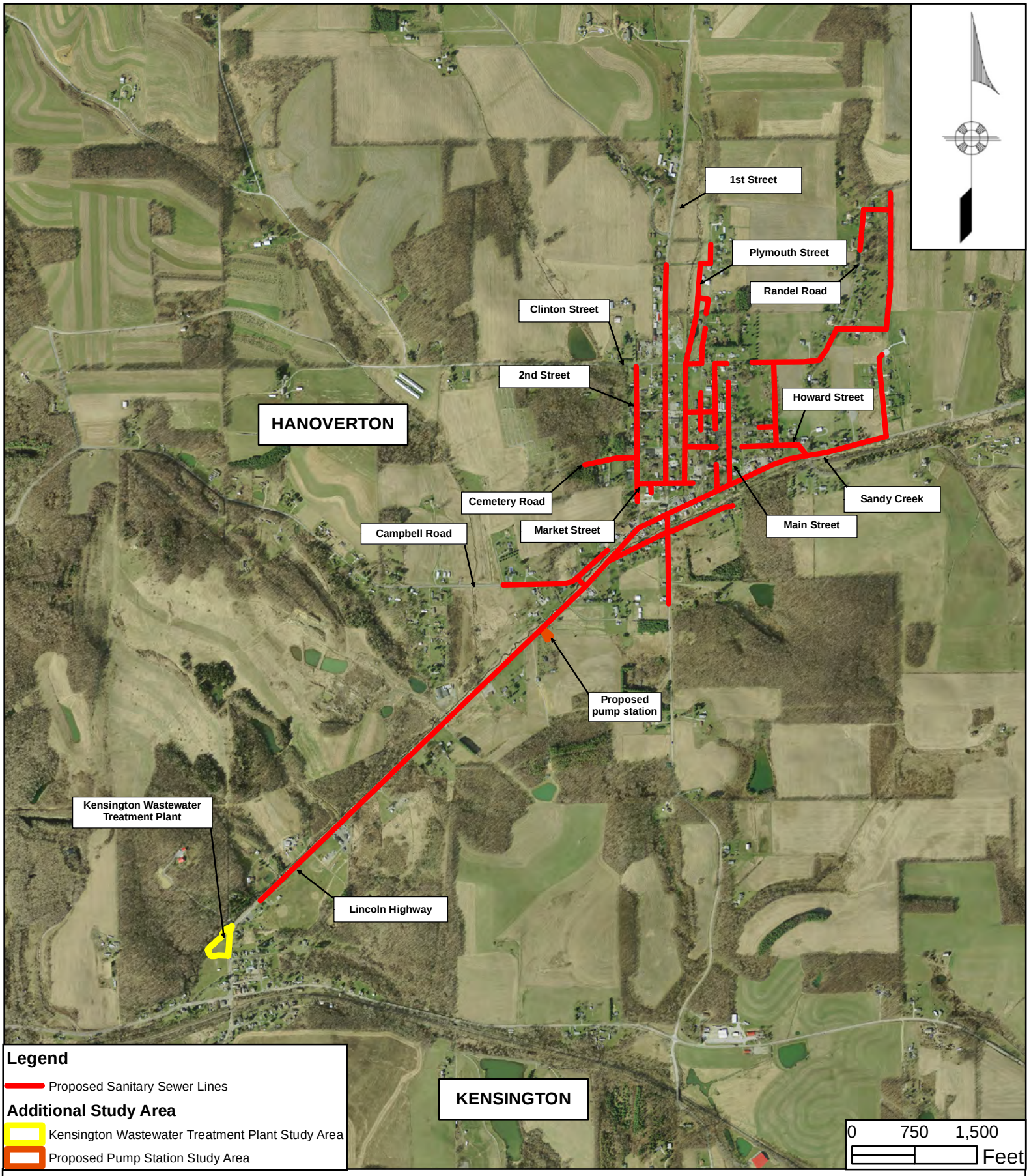
USGS Map
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	EBH	July 2021 Project No. 20-47601	Figure 1



Map Sources: Ohio Geographically Referenced Information Program - Scale: 1 "=1,500 '

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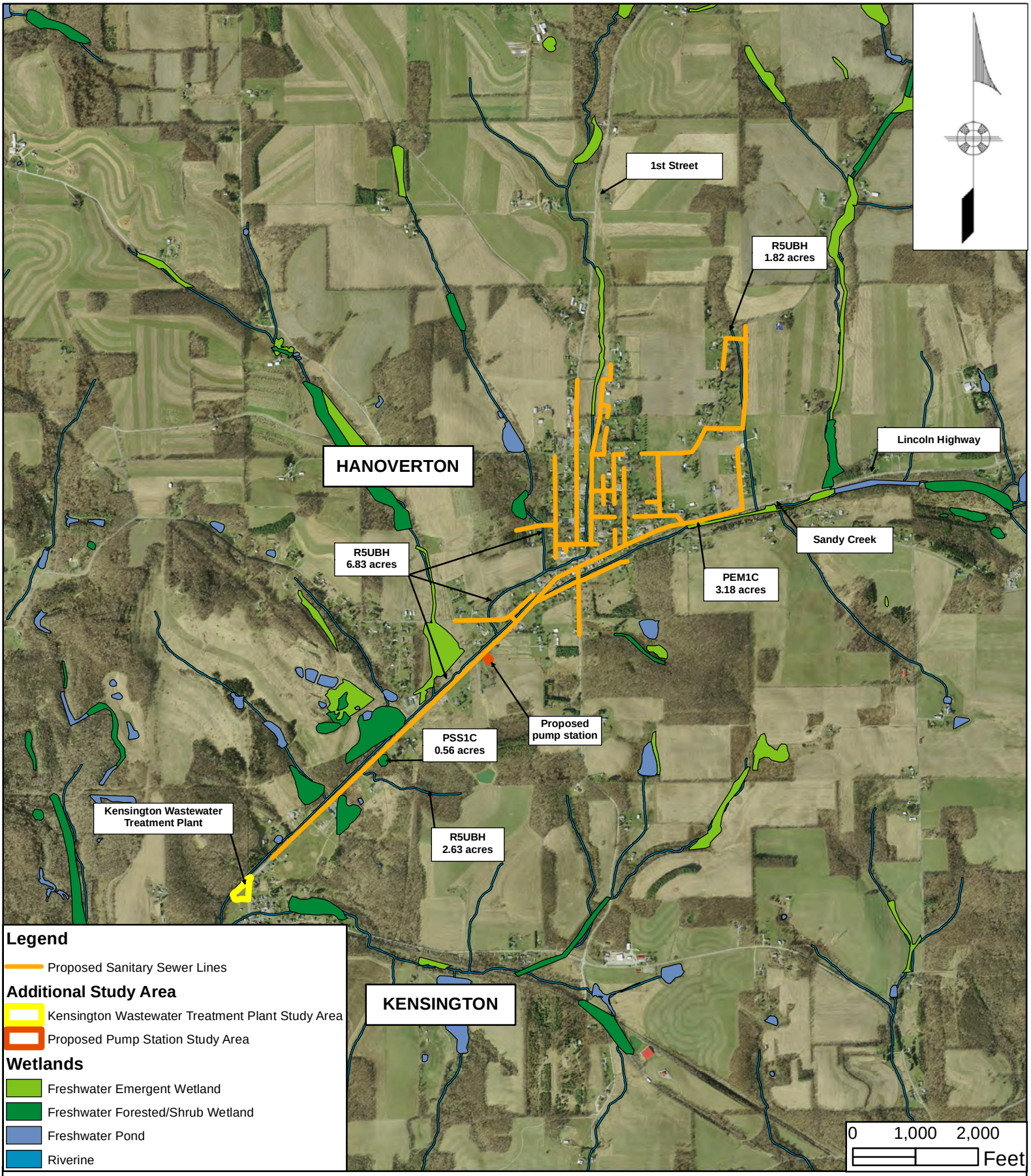
General Site Vicinity Map
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	EBH	July 2021 Project No. 20-47601	Figure 2



Map Sources: USFWS National Wetlands Inventory Mapper - Scale:1 "=2,000 '

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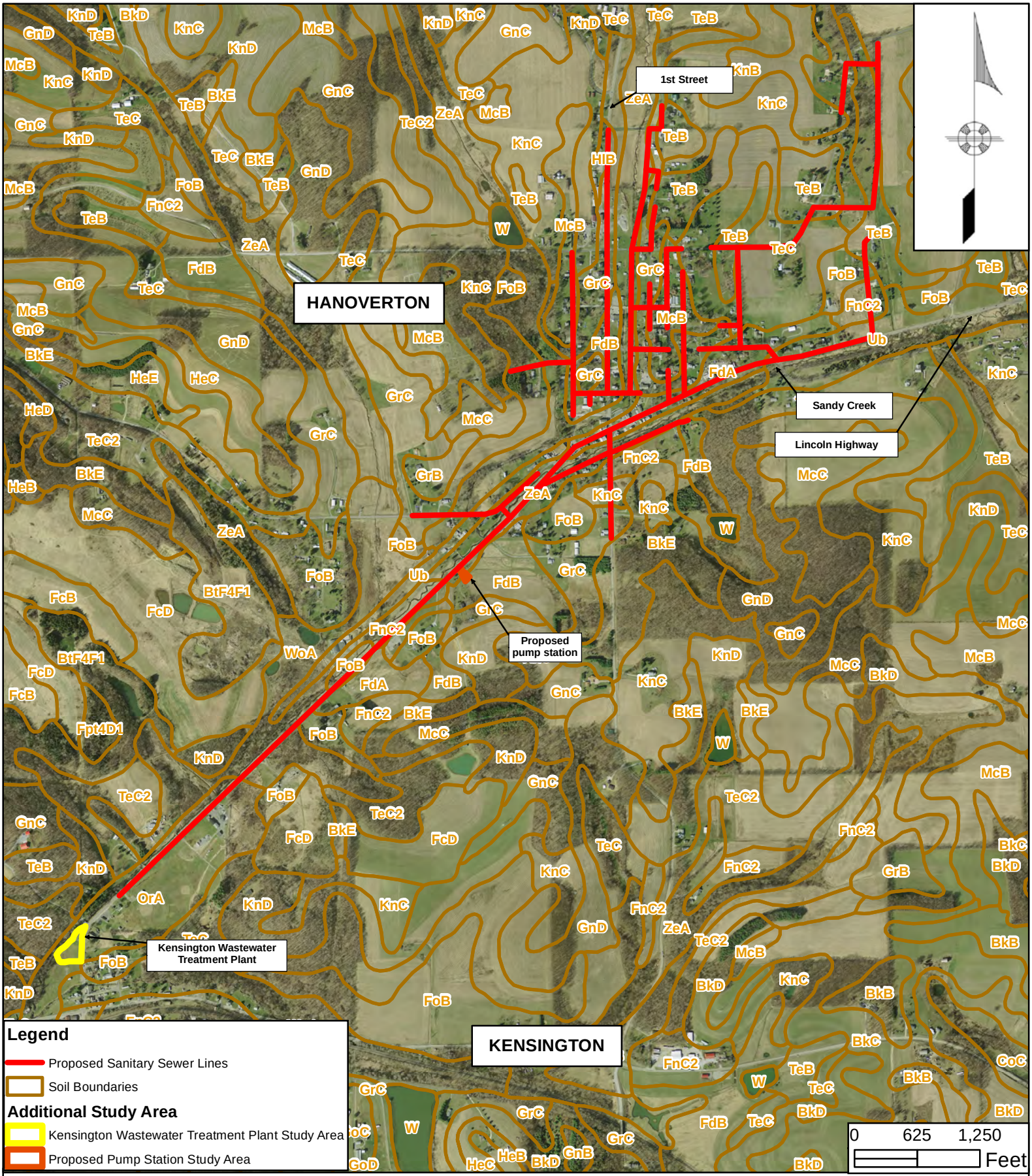
NWI Wetland Map
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	EBH	July 2021 Project No. 20-47601	Figure 3



Map Sources: Ohio Geographically Referenced Information Program, Web Soil Survey - Scale:1 "=1,250 '

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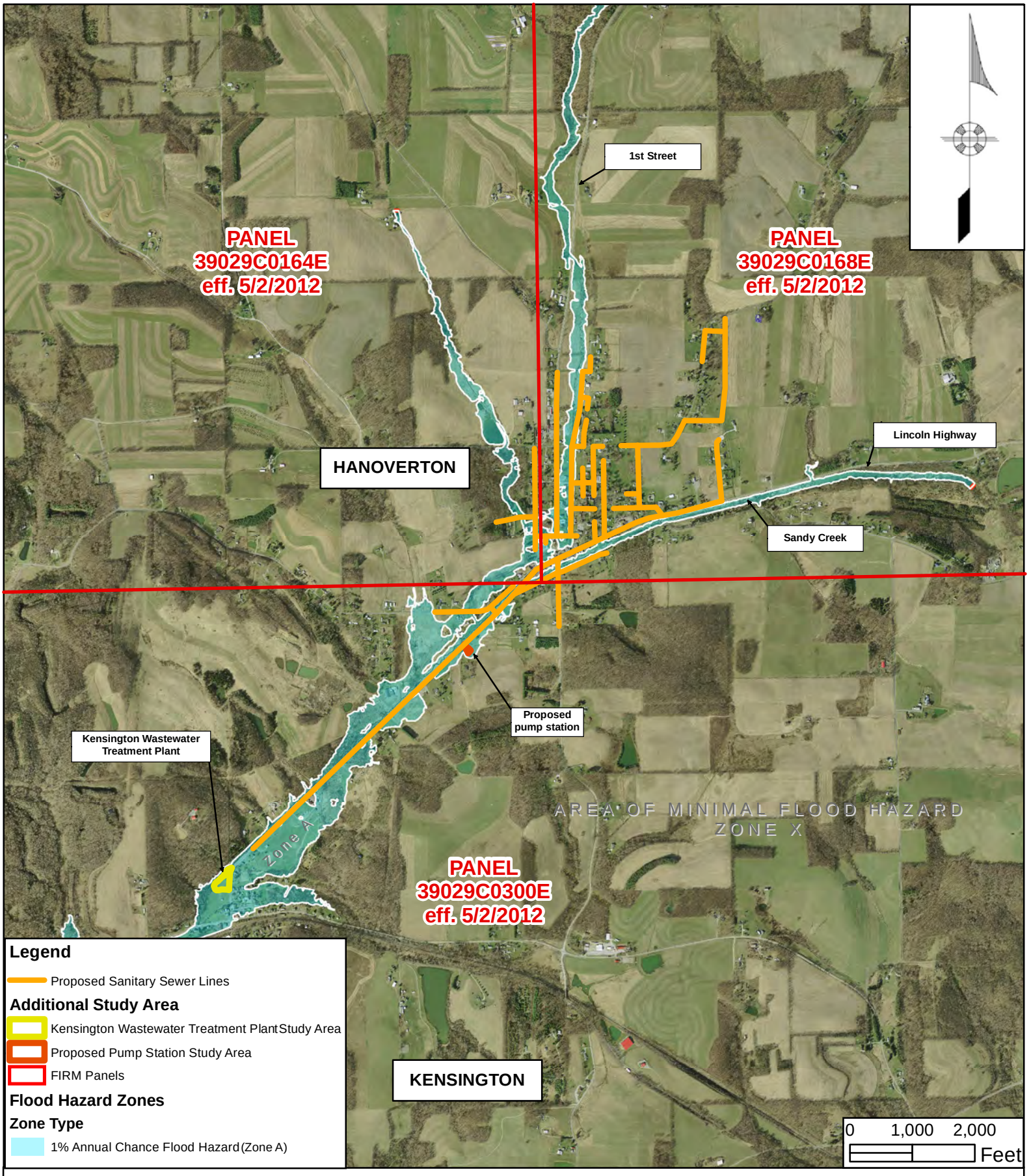
Soil Map
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:July 2021	Figure 4
RLG	EBH	Project No. 20-47601	



