

APPENDIX C: ENVIRONMENTAL ANALYSIS

Introduction

The Fixing America's Surface Transportation (FAST) Act, the current federal transportation bill, and implementing rules governing the development of metropolitan or regional transportation plans include environmental consultation and mitigation requirements. The requirements were first added under a prior bill, SAFETEA-LU, and have been continued under MAP-21 and now the FAST Act. Specifically, MPOs are required to consult with federal, state and county environmental and historic/cultural resource agencies in development of the regional transportation plan. The consultation is to include comparison of the transportation plan with conservation and environmental protection plans and inventories of natural and historic resources.

Regional transportation plans are also required to include a discussion of potential environmental mitigation strategies, policies, and actions that, over time, will serve to avoid, minimize, or compensate for (by replacing or providing substitute resources) the impacts to or disruption of the human and natural environment associated with implementation of the plan. The strategies are intended to be regional in scope, even though the mitigation may address potential project-level impacts.

The objective of these requirements is to strengthen the linkage between regional transportation planning and the project development and associated environmental analysis process required by the National Environmental Policy Act (NEPA) by:

1. Improving accountability for the natural and human environment in transportation planning and decision making; and
2. Improving understanding and respect for the comprehensive system level analysis and public decision making that occurs during the transportation planning process as the foundation for individual project purpose and need during project development under the NEPA process.

Environmental Resources Inventory

A comprehensive, up-to-date inventory of environmental resources and plans was prepared with assistance from the state resource agencies, Dane County Planning Department staff, and Capital Area Regional Planning Commission (CARPC) staff. Geographic information system (GIS) databases of the resources were mapped in relation to proposed capacity expansion projects and major transportation studies that might lead to such proposed projects. The resource inventory databases and maps provide a baseline of existing conditions for later use during project scoping and environment assessment as required by NEPA. In the meantime, they allow an initial environmental screening of planned transportation projects to be conducted to identify any that has the potential to negatively impact the natural and built environment. The resource plans and maps were also used to ensure that the composite local plans land use scenario used for developing the transportation plan was consistent with these plans.

The resource inventory was compiled from the following plans and databases:

- [Dane County Water Quality Plan](#) – This is the official area-wide water quality management plan for the county.¹ The purpose of the plan is to provide a policy framework and guidance for federal, state, and local water quality protection programs in the county. Area-wide water quality management plans are required to address the relationship of water quality to land and water resources and uses, to include existing and projected land use patterns and delineation of sewer service areas, and to delineate areas that should not be developed or disturbed because of resource value or environmental or physical constraints (Wis. Administrative Rule NR 121).

The water quality plan incorporates and is based on adopted regional land use and development plans, including the Dane County Land Use & Transportation Plan and the Dane County Farmland Preservation Plan. The plan has 11 technical

¹ Dane County is also included in the water quality management plans for major river basins, which are prepared by WisDNR as part of the statewide continuing water quality management planning process. Basin water quality plans applicable to Dane County include those for the Lower Wisconsin River Basin, the Sugar River-Pecatonica River Basin, and the Upper and Lower Rock River Basins (which include the Yahara River, Koshkonong Creek, and the Mauneshia River Watersheds). The intent and objective is consistency and mutual support between the Dane County Water Quality Plan and the applicable basin plans.

appendices and has been continually updated and expanded since it was certified by the state in 1979. The plan is included in the water quality management plans for four major river basins prepared by the Wisconsin Department of Natural Resources (WisDNR) as part of the statewide water quality management planning process.

- [Dane County Comprehensive Plan \(2007\)](#) – This plan was developed in accordance with the state’s “Smart Growth” legislation and includes nine elements, including one on Agricultural, Natural, and Cultural Resources. The plan is intended to provide an overall “umbrella” framework for planning in the county, at the same time covering gaps in existing plans. It is intended to support, not supplant, other planning efforts. Other plans such as Water Quality Plan are incorporated by reference.
- [Dane County Parks & Open Space Plan 2012-2017](#) – The plan, which is updated every five years, seeks to identify significant cultural, historical, and natural resources that should be considered for possible protection, preservation, or restoration. The plan also seeks to identify recreation needs and the county’s role in providing facilities to meet anticipated demands.
- [Dane County Land and Water Resources Management Plan](#) – Prepared by the county’s Land Conservation Department (LCD) staff with assistance from partner agencies, this plan addresses soil and water quality concerns using local, state, and federal programs. It is a five-year (2008-2013) action and implementation plan that emphasizes cooperation with conservation partners in the county, and is intended to complement and coordinate with existing plans.
- [Dane County Farmland Preservation Plan](#) – The plan, which was adopted in 1981, includes goals and policy statements and recommendations for specific elements that should be included in local town plans. Town plans, which are developed locally and adopted by the Dane County Board, are part of the county plan. These plans include a planned land use map specifying agricultural preservation areas and potential development areas and are used as criteria for zoning recommendations. Some city and village plans are also incorporated. The plan guides the administration of the county’s farmland preservation program. This state program provides income tax credits to farm owners if the land is zoned for exclusive agricultural use. Twenty-nine towns have adopted the county’s exclusive agricultural zoning.
- [Agricultural Land Evaluation Database](#) – The database was created from an agricultural land evaluation system developed by the Natural Resources Conservation Service with cooperation from the Dane County Land Conservation Department. The system is a component of the Dane County Land Evaluation Site Assessment (LESA) system, and uses three factors to rate the soil-based qualities of a site for agricultural use. The three factors, which are used to determine a numeric land evaluation (LE) rating, are:
 - Classification as prime farmland (weighted 10%)
 - Soil productivity for corn and alfalfa (45%)
 - Land capability class (45%)

Town and county boards use combined LESA standards to evaluate development proposals, site plans, and rezoning applications to minimize impact to agricultural resources.

