

Appendix A

Summary of Mitigation Measures



Table A-1. Summary of Mitigation Measures

Resource	Measures to Mitigate Adverse Effects
Land Use and Land Use Planning	Where it is not possible to remain within existing right-of-way, FHWA and WisDOT would compensate property owners in accordance with applicable laws and regulations for land acquired from residences, businesses, utilities, and American Family Field (see Sections 3.4.3, 3.5.3, 3.6.4, and 3.7.3). Some land currently used as highway right-of-way may potentially no longer be needed as right-of-way. WisDOT may declare the land excess right-of-way, and it could be converted to a different land use.
Transportation Service	<p>Section 3.27, Construction, describes measures to manage congestion during construction, which would be a result of lane closures on I-94 and adjacent local streets. WisDOT will develop a transportation management plan (TMP) to coordinate and manage impacts associated with construction. As part of the 8-lane alternative and 6-lane alternative with half interchange at Hawley Road, WisDOT would construct some off-interstate improvements to mitigate the traffic impacts of partially closing the Hawley Road interchange. The improvements are extending Washington Street to make it easier for drivers in the Hawley Road corridor to access the 68th Street/70th Street interchange and improvements at three local road intersections to improve local road operations.</p> <p>Existing Washington Street is about 0.5-mile south of I-94 and currently intersects with 70th Street and dead ends a few blocks to the east. It provides access to several businesses. A new Washington Street alignment would be constructed to provide a connection between 70th Street and Hawley Road/60th Street (Exhibit 2-1). Connecting 70th Street to Hawley Road/60th Street via Washington Street would provide convenient access to and from Hawley Road from the 68th Street/70th Street interchange for traffic that would no longer be able to enter I-94 eastbound or exit from I-94 westbound at Hawley Road.</p> <p>In addition to the Washington Street connection, WisDOT has identified three local road intersections for improvements to mitigate traffic congestion because of the partial closure of the Hawley Road interchange. Each of the intersections would see a modest increase in traffic volumes as a result of the access change at Hawley Road. The following are the local road intersections:</p> <ul style="list-style-type: none"> • 70th Street/Greenfield Avenue • National Avenue/Greenfield Avenue • Brewers Boulevard/National Avenue <p>At the 70th Street/Greenfield Avenue intersection, WisDOT would restripe the pavement to extend the southbound left-turn lane and improve the traffic signals to improve traffic operations. No right-of-way would be required for the improvements.</p> <p>At the National Avenue/Greenfield Avenue intersection, WisDOT would restripe the pavement and improve the traffic signals. Along National Avenue, northeast-bound National Avenue would be restriped to provide for a combined left and through lane, along with a right-turn lane. This would eliminate approximately 100 feet of on-street parking (about five parking spots). For southwest-bound National Avenue, a combined left and through lane, along with a right-turn lane, would be provided. This would eliminate approximately 150 feet of on-street parking. Along Greenfield Avenue, a left-turn lane and a combined through and right-turn lane would be provided in each direction. This would remove about 70 feet of parking along westbound Greenfield Avenue.</p> <p>At the Brewers Boulevard/National Avenue intersection, WisDOT would restripe traffic lanes and improve traffic signals. A second left turn lane would be added to northbound Brewers Boulevard. Along National Avenue, west of Brewers Boulevard, the second westbound through lane would be extended by 500 feet to a spot between 45th and 46th Streets. In addition, a right turn lane would be provided from westbound National Avenue to the VA entrance at General Mitchell Boulevard/47th Street. This was requested by the VA to improve access to its campus, and it would improve traffic operations along National Avenue.</p> <p>WisDOT and FHWA will coordinate with Canadian Pacific Railway to minimize interruptions to rail service while replacing the I-94 bridge over the Canadian Pacific Railway. WisDOT and FHWA will also work with MCTS to minimize disruption to its routes during construction.</p> <p>With the half interchange at Hawley Road, WisDOT would modify the I-94 signage along key arterials to direct drivers to the 68th Street/70th Street interchange or the Stadium Interchange. If needed, as part of the TMP, traffic calming measures could be installed along residential streets adjacent to the Hawley Road interchange, like Main Street and Adler Street south of I-94 and Dixon Street north of I-94. Under the half interchange at Hawley Road, traffic calming measures will deter drivers from using these residential streets to reach the 68th/70th Street interchange.</p>
Utilities	WisDOT will compensate utilities for relocating their facilities, if required. Most utilities that are currently in WisDOT’s right-of-way would be moved by the utility companies without compensation from WisDOT. WisDOT and FHWA will continue coordinating with utilities, municipalities, and the county to avoid or minimize interruptions in service during construction.