Map Sources: FEMA National Flood Hazard - Scale: 1 "=2,000 '

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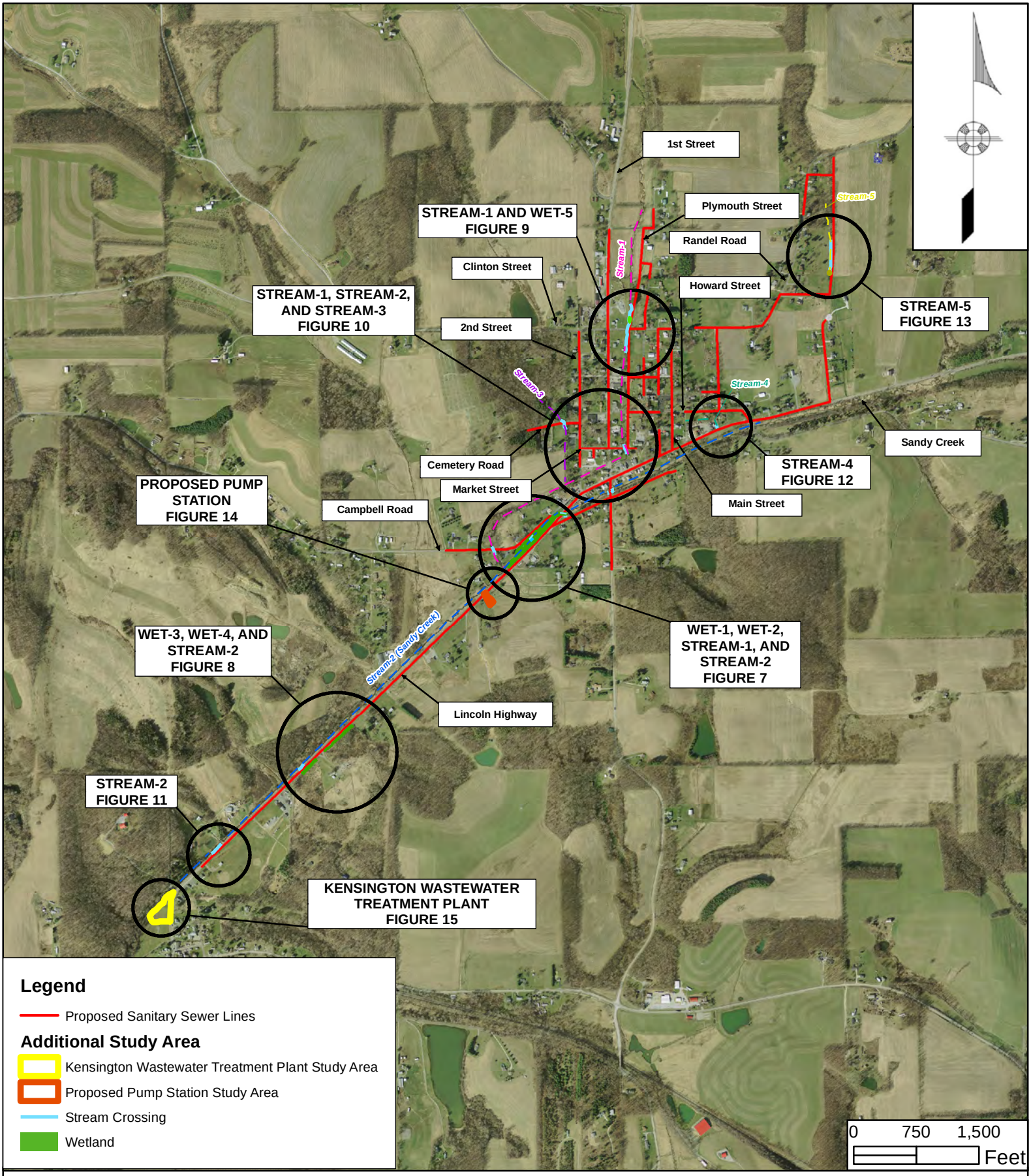
Floodplain Map
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	EBH	July 2021 Project No. 20-47601	Figure 5



Map Sources: Ohio Geographically Referenced Information Program - Scale: 1 "=1,500 '

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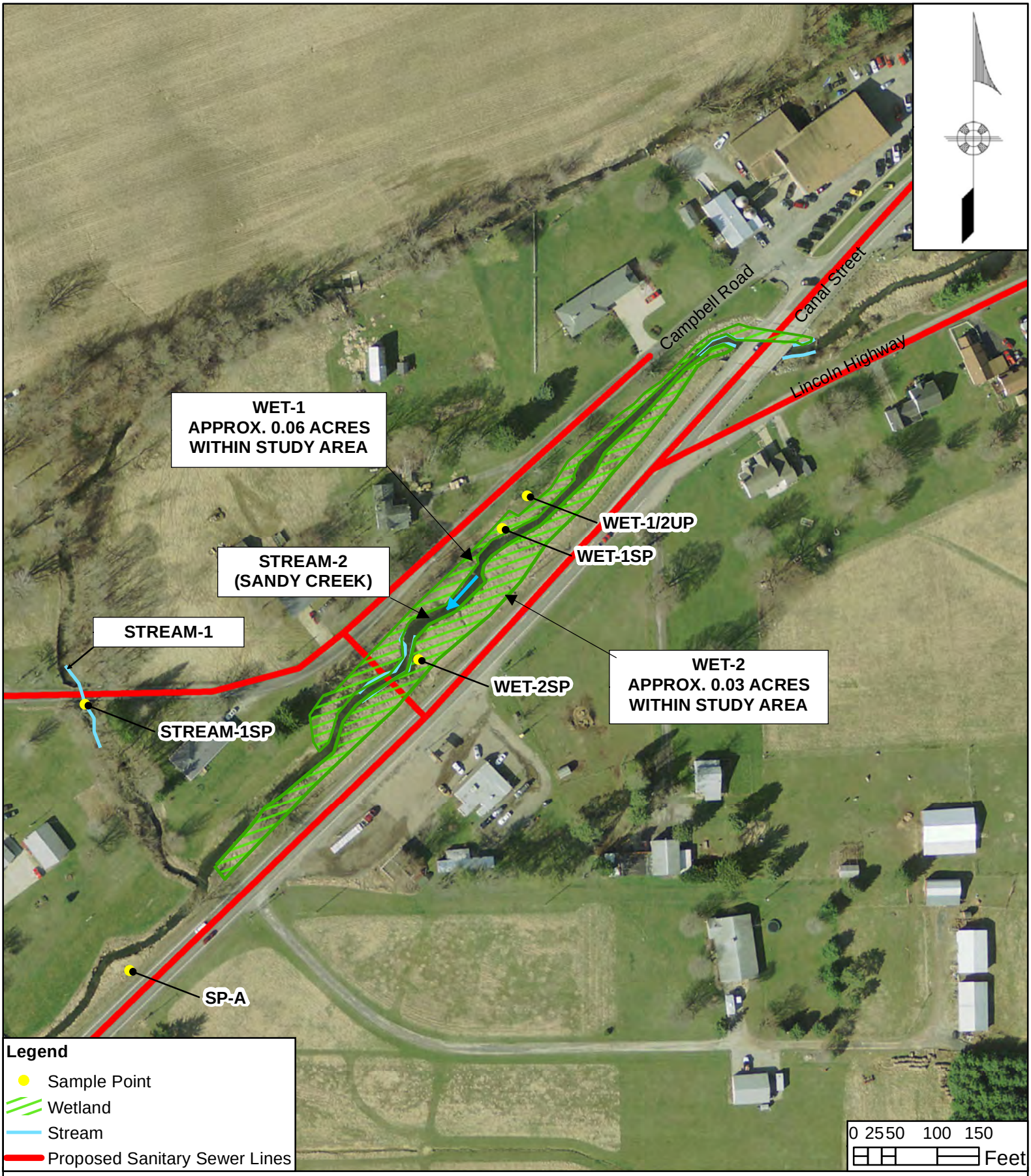
General Locations of Identified Wetlands and Streams
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	TAH	July 2021 Project No. 20-47601	Figure 6



Map Sources: Ohio Geographically Referenced Information Program - Scale: 1 "=150 '

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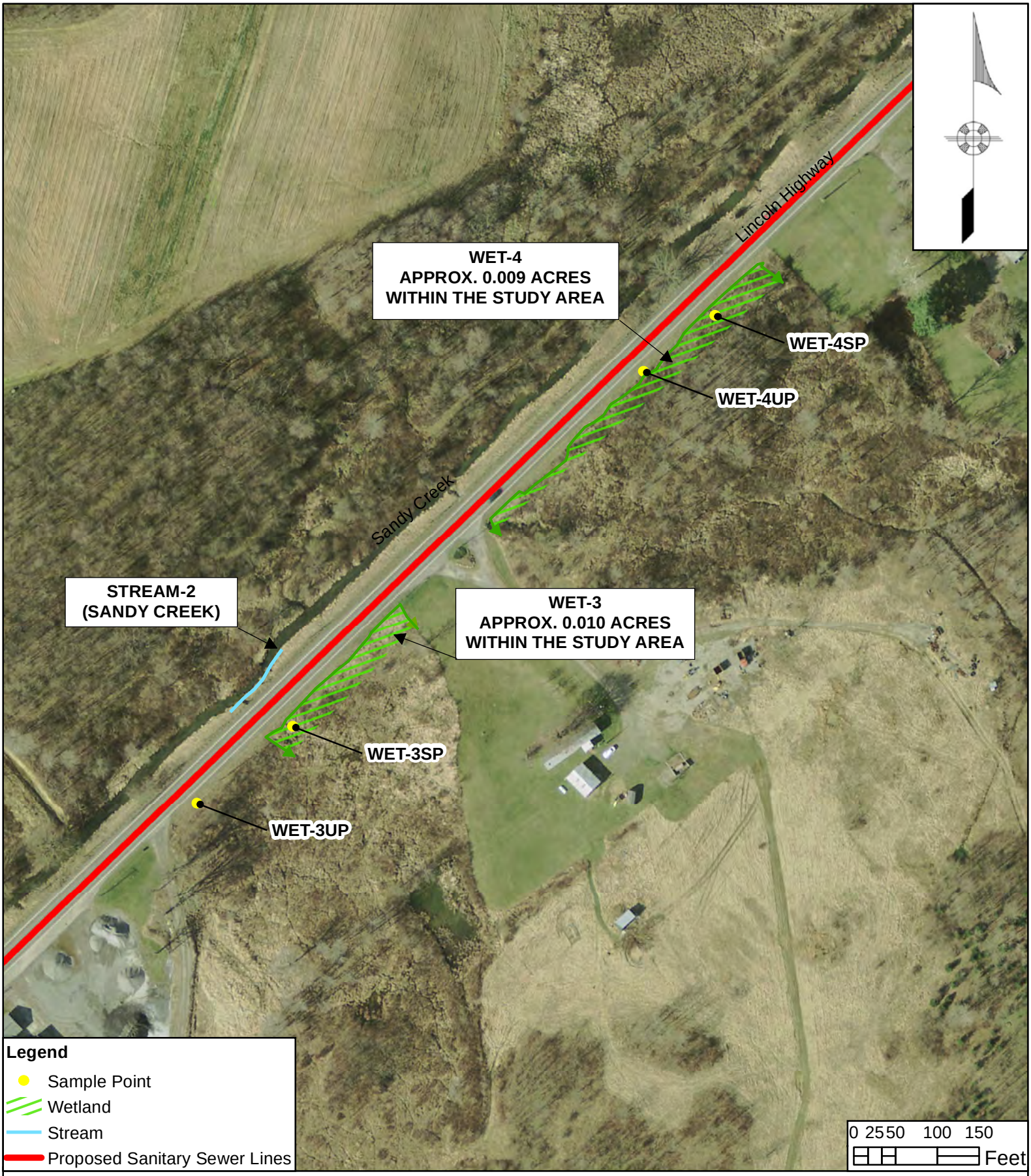
Field Observations Map -
STREAM-1, STREAM-2, WET-1, and WET-2
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	EBH	July 2021 Project No. 20-47601	Figure 7



Map Sources: Ohio Geographically Referenced Information Program - Scale: 1 "=150 '

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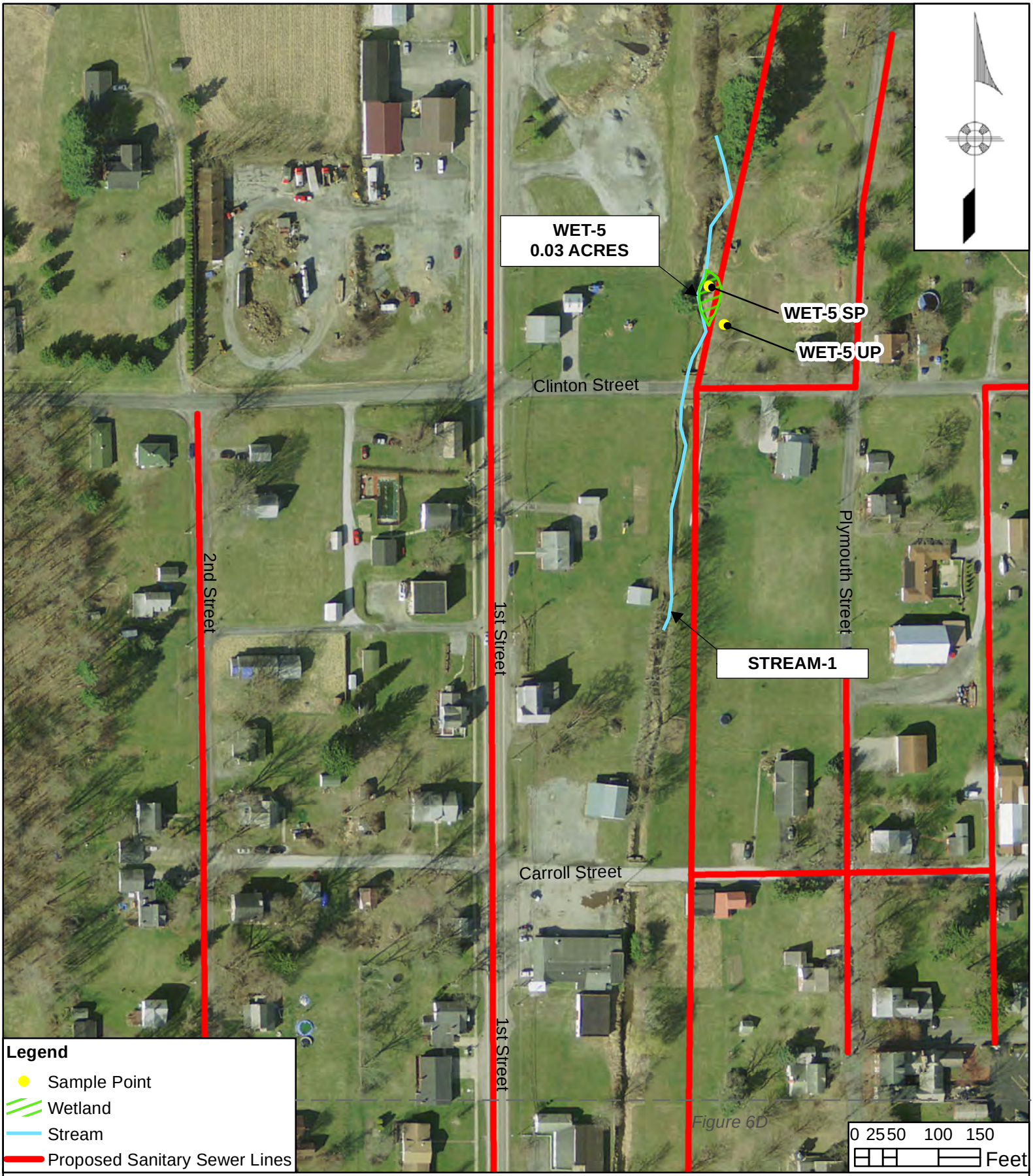
Field Observations Map - STREAM-2, WET-3, and WET-4
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	EBH	July 2021 Project No. 20-47601	Figure 8



