Appendix E: Environmental Mitigation

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Introduction

SAFETEA-LU specified that metropolitan transportation plans must include a discussion of types of potential environmental mitigation activities, to be developed in consultation with appropriate federal, state and tribal wildlife, land management, and regulatory agencies. MORPC continues to develop a discussion of environmental mitigation in accord with federal requirements. This is to be at the policy and/or strategic levels, not project-specific.

To address this, MORPC has prepared this appendix to the Metropolitan Transportation Plan, which maps the common environmental issues and discusses environmental mitigation strategies. MORPC analyzed the metropolitan transportation plan projects for potential environmental impacts using GIS. This appendix also includes some analysis of the number of specific projects near the various environmental features.

The ODOT Office of Environmental Services took a lead role in consulting with environmental resource agencies to obtain the data and discuss review of MPO Transportation Plans. As part of MORPC's public participation process MORPC includes the environmental resource agencies on Transportation Plan-related notices and announcements of document availability for review and comment including this appendix.

Methodology

There are three components to MORPC's methodology to address the SAFETEA-LU environmental mitigation requirement. First, through ODOT's consultation with the environmental resource agencies and MORPC's own data collection activities, maps of the most common environmental features have been developed. Second, a discussion of these is provided including general strategies that are applied when a project is implemented that impacts a particular environmental resource or feature. Third, in aggregate, the number of projects that could impact the various resources has been summarized. Note that for the third item, projects are very conceptual at the Transportation Plan stage. To advance any project to construction, additional study and detailed design will need to be completed. For projects that will use state or federal funds, this will include detailed environmental study in compliance with NEPA and other federal and ODOT requirements.

Common Environmental Issues

In consultation with the ODOT Office of Environmental Services(OES) four common environmental issues have been identified for discussion in this Transportation Plan Appendix. These are:

- Streams and Wetlands
- Threatened and Endangered Species
- Section 4(f) Land
- Cultural Resources

The following sections provide a brief description of each of these, map these issues for the MORPC area, and discuss mitigation when projects may impact the environmental issue. The projects were evaluated for potential environmental impacts by overlaying them on different environmental resource maps using GIS techniques.

Streams and Wetlands

The MORPC area includes numerous water resources including rivers, streams, upground reservoirs, and potential wetlands as shown in figures 1 and 2. Many transportation projects may cross or run alongside a stream or river or touch a wetland area. In these cases it is a goal to avoid, to the fullest extent practicable, any activity that adversely impacts streams or wetlands during the design, construction, or maintenance of the transportation facility. As most of the projects in the Transportation Plan will use state or federal funds, they will follow ODOT's Project Development Process (PDP). Within the PDP, ODOT strives to achieve the above goal.

ODOT takes appropriate action throughout the PDP to avoid, minimize, and mitigate impacts as required by federal, state, and local law. In the event that impacts to streams and wetlands are unavoidable, ODOT considers a wide variety of mitigation strategies, which always begins with evaluation of on-site opportunities (e.g., natural channel design techniques, bankfull culverts, wetland creation, etc.) within the project work area. On-site mitigation is mitigation opportunity within close proximity (one mile) of the project or within the 10 Digit Hydrological Unit Code (HUC) watersheds (refer to Figure 3) where the project occurs. Environmental resource agencies also prefer on-site mitigation. Once the on-site resources are exhausted, the search for mitigation opportunities may shift to off-site, within one mile of the project area, followed by a search within a specific 8-Digit Hydrological Unit Code (HUC) watershed. Mitigation opportunities may include mitigation banking, stream and wetland creation, restoration, and/or preservation, and possibly even preservation of upland buffers adjacent to stream and wetland resources.

Impact analysis and mitigation are integral parts of the project development process. Early review and analysis of project alternatives by regulatory and resource agencies combined with effective inter-office

coordination are required to develop successful transportation projects. ODOT follows guidelines for the development of mitigation as required by the U.S. Army Corps of Engineers (USACE) and Ohio Environmental Protection Agency (OEPA). The USACE mitigation guidelines are outlined in the latest USACE Regulatory Guidance Letter (RGL) 02-02, dated December 24, 2002. Ohio EPA has specific guidelines for wetland mitigation, which are included in the Ohio Administrative Code Sections 3745-1-50 through 3745-1-54, "The Wetland Water Quality Standards." Although mitigation is now being required for unavoidable impacts to streams there are currently no formal rules in Ohio. Stream mitigation for projects going through the PDP is being accomplished on a case-by-case basis and is negotiated with OEPA and USACE by ODOT's Office of Environmental Services (OES) through the pre-application/coordination and waterway permit processes.

OES in cooperation with ODOT Districts, the ODOT Office of Real Estate, the ODOT Office of Aerial Engineering, and project consultants coordinates to develop all stream and wetland mitigation projects. ODOT's general procedure for securing required mitigation for stream and wetland impacts includes:

A. Determination of mitigation needs. The Ecological Survey Report (ESR) documents these potential project impacts.

B. Analyze potential mitigation opportunities within the project area and/or close proximity (one mile) or within a specific 8-Digit Hydrological Unit Code (HUC) watershed where the impacts are anticipated to occur. This may require a partnership between ODOT and various organizations or individuals such as a watershed group, conservation group, a local park district, the Ohio Department of Natural Resources, or even a private landowner to secure appropriate mitigation.