- [Wisconsin Land Legacy Report](#) – This 2006 WisDNR report includes a statewide assessment and description of the places identified as most important to meet the state’s conservation and recreation needs for the next 50 years. It is intended as an educational resource and a source to reference when making land use decisions. It does not identify how or when the identified places should be protected or who should help protect them. Eleven of the 229 places identified statewide are at least partially in Dane County. They include (in alphabetical order):
 - Arlington Prairie

- Black Earth Creek
 - Blue Mound-Blanchardville Prairie and Savanna
 - Blue Mound State Park
 - Crawfish River-Waterloo Drumlins
 - Dunn-Rutland Savanna and Potholes
 - Lower Wisconsin Riverway
 - Patrick Marsh
 - Shoveler Lakes-Black Earth Trench
 - Sugar River
 - Upper Yahara River and Lakes
- [Wisconsin Wildlife Action Plan](#) – This WisDNR plan, also known as the comprehensive Wildlife Conservation Plan, presents priority conservation actions to the native wildlife species of greatest conservation need and their habitats. It sets priorities for use of federal and state wildlife funds and provides guidance and information, including a reference database, for government agencies and others to support their conservation efforts.
 - [Wisconsin Natural Heritage Program Inventory](#) – Maintained by WisDNR, this program maintains data on the locations and status of rare species, natural communities, and natural features in the state. The information is entered into an electronic database and locations marked on base maps. Exact locations are not published as this may threaten a resource, but the information is shared to facilitate protection and avoid impacts to rare resources. According to the inventory, the county provides habitat for 72 endangered or threatened terrestrial plant and animal species, and includes occurrences of 14 threatened or endangered natural communities. Federally listed plant species in Dane County include hill's thistle, prairie bush clover, eastern prairie white fringed orchid, and hall's bulrush. Federally listed animal species include henslow's sparrow, black tern bird, higgins eye pearly mussel, loggerhead shrike bird, northern long-eared bat, sheepnose mussel, and eastern massasauga rattlesnake.
 - [Aquatic & Terrestrial Resources Inventory](#) – WisDNR maintains this statewide database, which was developed in order to provide agency staff and partners with environmental information to use in landscape-scale decision-making.
 - [Wisconsin Historic Preservation Database](#) –The Wisconsin Historical Society maintains this GIS database of archaeological sites and surveys and historic properties. This inventory lists over 10,000 existing buildings of historic interest within the county. Access to this database is available through an online subscription, single use GIS data sets, and a public terminal in the State Historic Preservation Office.
 - [Wisconsin's Outstanding and Exceptional Resource Waters \(O/ERW\)](#) – This WisDNR dataset is designed to include the cleanest waters in Wisconsin. An outstanding resource water is a lake, stream or flowage with excellent water quality, high recreational and aesthetic value and high quality fishing. These waters are free from point or nonpoint source pollution. Exceptional resource waters exhibit the same qualities as outstanding waters but may be affected by point source pollution or have the potential for future discharge from a small sewer community.
 - [Wisconsin Wetlands Inventory](#) – This inventory was established in 1978 and completed in 1984 by the WisDNR to help protect wetlands. The inventory includes the type, size and location of the wetlands which are defined as an area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions.

Environmental Assessment

Figures C-1 to C-6 show the location of programmed and planned roadway capacity expansion projects and current and future major roadway and transit corridor studies in relation to the county's agriculture, natural, recreational, and historic/cultural resources. The maps were created from a GIS database developed from the resource inventories and plans listed and described above.

[Figure C-1](#), Major Roadway and High Capacity Transit Improvements and Studies shown with Agricultural Land, shows the agricultural land evaluation rating of all undeveloped lands in the county based on the assessment system described above that rates the soil-based qualities of a site for agricultural use. The ratings are separated into eight groups with Group I being the best soils for agriculture. According to the USDA Census of Agriculture, Dane County had a total of 2,749 farms in 2012 with a combined total of 504,420 acres of farmland – a 6% decline in acreage from 2007. The total market value of Dane County's agricultural products exceeded \$471 million – the highest of any county in the state and in the top 4% among all counties nationwide.

[Figure C-2](#), Major Roadway and High Capacity Transit Improvements and Studies shown with Woodlands and Stream Water Assessments, shows outdoor recreation areas (including state, county, and local parks, etc.), woodlands, unprotected grassland areas and native prairie and savanna remnants, and stream water assessments.