Map Sources: Ohio Geographically Referenced Information Program - Scale: 1 "=150 '

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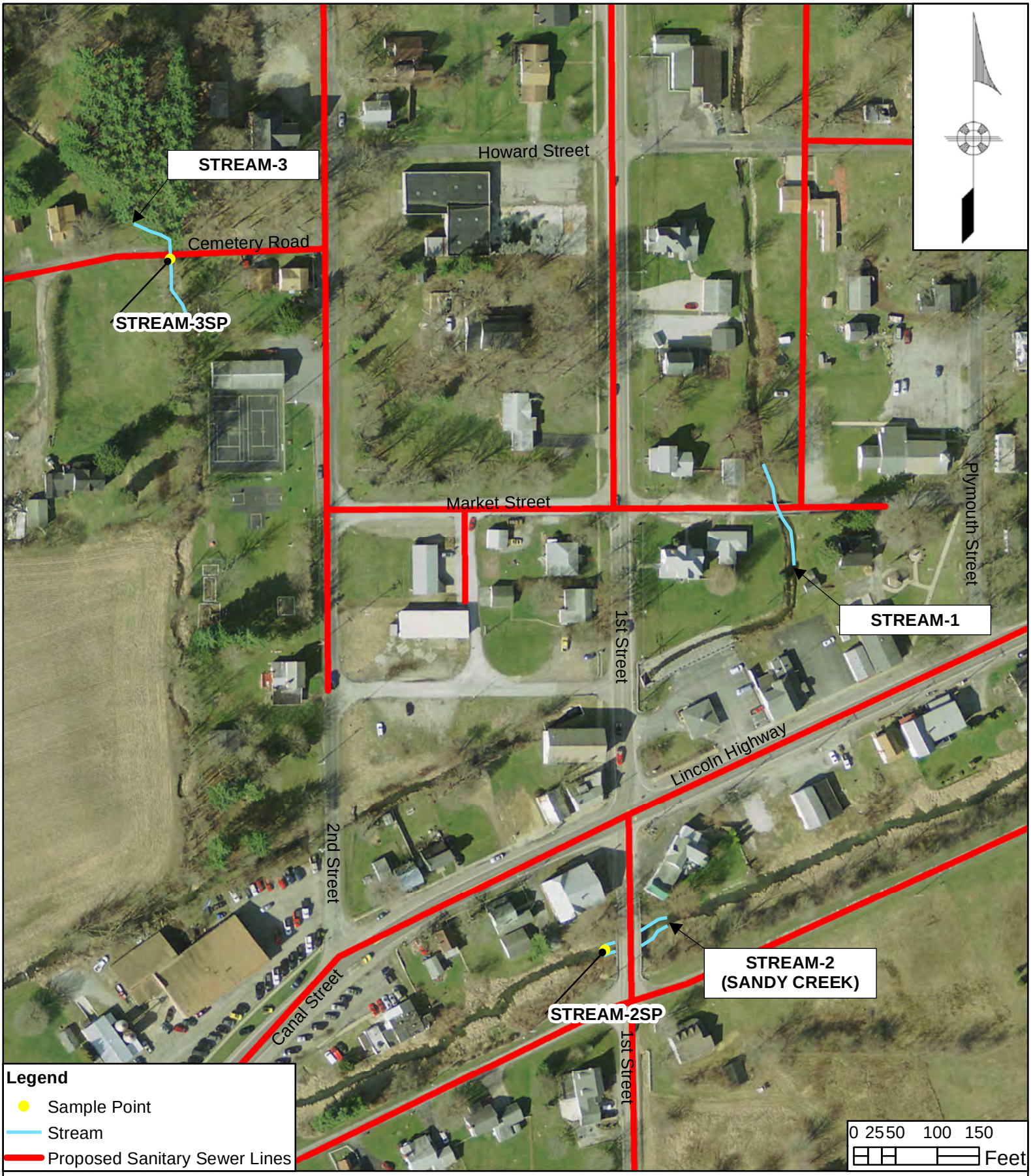
Field Observations Map - STREAM-1 and WET-5
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	Figure 9
RLG	EBH	July 2021 Project No. 20-47601	



Map Sources: Ohio Geographically Referenced Information Program - Scale: 1 "=150 '

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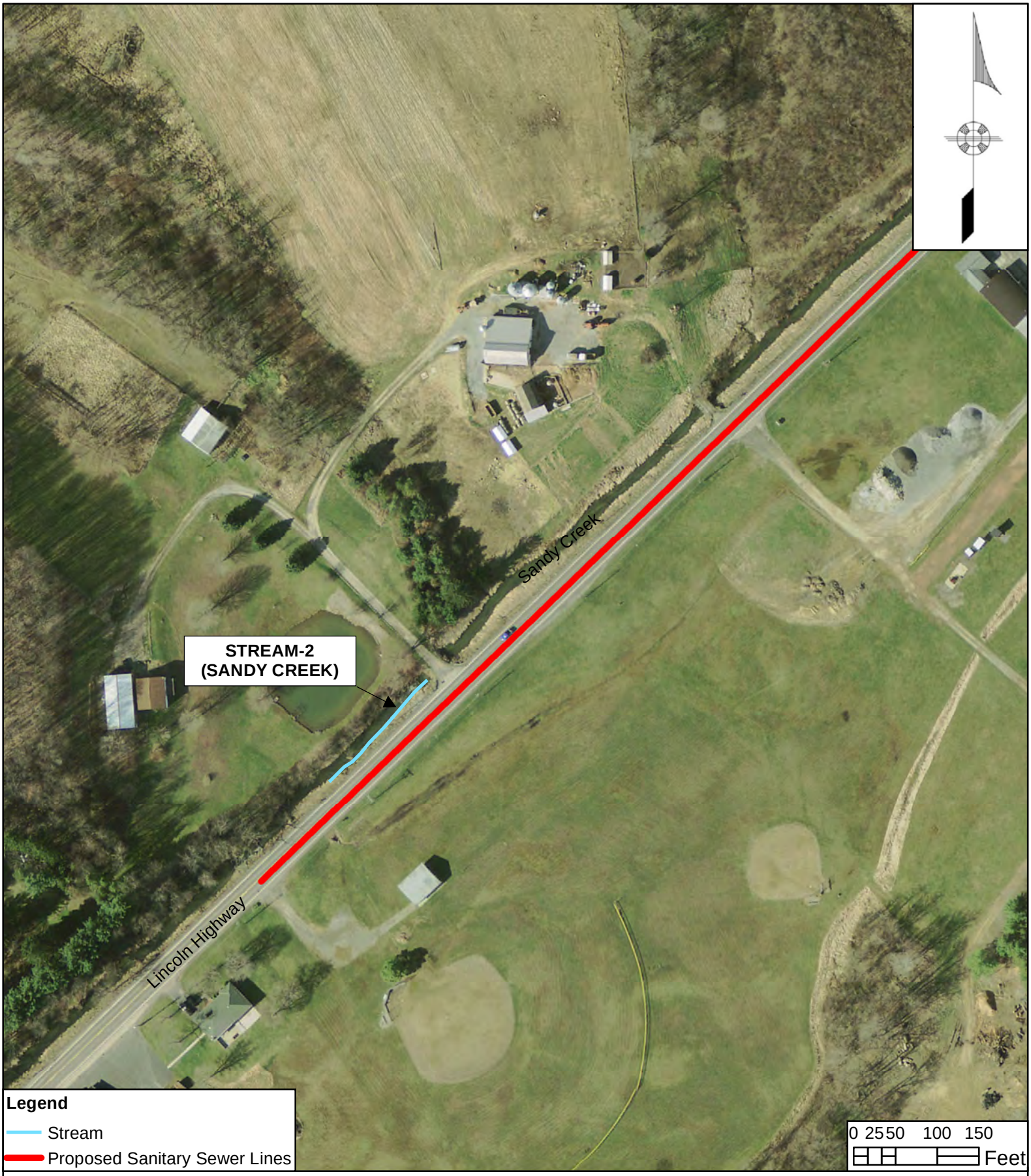
Field Observations Map - STREAM-1, STREAM-2, and STREAM-3
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	EBH	July 2021 Project No. 20-47601	Figure 10



Map Sources: Ohio Geographically Referenced Information Program - Scale: 1 "=150 '

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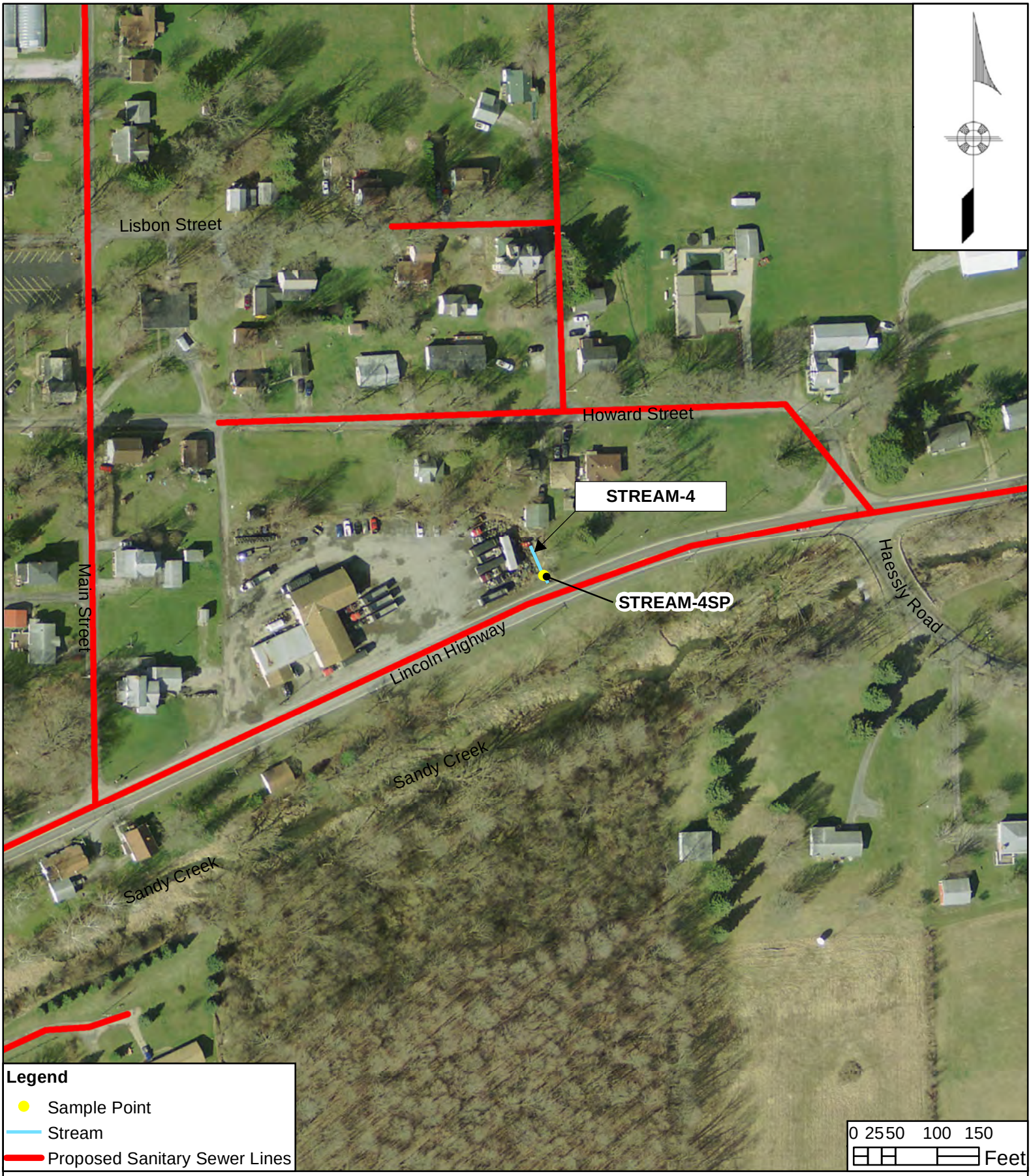
Field Observations Map - STREAM-2
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	EBH	July 2021 Project No. 20-47601	Figure 11



Map Sources: Ohio Geographically Referenced Information Program - Scale: 1 "=150 '

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Field Observations Map - STREAM-4
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	EBH	July 2021 Project No. 20-47601	Figure 12

Map Sources: Ohio Geographically Referenced Information Program - Scale: 1 "=150 '

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Field Observations Map - STREAM-5
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	EBH	July 2021 Project No. 20-47601	Figure 13

Map Sources: Columbiana County GIS 3 and 6 inch Combined Imagery - Scale:1 " = 100 '