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Residential Development	<p>Where it was not possible to avoid residences, federal property acquisition law provides for payment of just compensation for residences displaced for a federally funded transportation project (Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended [Uniform Act]). Acquisition price, replacement dwelling costs, moving expenses, increased rental or mortgage payments, closing costs, and other relocation costs are covered for the residential displacement.</p> <p>Under state law, no person or business would be displaced, unless a comparable replacement dwelling, business location, or other compensation (when a suitable replacement business location is not available) would be provided. Compensation is available to all displaced persons without discrimination. Prior to appraisals and property acquisition, an authorized relocation agent would interview each owner and renter to be relocated in order to determine their needs, desires, and unique situations associated with relocating. The agent would explain the relocation benefits and services each owner may be eligible to receive.</p> <p>Property acquisitions not involving residential, business, or other building relocations are also compensated in accordance with state and federal laws. Before initiation of property acquisition, WisDOT provides information explaining the acquisition process and the state’s Eminent Domain Law under Section 32.05, Wisconsin Statutes. A professional appraiser inspects the property to be acquired. Property owners are invited to accompany the appraiser to ensure that full information about the property is taken into consideration. Property owners may also obtain an independent appraisal. Based on the appraisal, the value of the property is determined and that amount offered to the owner. If agreement on fair market value cannot be reached, the owner would be advised of the appropriate appeal procedure. A search of available housing from local realtor listings in April 2022 reported 4 homes of similar price (\$115,000 to \$155,000) to the displaced residence, within roughly 1 mile of I-94 west of WIS 175/Brewers Boulevard (www.zillow.com; accessed April 2022).</p> <p>Septic tanks, drain fields, or wells on acquired properties would be abandoned in accordance with state regulations and local zoning standards. WisDOT will survey all buildings to be demolished to determine whether asbestos or lead paint is present. All appropriate and applicable engineering and regulatory controls will be followed during the handling and disposal of asbestos-containing material and lead-based paint. Contractors must comply with regulations of the United States Environmental Protection Agency (USEPA); National Emission Standards for Asbestos; the Occupational, Safety, and Health Administration regulations on asbestos removal; local government regulations; and all other applicable regulations. The most recent editions of all applicable standards, codes, or regulations shall be in effect. Persons performing asbestos abatement must comply with all training certification requirements, rules, regulations, and laws of the State of Wisconsin regarding asbestos removal. Before a contractor demolishes a building that may contain or is known to contain asbestos, the contractor must notify the Wisconsin Department of Natural Resources (WDNR) and the Wisconsin Department of Health and Family Services at least 10 working days before starting the work, using WDNR Form 4500-113: “Notification of Demolition and/or Renovation and Application for Permit Exemption.”</p> <p>Demographic data for the areas in which residential displacements would occur do not indicate age, disability, or income characteristics that would require special relocation consideration or services. WisDOT also coordinated with potential relocated residents prior to and during public meetings and no needed special relocation considerations or services were identified at those times. If unusual circumstances were to arise during real estate activities, WisDOT real estate personnel would be available to provide appropriate relocation services.</p> <p>During the project’s final design phase, WisDOT will design lighting in such a way to minimize the amount of freeway lighting that enters adjacent residential neighborhoods.</p>



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Commercial and Industrial Development	<p>Where it was not possible to avoid properties, commercial and industrial acquisitions and relocations would be in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. In addition to providing just compensation for property acquired, additional benefits are available to eligible displaced businesses, including relocation advisory services, reimbursement of moving expenses, and down-payment assistance. Under state law, no person would be displaced unless a comparable business location or other compensation (when a suitable business location replacement is not practical) is provided. Compensation is available to all displaced businesses without discrimination.</p> <p>Before initiating property acquisition activities, property owners would be contacted and given a detailed explanation of the acquisition process and Wisconsin’s Eminent Domain Law under Section 32.05, Wisconsin Statutes. Any property acquired would be inspected by one or more professional appraisers. The property owner would be invited to accompany the appraiser during the inspection to ensure that the appraiser is informed of every aspect of the property. Property owners will be given the opportunity to obtain an appraisal by a qualified appraiser that will be considered by WisDOT in establishing just compensation. Based on the appraisal, the value of the property would be determined and that amount offered to the owner.</p> <p>Before a contractor demolishes a building that may contain or is known to contain asbestos, the contractor must notify WDNR and the Wisconsin Department of Health and Family Services at least 10 working days before starting the work, using WDNR Form 4500-113: “Notification of Demolition and/or Renovation and Application for Permit Exemption.”</p> <p>There are no known age, ethnic, handicapped, or minority characteristics that would require special relocation consideration for any business displacement. There are two businesses that would be potentially difficult to relocate. Badger Truck Center, Inc., and Central Bark Doggy Day Care are franchisee establishments that operate within a designated territory. As part of their franchise agreements, they are not allowed to relocate within a specified distance of another franchisee.</p> <p>A search of a commercial realty website in May 2022 (www.loopnet.com) listed more than 10 commercial/industrial locations in the City of Milwaukee that would be adequate replacement sites for some businesses that would be displaced as a result of the project.</p> <p>Based on the listings, there is a sufficient amount of available properties for displaced businesses. However, the availability of vacant commercial and industrial locations is always in flux. As businesses relocate in the future, the number of business and commercial listings may change, but it appears likely that sufficient replacement business buildings will be available when required.</p> <p>Under the 8-lane alternative and 6-lane alternative with half interchange at Hawley Road, WisDOT would modify the I-94 signage along key arterials to direct drivers to the 68th Street/70th Street interchange or the Stadium Interchange. If needed, traffic calming measures could be installed along residential streets adjacent to the Hawley Road interchange, like Main Street and Adler Street south of I 94 and Dixon Street north of I-94. WisDOT would also construct some off-interstate improvements to mitigate the traffic impacts of partially closing the Hawley Road interchange. The improvements are extending Washington Street to make it easier for drivers in the Hawley Road corridor to access the 68th Street/70th Street interchange and improvements at three local road intersections to improve local road operations under the partial closure of the Hawley Road interchange.</p>