[Figure C-3](#), Major Roadway Projects and High Capacity Transit Improvements and Studies shown with Parks and Open Space, shows public and Native American lands, steep slopes, natural resource areas, water bodies, streams, and environmental/open space corridors. The natural resource areas include lands containing valuable natural resources or greenbelt corridors identified through a public process as part of development of the Dane County Parks and Open Space Plan. The environmental/open space corridor system is based on the recognition of the interrelatedness of adjacent landscape types and the importance of protecting valuable ecological units and linkages. The corridor system is therefore primarily associated with stream valleys and water features. The corridors include two distinct components: urban environmental corridors within urban service areas (USAs) and rural resource protection areas outside USAs. The urban environmental corridors are a continuous open space network based on natural features and environmental lands such as streams, lakes, shorelands, floodplains, wetlands, steep slopes, woodlands, parks, and publicly owned lands. The rural resource protection areas are based primarily on floodplains, wetlands and shoreland areas together with existing or proposed publicly owned or controlled lands needed for resource protection, continuity, or public recreation. The two corridor elements combine to provide a continuous countywide network of open spaces and environmental resources considered to be the most critical for protection.

[Figure C-4](#), Major Roadway and High Capacity Transit Improvements and Studies shown with Wetlands, Hydric Soils, and Aquatic Life in Streams, shows wetlands, hydric soils, and warm and cold water fisheries based on WisDNR's stream classification system. Hydric soils include soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. As such, they are potential wetland restoration sites. A combination of the hydric soil, hydrophytic vegetation, and hydrology criteria defines wetlands. Locating hydric soils assists in conservation planning, assessment of potential wildlife habitat, and overall land use planning.

[Figure C-5](#), Major Roadway and High Capacity Transit Improvements and Studies shown with Rare Species, Floodplains, and Resource Waters, shows those PLSS sections in the county within which aquatic and/or terrestrial rare or threatened species are located according to the Wisconsin Natural Heritage Program Inventory. Exact locations are not published in order to protect the resources. Also shown are the 100-year floodplains defined by FEMA and resource waters based on WisDNR's stream classification system. The stream classification system is based on aquatic organisms and was established by WisDNR under chapter NR 102 of the state Administrative Code. Both Outstanding Resource Waters (ORWs) and Exceptional Resource Waters (ERWs) are listed in the code.

[Figure C-6](#), Major Roadway and High Capacity Transit Improvements and Studies shown with Historical Sites, shows historical sites



Major Roadway and High Capacity Transit Improvements and Studies shown with Woodlands and Stream Water Assessments