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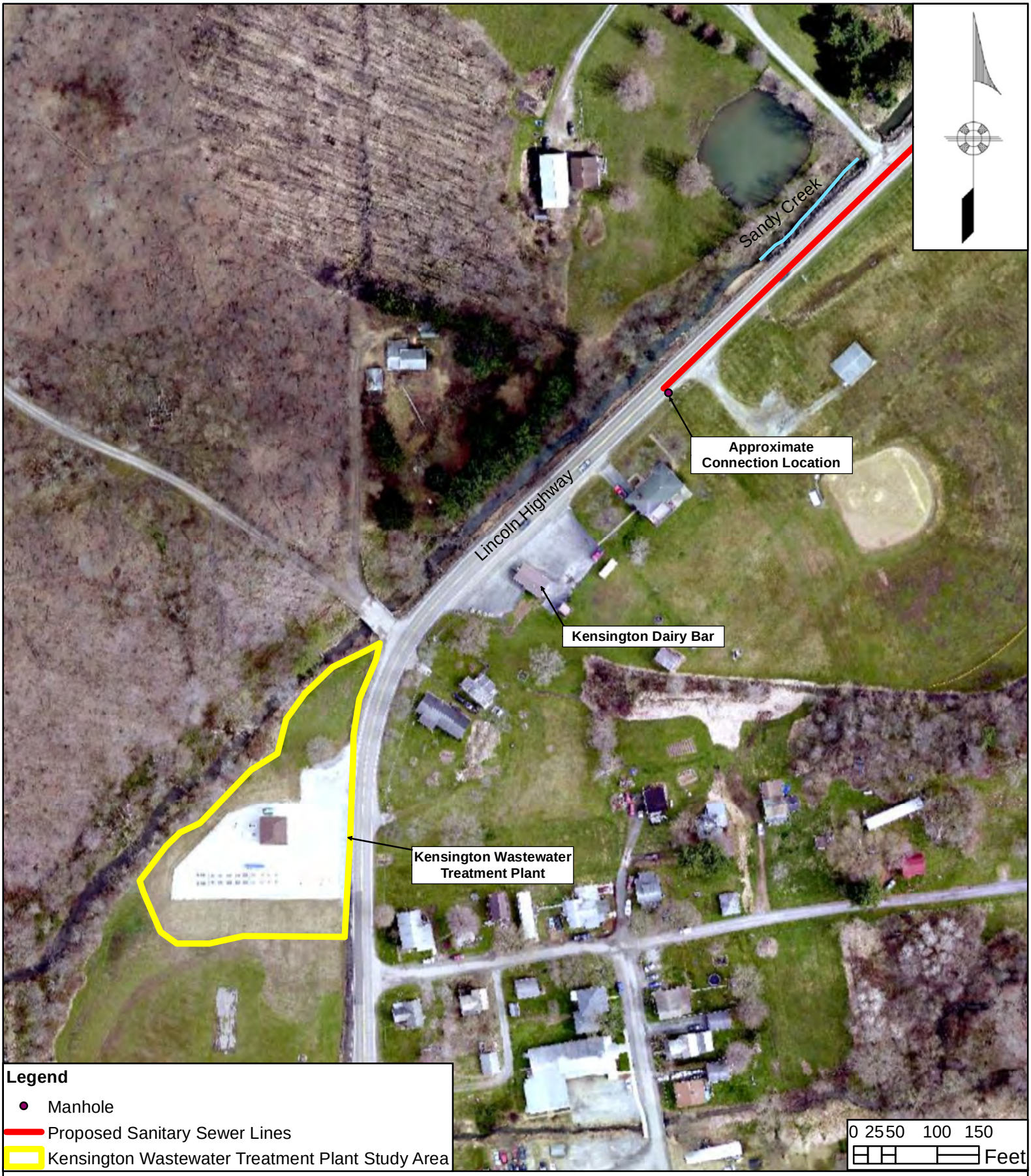
Additional Study Area - Proposed Pump Station
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	EBH	July 2021 Project No. 20-47601	Figure 14



Map Sources: Columbiana County GIS 3 and 6 inch Combined Imagery - Scale:1 " = 150 '

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Additional Study Area - Kensington Wastewater Treatment Plant
Hanoverton Sewer Collection System Improvements Project
Wetland Delineation and Stream Evaluation Report

Drawn By:	Chkd By:	Date:	
RLG	EBH	July 2021 Project No. 20-47601	Figure 15

APPENDICES

APPENDIX A – Site Photographs

Photo 1: 06/08/2021 **–** Proposed Pump Station location, facing northwest.

Photo 2: 06/08/2021 **–** Proposed Pump Station location, facing south.

Photo 3: 06/08/2021 **–** south side of Kensington Wastewater Treatment Plant location, facing west.

Photo 4: 06/08/2021 **–** south side of Kensington Wastewater Treatment Plan location, facing east.

Photo 5: 11/18/2020 – WET-1SP, facing west.

Photo 6: 11/24/2020 – WET-1, Iron present in surface water.

Photo 7: 11/18/2020 – WET-1/2UP, facing west.

Photo 8: 11/18/2020 – WET-1, Sandy Creek (STREAM-2), and WET-2, facing east.

Photo 9: 11/24/2020 – WET-2SP, facing north.

Photo 10: WET-2, Iron present in surface water.

Photo 11: 11/24/2020 – WET-3SP.

Photo 12: 11/24/2020 – WET-3SP, facing southeast.

Photo 13: 11/24/2020 – WET-3UP, facing west.

Photo 14: 11/24/2020 – WET-4SP, facing east.

Photo 15: 11/24/2020 – Standing water observed near WET-4SP, facing south.

Photo 16: 11/24/2020 – WET-4UP, facing east.

Photo 17: 11/25/2020 – WET-5SP, facing west.

Photo 18: 11/25/2020 – WET-5UP, facing north.

Photo 19: 11/24/2020 – SP-A, facing north.

Photo 20: 06/08/2021 - SP-B, facing northwest towards Lincoln Highway.

Photo 21: 06/08/2021 - Drainage channel adjacent to proposed pump station study area, facing east.

Photo 22: 11/18/2020 – STREAM-1, sample point location, facing south.

Photo 23: 11/24/2020 – STREAM-1, sample point location, facing north at Campbell Road.

Photo 24: 11/24/2020 – STREAM-1 crossing at Market Street, facing north.

Photo 25: 11/24/2020 – STREAM-1 crossing at Clinton Street, facing north.

Photo 26: 11/24/2020 – STREAM-2 (Sandy Creek), flowing parallel to the Lincoln Highway at the edge of the study area, facing west.

Photo 27: 11/18/2020 – STREAM-2 (Sandy Creek), facing west.

Photo 28: 11/24/2020 – STREAM-2 (Sandy Creek), crossing under Canal Street, facing west.

Photo 29: 11/24/2020 – STREAM-2SP location, crossing under bridge carrying 1st Street, facing west.

Photo 30: STREAM-2SP location, crossing under bridge carrying 1st Street, facing west.

Photo 31: 11/20/2020 – STREAM-3SP location, facing north towards Cemetery Road.

Photo 32: 11/20/2020 – STREAM-3SP location, facing south.

Photo 33: 11/20/2020 – STREAM-4SP location, facing north from Lincoln Highway.

Photo 34: 11/25/2020 – STREAM-4SP location, facing south towards Lincoln Highway.

Photo 35: 11/20/2020 – STREAM-5, within sample location reach, facing north.

Photo 36: 11/20/2020 – STREAM-5SP location, facing north.

Photo 37: 11/25/2020 – STREAM-5, channel appears to end at the end of tree line, facing south.

APPENDIX B – Wetland Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hanoverton Sewer Collection System Improvement Project City/County: Hanoverton, Columbiana County Sampling Date: 11/18/2020

Applicant/Owner: Columbiana County State: Ohio Sampling Point: Wet-1SP

Investigator(s): B. Shea, R. Galloway Section, Township, Range: S29 T15N R4W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 2%

Subregion (LRR or MLRA): LRR K Lat: 40.749292 Long: -80.939919 Datum: NAD83

Soil Map Unit Name: ZeA - Zepernick silt loam NWI classification: none listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes X No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland located on RDB stream bank of Stream-2 (Sandy Creek) between Campbell Road and Canal Street

Additional photos taken on 11/24/2020.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 0-1

Water Table Present? Yes X No _____ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wet-1SP

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	60	Yes	FACW
2. *Typha latifolia*	40	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	60	x 2 =	120
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	100 (A)		160 (B)

Prevalence Index = B/A = 1.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wet-1SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	90	10YR 4/3	10			Silty Clay/Muck	Saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- [X] Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none observed

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hanoverton Sewer Collection System Improvement Project City/County: Hanoverton, Columbiana County Sampling Date: 11/20/2020

Applicant/Owner: Columbiana County State: Ohio Sampling Point: Wet-1/2UP

Investigator(s): B. Shea, R. Galloway Section, Township, Range: S29 T15N R4W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 4-5%

Subregion (LRR or MLRA): LRR K Lat: 40.749399 Long: -80.939807 Datum: NAD83

Soil Map Unit Name: ZeA - Zepernick silt loam NWI classification: none listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes X	No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes _____	No X	

Remarks: (Explain alternative procedures here or in a separate report.)

Upland point representative of Wet-1 and Wet-2

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wet-1/2UP

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 5)			
1. *Poa pratensis*	90	Yes	FACU
2. *Glechoma hederacea*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species 100	x 4 = 400
UPL species	x 5 =
Column Totals: (A)	400 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

-Mowed grass area on hillslope. Sampling area was recently mowed making plant identification difficult for grass species that were present.

-Milkweed observed in the area

SOIL

Sampling Point: Wet-1/2UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	95	10YR 5/6	5			Silty Clay	crumbly soil

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- [X] Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none observed

Depth (inches): ___

Hydric Soil Present? **Yes** [X] **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hanoverton Sewer Collection System Improvement Project City/County: Hanoverton, Columbiana County Sampling Date: 11/18/2020

Applicant/Owner: Columbiana County State: Ohio Sampling Point: Wet-2SP

Investigator(s): B. Shea, R. Galloway Section, Township, Range: S29 T15N R4W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 40.748867 Long: -80.94029 Datum: NAD83

Soil Map Unit Name: ZeA - Zepernick silt loam NWI classification: none listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes X No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland located on LDB stream bank of Stream-2 (Sandy Creek) between Campbell Road and Canal Street.

Further observations and photos taken on 11/24/2020.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 0-1

Water Table Present? Yes X No _____ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wet-2SP

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	60	Yes	FACW
2. *Typha latifolia*	40	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 40	x 1 = 40
FACW species 60	x 2 = 120
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: 100 (A)	160 (B)

Prevalence Index = B/A = 1.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wet-2SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/1	90	10YR 4/3	10			Silty Clay/Muck	Saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- [X] Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none observed

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hanoverton Sewer Collection System Improvement Project City/County: Hanoverton, Columbiana County Sampling Date: 11/24/2020

Applicant/Owner: Columbiana County State: Ohio Sampling Point: Wet-3SP

Investigator(s): B. Shea, R. Galloway Section, Township, Range: S29 T15N R4W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 40.741588 Long: -80.95007 Datum: NAD83

Soil Map Unit Name: OrA - Orrville silt loam NWI classification: none listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes X No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland located at the Lincoln Highway edge of pavement slope. Only the outer boundary closest to study area was collected.
Wet-3 appears to extend in the south-east direction.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): 1
Water Table Present?	Yes X	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wet-3SP

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	60	Yes	FACW
2. *Typha latifolia*	30	Yes	OBL
3. *Scirpus cyperinus*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	60	x 2 =	120
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	100 (A)		160 (B)

Prevalence Index = B/A = 1.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

- *Cornus sericea* observed in the area
- Possible swamp rose *(Rosa palustris)* observed in the area.

SOIL

Sampling Point: Wet-3SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	90	7.5YR 4/6	10			Silty Clay	Saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- [X] Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none observed

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hanoverton Sewer Collection System Improvement Project City/County: Hanoverton, Columbiana County Sampling Date: 11/24/2020

Applicant/Owner: Columbiana County State: Ohio Sampling Point: Wet-3UP

Investigator(s): B. Shea, R. Galloway Section, Township, Range: S29 T15N R4W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Convex Slope (%): 0-1%

Subregion (LRR or MLRA): LRR K Lat: 40.74134 Long: -80.950489 Datum: NAD83

Soil Map Unit Name: OrA - Orrville silt loam NWI classification: None observed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland located at the Lincoln Highway edge of pavement slope. Only the outer boundary closest to study area was collected.
Wet-3 appears to extend in the south-east direction.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wet-3UP

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 5)			
1. *Solidago canadensis*	45	Yes	FACU
2. *Dipsacus fullonum*	25	Yes	FACU
3. *Daucus carota*	15	No	UPL
4. *Symphyotrichum ericoides*	10	No	FACU
5. *Poa sp.*	5	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	85	x 4 =	340
UPL species	15	x 5 =	75
Column Totals:	100 (A)		415 (B)

Prevalence Index = B/A = 4.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

- *Cornus sericea* observed in the area
- Possible swamp rose *(Rosa palustris)* observed in the area.

SOIL

Sampling Point: Wet-3UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 4/3	100					Silty Sandy Clay	dry and crumbly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6 inches

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hanoverton Sewer Collection System Improvement Project City/County: Hanoverton, Columbiana County Sampling Date: 11/24/2020

Applicant/Owner: Columbiana County State: Ohio Sampling Point: Wet-4SP

Investigator(s): B. Shea, R. Galloway Section, Township, Range: S29 T15N R4W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1-2%

Subregion (LRR or MLRA): LRR K Lat: 40.742912 Long: -80.948215 Datum: NAD83

Soil Map Unit Name: OrA - Orrville silt loam NWI classification: PSS1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes X No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland located at the Lincoln Highway edge of pavement slope. Only the outer boundary closest to study area was collected. Wet-4 appears to extend in the south-east direction.

Wet-4 located within NWI Wetland classified as PSS1C - System (P) Palustrine, Class(SS) Scrub-Shrub, Subclass (1) Broad-Leaved Deciduous and Water Regime (C) as Seasonally Flooded

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 1-2
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Standing water observed in the area - located outside of the study area.

VEGETATION – Use scientific names of plants.

Sampling Point: Wet-4SP

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	70	Yes	FACW
2. *Solidago gigantea*	20	Yes	FACW
3. *Scirpus cyperinus*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	90	x 2 =	180
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	100 (A)		190 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wet-4SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/2	95	10YR 5/6	5			Silty Clay	Saturated
3-12	10YR 5/1	80	10YR 6/6	20			Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- [X] Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none observed

Depth (inches): ___

Hydric Soil Present? **Yes** [X] **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hanoverton Sewer Collection System Improvement Project City/County: Hanoverton, Columbiana County Sampling Date: 11/24/2020

Applicant/Owner: Columbiana County State: Ohio Sampling Point: Wet-4UP

Investigator(s): B. Shea, R. Galloway Section, Township, Range: S29 T15N R4W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 3%

Subregion (LRR or MLRA): LRR K Lat: 40.742734 Long: -80.948528 Datum: NAD83

Soil Map Unit Name: OrA - Orrville silt loam NWI classification: none listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland located at the Lincoln Highway edge of pavement slope. Only the outer boundary closest to study area was collected.
Wet-4 appears to extend in the south-east direction.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wet-4UP

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 5)			
1. *Dipsacus fullonum*	55	Yes	FACU
2. *Symphyotrichum ericoides*	30	Yes	FACU
3. *Solidago canadensis*	10	No	FACU
4. *Daucus carota*	5	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	95	x 4 =	380
UPL species	5	x 5 =	25
Column Totals:	100 (A)		405 (B)

Prevalence Index = B/A = 4.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

Staghorn Sumac (*Rhus typhina)* observed in the area.