C. Develop preferred plan of action for mitigation

    - Select mitigation site(s); [on-site, off-site, or mitigation banks]
    - Provide funds to partnering organization for mitigation projects
    - Pursue conservation easements

D. Develop conceptual mitigation plan/report.

E. Coordinate conceptual mitigation plan/report with resource and regulatory agencies.

F. Submit approved conceptual mitigation plan/report with waterway permit applications.

G. Develop final mitigation plan for submission to agencies prior to permit authorization.

- Develop construction plans
- Procure conservation easements
- Provide funds to partnering agencies
- Procure credits at Mitigation Banks

H. Construct Mitigation Project.

I. Monitor Mitigation Project. ODOT performs post construction monitoring on all mitigation sites for a minimum of 5 years to ensure successful development and to meet waterway permit conditions.

Figure 1: Scenic Rivers

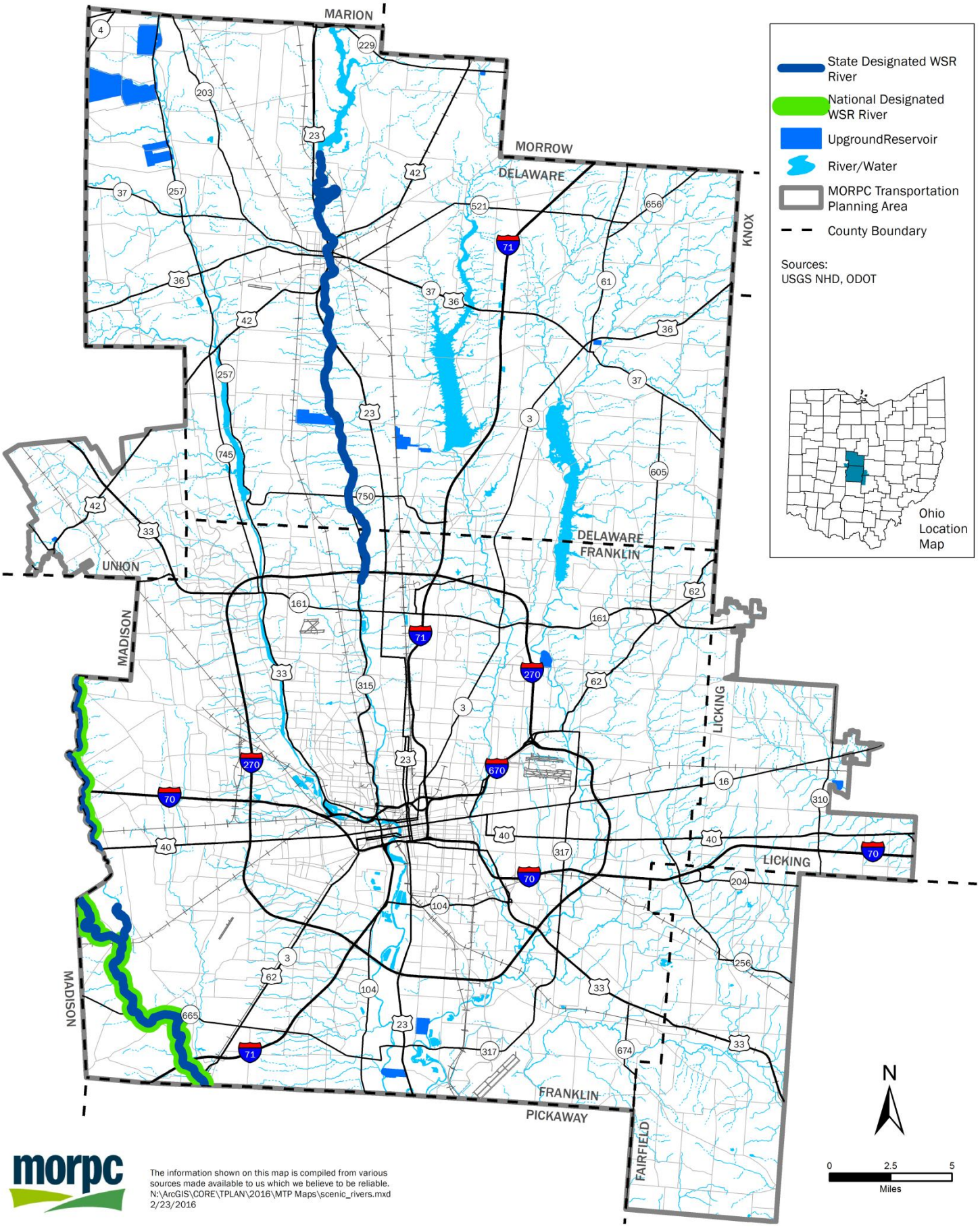


Figure 2: Potential Wetlands

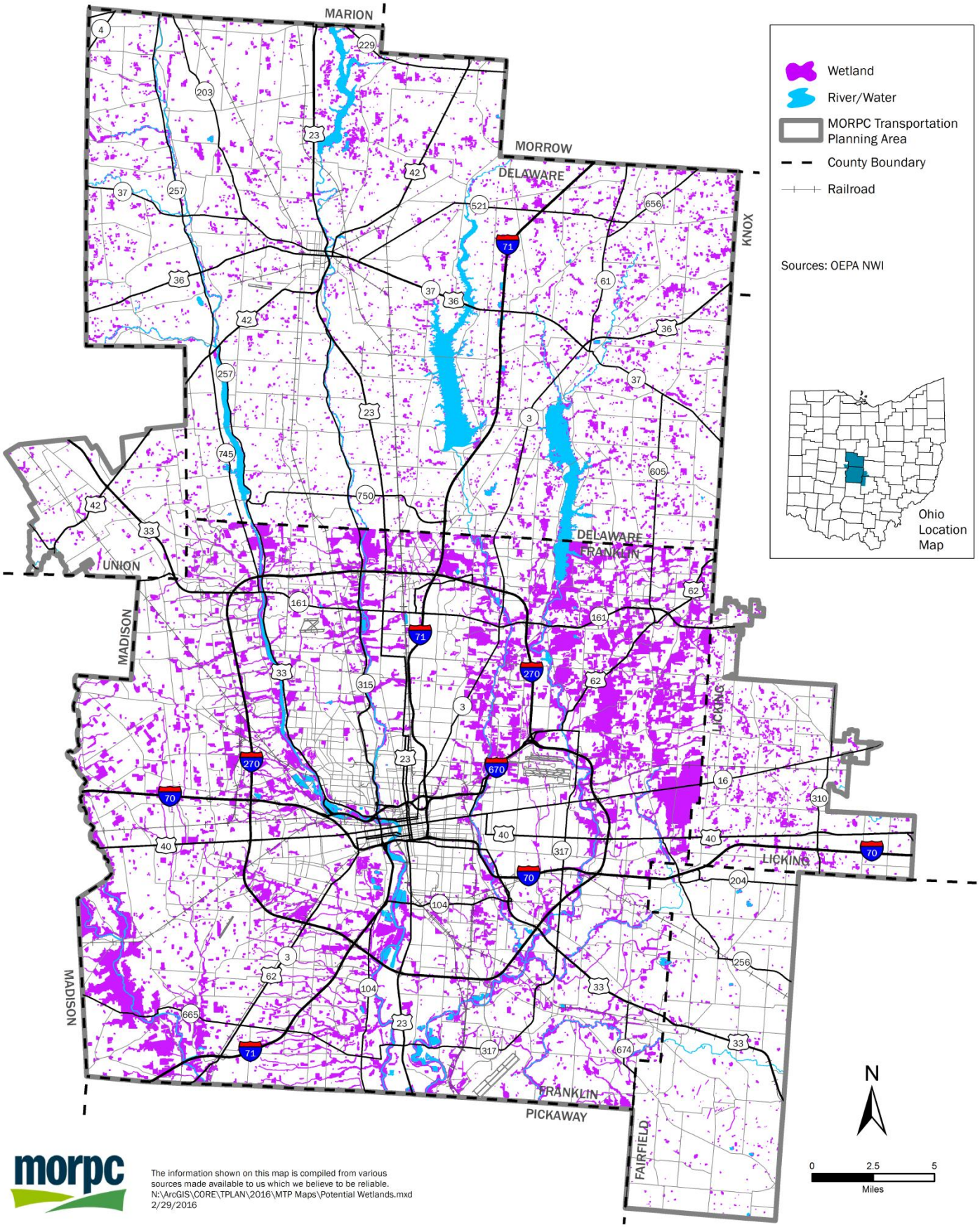
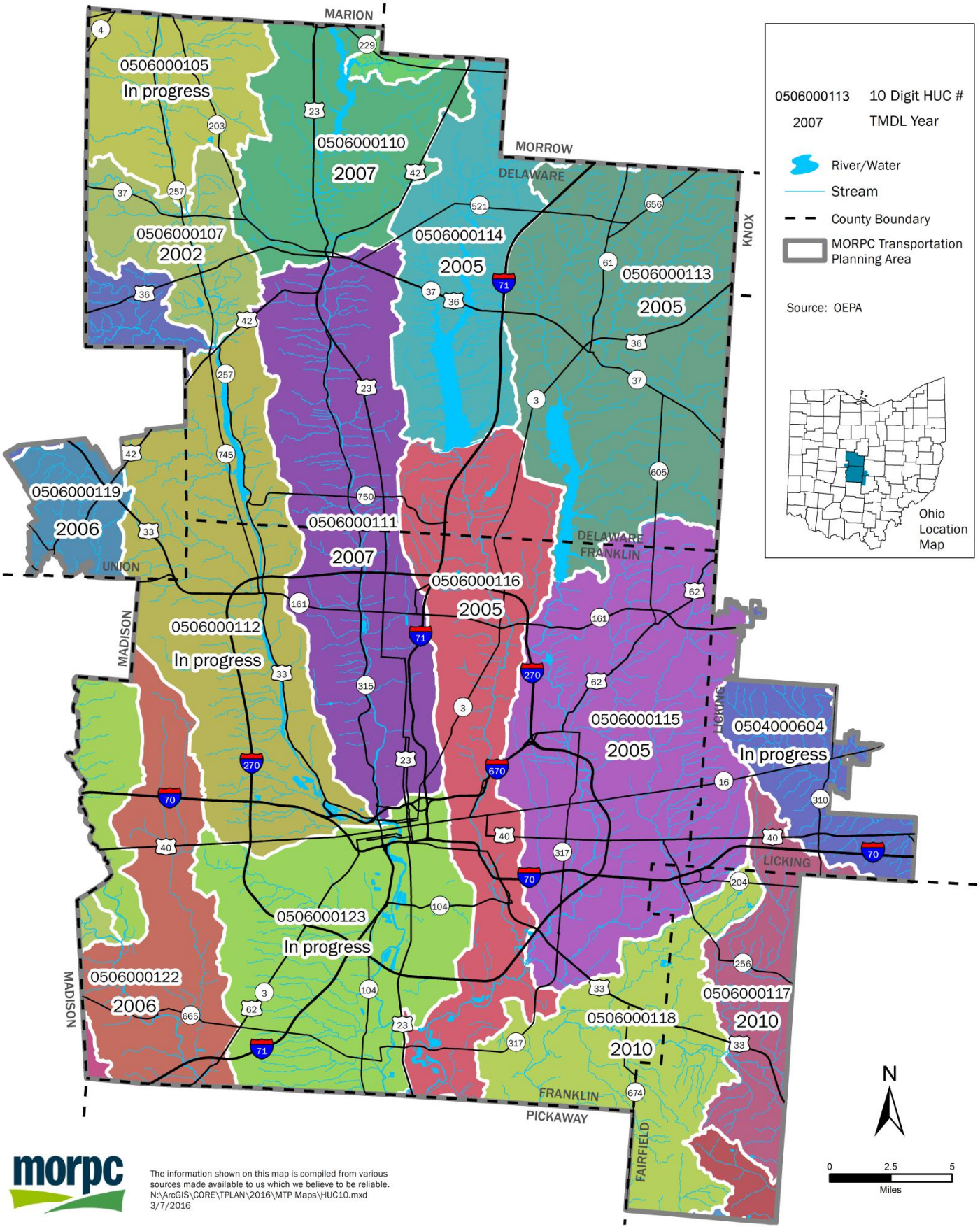