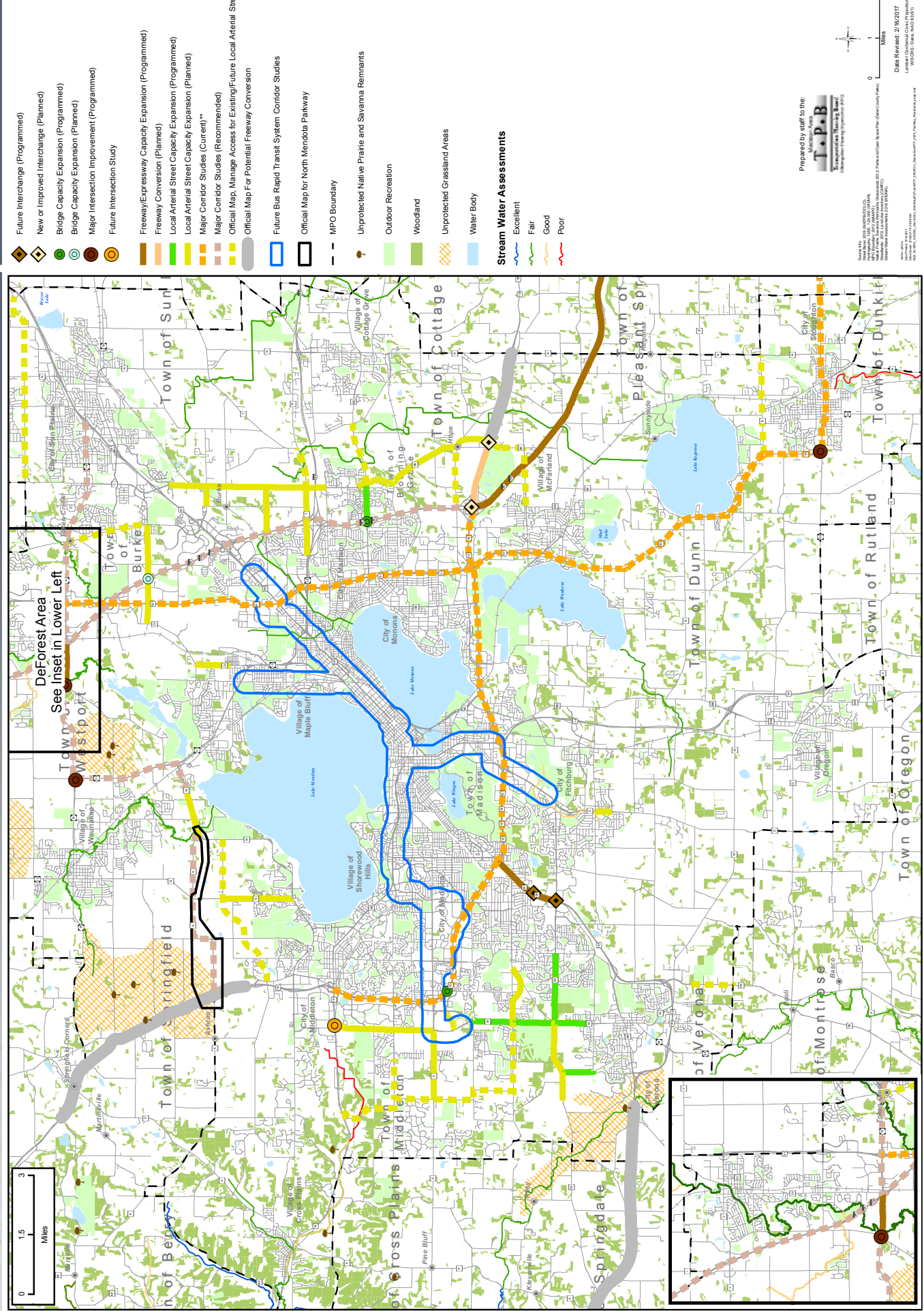


Figure C-2



Major Roadway and High Capacity Transit Improvements and Studies shown with Wetlands, Hydric Soils, and Aquatic Life in Streams

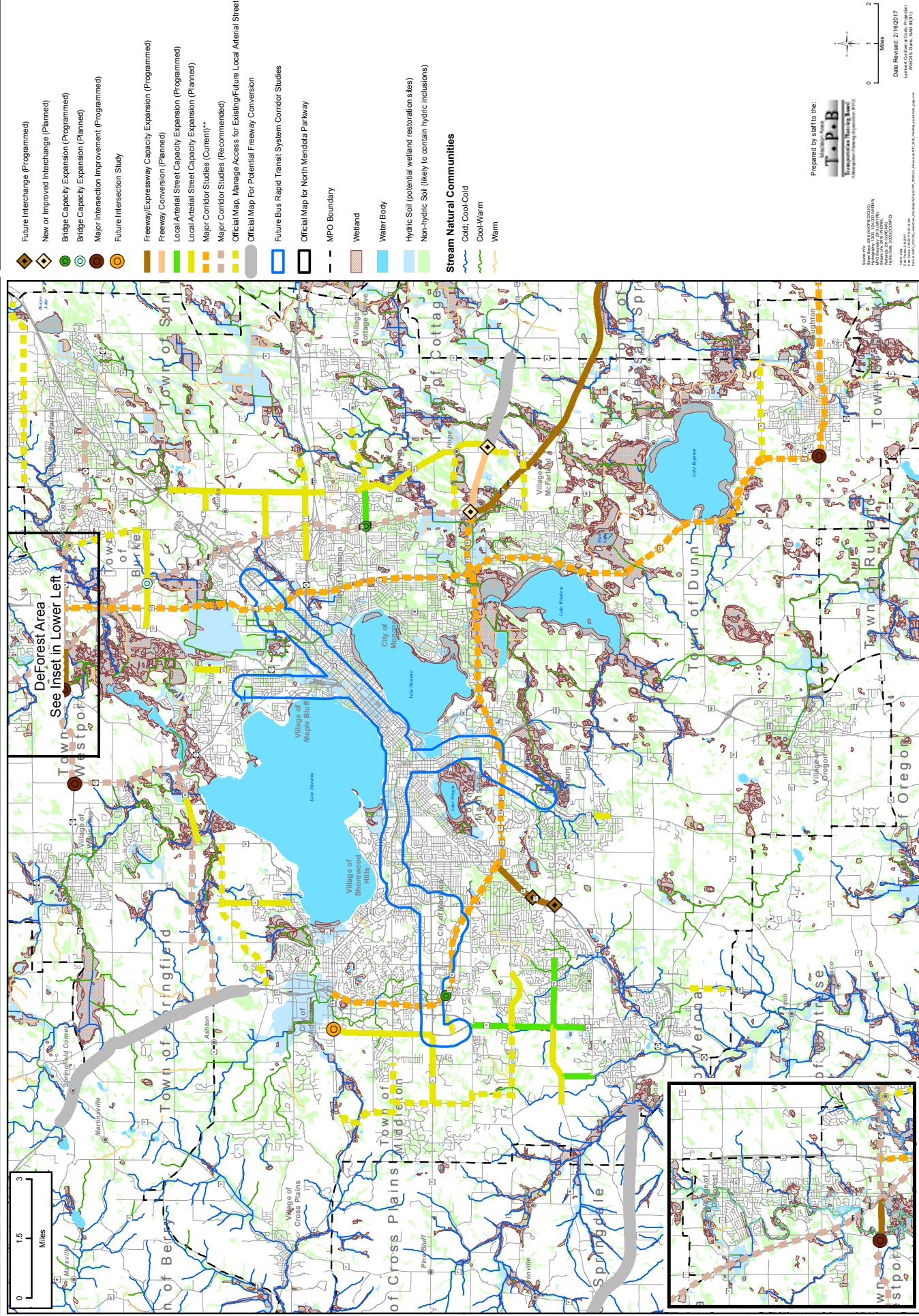
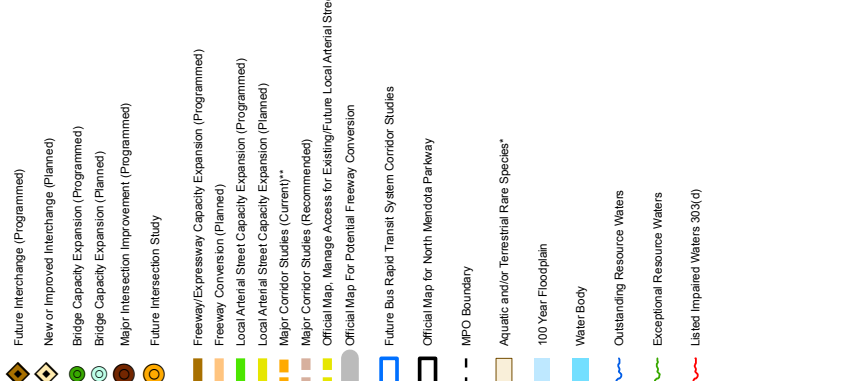