SOIL

Sampling Point: Wet-4UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR 5/2	100					Silty Clay	dry and crumbly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none observed

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hanoverton Sewer Collection System Improvement Project City/County: Hanoverton, Columbiana County Sampling Date: 11/25/2020

Applicant/Owner: Columbiana County State: Ohio Sampling Point: Wet-5SP

Investigator(s): D. Constantini, R. Galloway Section, Township, Range: S21 T15N R4W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 2%

Subregion (LRR or MLRA): LRR K Lat: 40.756281 Long: -80.935675 Datum: NAD83

Soil Map Unit Name: ZeA - Zepernick silt loam NWI classification: none listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No _____ Hydric Soil Present? Yes X No _____ Wetland Hydrology Present? Yes X No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____ If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland located on LDB stream bank of Stream-1, near crossing of Clinton Street

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes X No _____ Depth (inches): 2-3

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wet-5SP

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	90	Yes	FACW
2. *Eutrochium maculatum*	5	No	OBL
3. *Vernonia noveboracensis*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	95	x 2 =	190
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	100 (A)		195 (B)

Prevalence Index = B/A = 1.95

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wet-5SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	85	10YR 4/6	15			Silty Clay	Saturated
3-16	10YR 3/1	90	10YR 4/6	10			Silty Clay	Saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- [X] Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none observed

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hanoverton Sewer Collection System Improvement Project City/County: Hanoverton, Columbiana County Sampling Date: 11/25/2020

Applicant/Owner: Columbiana County State: Ohio Sampling Point: Wet-5UP

Investigator(s): D. Constantini, R. Galloway Section, Township, Range: S21 T15N R4W

Landform (hillslope, terrace, etc.): flat field Local relief (concave, convex, none): none Slope (%): 0%

Subregion (LRR or MLRA): LRR K Lat: 40.756153 Long: -80.935612 Datum: NAD83

Soil Map Unit Name: ZeA - Zepernick silt loam NWI classification: none listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wet-5UP

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 5)			
1. *Daucus carota*	90	Yes	UPL
2. *Dipsacus fullonum*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	10	x 4 =	40
UPL species	90	x 5 =	450
Column Totals:	100 (A)		490 (B)

Prevalence Index = B/A = 4.90

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wet-5UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					Silty Sandy Clay	dry and crumbly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6 inches

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hanoverton Sewer Collection System Improvement Project City/County: Hanoverton, Columbiana County Sampling Date: 11/24/2020

Applicant/Owner: Columbiana County State: Ohio Sampling Point: SP-A

Investigator(s): B. Shea, R. Galloway Section, Township, Range: S29 T15N R4W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none Slope (%): 2%

Subregion (LRR or MLRA): LRR K Lat: 40.747864 Long: -80.941562 Datum: NAD83

Soil Map Unit Name: ZeA - Zepernick silt loam NWI classification: none listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes X	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

Flat area vegetated primarily with reed canary grass located on LDB of Stream-2 (Sandy Creek).

Although located on flat area of Stream-2 bank with dominant species as reed canary grass - soils showed no redox features at 10YR 4/3 and were dry and crumbly.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: SP-A

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	100	x 2 =	200
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: SP-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-12	10YR 4/3	100					Silty Clay	dry and crumbly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none observed

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Hanoverton Sewer Collection System Improvement Project City/County: Hanoverton, Columbiana County Sampling Date: 06/08/2021

Applicant/Owner: Columbiana County State: Ohio Sampling Point: SP-B

Investigator(s): R. Galloway Section, Township, Range: S29 T15N R4W

Landform (hillslope, terrace, etc.): Field Local relief (concave, convex, none): none Slope (%): 0%

Subregion (LRR or MLRA): LRR K Lat: 40.747114 Long: -80.941981 Datum: NAD83

Soil Map Unit Name: ZeA - Zepernick silt loam NWI classification: none listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

mowed field area off of Lincoln Highway at approximate pump station location

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: SP-B

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 5)			
1. *Grass sp.*	100	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 15)			
1. *None observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

-Mowed grass area. Sampling area was recently mowed making plant identification difficult for grass species that were present.

SOIL

Sampling Point: SP-B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR 4/4	100					Silty Clay	slighty damp

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
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- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
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- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: compacted soils

Depth (inches): 10 inches

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

compacted soils throughout, unable to observe soils further than 10 inches beneath surface

Background Information

Name: Rachel Galloway

Date: 12/08/2020

Affiliation: Collective Efforts, LLC

Address: 462 Perry Highway, West View, PA 15229

Phone Number: 412-459-0114 ext. 108

e-mail address: rgalloway@collectiveefforts.com

Name of Wetland: Wet-1

Vegetation Communit(ies): PEM

HGM Class(es): Riverine/Depression

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

Figure 7 and Figure 9 show the wetland location and are included with the Wetland Delineation and Stream Evaluation Report.

Wet-1 is located on the right down bank of Stream-2 (Sandy Creek) - between Campbell Road and Canal Street.

Lat/Long or UTM Coordinate	40.749292, -80.939919
USGS Quad Name	Kensington
County	Columbiana
Township	Hanover Township
Section and Subsection	S29 T15N R4W
Hydrologic Unit Code	050400010406
Site Visit	11/18/2020
National Wetland Inventory Map	none listed
Ohio Wetland Inventory Map	none listed
Soil Survey	ZeA - Zepernick silt loam
Delineation report/map	Wet-1 is shown on Figure 6 and Figure 9 of the Wetland Delineation and Stream Evaluation Report

Name of Wetland: Wet-1	
Wetland Size (acres, hectares):	0.06 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

Figure 9 shows the wetland area and is included in the Wetland Delineation and Stream Evaluation Report.

Wet-1 is located on the right down bank of Stream-2 (Sandy Creek) - between Campbell Road and Canal Street. Wet-1 extends outside of the limits of the study area. Approximately 0.06 acres located the study area.

Comments, Narrative Discussion, Justification of Category Changes:

Wet-1 had a final score of 31, which falls within the 1 or 2 gray zone. Wet-1 was assigned to the higher of the two categories as a Modified Category 2.

Final score : 31	**Category:**	MOD CAT 2

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	X	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	(NO) Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	(NO) Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	(NO) Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	(NO) Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	(NO) Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	(NO) Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	(NO) Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	(NO) Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Wet-1	Rater(s): Rachel Galloway	Date: 11/18/2020

Metric 1. Wetland Area (size).

max 6 pts.	subtotal
1	1

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts.	subtotal
3	4

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

max 30 pts.	subtotal
16	20

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [ ] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [x] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [x] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [x] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts.	subtotal
12	32

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

subtotal this page
32

last revised 1 February 2001 jjm

Site: Wet-1	Rater(s): Rachel Galloway	Date: 11/18/2020

32
subtotal first page

0 (max 10 pts.) | 32 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-1 (max 20 pts.) | 31 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [0] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [x] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

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End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size		1
	Metric 2. Buffers and surrounding land use		3
	Metric 3. Hydrology		16
	Metric 4. Habitat		12
	Metric 5. Special Wetland Communities		0
	Metric 6. Plant communities, interspersion, microtopography		-1
	TOTAL SCORE		Category based on score breakpoints 31

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	(NO)	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	(YES) Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	(Category 2)	Category 3

modified

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Rachel Galloway
Date:	12/08/2020
Affiliation:	Collective Efforts, LLC
Address:	462 Perry Highway, West View, PA 15229
Phone Number:	412-459-0114 ext. 108
e-mail address:	rgalloway@collectiveefforts.com

Name of Wetland: Wet-2

Vegetation Communit(ies): PEM

HGM Class(es): Riverine/Depression

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

Figure 7 and Figure 9 show the wetland location and are included with the Wetland Delineation and Stream Evaluation Report.

Wet-2 is located on the left down bank of Stream-2 (Sandy Creek) - between Campbell Road and Canal Street.

Lat/Long or UTM Coordinate	40.748867, -80.94029
USGS Quad Name	Kensington
County	Columbiana
Township	Hanover Township
Section and Subsection	S29 T15N R4W
Hydrologic Unit Code	050400010406
Site Visit	11/18/2020
National Wetland Inventory Map	none listed
Ohio Wetland Inventory Map	none listed
Soil Survey	ZeA - Zepernick silt loam
Delineation report/map	Wet-2 is shown on Figure 6 and Figure 9 of the Wetland Delineation and Stream Evaluation Report

Name of Wetland: Wet-2	
Wetland Size (acres, hectares):	0.03 acres

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

Figure 9 shows the wetland area and is included in the Wetland Delineation and Stream Evaluation Report.

Wet-2 is located on the left down bank of Stream-2 (Sandy Creek) - between Campbell Road and Canal Street. Approximately 0.03 acres located within the study area.

Comments, Narrative Discussion, Justification of Category Changes:

Wet-2 had a final score of 31, which falls within the 1 or 2 gray zone. Wet-2 was assigned to the higher of the two categories as a Modified Category 2.

Final score : 31	**Category:**	MOD CAT 2

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	X	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	(NO) Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	(NO) Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	(NO) Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	(NO) Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	(NO) Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	(NO) Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	(NO) Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	(NO) Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Wet-2	Rater(s): Rachel Galloway	Date: 12/08/2020

Metric 1. Wetland Area (size).

1	1
max 6 pts.	subtotal

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [X] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

3	4
max 14 pts.	subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [X] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- [X] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

16	20
max 30 pts.	subtotal

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [ ] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [X] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [X] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [X] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [X] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [X] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [X] stormwater input
- [ ] point source (nonstormwater)
- [X] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

12	32
max 20 pts.	subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [X] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [X] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [X] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [X] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

32
subtotal this page

last revised 1 February 2001 jjm

Site: Wet-2	Rater(s): Rachel Galloway	Date: 12/08/2020

32
subtotal first page

0 (max 10 pts.) | 32 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-1 (max 20 pts.) | 31 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [0] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [x] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

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End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size		1
	Metric 2. Buffers and surrounding land use		3
	Metric 3. Hydrology		16
	Metric 4. Habitat		12
	Metric 5. Special Wetland Communities		0
	Metric 6. Plant communities, interspersion, microtopography		-1
	TOTAL SCORE		Category based on score breakpoints 31

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	(NO)	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	(YES) Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	(Category 2)	Category 3

modified

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Rachel Galloway
Date:	12/08/2020
Affiliation:	Collective Efforts, LLC
Address:	462 Perry Highway, West View, PA 15229
Phone Number:	412-459-0114 ext. 108
e-mail address:	rgalloway@collectiveefforts.com
Name of Wetland:	Wet-3
Vegetation Communit(ies):	PEM
HGM Class(es):	Depression

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

Figure 6 and Figure 8 show the wetland location and are included with the Wetland Delineation and Stream Evaluation Report.

Wet-3 is located at the Lincoln Highway edge of pavement slope. Only the outer boundary closest to study area was collected and acreage was estimated based off field observations. Wet-3 appears to extend in the south-east direction outside of the study area.

Lat/Long or UTM Coordinate	40.741588, -80.95007
USGS Quad Name	Kensington
County	Columbiana
Township	Hanover Township
Section and Subsection	S29 T15N R4W
Hydrologic Unit Code	050400010406
Site Visit	11/24/2020
National Wetland Inventory Map	none listed
Ohio Wetland Inventory Map	none listed
Soil Survey	OrA - Orrville silt loam
Delineation report/map	Wet-3 is shown on Figure 6 and Figure 8 of the Wetland Delineation and Stream Evaluation Report

Name of Wetland: Wet-3	
Wetland Size (acres, hectares):	0.010 acre

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

Figure 8 shows the wetland area and is included with the Wetland Delineation and Stream Evaluation Report.

Only the outer boundary closest to study area was collected and acreage was estimated based off field observations. Wet-3 appears to extend in the south-east direction outside of the study area. Approximately 0.010 acres located within the study area.

Comments, Narrative Discussion, Justification of Category Changes:

Wet-3 had a final score of 34, which falls within the 1 or 2 gray zone. Wet-3 was assigned to the higher of the two categories as a Modified Category 2.

Only the outer boundary closest to the study area was delineated for Wet-3. Wet-3 potentially extends in the south-east direction outside of the study area. Wet-3 was scored based off of field observations made within the study area.

Final score : 34	**Category:**	MOD CAT 2

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	X	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	(NO) Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	(NO) Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	(NO) Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	(NO) Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	(NO) Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	(NO) Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	(NO) Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	(NO) Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Wet-3	Rater(s): Rachel Galloway	Date: 11/24/2020

Metric 1. Wetland Area (size).

2	2
max 6 pts.	subtotal

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

7	9
max 14 pts.	subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

11	20
max 30 pts.	subtotal

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [x] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [X] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

15	35
max 20 pts.	subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [x] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

35
subtotal this page

last revised 1 February 2001 jjm

Site: Wet-3	Rater(s): Rachel Galloway	Date: 11/18/2020

35
subtotal first page

0 (max 10 pts.) | 35 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-1 (max 20 pts.) | 34 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [0] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [x] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

34

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size		2
	Metric 2. Buffers and surrounding land use		7
	Metric 3. Hydrology		11
	Metric 4. Habitat		15
	Metric 5. Special Wetland Communities		0
	Metric 6. Plant communities, interspersion, microtopography		-1
	TOTAL SCORE		Category based on score breakpoints 34

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	(NO)	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	(YES) Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	(Category 2)	Category 3

modified

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Rachel Galloway
Date:	12/08/2020
Affiliation:	Collective Efforts, LLC
Address:	462 Perry Highway, West View, PA 15229
Phone Number:	412-459-0114 ext. 108
e-mail address:	rgalloway@collectiveefforts.com
Name of Wetland:	Wet-4
Vegetation Communit(ies):	PEM
HGM Class(es):	Depression

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

Figure 7 and Figure 8 show the wetland location and are included with the Wetland Delineation and Stream Evaluation Report.

Wet-4 is located at the Lincoln Highway edge of pavement slope. Only the outer boundary closest to study area was collected and acreage was estimated based off field observations and aerial imagery. Wet-4 appears to extend in the south-east direction outside of the

Lat/Long or UTM Coordinate	40.742912, -80.948215
USGS Quad Name	Kensington
County	Columbiana
Township	Hanover Township
Section and Subsection	S29 T15N R4W
Hydrologic Unit Code	050400010406
Site Visit	11/24/2020
National Wetland Inventory Map	PSS1C
Ohio Wetland Inventory Map	N/A
Soil Survey	OrA - Orrville silt loam
Delineation report/map	Wet-4 is shown on Figure 6 and Figure 8 of the Wetland Delineation and Stream Evaluation Report

Name of Wetland: Wet-3	
Wetland Size (acres, hectares):	0.009 acre

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

Figure 7 and Figure 8 show the wetland area and location and are included with the Wetland Delineation and Stream Evaluation Report.

Wet-4 is located at the Lincoln Highway edge of pavement slope. Only the outer boundary closest to study area was collected and acreage was estimated based off field observations and aerial imagery. Approximately 0.009 acres located within the study area.

Comments, Narrative Discussion, Justification of Category Changes:

Wet-4 had a final score of 34, which falls within the 1 or 2 gray zone. Wet-4 was assigned to the higher of the two categories as a Modified Category 2.

Only the outer boundary closest to the study area was delineated for Wet-4. Wet-4 potentially extends in the south-east direction outside of the study area.Wet-4 was scored based off of field observations made within the study area.

Final score : 34	**Category:**	MOD CAT 2

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	X	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	(NO) Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	(NO) Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	(NO) Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	(NO) Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	(NO) Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	(NO) Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	(NO) Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	(NO) Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Wet-4	Rater(s): Rachel Galloway	Date: 12/08/2020

Metric 1. Wetland Area (size).

2	2
max 6 pts.	subtotal

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

7	9
max 14 pts.	subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

11	20
max 30 pts.	subtotal

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [x] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [X] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

15	35
max 20 pts.	subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [x] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

35
subtotal this page

last revised 1 February 2001 jjm

Site: Wet-4	Rater(s): Rachel Galloway	Date: 12/08/2020

35
subtotal first page

0 (max 10 pts.) | 35 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-1 (max 20 pts.) | 34 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [0] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [x] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

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End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size		2
	Metric 2. Buffers and surrounding land use		7
	Metric 3. Hydrology		11
	Metric 4. Habitat		15
	Metric 5. Special Wetland Communities		0
	Metric 6. Plant communities, interspersion, microtopography		-1
	TOTAL SCORE		Category based on score breakpoints 34

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	(NO)	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	(YES) Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	(Category 2)	Category 3

modified

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Rachel Galloway
Date:	12/08/2020
Affiliation:	Collective Efforts, LLC
Address:	462 Perry Highway, West View, PA 15229
Phone Number:	412-459-0114 ext. 108
e-mail address:	rgalloway@collectiveefforts.com
Name of Wetland:	Wet-5
Vegetation Communit(ies):	PEM
HGM Class(es):	Riverine/Depression

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

Figure 6 and Figure 11 show the wetland area and location and are included with the Wetland Delineation and Stream Evaluation Report.