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Institutional and Public Services	<p>WisDOT and FHWA would replace or compensate the Stadium District for American Family Field parking spaces that are lost, if any, and compensate the Stadium District for land that is acquired. WisDOT and FHWA would continue working with the Stadium District and the Milwaukee Brewers to develop a plan to efficiently unload the parking lots after games, while improving I-94 capacity and safety. WisDOT and FHWA would compensate Girl Scouts of America for any land acquired as part of the project.</p> <p>As requested by the VA (2016 Final EIS; Appendix D, letter D-27), WisDOT and FHWA would maintain the Zablocki Drive connection between Bluemound Road and the VA Campus. The VA noted that this northern access route improves safety and traffic congestion on the VA Campus and is an additional evacuation route. It also provides access to the portion of Wood National Cemetery north of I-94. All alternatives maintain this northern connection separate from General Mitchell Boulevard. See Section 3.23.3, Section 3.24.4, and Section 4.5 for additional mitigation measures for the VA Campus.</p> <p>The Washington Street extension would mitigate the traffic impacts on the VA, cemeteries, and emergency services of partially closing the Hawley Road interchange by making it easier for drivers on Hawley Road to access the 68th Street/70th Street interchange. Connecting 70th Street to Hawley Road/60th Street via Washington Street would provide convenient access to and from Hawley Road from the 68th Street/70th Street interchange for traffic that would no longer be able to enter I-94 eastbound or exit from I-94 westbound at Hawley Road.</p> <p>Eliminating parking from the American Family Field parking lots could be mitigated through the construction of parking structures onsite or building more of the proposed roadways over the parking lots on bridges to provide for parking under the bridges. Additional new parking spaces, about 550 and 900 spaces for the hybrid interchange and diverging diamond interchange, respectively, could be located on existing open land or existing WisDOT right-of-way that would no longer be required.</p> <p>WisDOT would likely build a Service Facility in the Milwaukee area to replace the 60th Street building.</p>
Socioeconomic Characteristics	<p>The 8- and 6-lane alternatives include the following features that minimize impacts on residences, businesses, community facilities, and access points:</p> <ul style="list-style-type: none"> • Maintains comparable access points to and from I-94 and connectivity east of the Stadium Interchange. • The Washington Street extension would mitigate the traffic impacts of partially closing the Hawley Road interchange by making it easier for drivers on Hawley Road to access the 68th Street/70th Street interchange. Connecting 70th Street to Hawley Road/60th Street via Washington Street would provide convenient access to and from Hawley Road from the 68th/70th Street interchange for traffic that would no longer be able to enter I-94 eastbound or exit from I-94 westbound at Hawley Road. <p>WisDOT will continue to coordinate with communities during future design phases. Improved travel reliability and safety on I-94 can also support local economic development efforts, which can help offset unavoidable impacts to the local tax base.</p>
Visual Character/Aesthetics	<p>On previous WisDOT Southeast Freeways projects, such as the Marquette Interchange, I-94 North-South Corridor, and Zoo Interchange, community sensitive design (CSD) efforts during final design identified concepts for visual benefits and minimization of impacts resulting from a larger-scale freeway. As part of the 2015-2017 State of Wisconsin budget, funding is no longer available for CSD aesthetic mitigation or enhancement unless required as mitigation through a federal rule or to replace a previous aesthetic treatment eliminated during project construction.</p>



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Surface Water and Fishery	<p>In the study phase, various stormwater BMPs were evaluated. During the next subsequent project design phases, best management practices will be further refined in coordination with WDNR, local municipalities, and MMSD to meet all required guidelines for a federally funded project.</p> <p>WisDOT would work with communities and MMSD during the project’s final design phase to calculate stormwater measurements and to address stormwater management, both from a water quality and water quantity standpoint. WisDOT would further assess the water quality and quantity management options during the final design phase. WisDOT would comply with Wisconsin Administrative Code NR 151 and WisDOT’s Memorandum of Understanding on Erosion Control and Stormwater Management with WDNR. WisDOT would engage in further discussions with WDNR, MMSD, and other partner communities during design to identify additional stormwater management measures that may be cost-effective to implement, consistent with WisDOT’s stormwater management policies.</p> <p>WisDOT would implement stormwater management techniques for the 8- and 6-lane alternatives. Per WDNR’s request, the project’s conceptual stormwater management plan should evaluate the impact of runoff release rates for 100-year and 2-year storm events.</p> <p>The 8- and 6-lane alternatives would increase impervious area and therefore increase the amount of stormwater runoff from I-94. However, the alternatives would also provide the opportunity for BMPs to treat the runoff and bring I-94 in compliance with Wisconsin’s stormwater management regulations that limit the amount of pollution in runoff. BMPs can be used for stormwater management. BMP options are described in the following list and shown in Exhibit 3-19. For the purpose of this evaluation, the variety of stormwater BMPs are discussed as potential, but for water quality and quantity modeling, wet stormwater retention basins were used as the most practical and efficient practice.</p> <p>The following are the BMP options:</p> <ul style="list-style-type: none"> • Retention Basins (Wet Detention Basins)—Retention basins have a permanent pool of water year-round. The permanent pool allows pollutant particles in stormwater runoff to settle over an extended period of time. Nutrient uptake also occurs through increased biological activity. • Dry Detention Basins—A dry detention basin typically is designed to store runoff and discharge it slowly to reduce the peak discharge downstream. As normally designed, the basins typically have little effect on the volume of stormwater released to the receiving water. Peak flow reduction is often accomplished through use of a multistage outlet structure that allows increased discharge as water levels in the basin increase. • Infiltration Devices—Infiltration can be achieved through use of trenches or grass swales. Infiltration devices are used to slow the water flow so that more water is absorbed into the ground and more pollutants are removed from runoff. Due to the potential extent of contaminated soils throughout this study area, the use of infiltration devices may be discouraged. • Grass-lined Ditches—This BMP generally helps reduce suspended solids to meet the regulatory goal of NR 151, which outlines establishes runoff pollution performance standards for transportation facilities. • Trapezoidal Swale through Infield—This BMP combines grass ditch treatment with peak flow reduction and is considered the same level of suspended solid control as grass ditches. • Vegetated Rock Filters—This BMP may be used at outfalls to waterways or anywhere concentrated runoff leaves the right-of-way. It is similar in concept to a level spreader, which attempts to reintroduce sheet flow and provides a small amount of peak flow and volume reduction. • Swale Blocks/Ditch Checks—Swale blocks/ditch checks are small earthen berms constructed in the bottom of a ditch at regular intervals to detain runoff from frequent storms. This BMP provides peak flow reduction and may provide infiltration benefits depending on soil conditions. • Inline Storage—This method is not desirable from a water quality standpoint, but would manage water quantity. Storm sewer pipes would be designed larger than normal to provide storage in the sewer during rain, then the water is gradually released after the rain ends. • Biofiltration Basins—Biofiltration basins are similar to infiltration devices and appear from the surface to look like a garden area. They use engineered soil, underdrains, native vegetation, and shallow detention to allow flows to be stored on the surface and slowly infiltrate to the subsoils or in cases of contaminated or poorly drained soils, drain through underdrain to a storm sewer. In narrow or restricted land space areas, stormwater biofiltration systems may be used within ditch areas, between mainline and frontage road lanes, or within ramp areas. • Stormwater Trees – this BMP may be used in the project corridor or watershed to reduce runoff. Stormwater trees absorb stormwater during a rainfall event, absorb carbon dioxide, serve as an urban canopy to reduce urban heat zones, and reduce erosion during rainfall events.