Figure C-4



Rare Species found within the PLSS Section Indicated

Prepared by staff to the:

T.P.B.
Mission Area

To request that Training Board
re-appoint the following Organisations to the 2022

Source: 2016 (MADP/DOCLD),
hydrography: 1200, 1.24.000 (WICHA),
PO Boundary: 2013 (MADP),
Resource Waters: 2016 (WICHA),
Rare Species: 2016 (WICHA),
biofish: 2014 (FEMA).

Date Revised: 2/16/2017
Lambert Conformal Conic Projection
WGS84 - Data, NAD 83(91)

Figure: C-5



identified by the Dane County Historical Society, Madison Historic Landmarks, and Research Sites. Buildings and sites on the State and National Registers of Historic Places are included.

The resource maps illustrate the sensitivity of the western, driftless part of the county. They also show the extensive amount of streams and wetlands in the Yahara River valley in the central part of the county and in the drumlin area in the eastern part of the county. The streams in the central and eastern parts of the county are flatter and more sluggish and fewer are spring-fed. Their water quality is affected by runoff from the extensive agricultural lands in these areas.

The environmental resource maps provide an overall picture of the location of environmentally sensitive areas in relation to proposed transportation improvements and corridor studies. The three transportation corridors with planned or potential projects that traverse the most sensitive areas are Buckeye Road (relocated Buckeye Road to US 12/18), Sprecher Road (Sharpsburg Drive to Buckeye Road), and the southern part of the North Mendota Parkway, which crosses Six Mile Creek in the northern part of the Yahara River Watershed. The southwestern segment of the North Mendota Parkway (west of the CTH M/CTH K intersection) is included in the plan at this time only as a study. An environmental study of this part of the corridor was conducted by Dane County to provide a general assessment of the impacts of a roadway through this corridor, identify the routing with the least environmental impact for official mapping, and also identify the boundaries of a planned E-Way, similar to the Lewis Nine Springs E-Way through Fitchburg. A specific route in the eastern part of the corridor between CTH M and CTH Q was identified while a broader area to the west over to US 12 was identified. The northeastern part of the parkway (WIS 19 between the Interstate and River Road) crosses the Yahara River and is also in a sensitive area. That segment is programmed for expansion to four lanes in conjunction with the replacement of the bridge over the Yahara River. The programmed CTH M (S. Pleasant View Road) (Valley View to Cross Country Road) project also has significant potential impacts based on this screening, however an environmental study for the project was just recently completed and approved.

In order to address growth management issues in the North Mendota Parkway Corridor, including potential indirect and cumulative impacts to environmental and agricultural resources, local communities in the corridor adopted a binding intergovernmental agreement that commits the communities to implementing the land use/transportation planning recommendations from the study. These include:

- Adoption of a transportation policy that provides for access control on all identified future collector roadways;
- Official mapping of the North Mendota E-Way to preserve open space system sites; and
- Adoption of a North Mendota Area Plan with a 50-year time horizon that includes a development plan map depicting development areas, permanent preservation areas (including sensitive environmental areas, farmland protection areas, and significant historic/cultural resources), and other "indefinite future areas."

Dane County and area communities adopted resolutions supporting the recommendations of the North Mendota Parkway Implementation Oversight Committee, which had been set up to identify the E-Way corridor and the roadway corridor. The E-Way or North Mendota Natural Resources Area was incorporated by the county into the 2012-2017 Dane County Parks and Open Space Plan. In part due to lack of funding for the roadway project, no further activities have been undertaken to implement the above recommendations.