Figure 3: HUC Boundaries



Endangered & Threatened Species

Statewide, Ohio harbors a great diversity of wildlife and plant communities. Many species receiving federal or state protection are tied closely to their habitats. Land use change has been the most common cause for decline in species range and diversity. Contamination and degradation of natural waters has also contributed to loss of habitat. Loss of wetlands and forests has contributed largely to the federal and/or state listing of over 500 plants and animals within Ohio, including a variety of mammals, birds, reptiles and amphibians, mollusks, insects, fishes, and plants. Figure 4 highlights the locations within the MORPC area that have been identified as home to endangered and threatened species.

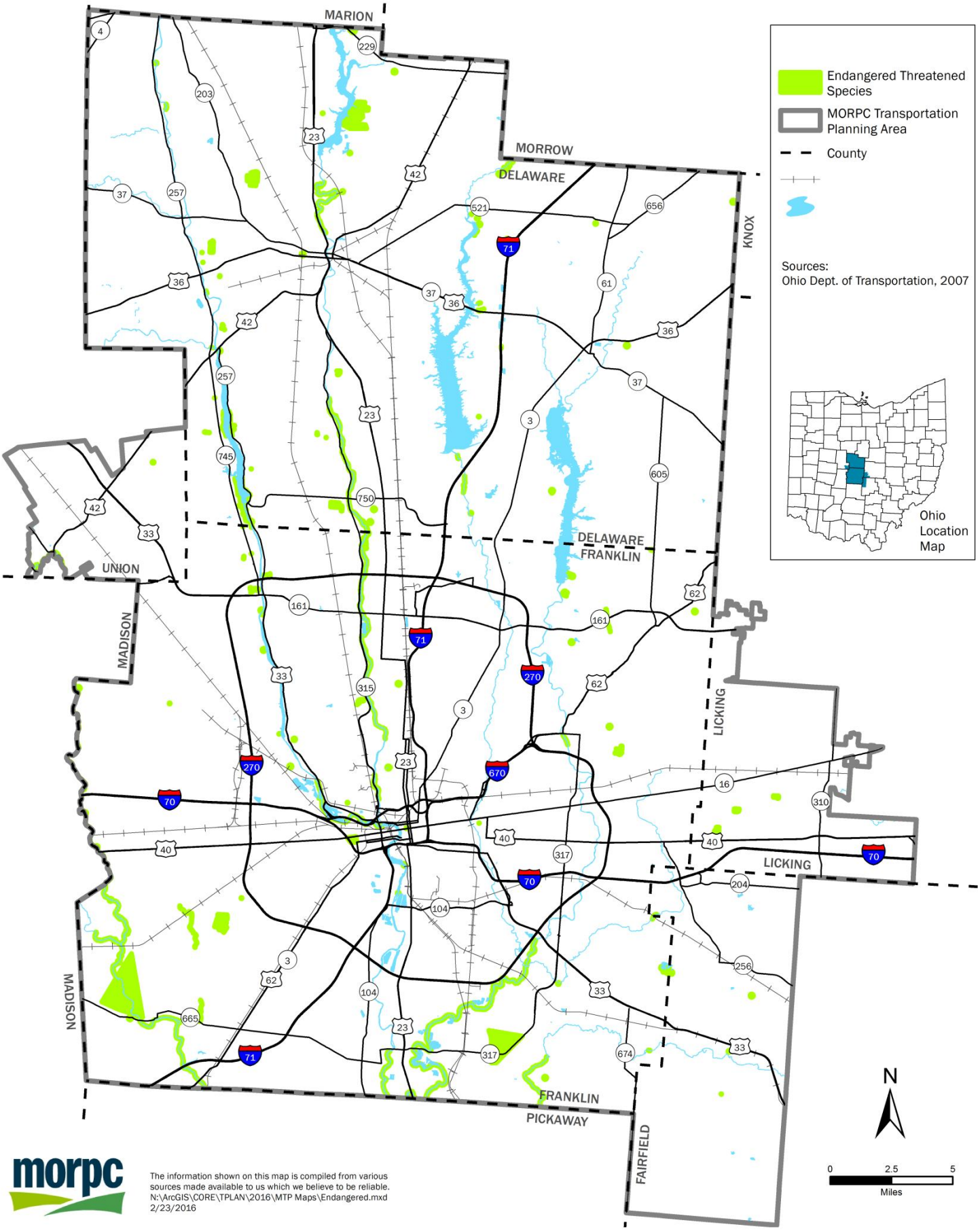
Projects going through the PDP are planned and designed to comply with the National Environmental Policy Act, Endangered Species Act, Clean Water Act, and Ohio Revised Code to name a few. The Endangered Species Act and Ohio Revised Code are the specific federal and state legislation that provide for the protection and conservation of plants and animals within Ohio. The rules and regulations associated with these laws dictate that ODOT will build and operate their roadway projects with no, or minimal impacts to protected species and their habitat (including potentially unoccupied habitat).

During the project development process, ODOT coordinates with numerous regulatory agencies to determine if protected species are likely to be encountered within the project area. If a threatened or endangered species is suspected of existing within the project area a specific survey is often undertaken to determine presence.

There are a variety of commitments and mitigation techniques that ODOT utilizes on projects to protect listed species. These differ depending on the habitat and the species that are to be protected. The more common commitments and mitigation ODOT makes regarding protecting federal- and state-listed species include:

- Restricting the clearing of trees to the period between September 15 and April 15 to avoid potential impacts to roosting Indiana bats.
- Relocation of listed mussel and plant species out of construction areas.
- Prevention of disturbance of Indiana bats from blasting activities near sensitive subterranean areas (primarily in southeastern Ohio).