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Resource	Measures to Mitigate Adverse Effects
Surface Water and Fishery (continued)	<p>To comply with State Statute 87.30 and NR 216¹ and to address concerns raised by MMSD, WisDOT, and FHWA are investigating retention/detention basins to manage stormwater from the proposed improvements. The retention/detention ponds would also improve water quality by allowing solid pollutants (sand, grit, etc.) to settle out of the water before it flows into storm sewers or streams. If the retention/detention ponds are built, WisDOT would provide landscaping around the pond. Potential locations for retention/detention basins include the following:</p> <ul style="list-style-type: none"> West of Stadium Interchange (Exhibit 3-20a)— Biofiltration basins or retention basins may be placed between the ramps at the 68th Street/70th Street interchange. A few opportunities for retention are provided at the Hawley Road interchange, within the infields, east of Hawley Road, north of I-94, and potentially south of I-94. Stormwater from I-94 in the area through the cemeteries would be best served using storm sewer conveyance to the ponds at Hawley Road. East of Stadium Interchange (Exhibit 3-20b)— Stormwater retention basins within the Stadium Interchange may be between the freeway and ramps or under bridges within the WisDOT right-of-way. Two vacant MMSD parcels east of the Stadium Interchange may serve as potential locations for retention basins. East of the Stadium Interchange, stormwater retention basins may be located within areas of the existing I-94 alignment. Areas under bridges may also be used for stormwater retention and provide the additional benefit of shading and reducing thermal pollution to the streams. WisDOT would consider using permeable pavement in areas of the American Family Field parking lot that need to be reconstructed as a result of the project. <p>In 2018, the MMSD developed TMDL limits on behalf of WDNR for the watersheds within the Milwaukee area, including the Menomonee River and its tributaries (WDNR 2018). TMDL is the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards. TMDLs were established for fecal coliform bacteria, phosphorus, and sediment. WisDOT would continue to comply with TMDLs and current NR 151 requirements for stormwater management.</p> <p>In evaluating the proposed stormwater retention and/or biofiltration device locations, special consideration was given to address the removal of not only total suspended solids, but also phosphorus and fecal coliform bacteria. In the attempt to achieve a significant removal rate of each of the constituents, a secondary benefit of volumetric control results. The volume stored during the critical time period of the Menomonee River addresses concerns raised by MMSD regarding volumetric releases to the river.</p> <p>East of about 38th Street, I-94 drains to a combined sanitary and storm sewer system. The drainage design team evaluated separating the freeway stormwater runoff from the combined sewer, with the desire to drain the treated runoff from the proposed stormwater ponds to the Menomonee River. A few potential obstacles were identified. The Menomonee Valley is adjacent to the freeway. The Valley has historically been used as a rail yard with tracks existing to this day. Potentially hazardous soils and materials are located throughout the valley area and could be situated between the freeway and the future storm sewer outfalls to the Menomonee River. There is potential for the 8- and 6-lane alternatives to avoid conveyance to the river to provide the water quality/quantity controls within the WisDOT right-of-way and adjacent available open space.</p> <p>The Marquette Interchange Project introduced the stormwater management strategy (Marquette Approach) of separating the “first flush” or low flows of storm events to the combined sewer and allowing the higher and cleaner flows to discharge to the river. This was seen as a win-win approach because MMSD would still treat the portion of stormwater runoff with the highest pollutant levels, but not be overtaxed with the higher flows. This example may be evaluated for this project during a later phase when the extent of contamination within the Menomonee Valley can be more adequately assessed. MMSD’s comments on the Draft EIS encouraged WisDOT to follow the Marquette Interchange approach. TMDL’s may offer a new challenge that should be evaluated with the Marquette Approach, as well as the costs involved in installing additional storm sewer to route the higher flows to the river.</p>
Environmental Corridors and Natural Areas	<p>There are no feasible Stadium Interchange options that could completely avoid impact to the linear primary environmental corridor. Alternatives were designed to minimize impacts to the primary environmental corridor in this location by clear spanning it.</p>

¹ NR 216 says that WisDOT bridge “construction may not cause any obstruction to flood flows.”