Wet-5 is located on left down bank of Stream-1.

Lat/Long or UTM Coordinate	40.756281, -80.935675
USGS Quad Name	Hanoverton
County	Columbiana
Township	Hanover Township
Section and Subsection	S21 15N R4W
Hydrologic Unit Code	050400010406
Site Visit	11/25/2020
National Wetland Inventory Map	none listed
Ohio Wetland Inventory Map	none listed
Soil Survey	ZeA - Zepernick silt loam
Delineation report/map	Wet-5 is shown on Figure 6 and Figure 11 of the Wetland Delineation and Stream Evaluation Report

Name of Wetland: Wet-5	
Wetland Size (acres, hectares):	0.03 acre

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

Figure 11 shows the wetland area and location and is included with the Wetland Delineation and Stream Evaluation Report.

Wet-5 is located on left down bank of Stream-1.

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 25	**Category:** CAT 1

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	X	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	(NO) Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	(NO) Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	(NO) Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	(NO) Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	(NO) Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	(NO) Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	(NO) Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	(NO) Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Wet-5	Rater(s): Rachel Galloway	Date: 12/08/2020

Metric 1. Wetland Area (size).

0 (max 6 pts.) | 0 (subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

3 (max 14 pts.) | 3 (subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrub land, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

14 (max 30 pts.) | 17 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [ ] Precipitation (1)
- [x] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [x] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [x] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [X] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

11 (max 20 pts.) | 28 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [x] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [X] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

28 (subtotal this page)

last revised 1 February 2001 jjm

Site: Wet-5	Rater(s): Rachel Galloway	Date: 12/08/2020

28
subtotal first page

0 (max 10 pts.) | 28 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-3 (max 20 pts.) | 25 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [0] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [x] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

25

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size		0
	Metric 2. Buffers and surrounding land use		3
	Metric 3. Hydrology		14
	Metric 4. Habitat		11
	Metric 5. Special Wetland Communities		0
	Metric 6. Plant communities, interspersion, microtopography		-3
	TOTAL SCORE		Category based on score breakpoints 25

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	(Category 1)	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

APPENDIX C – Stream Data Forms

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 56

Stream & Location: Stream-1SP *RM:* 46.0 *Date* 11/18/20

STREAM-1 *Scorers Full Name & Affiliation:* Rachel Galloway - Collective Efforts, LLC.

River Code: ___-___-___ *STORET #:* ____ *Lat./ Long.:* (NAD 83 - decimal °) 40.748739 / -80.941735 *Office verified location* ☐

1] *SUBSTRATE* Check *ONLY* **Two** substrate *TYPE BOXES*; estimate % or note every type present

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐ ☐ BLDR /SLABS [10]			☐ ☐ HARDPAN [4]		
☐ ☐ BOULDER [9]			☐ ☐ DETRITUS [3]		
☐ ☐ COBBLE [8]	5	15	☐ ☐ MUCK [2]		
☒ ☐ GRAVEL [7]	35	25	☐ ☐ SILT [2]	20	25
☐ ☒ SAND [6]	40	35	☐ ☐ ARTIFICIAL [0]		
☐ ☐ BEDROCK [5]			(Score natural substrates; ignore sludge from point-sources)		

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☒ 3 or less [0]

Check ONE (*Or 2 & average*)

ORIGIN
- ☐ LIMESTONE [1]
- ☐ TILLS [1]
- ☐ WETLANDS [0]
- ☐ HARDPAN [0]
- ☒ SANDSTONE [0]
- ☐ RIP/RAP [0]
- ☐ LACUSTURINE [0]
- ☐ SHALE [-1]
- ☐ COAL FINES [-2]

SILT / EMBEDDEDNESS

QUALITY
- ☐ HEAVY [-2]
- ☐ MODERATE [-1]
- ☒ NORMAL [0]
- ☐ FREE [1]
- ☐ EXTENSIVE [-2]
- ☐ MODERATE [-1]
- ☒ NORMAL [0]
- ☐ NONE [1]

Comments

Substrate 13 *Maximum 20*

2] *INSTREAM COVER* Indicate presence 0 to 3: **0**-Absent; **1**-Very small amounts or if more common of marginal quality; **2**-Moderate amounts, but not of highest quality or in small amounts of highest quality; **3**-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

1 UNDERCUT BANKS [1]	___ POOLS > 70cm [2]	___ OXBOWS, BACKWATERS [1]
1 OVERHANGING VEGETATION [1]	___ ROOTWADS [1]	___ AQUATIC MACROPHYTES [1]
___ SHALLOWS (IN SLOW WATER) [1]	___ BOULDERS [1]	1 LOGS OR WOODY DEBRIS [1]
1 ROOTMATS [1]		

AMOUNT Check ONE (*Or 2 & average*)
- ☐ EXTENSIVE >75% [11]
- ☒ MODERATE 25-75% [7]
- ☒ SPARSE 5-<25% [3]
- ☐ NEARLY ABSENT <5% [1]

Comments

Cover Maximum 20 11

3] *CHANNEL MORPHOLOGY* Check ONE in each category (*Or 2 & average*)

SINUOSITY
- ☐ HIGH [4]
- ☐ MODERATE [3]
- ☒ LOW [2]
- ☐ NONE [1]

DEVELOPMENT
- ☐ EXCELLENT [7]
- ☒ GOOD [5]
- ☒ FAIR [3]
- ☐ POOR [1]

CHANNELIZATION
- ☐ NONE [6]
- ☒ RECOVERED [4]
- ☐ RECOVERING [3]
- ☐ RECENT OR NO RECOVERY [1]

STABILITY
- ☒ HIGH [3]
- ☐ MODERATE [2]
- ☐ LOW [1]

Comments

Channel Maximum 20 13

4] *BANK EROSION AND RIPARIAN ZONE* Check **ONE** in each category for *EACH BANK* (*Or 2 per bank & average*)

River right looking downstream

L	R	EROSION
☐	☐	NONE / LITTLE [3]
☒	☒	MODERATE [2]
☐	☐	HEAVY / SEVERE [1]

L	R	RIPARIAN WIDTH
☐	☐	WIDE > 50m [4]
☐	☐	MODERATE 10-50m [3]
☒	☒	NARROW 5-10m [2]
☐	☐	VERY NARROW < 5m [1]
☐	☐	NONE [0]

L	R	FLOOD PLAIN QUALITY
☐	☐	FOREST, SWAMP [3]
☒	☒	SHRUB OR OLD FIELD [2]
☐	☐	RESIDENTIAL, PARK, NEW FIELD [1]
☐	☐	FENCED PASTURE [1]
☐	☐	OPEN PASTURE, ROWCROP [0]

L	R	
☐	☐	CONSERVATION TILLAGE [1]
☐	☐	URBAN OR INDUSTRIAL [0]
☐	☐	MINING / CONSTRUCTION [0]

Indicate predominant land use(s) past 100m riparian.

Comments

Riparian Maximum 10 6

5] *POOL / GLIDE AND RIFFLE / RUN QUALITY*

MAXIMUM DEPTH Check **ONE** (*ONLY!*)
- ☐ > 1m [6]
- ☐ 0.7-<1m [4]
- ☐ 0.4-<0.7m [2]
- ☐ 0.2-<0.4m [1]
- ☒ < 0.2m [0]

CHANNEL WIDTH Check ONE (*Or 2 & average*)
- ☒ POOL WIDTH > RIFFLE WIDTH [2]
- ☐ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY Check ALL that apply
- ☐ TORRENTIAL [-1]
- ☐ VERY FAST [1]
- ☐ FAST [1]
- ☒ MODERATE [1]
- ☐ SLOW [1]
- ☐ INTERSTITIAL [-1]
- ☐ INTERMITTENT [-2]
- ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Comments

Pool / Current Maximum 12 3

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (*Or 2 & average*). ☐ NO RIFFLE [metric=0]

RIFFLE DEPTH
- ☐ BEST AREAS > 10cm [2]
- ☒ BEST AREAS 5-10cm [1]
- ☐ BEST AREAS < 5cm [metric=0]

RUN DEPTH
- ☐ MAXIMUM > 50cm [2]
- ☒ MAXIMUM < 50cm [1]

RIFFLE / RUN SUBSTRATE
- ☐ STABLE (e.g., Cobble, Boulder) [2]
- ☒ MOD. STABLE (e.g., Large Gravel) [1]
- ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

RIFFLE / RUN EMBEDDEDNESS
- ☐ NONE [2]
- ☒ LOW [1]
- ☐ MODERATE [0]
- ☐ EXTENSIVE [-1]

Comments

Riffle / Run Maximum 8 4

6] *GRADIENT* (39.6 ft/mi) **DRAINAGE AREA** (2.44 mi²)
- ☐ VERY LOW - LOW [2-4]
- ☒ MODERATE [6-10]
- ☐ HIGH - VERY HIGH [10-6]

%POOL: 20 **%GLIDE:** 10 **%RUN:** 10 **%RIFFLE:** 60

Gradient Maximum 10 6

A] SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
- ☒ WADE
- ☐ L. LINE
- ☐ OTHER

STAGE

1st -sample pass- 2nd	
☐ HIGH	☐
☐ UP	☐
☒ NORMAL	☐
☐ LOW	☐
☐ DRY	☐

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☒ 0.12 Km
- ☐ OTHER

meters

CLARITY

1st --sample p ass-- 2nd	
☐ < 20 cm	☐
☐ 20-<40 cm	☐
☐ 40-70 cm	☐
☐ > 70 cm/ CTB	☐
☐ SECCHI DEPTH	☐

CANOPY

- ☐ > 85%- OPEN
- ☒ 55%-<85%
- ☐ 30%-<55%
- ☐ 10%-<30%
- ☐ <10%- CLOSED

1st pass _____ cm

2nd _____ cm

Comment RE: Reach consistency/ Is reach typical of steam?*, Recreation/* Observed - Inferred, *Other/* Sampling observations, Concerns, Access directions, etc.

STREAM-1 crosses study area under a bridge structure on Campbell Road. STREAM-1SP site photos and figures are included in the Wetland Delineation and Stream Evaluation Report.

Field Measurements:

Temperature: 5.7 °C Dissolved Oxygen: 16.32 mg/l

pH: 8.63 S.U. Conductivity: 364 µs/cm

B] AESTHETICS

- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OIL SHEEN
- ☐ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

C] RECREATION

AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

D] MAINTENANCE

Circle some & *COMMENT*

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES

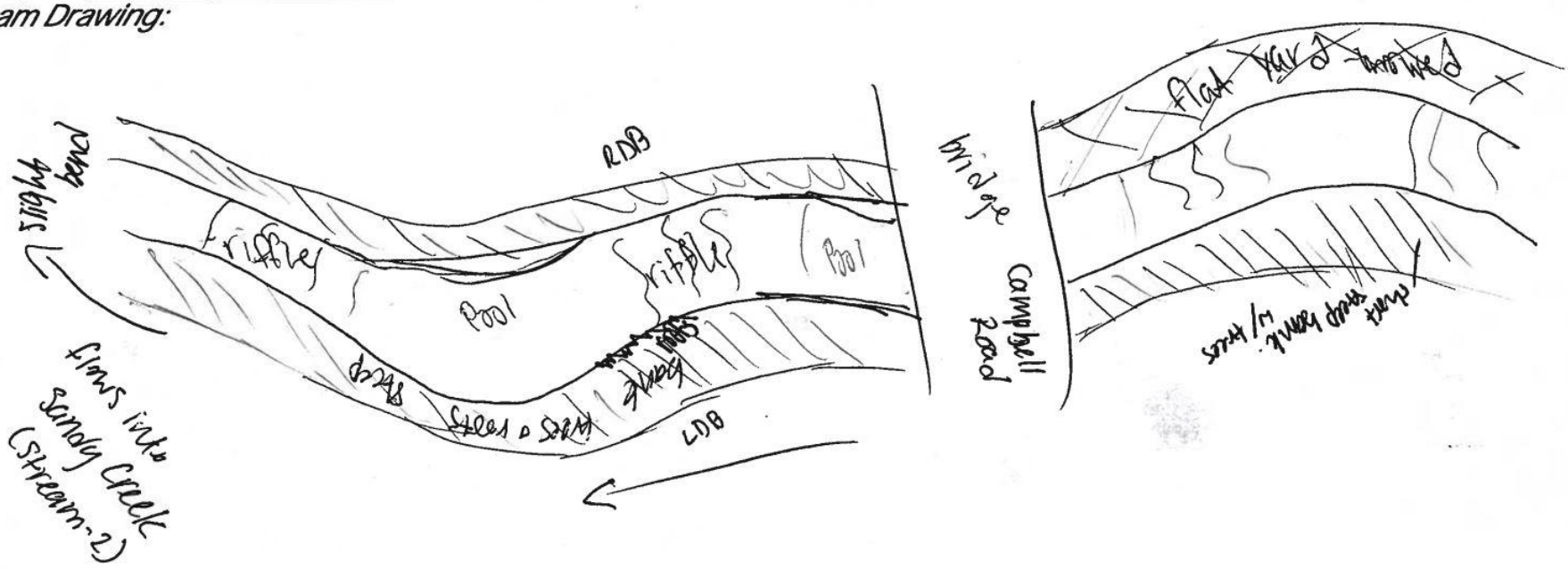
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

- **x̄ width** 9-10 ft
- **x̄ depth** 3-4 inches
- **max. depth** 8 inches
- **x̄ bankfull width** 10-11 ft
- **bankfull x̄ depth** approx 10-12 inches
- **W/D ratio** -
- **bankfull max. depth** -
- **floodprone x² width** -
- **entrench. ratio** -

Legacy Tree:

Stream Drawing:



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 54

Stream & Location: STREAM-2SP **RM:** 46.3 **Date** 11/18/20

STREAM-2 (Sandy Creek) **Scorers Full Name & Affiliation:** Rachel Galloway - Collective Efforts, LLC.