- Timely removal of carcasses from roadways to minimize the potential of vehicles striking scavenging bald eagles.
- Measures to allow terrestrial species such as bobcat, black bear, timber rattlesnake, etc. to pass unharmed through construction areas.
- Measures to ensure that all equipment is in proper working order to minimize construction noise and reduce the risk of equipment spills and leaks.
- Construction and post-construction plan notes are included requiring strict adherence to ODOT's Construction and Material Specifications for Sedimentation and Erosion Control.

Figure 4: Endangered and Threatened Species



Section 4(f) Land

Section 4(f) of the United States Department of Transportation(USDOT) Act requires that special effort be made to preserve public park and recreation lands, wildlife and waterfowl refuges, and public or privately owned historic sites. Section 4(f) specifies that federally funded transportation projects requiring the use of land from a public park, recreation area, wildlife and waterfowl refuge or land of significant historic site can only occur if there is no feasible and prudent alternative. Using Section 4(f) land requires all possible planning to minimize harm.

Central Ohio like the rest of Ohio has numerous federal, state and local parks, wildlife and waterfowl refuges and national registry historic sites and districts (refer to figures 5 and 6). These sites are important to our communities and heritage. However, at times, transportation projects impact Section 4(f) resources and require specific measures to minimize harm or mitigate the impacts. These activities involve close coordination with the officials that have jurisdiction of the specific resources.

Investigation of Section 4(f) resources and investigation of potential impacts occur throughout ODOT's PDP for individual projects. The intent of evaluating project resources throughout the process helps to guide projects toward practical solutions while minimizing impacts when no feasible and prudent alternative exists. The availability of detail during the PDP on the preferred alternative allows for closer examination of the potential for Section 4(f) impacts and a clearer determination of how impacts should be processed. Once this is known, project sponsors and officials that own the resources can follow a process for mitigation.