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Wetlands	<p>Presidential Executive Order 11990, Protection of Wetlands, requires federal agencies to avoid, to the extent practicable, long- and short-term adverse impacts associated with the destruction or modification of wetlands. More specifically, the order directs federal agencies to avoid new construction in wetlands unless there is no practicable alternative. The order states that where wetlands cannot be avoided, the proposed action must include all practicable measures to minimize harm to wetlands.</p> <p>The Clean Water Act’s Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 CFR Part 230) are administered by USEPA and the Corps of Engineers. The guidelines state that dredged or fill material should not be discharged into aquatic ecosystems (including wetlands), unless it can be demonstrated that there are no practicable alternatives to such discharge, that such discharge will not have unacceptable adverse impacts, and that all practicable measures to mitigate adverse impacts are undertaken.</p> <p>Compensation for unavoidable wetland loss will be carried out in accordance with the Wisconsin Department of Transportation Wetland Mitigation Banking Technical Guideline developed as part of the WisDOT/WDNR Cooperative Agreement on Compensatory Wetland Mitigation and the regulations for compensatory wetland mitigation issued jointly by the Corps of Engineers and USEPA in May 2008 (33 CFR § 325, 33 CFR § 332, and 40 CFR § 230 [April 10, 2008]). A wetland mitigation plan will be developed during the project’s final design phase, in consultation with state and federal agencies.</p>
Threatened and Endangered Species	<p>Prior to construction, WisDOT will consult with WDNR in accordance with the DOT/DNR Cooperative Agreement Memorandum of Understanding On Endangered and Threatened Species Consultation to develop appropriate measures to mitigate potential adverse impacts to state-listed species. During final design, the area of impact to potential habitats as identified in the field survey will be determined. WisDOT and WDNR will consult on additional species surveys, as needed. If a listed threatened or endangered species is present and cannot be avoided, WisDOT and WDNR will initiate incidental take consultation in accordance with the Wisconsin Statute 29.604 “Endangered and threatened species protected.” The statute requires a consideration of mitigation measures to reduce the impact and a public notice before the permit can be issued.</p> <p>Bridges and culverts will be inspected to determine if any migratory birds are present. If swallows are present in the study area, WisDOT will remove their nests from the underside of bridges prior to construction, between August 20 and May 15. The nests are unoccupied during this period. After swallow nests are removed, WisDOT will place nets under the bridge to keep swallows from re-establishing nests on bridges that are going to be removed.</p> <p>Following FHWA’s User’s Guide, WisDOT made an effect determination that the project “may affect, not likely to adversely affect” the northern long-eared bat. Proper documentation was submitted to USFWS on December 17, 2021. After the 30-day evaluation period for the verification letter no further notification was received from USFWS. This indicates the project may proceed as planned.</p> <p>Avoidance and minimization measures to limit impacts to the northern long-eared bat include modifying all aspects of the project to avoid tree removal in excess of what is required to implement the project safely. Tree removal within potential habitat will occur outside of the active season and areas will be clearly marked to stay within limits. Bridge surveys will be conducted no more than 7 days prior to the start of construction to ensure northern long-eared bats have not started to use the structure.</p> <p>To minimize potential indirect effects on bats or aquatic insects which may provide forage, WisDOT will implement erosion, sediment, and stormwater controls to protect water quality, wetlands, and streams. Where feasible, vegetated swales will be used to assist with filtering sediment and other pollutants from roadside drainage. Temporarily disturbed areas created from construction activities will be revegetated.</p> <p>To minimize potential effects on air quality, construction contractors will use proactive measures to prevent discharges of dust into the atmosphere that may unreasonably interfere with the public and adjacent properties or may be harmful to plants and animals.</p>



Noise

Based upon the requirements of 23 CFR 772 and within the framework of *Facilities Development Manual 23*, Noise, various methods were reviewed to mitigate the noise impact of the proposed improvements. Among those considered were restricting truck traffic to specific times of the day, prohibiting trucks, altering horizontal and vertical alignments, property acquisition for construction of noise barriers or berms, property acquisition to create buffer zones to prevent development that could be adversely impacted, soundproofing public use or nonprofit institutional buildings (Land Use Activity Category D only), berms, and sound barriers.

Restricting or prohibiting trucks is counter to the project's purpose and need. Design criteria and recommended termini for the proposed project preclude substantial horizontal and vertical alignment shifts that would produce noticeable changes in the projected acoustical environment. Due to right-of-way limitation, the construction of noise berms is neither feasible nor reasonable. Soundproofing was not considered because there are reasonable and feasible exterior measures. Therefore, only the construction of noise barriers was reviewed. Abatement is recommended only when it is feasible and reasonable to construct a noise barrier.

Facilities Development Manual 23, Noise, has established criteria for determining feasibility and reasonableness and is summarized as follows:

- The barrier must provide at least 5-dB reduction to be considered feasible.
- One receptor or common use area must meet the 9-dB design goal for the noise barrier to be considered for reasonableness.
- A noise barrier must reduce noise levels by at least 8 decibels for a receptor or common use area to be considered as benefited for the purposes of determining reasonableness. The total cost of the barrier may not exceed \$50,000 per abutting residence.
- If a common noise environment exists within the project termini, cost-averaging of multiple barriers within the common noise environment may occur as part of the reasonableness determination. Noise barriers exceeding \$100,000 per benefited receptor cannot be included in the cost averaging. The order of cost averaging of eligible multiple barriers will start with the most cost-effective noise barrier increasing to the second most cost-effective barrier to the third, etc., until the average cost approaches or equals but does not exceed \$50,000 per benefited receptor. The noise barriers included in the cost averaging may be carried forward for a determination of whether they will be incorporated into the project. The department must receive a vote of support for the project from a simple majority of all votes cast by the owners or residents of the benefited receptors.