Most of the plan's recommended major local arterial capacity expansion projects involve reconstruction of existing roadways to provide additional travel lanes rather than new roadways on new alignment. There are two projects that involve short segments of roadway on new alignment. A very short segment of the programmed Sprecher Road reconstruction project is on a new alignment to avoid a drumlin area and connect directly to CTH AB. A short segment of Raymond Road/MidTown Road (Muir Field Road to Jeffy Trail) will be reconstructed on a new alignment to provide a continuous east-west roadway. These local arterial projects are located in developing areas or in areas planned for future urban development within the next 30-35 years. None of these projects is of a scale or nature that would be expected to result in significant indirect and/or cumulative impacts to environmental or agricultural resources located outside these planned areas of development.

Environmental Screening of Projects

MPO staff conducted an environmental screening of programmed and planned capacity expansion roadway projects using the MPO's geographic information system (GIS) database. The purpose of this screening was to identify those projects that have the potential for negatively impacting the natural and built environment with the intent of preventing or minimizing such impacts. The environmental screening results also notify the MPO Policy Board, WisDOT, and local governments of possible environmental impacts associated with these improvements to the region's roadway system.

Following consultation with CARPC staff, the following environmental resources or features were chosen for the environmental screening:

- Best agricultural soils (based upon the agricultural land evaluation rating system)
- Wetlands and water bodies
- Environmental corridors
- Steep slopes
- Streams
- Parks and other recreational areas
- Tribal lands
- General location (PLSS section) where rare or threatened species have been located
- Historic properties
- DNR Managed Lands

Burial sites were not included in this analysis as the sites are not to be made public. However, they are a protected resource under section 157.70 of the Wisconsin Statutes and must be considered when evaluating potential projects.

There is overlap among the selected environmental features, since environmental corridors are based on natural features and environmental lands such as streams, lakes, floodplains, wetlands, steep slopes, woodlands, parks, and other publicly owned lands. However, it was decided to separately screen for some of these features since not all of them are included within environmental corridors. This ensured that the screening captured all potentially environmentally significant lands.

For the screening, buffers were assigned to the roadway projects. For roadway expansion projects, a buffer of 125 feet on either side of the roadway centerline was used, making for a 250-foot wide buffer overall. This is about twice the size of the typical 120-foot right of way used for a four-lane, divided urban street. The much wider buffer was used, because this was just a screening and areas outside the right of way could potentially be affected by construction activity and storm water runoff. A total buffer of 800 feet was used for proposed interchange and bridge projects.

Figure C-7 lists all of the programmed and planned capacity expansion projects and indicates those that appear to have one or more of the above-listed resources within the buffer zone of the project. The table includes programmed and planned capacity improvement studies, but the environmental resources within the study areas were not assessed. The table does not indicate the various levels of potential impacts (e.g., number of acres affected), but simply denotes an environmental feature's proximity to the proposed roadway project. This screening in no way eliminates the need for the project sponsor to complete an in-depth environmental assessment that meets the requirements of the NEPA and the Wisconsin Environmental Policy Act (WEPA), where applicable.

Many of the planned roadway projects are adjacent to at least one environmental resource or feature. Steep slopes and highly rated agricultural soils are the most common features falling within the buffers followed by rare species and environmental corridors. It should be noted that all of the impacted agricultural lands are in areas planned for future development, according

Figure C-7

Assessment of Potential Resource Impacts of Potential Roadway Capacity Expansion Projects