Oftentimes, transportation officials are aware of and account for regional Section 4(f) resources that are important for preservation and community cohesion. Other resources may not be as well known, but are afforded the same protection under Section 4(f). Even though long-range planning processes can account for well-known Section 4(f) resources throughout the region that would pose a significant loss if impacted, it is premature to analyze individual projects' Section 4(f) impacts this early in the process.

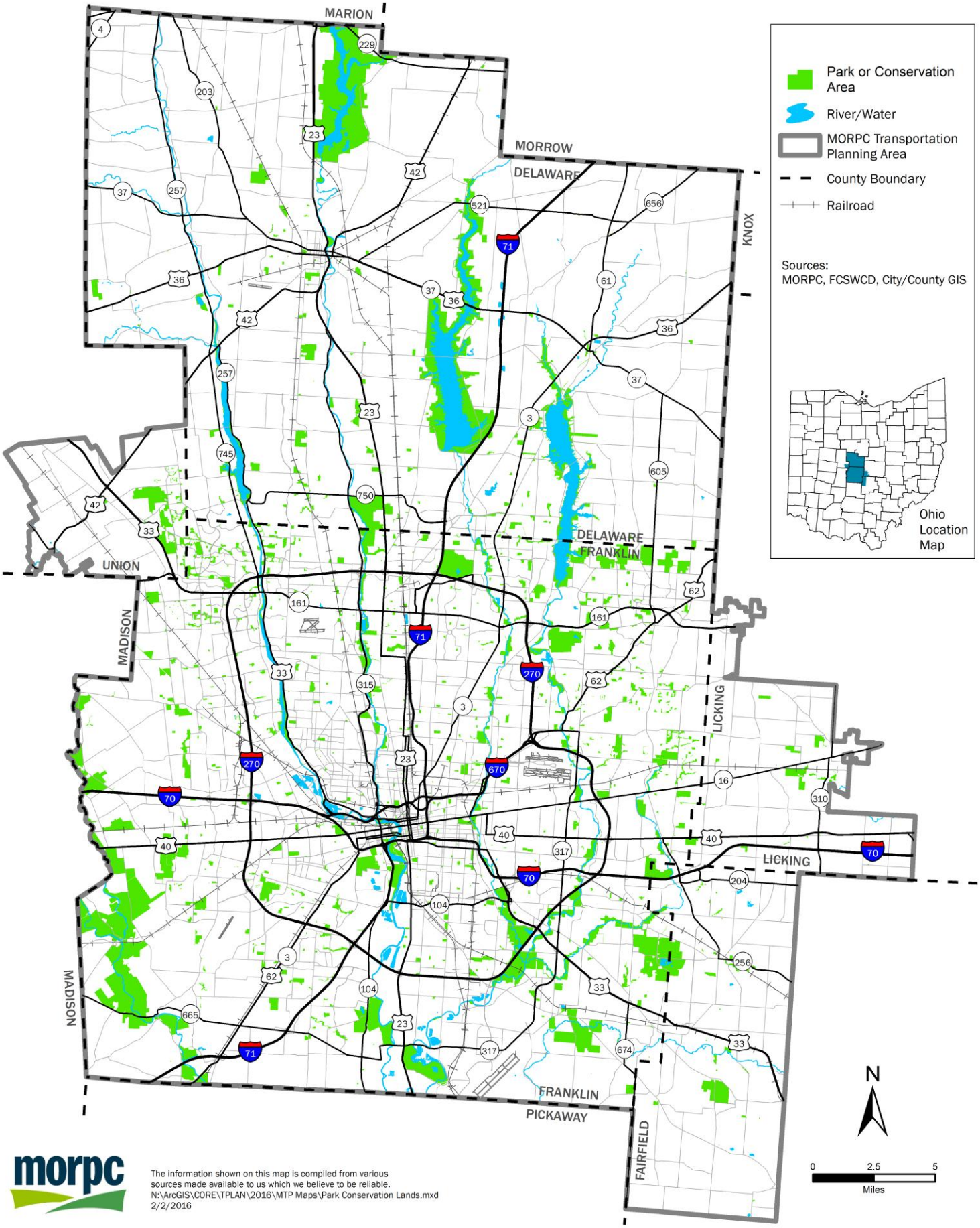
In cases where projects do have Section 4(f) impacts and there is no feasible and prudent alternative to avoid use of the resource, the PDP requires the consideration of "all possible planning to minimize harm." Minimization of harm may entail both alternative design modifications that lessen the impact on 4(f) resources and mitigation measures that compensate for residual impacts. Minimization and mitigation measures should be determined through consultation with the official or the agency owning or administering the resource. Neither the Section 4(f) statute nor regulation requires the replacement of 4(f) resources used for transportation projects, but this option is appropriate as a mitigation measure for direct project impacts.