A total of 13 noise barriers were analyzed for seven residential areas and three cemeteries abutting the corridor that would be exposed to noise levels that approach or exceed the noise level criteria for considering barriers for each of the alternatives. A summary of the noise barriers is presented in **Table 3-26** and shown on **Exhibit 3-21b**. Detailed information about the noise barriers considered for each of the alternatives under consideration is presented in **Tables 3-27 through 3-32**. **Tables 3-27 through 3-32** present the results of the noise barrier analysis, including barrier location, future Leq(1h) noise levels without and with a barrier, barrier length and height, estimated cost, number of residential units benefited, noise reduction provided by the barrier, and cost per residential unit for each alternative.

It should be noted that options to avoid impacts to overhead powerlines and other utilities located north of I 94 between 68th Street and Hawley Road under the 8-lane alternative and both 6-lane alternatives were investigated. Shifting I 94 roadway south in this area, locating the noise barrier north of the ATC towers, or reducing the height of the barrier to avoid impacts to the overheard utilities were considered. Shifting the roadway to the south or moving the barrier to the north of the ATC towers were eliminated as options from consideration due to right-of-way impacts and additional costs. Barrier 4A, a reduced height barrier, was found to be reasonable and feasible with its reduced height and avoids the additional cost of relocating ATC towers that would be required by Barrier 4 for the 8- and 6-lane alternatives. See **Table 3-27**, and **Exhibit 3-21c**.

The final step in the reasonableness determination is to cost average the multiple noise barriers within the common noise environment on all noise barriers costing less than \$100,000 per unit. Cost averaging for the 8-lane alternative with hybrid interchange provided cost reasonableness for one additional barrier (Barrier 3) for a total of six barriers. Cost averaging for the 8-lane alternative with diverging diamond interchange provided cost reasonableness for three additional barriers (Barriers 3, 9, and 10) for a total of six barriers. Cost averaging for the 6-lane alternative with full interchange at Hawley Road provided cost reasonableness for one additional barrier (Barrier 3) for a total of six barriers. Cost averaging for both 6-lane alternatives with the diverging diamond interchange provided cost reasonableness for two additional barriers (Barriers 3 and 10) for a total of six barriers (**Exhibit 3-21c**).

The noise analysis for the Washington Street extension identified 15 receivers representing 120 residences along 60th Street/Hawley Road, Dickinson Street, and 70th Street for the Washington Street connection project. No noise levels exceed the noise level criteria for the Washington Street extension; therefore, no noise barriers are recommended in the Washington Street extension area.

During the final design phase of the project as the roadway profiles and retaining walls are more accurately defined relative to the surrounding areas, the location of feasible and reasonable noise mitigation will be reassessed. If final design results in substantial changes in roadway design from the conditions modeled for the Supplemental Draft EIS or Supplemental Final EIS, noise abatement measures will be reviewed. A final decision on the installation of abatement measures will not be made until the project's final design has progressed to a point where barrier siting can be confidently determined and until the public involvement process is complete. The public involvement process will solicit the viewpoints of residents and property owners who benefit by the construction of the feasible and reasonable noise barriers to determine whether noise abatement will be likely to be incorporated into the project.



Table A-1. Summary of Mitigation Measures

Resource	Measures to Mitigate Adverse Effects
Hazardous Materials	<p>During design, WisDOT will develop remediation measures for contaminated sites that cannot be avoided. Disturbance near potentially contaminated sites will be minimized to the extent possible and practicable. As applicable, the contract special provisions will include a Notice to Contractor describing the potential contamination with names and locations of sites. The areas of potential contamination will be marked on the plan sheets with reference to check the Notice to Contractor in the special provisions.</p> <p>The regional WisDOT office will work with concerned parties to ensure that disposition of any petroleum contamination is resolved to the satisfaction of WDNR, WisDOT, and FHWA before acquisition.</p> <p>During the project’s real estate acquisition phase, WisDOT will survey all buildings and structures that need to be demolished to determine whether asbestos or lead-based paint is present. All appropriate and applicable engineering and regulatory controls will be followed during the handling and disposal of asbestos containing materials and lead-based paint. Contractors must comply with USEPA regulations; National Emission Standards for Asbestos; the Occupational, Safety, and Health Administration regulations on asbestos removal; local government regulations; and all other applicable regulations. The most recent editions of all applicable standards, codes, or regulations shall be in effect. Additionally, any person performing asbestos abatement must comply with all training certification requirements, rules, regulations, and laws of the State of Wisconsin regarding asbestos removal.</p> <p>Special provision 203-005, bid item 203.0210s will be included in the construction plans to address asbestos abatement. The contractor will be responsible for completion of the Notification of Demolition and/or Renovation (WDNR Form 4500-113).</p>
Cemeteries	<p>WisDOT would maintain the Zablocki Drive bridge across I-94. The 8- and 6-lane alternatives would continue to provide access to Wood National Cemetery (and the VA Campus in general). With the hybrid interchange, westbound I 94 traffic would still be able to reach General Mitchell Boulevard directly via a new frontage road north of I-94, which would pass over Yount Drive and connect to General Mitchell Boulevard near the existing westbound I-94 exit ramp. For drivers on westbound I-94, this connection would provide access to Wood National Cemetery that is similar to existing access. Eastbound traffic will exit to 44th Street, and then reach General Mitchell Boulevard by way of Selig Drive.</p> <p>With the diverging diamond interchange, drivers exiting I-94 westbound will exit the freeway just west of the 35th Street overpass travel over WIS 175 and connect to General Mitchell Boulevard north of the freeway. Drivers exiting I-94 eastbound will exit I-94 just west of General Mitchell Boulevard and travel east through the hook ramp (between Yount Drive and WIS 175) and connect to General Mitchell Boulevard north of the freeway at the same location as the westbound exit.</p> <p>A wall would be built south of I-94 to partially screen views of I-94 from Wood National Cemetery (see Section 3.24.3). The existing wood fence north of I-94 would be replaced with a fence/wall of a similar height.</p> <p>WisDOT and FHWA will continue to work with the National Cemetery Administration to determine the impacts of vibration from I-94. WisDOT and FHWA, in coordination with Section 106 consulting parties, will prepare a Monitoring Plan to address concerns about construction related vibration impacts adjacent to the Soldiers’ Home NHL and Historic District. The Monitoring Plan will include a raise and align survey for grave markers within Wood National Cemetery.</p> <p>Further measures to minimize and mitigate impacts to the Wood National Cemetery (as a contributing element of the Soldiers’ Home NHL) and Calvary Cemetery (eligible for listing on the National Register of Historic Places) are discussed in Sections 3.24.3 and 3.24.4.</p> <p>No mitigation measures are planned for the Beth Hamedrosh Hagodel, Spring Hill, or Anshai Lebowitz cemeteries; however, coordination with all cemeteries near the project will continue throughout the design process and into construction.</p> <p>Per the project’s Programmatic Agreement, if human remains are inadvertently/accidentally discovered during implementation of the project, all ground disturbing activities in the immediate area of the discovery shall halt until the following actions have been carried out, in accordance with Wisconsin Statute 157.70 and the Native American Graves Protection and Repatriation Act, as required. WisDOT shall immediately implement measures to protect the human remains from inclement weather and vandalism, and notify appropriate law enforcement officials to determine whether or not the remains are subject to a criminal investigation by local or federal authorities. The VA’s National Cemetery Administration will be notified and consulted if human remains are discovered within or adjacent to Wood National Cemetery.</p>
Historic Properties	<p>Under the 8- and 6-lane alternatives, it is anticipated there would be no adverse effects to historic properties, but the Section 106 consultation process, which discusses effects to historic properties, is ongoing. The 2016 Programmatic Agreement was written to ensure there would be no adverse effects on historic properties. Through the ongoing Section 106 consultation process, the Programmatic Agreement will be amended or updated, as appropriate, for any newly identified effects to historic properties and for newly NRHP-eligible or -listed historic properties.</p>