PROJECT			RESOURCE									
Facility	Segment	Est. Time Table	Best Ag. Soils	Wetlands/ Water Body	Envir. Corr.	Steep Slopes	Stream	Parks/ Rec. Facilities	Tribal Lands	Rare Species	Historic Properties	DNR Managed Lands
Programmed Projects and Studies												
Roadway Segments - State												
Verona Rd. (US 18/151)	Nakoma St. to Raymond Rd.	2017-2020				X				X		
Verona Rd. (US 18/151)	Raymond Rd. to McKee Rd./CTH PD	2017-2020				X				X		
WIS 19	River Rd. to Interstate 39/90	2017-2020	X	X	X	X	X	X		X		X
Roadway Segments - Local												
CTH M (S. Pleasant View Rd.)	Valley View Rd. to Cross Country Rd.	2017-2020	X	X	X	X		X		X		
Cottage Grove Rd. (CTH BB)	North Star Dr. to Sprecher Rd.	2017-2020				X						
McKee Rd. (CTH PD)	Meriter Way to Maple Grove Dr.	2017-2020			X	X		X		X		
Nine Mound Rd.	Cross Country Rd. to CTH PD	2017-2020				X						
Interchanges and Bridges												
W. Beltline (US 12/14)	S. High Point Rd. Bridge	2017-2020				X				X		
Interstate 39/90	Cottage Grove Rd. Bridge	2017-2020				X						
Verona Rd. (US 18/151)	Williamsburg Way, CTH PD Interchanges	2017-2020								X		
Major Studies - Capacity Improvements												
W. Beltline (US 12/14/18/151)	US 14 to CTH N	2017 -2024	PEL study concluding; EIS to follow.									
Interstate 39/90	Beltline interchange area	2017-2018	Includes US 12/18 from US 51 to CTH AB.									
US 51 (Stoughton Rd.)	Terminal Dr. to WIS 19	2017-2018	Ongoing.									
US 51	McFarland to Stoughton	2017-2018	Recommended alternative identified; mostly reconstruction with intersection improvements.									
Planned Projects												
Roadway Segments - State												
US 51	WIS 138 to CTH B	2021-2035										
Roadway Segments - Local												
Buckeye Rd. (CTH AB)	Relocated Sprecher Rd. to US 12/18	2036-2050	X	X	X	X	X	X				X
CTH D (Fish Hatchery Rd.)	Lacy Rd. to Nobel Dr.	2021-2035	X		X							
CTH M	Willow Rd. to CTH K	2021-2035	X	X	X		X	X		X		X
CTH PD	CTH M to West of Shady Oak Ln.	2021-2035	X		X	X						
CTH Q	Oncken Rd. to CTH M (Century Ave.)	2021-2035	X		X	X				X		
CTH T (Commercial Ave.)	N. Thompson Dr. to Reiner Rd.	2036-2050	X			X						
Hoepker Rd.	US 51 to Portage Rd.	2021-2035	X		X	X				X		
Hoepker Rd.	Portage Rd. to Rattman Rd./American Pkwy.	2021-2035	X		X							
Hoepker Rd.	US 51 to CTH CV	2021-2035				X				X		
Lien Rd.	City View Dr. to Felland Rd.	2021-2035	X			X						
Lien Rd. Extension	Felland Rd. to Reiner Rd.	2021-2035	X	X		X						
Mid town Rd.	Muir Field Rd. to CTH M (S. Pleasant View)	2036-2050	X		X	X				X		
Mineral Point Rd. (CTH S)	S. Pleasant View Rd. to Veritas Dr.	2021-2035	X			X				X		
Mineral Point Rd. (CTH S)	Veritas Dr. to Pioneer Rd.	2036-2050	X							X		
Nelson Rd.	High Crossing Blvd. to Reiner Rd.	2036-2050	X			X						
Packers Ave. (CTH CV)	Tennyson Ln. to Wheeler Rd.	2036-2050	X							X		
N. Pleasant View Rd.	US 14 to Greenway Blvd.	2021-2035			X	X				X		
N. Pleasant View Rd.	Greenway Blvd. to Timber Wolf Trail	2021-2035			X	X				X		
N. Pleasant View Rd.	Timber Wolf Trail to Mineral Point Rd.	2021-2035	X							X	X	
Reiner Rd.	O'Keeffe Ave. to Lien Rd. extended	2036-2050	X	X		X						
Reiner Rd.	Lien Rd. extended to CTH T	2036-2050	X									
Sprecher Rd.	CTH T to Milwaukee St.	2021-2035	X									
Sprecher Rd.	Sharpsburg Dr. to Buckeye Rd. (CTH AB)	2021-2035	X	X	X	X		X				
Watts Rd.	CTH M to Pleasant View Rd.	2021-2035	X			X				X		
Interchanges and Bridges												
Interstate 39/90	Beltline (US 12/18) Interchange (BIC)	2021-2035		X								
Interstate 39/90	Hoepker Rd. Bridge	2021-2035			X	X						
US 12/18	CTH AB Interchange		X									
Major Studies												
Interstate 39/90/94*	Beltline to I-90/94 split near Portage	Uncertain	Partly outside the MPO Planning Area.									
WIS 19/WIS 113/CTH M	US 12 to US 151	Uncertain										

* Indicates most of roadway segment located outside the Madison Metropolitan Planning Area.

to local land use plans. Additionally, steep slopes in some areas are attributed to project-related grading. Eight projects are adjacent to wetlands or water bodies; six are in the vicinity of parks or recreational facilities; three projects are adjacent to streams; three are in the vicinity of DNR Managed Lands; and one project is located adjacent to a historic property. None of the projects is adjacent to tribal land.

It should be emphasized that a detailed review of orthophoto maps showing the resource features and project buffers was not conducted. A cursory review of maps of the project buffers and resources was done in some cases (e.g., to determine the location of the resource within the project buffer where only a fraction of an acre was inside it). In addition, the scale of maps the MPO had of the alignment of those roadways on new alignment was not necessarily suitable for such a detailed analysis.

The screening was conducted to provide an early warning of those projects for which impacts to resources may need to be assessed further in order to mitigate possible negative impacts on the natural and built environment. The location of one or more environmental features within the buffer zone area may influence the design (e.g., width of median), alignment, timing, and/or cost of planned projects. The assessment does not prevent a project from moving forward, but identifies potential impacts that may need to be addressed as the project goes into the design and preliminary engineering phase.

Environmental Mitigation Strategies and Activities

Proposed roadway capacity expansion projects have been or are being developed through the regional transportation planning process to avoid, if at all possible, impacts to environmentally sensitive resources. First, in terms of land use, a significant amount of redevelopment was assumed within the greater Madison Isthmus area, existing and planned mixed-use activity centers in Madison, and other suburban downtown areas. For the City of Madison, over one-half of new housing units were allocated to infill/redevelopment areas, while a sizable amount of employment was also allocated to these areas, including 10,000 jobs in the greater Isthmus area. The vast majority of all future growth was allocated to existing urban service areas. This growth allocation reflects the fact that the encouragement of development of high-density, mixed-use activity centers, primarily along existing and planned major transit corridors is a central recommendation of the City of Madison's Madison in Motion Transportation Plan and this RTP. The development of these centers is reflected in the land use growth forecast for the RTP.