Mitigation measures involving public parks, recreation areas, or wildlife and waterfowl refuges may involve a replacement of land and/or facilities of comparable value and function, or monetary compensation, which could be used to enhance the remaining land. Mitigation of historic sites usually consists of those measures necessary to preserve the historic integrity of the site and agreement by FHWA. In any case, the cost of mitigation should be a reasonable public expenditure

in light of the severity of the impact on the Section 4(f) resource in accordance with federal requirements. Mitigation for common Section 4(f) resource impacts may be:

- Improving access or expansion/pavement of parking area
- Landscape or screening of resource
- Installation of beautification enhancements such as park benches, trash receptacles, signage, etc.
- Maintenance of traffic accommodation or rerouting of traffic
- Minimizing construction noise or limiting construction to specific times
- Direct compensation for improvements to on-site resources
- Design refinements

Figure 5: Parklands



The information shown on this map is compiled from various sources made available to us which we believe to be reliable.
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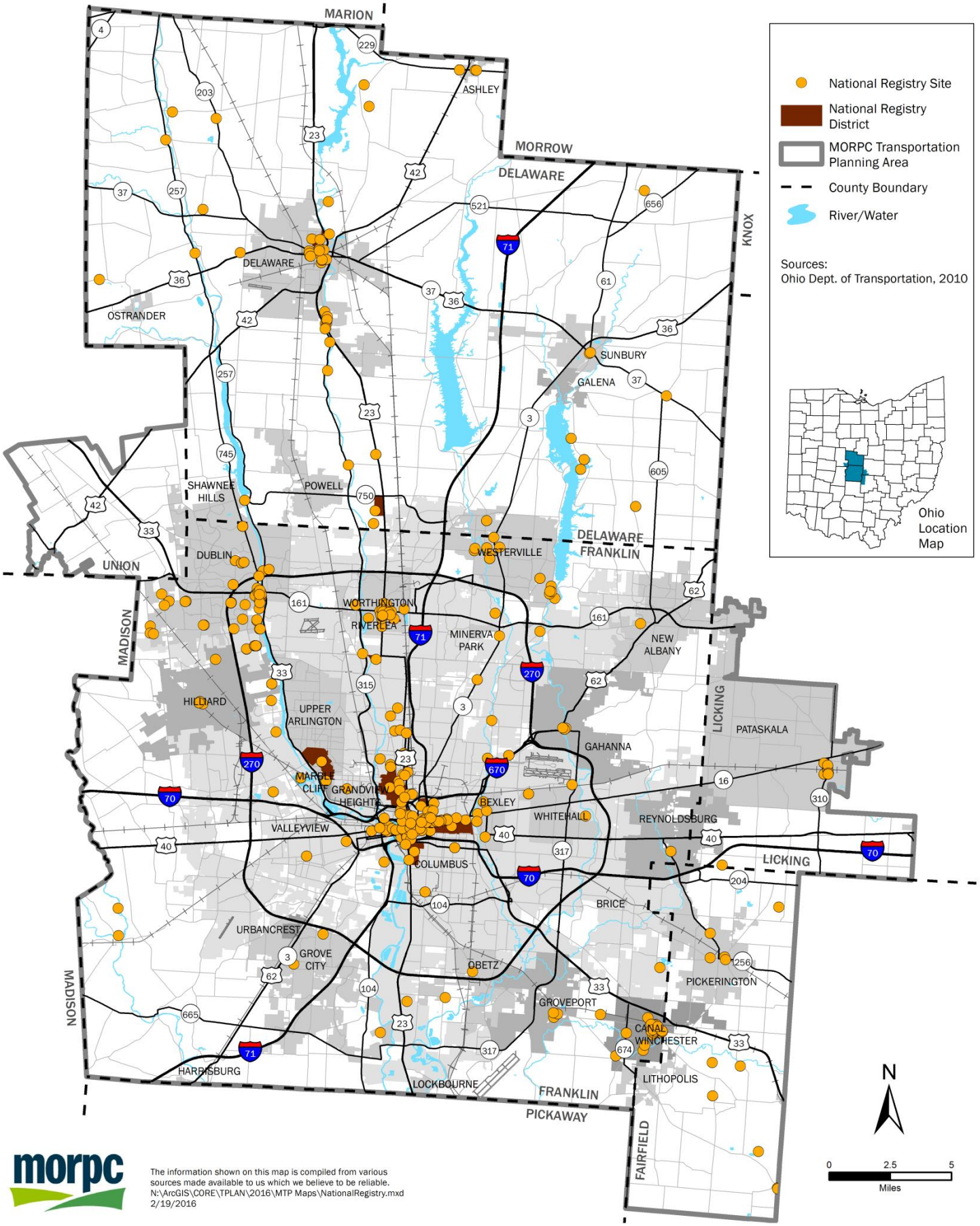
Figure 6: National Register Features



The information shown on this map is compiled from various sources made available to us which we believe to be reliable.
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Cultural Resources

Cultural resource reviews during the PDP are planned and designed to comply with the National Environmental Policy Act, the National Historic Preservation Act, the Department of Transportation Act, the Ohio Revised Code and 36 CFR Part 800 (the implementing regulations for Section 106 of the National Historic Preservation Act). All of these require that cultural resources be considered during the development of all highway projects in Ohio. An element of that consideration involves consulting with various entities, including the Federal Highway Administration (FHWA), the State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP), City Historic Preservation Offices, local public officials, local organizations, and the public.