Table A-1. Summary of Mitigation Measures

Resource	Measures to Mitigate Adverse Effects
Archaeological Resources	No adverse impacts to archaeological resources were identified. The amended Programmatic Agreement includes stipulations regarding inadvertent discoveries during construction activities, as well as the discovery of human remains.
Recreational Resources/Public Use Lands	If 44th Street is closed during construction, WisDOT and WDNR will develop a detour route for the Hank Aaron State Trail extension that follows 44th Street. WisDOT will work with the City of Milwaukee to develop a detour route for the HAST if it is closed as a result of the 70th Street bridge reconstruction. WisDOT will work with the City of Milwaukee to develop a detour route for the HAST if it is closed as a result of the 70th Street bridge reconstruction. In addition, WisDOT will construct a permanent connection between the HAST and Oak Leaf Trail along 44th Street and Wells Street, traveling under I 94 east of the Stadium Interchange. WisDOT would purchase a temporary easement from Milwaukee County to access General Mitchell Boulevard to reconstruct it. All sidewalks and landscaping along General Mitchell Boulevard affected by the reconstruction would be restored.
Construction	<p>Noise</p> <p>To reduce the potential impact of construction noise, special WisDOT provisions would require operation of motorized equipment in compliance with all applicable local, state, and federal laws and regulations relating to noise levels permissible within and adjacent to the project construction site. All motorized construction equipment would be required to have mufflers constructed in accordance with the equipment manufacturer’s specifications or a system of equivalent noise-reducing capacity. WisDOT would also require that mufflers and exhaust systems be maintained in good operating condition, free of leaks and holes. In addition, where possible, noise walls will be constructed prior to most mainline construction.</p> <p>Vibration</p> <p>WisDOT will coordinate with adjacent property owners prior to construction to determine if any buildings near construction areas are in poor structural condition. WisDOT will meet City of Milwaukee vibration ordinances.</p> <p>Air Quality</p> <p>Construction vehicle emission impacts could be mitigated through implementing and maintaining a comprehensive traffic control plan, enforcing emission standards for gasoline and diesel construction equipment, and stipulating that unnecessary idling and equipment operation is to be avoided.</p> <p>Several air-quality construction mitigation best practices are available to assist in reducing diesel emission impacts from construction equipment. Off-road diesel engines can contribute significantly to the levels of particulate matter and nitrogen oxides in the air. In recent years, USEPA has set emissions standards for engines used in most new construction equipment. However, construction equipment can last for a long time, and it may take several years before all equipment is furnished with engines that meet USEPA standards. To address this, WisDOT and FHWA can implement several strategies to reduce emissions from the older engines that are in operation today.</p> <p>Reducing pollutant emissions from older off-road diesel engines can occur through a variety of strategies, including the following: reducing idling, properly maintaining equipment, using cleaner fuel, and retrofitting diesel engines with diesel-emission control devices. By reducing unnecessary idling at the construction site, emissions will be reduced, and fuel will be saved. Proper maintenance of the diesel engine will also allow the engine to perform better and emit less pollution through burning fuel more efficiently. Switching to fuels that contain lower levels of sulfur reduces particulate matter. Using ultra-low sulfur diesel does not require equipment changes or modification. Using fuels that contain a lower level of sulfur also tends to increase the effectiveness of retrofit technologies. Retrofitting off-road construction equipment with diesel-emission control devices can reduce particulate matter, nitrogen oxides, carbon monoxide, or hydrocarbons, in addition to other air pollutants. Diesel particulate filters can be used to physically trap and oxidize particulate matter in the exhaust stream, and diesel oxidation catalysts can be used to oxidize pollutants in the exhaust stream (USEPA 2008b). In the final design phase, WisDOT will consider including the measures on a voluntary or mandatory basis. USEPA’s comments on the Draft EIS suggested several measures to reduce diesel emissions from construction equipment during construction. WisDOT will coordinate with WDNR to consider these additional measures for inclusion in contract specifications (2016 Final EIS; Appendix E, letter E-10).</p> <p>Fugitive dust impacts generated by construction would be mitigated by standard dust control measures. The measures may include the frequent watering of construction sites that have large expanses of exposed soil, watering debris generated during the demolition of existing structures, washing construction vehicle tires before they leave construction sites, and securing and covering equipment and loose materials prior to travel.</p>