River Code: _ _ _ - _ _ _ - _ _ _ **STORET #:** _ _ _ _ _ _ **Lat./ Long.:** (NAD 83 - decimal °) 40.750572 / -80.936768 **Office verified location** ☐

1] SUBSTRATE

Check ***ONLY* Two** substrate *TYPE BOXES*; estimate % or note every type present

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐ ☐ BLDR /SLABS [10]			☐ ☐ HARDPAN [4]		
☐ ☐ BOULDER [9]			☐ ☐ DETRITUS [3]		
☐ ☐ COBBLE [8]	5	15	☐ ☐ MUCK [2]		
☒ ☐ GRAVEL [7]	30	25	☐ ☐ SILT [2]	25	25
☐ ☒ SAND [6]	40	35	☐ ☐ ARTIFICIAL [0]		
☐ ☐ BEDROCK [5]					

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☒ 3 or less [0]

Check ONE (*Or 2 & average*)

ORIGIN
- ☐ LIMESTONE [1]
- ☐ TILLS [1]
- ☐ WETLANDS [0]
- ☐ HARDPAN [0]
- ☒ SANDSTONE [0]
- ☐ RIP/RAP [0]
- ☐ LACUSTURINE [0]
- ☐ SHALE [-1]
- ☐ COAL FINES [-2]

SILT / EMBEDDEDNESS

QUALITY
- ☐ HEAVY [-2]
- ☐ MODERATE [-1]
- ☒ NORMAL [0]
- ☐ FREE [1]
- ☐ EXTENSIVE [-2]
- ☐ MODERATE [-1]
- ☒ NORMAL [0]
- ☐ NONE [1]

Substrate 13 *Maximum 20*

Comments

2] INSTREAM COVER

Indicate presence 0 to 3: **0**-Absent; **1**-Very small amounts or if more common of marginal quality; **2**-Moderate amounts, but not of highest quality or in small amounts of highest quality; **3**-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

1 UNDERCUT BANKS [1]	____ POOLS > 70cm [2]	____ OXBOWS, BACKWATERS [1]	
1 OVERHANGING VEGETATION [1]	____ ROOTWADS [1]	____ AQUATIC MACROPHYTES [1]	
____ SHALLOWS (IN SLOW WATER) [1]	____ BOULDERS [1]	____ LOGS OR WOODY DEBRIS [1]	
1 ROOTMATS [1]			

AMOUNT

Check ONE (*Or 2 & average*)
- ☐ EXTENSIVE >75% [11]
- ☒ MODERATE 25-75% [7]
- ☒ SPARSE 5-<25% [3]
- ☐ NEARLY ABSENT <5% [1]

Cover *Maximum 20* 8

Comments

3] CHANNEL MORPHOLOGY

Check ONE in each category (*Or 2 & average*)

SINUOSITY
- ☐ HIGH [4]
- ☐ MODERATE [3]
- ☒ LOW [2]
- ☐ NONE [1]

DEVELOPMENT
- ☐ EXCELLENT [7]
- ☐ GOOD [5]
- ☒ FAIR [3]
- ☐ POOR [1]

CHANNELIZATION
- ☐ NONE [6]
- ☒ RECOVERED [4]
- ☐ RECOVERING [3]
- ☐ RECENT OR NO RECOVERY [1]

STABILITY
- ☐ HIGH [3]
- ☒ MODERATE [2]
- ☐ LOW [1]

Channel *Maximum 20* 11

Comments

4] BANK EROSION AND RIPARIAN ZONE

Check **ONE** in each category for ***EACH BANK*** (*Or 2 per bank & average*)

River right looking downstream

EROSION

L	R	
☒	☒	NONE / LITTLE [3]
☐	☐	MODERATE [2]
☐	☐	HEAVY / SEVERE [1]

RIPARIAN WIDTH

L	R	
☐	☐	WIDE > 50m [4]
☒	☐	MODERATE 10-50m [3]
☐	☒	NARROW 5-10m [2]
☐	☐	VERY NARROW < 5m [1]
☐	☐	NONE [0]

FLOOD PLAIN QUALITY

L	R	
☐	☐	FOREST, SWAMP [3]
☒	☒	SHRUB OR OLD FIELD [2]
☐	☐	RESIDENTIAL, PARK, NEW FIELD [1]
☐	☐	FENCED PASTURE [1]
☐	☐	OPEN PASTURE, ROWCROP [0]

L	R	
☐	☐	CONSERVATION TILLAGE [1]
☐	☐	URBAN OR INDUSTRIAL [0]
☐	☐	MINING / CONSTRUCTION [0]

Indicate predominant land use(s) past 100m riparian.

Riparian *Maximum 10* 7

Comments

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

Check **ONE** (*ONLY!*)
- ☐ > 1m [6]
- ☐ 0.7-<1m [4]
- ☒ 0.4-<0.7m [2]
- ☐ 0.2-<0.4m [1]
- ☐ < 0.2m [0]

CHANNEL WIDTH

Check ONE (*Or 2 & average*)
- ☐ POOL WIDTH > RIFFLE WIDTH [2]
- ☒ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply

☐ TORRENTIAL [-1]	☒ SLOW [1]
☐ VERY FAST [1]	☐ INTERSTITIAL [-1]
☐ FAST [1]	☐ INTERMITTENT [-2]
☒ MODERATE [1]	☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool / Current *Maximum 12* 5

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (*Or 2 & average*). ☐ **NO RIFFLE [metric=0]**

RIFFLE DEPTH
- ☐ BEST AREAS > 10cm [2]
- ☒ BEST AREAS 5-10cm [1]
- ☐ BEST AREAS < 5cm [metric=0]

RUN DEPTH
- ☐ MAXIMUM > 50cm [2]
- ☒ MAXIMUM < 50cm [1]

RIFFLE / RUN SUBSTRATE
- ☐ STABLE (e.g., Cobble, Boulder) [2]
- ☒ MOD. STABLE (e.g., Large Gravel) [1]
- ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

RIFFLE / RUN EMBEDDEDNESS
- ☐ NONE [2]
- ☒ LOW [1]
- ☐ MODERATE [0]
- ☐ EXTENSIVE [-1]

Riffle / Run *Maximum 8* 4

Comments

6] GRADIENT

DRAINAGE AREA (3.57 mi²)

(31 ft/mi)
- ☐ VERY LOW - LOW [2-4]
- ☒ MODERATE [6-10]
- ☐ HIGH - VERY HIGH [10-6]

%POOL: 20 **%GLIDE:** 20 **%RUN:** 30 **%RIFFLE:** 30

Gradient *Maximum 10* 6

A] SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
- ☒ WADE
- ☐ L. LINE
- ☐ OTHER

STAGE

1st -sample pass- 2nd	
☐ HIGH	☐
☐ UP	☐
☒ NORMAL	☐
☐ LOW	☐
☐ DRY	☐

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☒ 0.12 Km
- ☐ OTHER

meters

CLARITY

1st --sample p ass-- 2nd	
☐ < 20 cm	☐
☐ 20-<40 cm	☐
☐ 40-70 cm	☐
☐ > 70 cm/ CTB	☐
☐ SECCHI DEPTH	☐

1st pass 2nd _____ cm

CANOPY

- ☐ > 85%- OPEN
- ☒ 55%-<85%
- ☐ 30%-<55%
- ☐ 10%-<30%
- ☐ <10%- CLOSED

Comment RE: Reach consistency/ Is reach typical of steam?, *Recreation/* Observed - Inferred, *Other/* Sampling observations, Concerns, Access directions, etc.

STREAM-2SP crosses study area under a bridge structure on near the intersection of Lincoln Highway and 1st Street. STREAM-2SP site photos and figures are included in the Wetland Delineation and Stream Evaluation Report.

Field Measurements:

Temperature: 6.5 °C Dissolved Oxygen: 14.29 mg/l

pH: 8.67 S.U. Conductivity: 417 µs/cm

B] AESTHETICS

- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OIL SHEEN
- ☐ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

C] RECREATION

AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

D] MAINTENANCE

Circle some & *COMMENT*

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES

WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

- $\bar{x}$ width 10-12 ft
- $\bar{x}$ depth 1 ft
- max. depth 1-2 ft
- $\bar{x}$ bankfull width 12 ft
- bankfull $\bar{x}$ depth 1-2 ft
- W/D ratio -
- bankfull max. depth -
- floodprone x^2 width -
- entrench. ratio -

Legacy Tree:

Stream Drawing:

Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3) 66

SITE NAME/LOCATION: Stream-3SP (STREAM-3)

SITE NUMBER: _____ RIVER BASIN: Tuscarawas - Headwaters Sandy Creek RIVER CODE: - DRAINAGE AREA (mi²): 0.54

LENGTH OF STREAM REACH (ft): 200 LAT: 40.752868 LONG: -80.938592 RIVER MILE: 46.27

DATE: 11/20/2020 SCORER: R. Galloway COMMENTS: Crossing under Cemetery Road Bridge

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]		☐	SILT [3 pt]	25%
☐	BOULDER (>256 mm) [16 pts]		☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pts]		☐	FINE DETRITUS [3 pts]	
☐	COBBLE (65-256 mm) [12 pts]	15%	☐	CLAY or HARDPAN [0 pt]	
☒	GRAVEL (2-64 mm) [9 pts]	50%	☐	MUCK [0 pts]	
☐	SAND (<2 mm) [6 pts]		☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 20% (A)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12

TOTAL NUMBER OF SUBSTRATE TYPES: 4 (B)

HHEI Metric Points

Substrate Max = 40: 16

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5pts]
☒	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: _____ MAXIMUM POOL DEPTH (centimeters): 13

Pool Depth Max = 30: 25

3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check *ONLY* one box):

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☒	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (≤ 3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]		

COMMENTS: _____ AVERAGE BANKFULL WIDTH (meters): 3

Bankfull Width Max=30: 25

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream *

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R	L	R
☐	☐ Wide >10m	☐	☐ Mature Forest, Wetland	☐	☐ Conservation Tillage
☐	☐ Moderate 5-10m	☒	☐ Immature Forest, Shrub or Old Field	☐	☐ Urban or Industrial
☒	☒ Narrow <5m	☐	☒ Residential, Park, New Field	☐	☐ Open Pasture, Row Crop
☐	☐ None	☐	☐ Fenced Pasture	☐	☐ Mining or Construction

COMMENTS: _____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☒	Stream Flowing	☐	Moist Channel, isolated pools, no flow (intermittent)
☐	Subsurface flow with isolated pools (interstitial)	☐	Dry channel, no water (ephemeral)

COMMENTS: _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☒	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☒ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Sandy Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Hanoverton NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: Columbiana Township/City: Hanover Township - Hanoverton

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/17/2020 Quantity: approx. 0.14 inch

Photo-documentation Notes: Photos included in Wetland Delineation and Stream Evaluation Report

Elevated Turbidity? (Y/N): N Canopy (% open): 85%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) 6.8 Dissolved Oxygen (mg/l) 13.28 pH (S.U.) 8.19 Conductivity (umhos/cm) 221

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: _____

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) Y Species observed (if known): small fish observed - species unknown

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

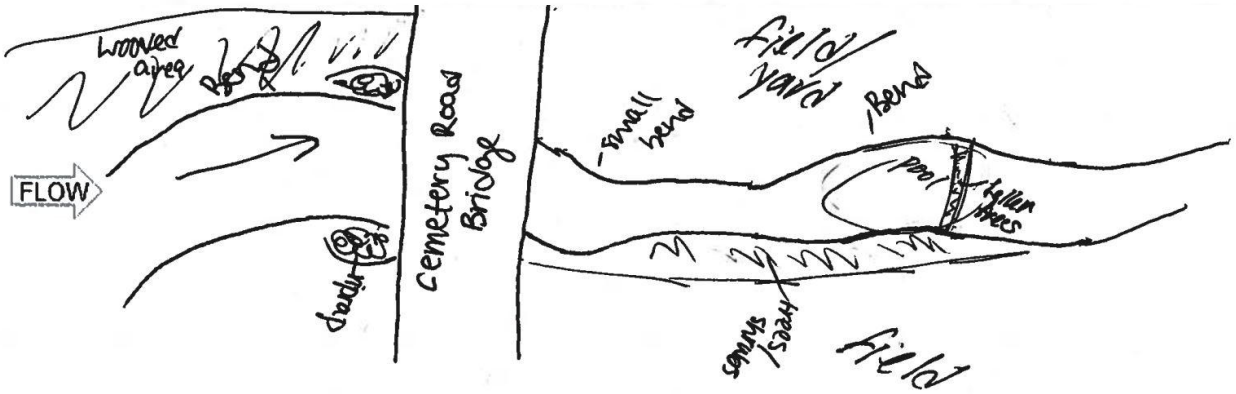
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Stream-3 crosses under the bridge on Cemetery Road approximately 180 feet west from the intersection of Cemetery Road and 2nd Street.

Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3) 34

SITE NAME/LOCATION: Stream-4SP (STREAM-4)

SITE NUMBER: _____ RIVER BASIN: Tuscarawas - Headwaters Sandy Creek RIVER CODE: - DRAINAGE AREA (mi²): 0.081

LENGTH OF STREAM REACH (ft): 200 LAT: 40.752663 LONG: -80.931986 RIVER MILE: 46.90

DATE: 11/20/2020 SCORER: R. Galloway COMMENTS: located adjacent to 30060 Canal street parking lot

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]		☐	SILT [3 pt]	25%
☐	BOULDER (>256 mm) [16 pts]		☒	LEAF PACK/WOODY DEBRIS [3 pts]	30%
☐	BEDROCK [16 pts]		☐	FINE DETRITUS [3 pts]	
☒	COBBLE (65-256 mm) [12 pts]	30%	☐	CLAY or HARDPAN [0 pt]	
☐	GRAVEL (2-64 mm) [9 pts]	15%	☐	MUCK [0 pts]	
☐	SAND (<2 mm) [6 pts]		☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 30% (A)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15

TOTAL NUMBER OF SUBSTRATE TYPES: 4 (B)

HHEI Metric Points

Substrate Max = 40: 19

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5pts]
☐	> 10 - 22.5 cm [25 pts]	☒	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: no water in channel at time of evaluation

MAXIMUM POOL DEPTH (centimeters): -

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check *ONLY* one box):

☐	> 4.0 meters (> 13') [30 pts]	☒	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (≤ 3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]		

COMMENTS: _____

AVERAGE BANKFULL WIDTH (meters): 1.5

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream *

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☒	☒	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☒	☒	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: _____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (intermittent)
☐	Subsurface flow with isolated pools (interstitial)	☒	Dry channel, no water (ephemeral)

COMMENTS: _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐	None	☒	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☒ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Sandy Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Hanoverton NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: Columbiana Township/City: Hanover Township - Hanoverton

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/17/2020 Quantity: approx. 0.14 inch

Photo-documentation Notes: Photos included in Wetland Delineation and Stream Evaluation Report

Elevated Turbidity? (Y/N): N Canopy (% open): 90%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) - Dissolved Oxygen (mg/l) - pH (S.U.) - Conductivity (umhos/cm) -

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: _____

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

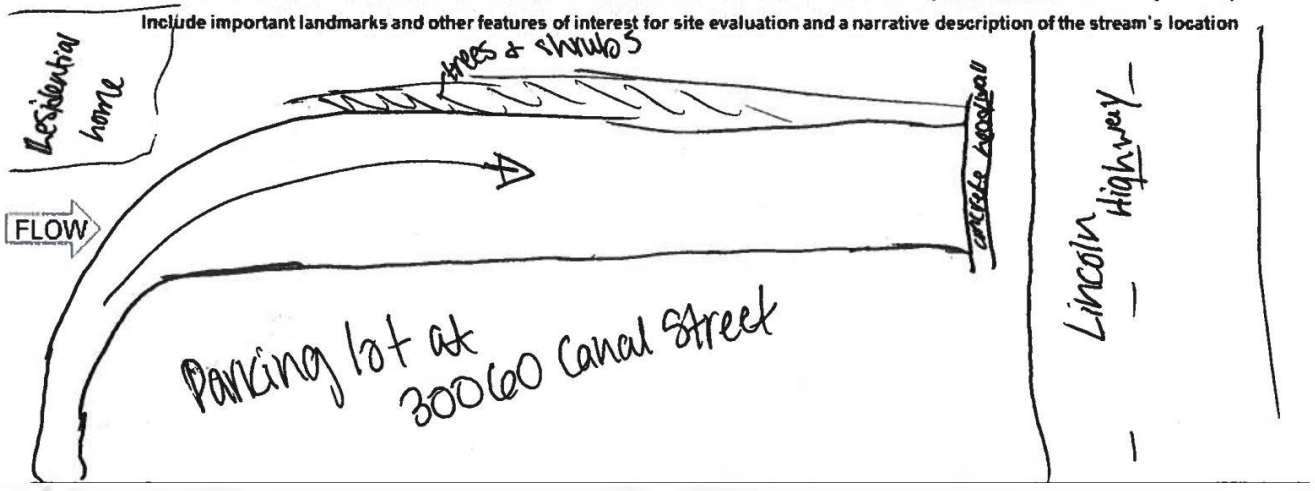
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



No water or flow at the time of evaluation. Stream-4 located adjacent to 30060 Canal Street- flows into concrete headwall at edge of pavement of Lincoln Highway.

Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3) 25

SITE NAME/LOCATION: Stream-5SP (STREAM-5)

SITE NUMBER: _____ RIVER BASIN: Tuscarawas - Headwaters Sandy Creek RIVER CODE: - DRAINAGE AREA (mi²): 0.14

LENGTH OF STREAM REACH (ft): 200 LAT: 40.758051 LONG: -80.92694 RIVER MILE: 46.96

DATE: 11/20/2020 SCORER: R. Galloway COMMENTS: small/dry channel located in field east of Randel Road

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: [X] NONE / NATURAL CHANNEL [ ] RECOVERED [ ] RECOVERING [ ] RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
[ ]	BLDR SLABS [16 pts]		[X]	SILT [3 pt]	25%
[ ]	BOULDER (>256 mm) [16 pts]		[X]	LEAF PACK/WOODY DEBRIS [3 pts]	40%
[ ]	BEDROCK [16 pts]		[ ]	FINE DETRITUS [3 pts]	
[ ]	COBBLE (65-256 mm) [12 pts]		[ ]	CLAY or HARDPAN [0 pt]	
[ ]	GRAVEL (2-64 mm) [9 pts]	15%	[ ]	MUCK [0 pts]	
[ ]	SAND (<2 mm) [6 pts]	20%	[ ]	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0%

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 4

HHEI Metric Points

Substrate Max = 40: 10

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- [ ] > 30 centimeters [20 pts]
- [ ] > 22.5 - 30 cm [30 pts]
- [ ] > 10 - 22.5 cm [25 pts]
- [ ] 5 cm - 10 cm [15 pts]
- [ ] < 5 cm [5pts]
- [X] NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: no water in channel at time of evaluation MAXIMUM POOL DEPTH (centimeters): -

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check *ONLY* one box):

- [ ] > 4.0 meters (> 13') [30 pts]
- [ ] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- [ ] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- [X] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- [ ] ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS: _____ AVERAGE BANKFULL WIDTH (meters): 1.2

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream *

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
[ ]	[ ]	Wide >10m	[ ]	[ ]	Mature Forest, Wetland	[ ]	[ ]	Conservation Tillage
[ ]	[ ]	Moderate 5-10m	[ ]	[ ]	Immature Forest, Shrub or Old Field	[ ]	[ ]	Urban or Industrial
[ ]	[X]	Narrow <5m	[ ]	[X]	Residential, Park, New Field	[X]	[ ]	Open Pasture, Row Crop
[X]	[ ]	None	[ ]	[ ]	Fenced Pasture	[ ]	[ ]	Mining or Construction

COMMENTS: narrow wooded area parallel to RDB, farmed field on LDB

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- [ ] Stream Flowing
- [ ] Subsurface flow with isolated pools (interstitial)
- [ ] Moist Channel, isolated pools, no flow (intermittent)
- [X] Dry channel, no water (ephemeral)

COMMENTS: _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

- [X] None
- [ ] 0.5
- [ ] 1.0
- [ ] 1.5
- [ ] 2.0
- [ ] 2.5
- [ ] 3.0
- [ ] >3

STREAM GRADIENT ESTIMATE

[X] Flat (0.5 ft/100 ft) [ ] Flat to Moderate [ ] Moderate (2 ft/100 ft) [ ] Moderate to Severe [ ] Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Sandy Creek Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Hanoverton NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: Columbiana Township/City: Hanover Township - Hanoverton

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/17/2020 Quantity: approx. 0.14 inch

Photo-documentation Notes: Photos included in Wetland Delineation and Stream Evaluation Report

Elevated Turbidity? (Y/N): N Canopy (% open): 90-100%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) - Dissolved Oxygen (mg/l) - pH (S.U.) - Conductivity (umhos/cm) -

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: _____

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

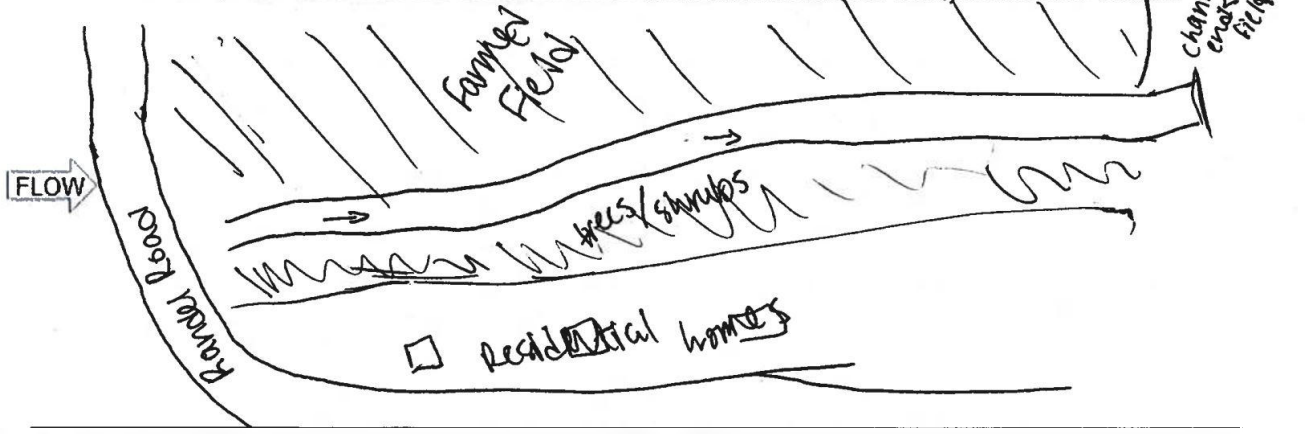
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



No water or flow at the time of evaluation. Stream-5 located at edge of farmed field running parallel to tree line east of Randel Road.Channel appeared to end before reaching mowed grass yard connected to Chestnut lane.

APPENDIX D - Qualifications

RESUME RACHEL GALLOWAY

Ms. Galloway is an environmental scientist with Collective Efforts, LLC. Her experience includes wetland delineations and determinations, environmental habitat assessments, stream evaluations, mapping with geographic information systems, and technical report writing. Ms. Galloway's environmental background focuses on environmental permitting and GIS.

ACAA Cargo Area 4 Wetland Delineation
Allegheny County, Pennsylvania
Ms. Galloway was part of a field team conducting wetland delineations for areas adjacent to Cargo Bay 3 within Pittsburgh International Airport (PIT). In order to complete the wetland delineations, Ms. Galloway and other team members collected and reviewed surrounding soil, vegetation, and hydrology indicators for potential wetland presence and completed wetland data forms. Her responsibilities included field work, plant identification, GPS data collection, and report preparation. Ms. Galloway was the primary map producer for the project using ArcMap.

Wetland Determination Camp Meeting Road Slide Repair
Bell Acres Borough, Allegheny County, Pennsylvania
Ms. Galloway was a member of a team determining the presence of potential wetlands for the Allegheny County Department of Public Works (ACDPW) as part of preliminary design work associated with the rehabilitation of Camp Meeting Road where a landslide occurred. The project also included the replacement of a 36-inch diameter culvert with a larger culvert to convey the 10-year storm event. The wetland determination included a desktop review and evaluation of background mapping and historical information to determine if the potential for wetland and streams existed within the project area. Ms. Galloway conducted a site walk to visually assess the potential for wetlands and streams within the project area. Her responsibilities included field work, plant identification, GPS navigation and data collection, and report preparation.

Wetland Delineation and Determination
Various Locations, Various States
Prior to joining Collective Efforts, Ms. Galloway took part in several wetland delineation and determinations in Pennsylvania, West Virginia, Ohio, New York, and Texas, primarily for energy sector projects. In order to complete wetland delineations, Ms. Galloway conducted desktop analysis of background mapping and historical information to identify potential wetlands and conduct field evaluation. For field evaluations, Ms. Galloway collected and reviewed surrounding soil, vegetation, and hydrology indicators for potential wetland presence and completed the associated wetland data forms. Associated stream identification included evaluation for macroinvertebrate presence, substrate type, and hydrological condition. Her responsibilities included field work, plant identification, GPS data collection, and report preparation.

Highlights:
- Geographic information systems (GIS)
- Wetland Determination and Delineation
- Stream Identification and Assessment
- Habitat Assessment
- Public involvement
- Erosion and Sedimentation Control Plans and NPDES Permits Review

Education:
- B.S. Geography: Environmental Studies and Sustainability, Slippery Rock University of Pennsylvania
- Certification in Geographic Information Sciences, Slippery Rock University of Pennsylvania

Professional History:
- SWCA Environmental Consultants
- Schuylkill County Conservation District

Certifications, Training and Affiliations:
- Wetland Delineation 36 Hour Training via The Swamp School
- 10-Hour OSHA General Industry Safety Training
- OSHA 24-Hour Hazwoper Training
- Member of Gamma Theta Upsilon (GTU) International Geographical Honor Society

RESUME DOMINIC COSTANTINI

Mr. Costantini is an environmental scientist at Collective Efforts, LLC. His expertise in the environmental field includes stream and wetland delineations, stream sampling and analysis, field investigations, and water and soil sampling.

ACAA Cargo Area 3 Wetland Jurisdictional Delineations
Allegheny County, Pennsylvania

Mr. Costantini was a member of the field team responsible for delineating wetland areas at the Pittsburgh International Airport (PIT) for Allegheny County Airport Authority (ACAA). The project area was located adjacent to the Cargo Area 3 taxiway and covered approximately 25 acres. After the wetland delineation was completed, the results were confirmed by the Pennsylvania Department of Environmental Protection (PADEP) and the United States Army Corps of Engineers (USACE). Upon approval from PADEP and USACE, this jurisdictional delineation remains valid for five years.

ACAA BCCD Wetland Mitigation Site Determination
Beaver County, Pennsylvania

Mr. Costantini was a member of the field team that conducted a wetland and stream evaluation at Independence Marsh located in Beaver County in a wetland area previously established for mitigation purposes. The field crew identified vegetation and structures within the marsh. Mr. Costantini assisted with completing the wetland data forms and evaluating soil samples. The data collected was used to determine if Independence Marsh was effectively performing the common functions and values for wetlands, as it was designed to do. He also identified the numerous structures constructed in the stream for mitigation purposes, and an overflow structure designed to channel water to Raccoon Creek during high flood events.

ACAA Clinton – Enlow Bridge Replacement
Allegheny County, Pennsylvania

Mr. Costantini was part of a wetland determination team tasked to inspect the surround areas of a bridge along property owned by ACAA along Clinton – Enlow Road for any possible wetlands. The team completed multiple wetland determinations and delineations identifying three wetlands around the bridge. Following the field work, Mr. Costantini prepared the written report summarizing the findings.

ACAA Cargo Area 4 Wetland Delineations
Allegheny County, Pennsylvania

Mr. Costantini was part of a team that was tasked with inspecting the entire area under consideration for building of the future Cargo Area 4 and the expanded taxiway. The team spent a total of four workdays walking through the project area and inspecting it for any areas that potentially be considered wetlands. Multiple points of interest were marked using the Topcon GPS system. After field work was completed Mr. Costantini and the rest of the field crew members created the cargo area 4 Wetland Report that included plant identification and a description of the field findings.

Highlights:
- Over two years of environmental field work experience
- Projects located in PA, and OH
- Wetland delineations
- Stream assessments and water quality assessments
- Sampling and transporting of hazardous materials

Education:
- B.S. Environmental Science, California University of Pennsylvania

Professional History:
- Collective Efforts, LLC

Certifications, Training and Affiliations:
- OSHA 24-Hour HAZMAT Training
- OSHA 8-Hour HAZMAT Training Refresher
- Confined Space Training

RESUME BRIANNA SHEA

Ms. Shea is an environmental scientist at Collective Efforts, LLC. Her experience in the environmental field includes stream evaluations, soil sampling, mapping and data management with GIS, and plant identification. In addition, Ms. Shea has experience as a construction inspector for infrastructure replacement projects.

ACAA Cargo Area 4 Wetland Delineation
Allegheny County, Pennsylvania
Ms. Shea was part of a field team tasked with conducting a wetland delineation for areas within the Pittsburgh International Airport, adjacent to Cargo Area 3, where potential construction for the proposed Cargo Area 4 expansion were likely to occur. The field work conducted by Ms. Shea and other team members in the areas of interest consisted of GPS data collection, plant identification, hydrological observations, and soil sampling and classification. Once data from the four days of field work was compiled by the team, report preparation began by Ms. Shea and other team members to present the team's findings.

Lower Chippewa Invasive Partnership
Dunn County, Wisconsin
While with a previous employer, Ms. Shea was a member of the field crew for the Lower Chippewa Invasive Partnership (LCIP) assisting in the identification and removal of invasive species like Amur cork trees. Mechanical methods of removal consisted of loppers and handsaws for smaller tree species. Chemical removal methods were implemented when species were too large to cut and involved shaving off the bark around the tree and applying an aquatic safe herbicide (Glyphosate). Removals occurred around the Menomonie area of Dunn County on public and private lands.

USDA-NRCS and LWCD Internship
Dunn County, Wisconsin
Prior to joining Collective Efforts, Ms. Shea was a conservation intern for Dunn County's Land and Water Conservation Division (LWCD) and the United States Department of Agriculture Natural Resource Conservation Services (USDA-NRCS). During her internship she worked closely with county, state, and federal conservation agencies and local non-profit organizations including the Lower Chippewa Invasive Partnership (LCIP), U.S. Fish and Wildlife Service (USFWS), county surveying, and Department of Natural Resources (DNR) Wildlife, Fisheries, and Forestry. Her projects with the LWCD involved citizen-based stream monitoring to determine stream health based on macro-invertebrate sampling and stream characteristics. With the U.S. Fish and Wildlife Services and Trout Unlimited, Ms. Shea assisted in stream shocking in various streams to record trout populations. Duties with the USDA-NRCS involved bulk density sampling, soil sampling, GIS data management, and compliance walkthroughs of landowners and farmers enrolled in NRCS easement and incentive programs like Conservation Stewardship Program (CSP), Agricultural Conservation Easement Program (ACEP), Conservation Reserve Program (CRP), and Conservation Quality Incentives Program (EQIP).

Highlights:
- Geographic information systems (GIS)
- Wetland delineation
- Stream assessments and water quality assessments
- Soil sampling
- Plant identification

Education:
- B.S. Environmental Science Concentration: Land Resources, University of Wisconsin - Stout
- Minors: GIS and Plant Science, University of Wisconsin - Stout

Professional History:
- Collective Efforts, LLC
- Lower Chippewa Invasive Partnership
- Dunn County LWCD and USDA-NRCS

Certifications, Training and Affiliations:
- OSHA 10-Hour Construction Safety Training
- OSHA Permit and Non-Permit Confined Space Entry Certification
- PA Department of Transportation Certified Flagger