Mitigation measures developed through a Section 106 Memorandum of Agreement consultation process provide ways to avoid, minimize, or mitigate adverse effects to historic properties (i.e., those listed in or eligible for listing in the National Register of Historic Places (NRHP)) impacted by projects. These mitigation measures are carried through as environmental document commitments and must be completed and accounted for with SHPO and FHWA. Furthermore, the MOA is not closed until all stipulations are fulfilled. A failure to meet all stipulations can potentially jeopardize a project sponsor's funding or other agreements or projects.

A plan for mitigating an adverse effect is site/property specific and requires a separate research design or approach for each historic property impacted by the project. It should be based on the context development and refinement through the preceding Phase I and Phase II work.

Mitigation measures may involve a variety of methods including, but not limited to aesthetic treatments, avoidance, archaeological data recovery, creative mitigation, salvage and re-use of historic materials, informing/educating the public and Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) documentation. Approaches vary widely depending on the type of historic property, the qualities that enable the property to meet the NRHP Criteria of Eligibility, the location of the historic property with respect to the project, etc. Mitigation plans are developed in consultation with ODOT, SHPO, FHWA, consulting parties (i.e., local officials, organizations, public), federally recognized Native American Indian tribes, and on occasion, the ACHP.

HABS/HAER Recordation

HABS/HAER recordation documents buildings and engineering structures (e.g., bridges), respectively, that are listed in or eligible for listing in the NRHP. In Ohio, the SHPO requires Level 2 documentation for HABS/HAER recordation. Level 2 archival documentation consists of large-format (4'x5') black-and-white negatives and prints, a written historical report, and photographs or photographic reproductions of selected existing drawings.

Documentation must follow the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation:

- HABS/HAER Standards (U.S. Department of the Interior 1993)
- HABS Historical Reports (U.S. Department of the Interior 2000)

- Recording Historic Structures & Sites for the Historic American Engineering Record (U.S. Department of the Interior 1996).

All are available online at http://www.nps.gov/history/local-law/arch_stnds_6.htm.

Archaeological Data Recovery

Phase III archaeological data recovery investigations are intended to mitigate the adverse effect to archaeological sites listed in or eligible for listing in the NRHP. Mitigation is achieved through intensive large-scale excavations and through detailed analysis of the resultant cultural remains that were encountered during these excavations. Archaeological data recovery plans are developed in consultation with ODOT's Office of Environmental Services and the SHPO. The results of all data recovery investigations are summarized as a technical report that are reviewed and approved by ODOT-OES and the SHPO. Completion of the fieldwork and the final report of findings are considered an environmental document commitment. Approval of the final report generally fulfills the agency's responsibility for the commitment.

Data recovery plans are developed on a project-by-project basis and are designed to recover appropriate types of pertinent information related to the context that makes the sites significant. Field investigations and analyses are problem-oriented and are designed to answer specific questions regarding the site and its context. Data recovery plans specifically outline the site context and formulate hypotheses on how site research can address these hypotheses. The plans also outline field procedures and propose methods needed to record a site's physical context and any structural elements related to the resource. Each plan should also outline approaches to better recover data and devise analytical methods to best describe associated artifacts which may be recovered.

The final data recovery mitigation report should include a summary of the approach from the data recovery plan along with the findings of the excavation in order to address how the recovered assemblage relates to the site's historic context. Ways to publicly disseminate the results of data recovery investigations are also considered to be an important part of any mitigation plan.

Metropolitan Transportation Plan Analysis Summary

The locations of various environmental issues within the MPO transportation planning area were displayed Figures 1 through 6 above. The Transportation Plan includes 464 individual projects, strategies or activities throughout the region. This section summarizes how many of these projects are near or across the environmental issue locations. This information is only provided to show how common it is that the environmental issue is expected to be addressed and mitigation measures employed as projects from the Transportation Plan move through the PDP.

The following method was used to summarize the number of projects near common environmental issue locations. First, the GIS was used to create buffers for each of the Transportation Projects. The buffers were 1 mile for capacity projects such as new roadways, new freeways, and new interchanges. The buffers were ½ mile for all other project types. These were then overlaid with the environmental issue location file in the GIS to identify if the issue was within the buffer. The number of these was then counted for each environmental issue location. Due to evaluating impacts on the environmental issue was a macro level rather than determining specific impacts. The mitigation strategies encompass a menu of options to address a wide-range of potential impacts and are not project-specific.

The following table summarizes how many projects are near each type of environmental issue location.

Environmental Issues	Number of Projects Near an Environmental Issue Location
Body of Water(River, Stream, and Upground Reservior)	445
Potential Wetland	459
Scenic River	33
Park	407
National Register Sites or Districts	176
Endangered or Threatened Species	162