Table A-1. Summary of Mitigation Measures

Resource	Measures to Mitigate Adverse Effects
Construction (continued)	<p>Air Quality (continued)</p> <p>Dust control during construction would be accomplished in accordance with WisDOT’s Standard Specifications for Highway and Structure Construction (WisDOT 2022), which requires applying water or other dust control measures during grading and on haul roads. The location and operation of concrete batch plants would be in accordance with the Standard Specifications, and any special provisions developed during coordination with WDNR regarding air-quality standards and emissions. Any portable-material plants would be operated in accordance with WDNR air-quality requirements/guidelines. Demolition and disposal of residential or commercial buildings is regulated under WDNR’s asbestos renovation and demolition requirements (Wisconsin Administrative Code, Chapter NR 447).</p> <p>Traffic</p> <p>During the final design phase, WisDOT and FHWA would evaluate the diversion routes to determine if improvements to the routes are necessary. In addition to roadway improvements, signal timing modifications, temporary signals, parking restrictions, intersection improvements, incident management, and demand management options may be instituted during construction to ease potential congestion and delay.</p> <p>Freeway and local street lane closures would be staged to ease disruptions to the extent possible. Other mitigation measures may include the following:</p> <ul style="list-style-type: none"> • Adding MCTS buses and increasing frequencies to maintain headways, improving transit infrastructure, and providing funding to support MCTS staffing and outreach during construction. • Holding workshops to determine methods to reduce the effects of construction on area businesses, residents, commuters, community services, and special events. • Implementing a community involvement plan to inform the public, including radio, internet, print, and television. • Encouraging businesses to modify their work schedules and/or shipping schedules to avoid peak traffic hours. • Improving detour routes and other routes due to increased traffic resulting from freeway construction. <p>Water Quality/Erosion</p> <p>Appropriate techniques and BMPs, as described in the WisDOT Facilities Development Manual, would be employed to prevent erosion and to minimize siltation to environmentally sensitive resources in the study area. Erosion control devices would be installed before erosion-prone construction activities begin.</p> <p>WisDOT’s construction contractor would use standard erosion control devices and BMPs to reduce and control the deposit of sediment into environmentally sensitive resources before erosion-prone construction begins. The construction contractor would be required to prepare an erosion control implementation plan that includes all erosion control commitments made by WisDOT while planning and designing the project. The construction plans and contract special provisions must include the specific erosion control measures agreed on by WisDOT in consultation with WDNR. WDNR will review the Erosion Control Implementation Plan. The following measures may be used during construction:</p> <ul style="list-style-type: none"> • Minimizing the amount of land exposed at one time • Silt fencing • Sedimentation traps • Dust abatement • Turbidity barriers • Street sweeping • Inlet protection barriers • Temporary seeding • Erosion mats • Ditch or slope sodding • Seeding and mulching exposed soils <p>Under revisions to the WisDOT/WDNR Cooperative Agreement, Memorandum of Understanding on Erosion Control and Stormwater Management, following construction, disturbed land would be re-seeded with a mix of fast-growing grasses. Drainage systems would be maintained, restored, or re-established in a manner that would not impound water.</p>



Table A-1. Summary of Mitigation Measures

Resource	Measures to Mitigate Adverse Effects
Construction (continued)	<p>Additional impact mitigation techniques during construction would include the following, as needed, at a particular location:</p> <p>If dewatering were required, dirty water would be pumped into a stilling, or settling, basin before it would be allowed to re-enter a stream.</p> <p>Trenched-in erosion bales would be installed in areas of moderate velocity runoff; clean-aggregate ditch checks would be installed in ditches with moderate- to high-velocity runoff during and after construction; and ditches would be protected with erosion bales and matting in conjunction with seeding.</p> <p>Storing and fueling construction equipment would be done in upland areas, away from environmentally sensitive areas. Accidental spills during refueling at construction sites or as a result of an accident involving hazardous material haulers would be handled in accordance with local government response procedures. First response would be through local fire departments and emergency service personnel to ensure public safety and to contain immediate threats to the environment. Depending on the nature of the spill, WDNR would then be notified to provide additional instructions regarding cleanup and restoration of any affected resources. The cost of cleanup operations is the responsibility of the contractor or carrier involved in the spill. Further, WisDOT’s Standard Specifications state that public safety and environmental protection measures shall be enforced by the construction contractor.</p> <p>Contractors would be required to follow WDNR guidelines for ensuring that construction equipment used in or near waterways is adequately decontaminated for zebra mussels and plant exotics, including purple loosestrife and Eurasian milfoil.</p> <p>Material Source/Disposal Sites</p> <p>If any material sources are necessary to construct the project, appropriate erosion control measures would be applied to these sites during and following construction; and following use, such sites would be properly seeded, mulched, and protected from erosion.</p> <p>Any portable materials plants would be properly treated to prevent erosion, and WDNR would be able to review site plans, including any gravel-washing operations, high-capacity wells, and site closure/restoration.</p>