In developing the future year 2050 travel forecast, implementation of the full bus rapid transit (BRT) system, addition of express bus service, and other planned service improvements were assumed despite the fact many of these services are not part of the financially constrained RTP. To address remaining traffic congestion, the impacts of new two-lane collector street connections and extensions were tested prior to consideration of any major capacity expansion projects on the arterial roadway system. Capacity expansion projects are thus considered only to address the residual traffic congestion not addressed by these land use and transportation measures, including greatly expanded public transit.

This planning approach is consistent with the policy of the Madison Area Transportation Planning Board – An MPO to utilize Transportation Demand Management (TDM), Transportation System Management (TSM), and Intelligent Transportation Systems (ITS) solutions prior to consideration of roadway capacity expansion. It is also the policy of the MPO to continue to accept higher congestion levels (generally Level of Service D, but also E in corridors with constraints that preclude added travel lanes) during peak hours on major roadways before giving consideration to expanding or building new roadway facilities.

The MPO has compiled a comprehensive GIS database of the location and quality of environmental and historic/cultural resources in the county. An environmental screening of proposed roadway capacity expansion projects has been conducted to identify those with potential impacts to any of these resources. This screening provides an early warning to policy makers and project sponsors of these potential impacts.

While inclusion of a recommended project in the regional transportation plan represents preliminary regional support for the

project, the projects go through several steps from conception to implementation and take many years to successfully complete. Detailed environmental analysis of individual projects occurs later in the project development process as the project approaches the preliminary engineering stage. At this stage, project design features may be refined and the environmental impacts and mitigation strategies can be identified.

During preliminary engineering and environmental studies of roadway capacity expansion projects with possible unavoidable impacts on environmentally sensitive resources, it is expected that efforts to eliminate or minimize any adverse impacts will be exhausted. Evaluation of alternatives should follow the fundamental NEPA hierarchy of avoid-minimize-mitigate. The scope of the necessary preliminary engineering and environmental studies would include the consideration of alternate alignments and cross-sections designed specifically to avoid, or if not possible, minimize the impacts on environmentally sensitive resources. To further minimize impacts, consideration should be given to the use of alternative design features or operational management measures. These might include special context sensitive design features, landscaping or screening to minimize impacts on parks or natural areas, or construction of a bridge over wetlands rather than a roadway on a filled embankment even if it significantly increases project costs. Another technique that should be considered to minimize impacts would be to seek exceptions or variances to design standards, which would reduce the roadway cross-section through the impacted area. Measures to reduce construction-related impacts should also be used.

Where environmentally sensitive resources will be unavoidably impacted, and for which mitigation is compensatory, efforts should focus on the preferred means of mitigation as identified by the federal and state regulatory agencies. Types of mitigation typically considered include: (1) Enhancement of the remaining adjacent environmentally sensitive resources, which will not be impacted as part of the roadway project; (2) Re-creation of the impacted environmentally sensitive resources; (3) Creation of new environmentally sensitive resources; or (4) Acquisition and utilization of mitigation bank credits. Potential mitigation sites could include areas within or adjacent to environmental corridors, isolated natural resource areas, and other mitigation bank sites. Mitigation banks are used when compensation at or near the project site is not practicable and the loss of the wetland is unavoidable. Currently, there is an active wetland mitigation bank site in the Town of Dane.

Established federal and/or state policy and guidelines exist with respect to compensatory mitigation of certain environmentally sensitive resources. With respect to wetlands, all wetland compensatory mitigation efforts must meet the Department of the Army (DA) requirements of Section 404 of the Clean Water Act including the United States Environmental Protection Agency 404(b)(1) Guidelines at 40 Code of Federal Regulations (CFR) Part 230, and the April 2008 Federal Rule - Compensatory Mitigation for Losses of Aquatic Resources found at 33 CFR Part 332 (Federal Mitigation Rule), Section 10 of the Rivers and Harbors Act, and WisDNR requirements in Section 281.36 of the Wisconsin Statutes, Chapter NR 350 of the Wisconsin Administrative Code, 2011 State of Wisconsin Act 118, as well as other applicable federal and state statutes, regulations, guidelines, and ordinances.

For Wisconsin Department of Transportation (WisDOT) projects, compensatory mitigation efforts must meet the requirements of the WisDOT Wetland Mitigation Banking Technical Guidelines, which set out the operational criteria for wetland mitigation banks and the responsibilities of the Federal and state resource and transportation agencies. These agencies include the Wisconsin Department of Natural Resources (WisDNR), U.S. Army Corps of Engineers, U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service, and Federal Highway Administration. The Guidelines were first developed in 1993 following the establishment of a state policy on wetland banking for WisDOT through an amendment to the cooperative agreement between WisDOT and WisDNR. The Guidelines have been revised twice, most recently in 2002. An interagency review team oversees the operation and maintenance of wetland banks.

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