

11.0 CUMULATIVE IMPACTS

This chapter describes the potential for cumulative impacts, both direct and indirect, from the Preferred Alternative in combination with other past, present and reasonably foreseeable future actions.

Cumulative impacts analysis takes into account an array of potential actions and their impacts that are unrelated to the Preferred Alternative except to the extent that their impacts may, in combination with the potential impacts from the Preferred Alternative, result in adverse impacts. Cumulative impacts are defined as follows in the Council on Environmental Quality's (CEQ) regulations (40CFR 1500-1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended:

The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40CFR 1508.7).

The purpose of cumulative impacts analysis is to look for impacts that may be minimal, and therefore, neither significant nor adverse when examined within the context of the proposed action, but that may accumulate and become significant and adverse when combined with other actions.

A separate cumulative impact study was completed for the Mississippi Scenic Riverway (*Cumulative Impacts Study for the Mississippi Scenic Riverway: St. Cloud (10th Street Bridge) to Anoka-Champlin (TH 169 Bridge)*, Mn/DOT, June 2003). That study focused on the cumulative impacts that up to five new river crossings, including the I-94/TH 10 Interregional Connection, plus other anticipated actions in the study area (i.e., anticipated future development) could have to this 53-mile segment of the Mississippi River in recognition of its inclusion in the state Wild and Scenic River system. The study also contained information on future demographic projections for the study area that are applicable to the cumulative impact assessment for this FEIS.

11.1 CUMULATIVE IMPACT METHODOLOGY

The goal of cumulative impact analysis is to consider the potential combined effects of past, existing and anticipated future actions, with the intent of identifying planning/implementation measures that can be taken to mitigate (avoid, minimize or otherwise alleviate) the effects of those actions. Based on the CEQ definition of cumulative effects and the goals stated, the study methodology followed these steps:

- Identify the time frame (past, present and future) for analysis.
- Identify the resources to be analyzed.
- Identify the geographic area to be considered in assessing each resource.
- Define past, present and future conditions.

- Assess impacts to resources resulting from the Preferred Alternative, other future actions in the study area, and the cumulative impact of these actions. This assessment includes the consideration/identification of avoidance and mitigation measures to alleviate adverse cumulative impacts to these resources.

11.1.1 Establish Time Frame for Analysis

The year 1976 was chosen as the ‘past’ reference year for this study. This is the year that construction of the new I-94 corridor between the Twin Cities and St. Cloud was completed. It is also the year that the Mississippi River was designated to become part of the state Wild and Scenic River system. Thus, 1976 represents a benchmark year with respect to the use and protection of the Mississippi River and to the transportation mobility and access between the Twin Cities and St. Cloud with resulting increased opportunities for growth and economic development along the corridor (see Section 11.1.4 below).

‘Existing’ conditions were defined as being based on year 2000 data, since data for that year is more readily available than other data.

Year 2040 was selected as the ‘future’ conditions analysis year. Since the proposed project is not anticipated to be built for approximately 15 - 20 years, year 2040 would represent conditions an additional 20 years (a ‘typical’ planning horizon) into the future.

11.1.2 Identify Resources to be Analyzed

The cumulative impacts analysis is limited to those resources, ecosystems and human communities affected by the Preferred Alternative. While the Preferred Alternative may affect several resources either directly or indirectly, this analysis is intended to narrow the focus to the project-related impacts that could potentially have the largest cumulative impacts. The analysis will focus on cumulative impacts to the following issues/resources: wetlands; vegetation, wildlife and fisheries; state/federal threatened and endangered species; farmland; traffic noise; cultural resources; visual impacts; water quality; and the Mississippi Scenic Riverway.

11.1.3 Identify Geographic Area to be Studied for Each Resource

Chapter 10 of this FEIS described the potential indirect impacts of the Preferred Alternative; Chapters 4 through 9 analyzed the social, economic and environmental impacts that will occur within and immediately adjacent to the construction limits of the Preferred Alternative. However, for the purposes of assessing cumulative impacts, a broader geographic area must be considered in order to assess the combined effects of reasonably foreseeable future projects on resources in the project area. Since each resource has a different area of influence, the geographic area for each resource varies and is summarized below.

For the Mississippi Scenic Riverway an appropriate geographic boundary was determined to be the Mississippi Scenic Riverway Management Area as defined by the MnDNR (refer to Figure 6.6 of the DEIS). Although the Mississippi Scenic Riverway Management Area’s southern and northern boundaries (from 10th Street bridge in St. Cloud to the western border of the cities of Anoka and Champlin) extend far beyond the project area, impacts to Riverway scenic quality and recreational uses were considered in the context of the entire 53-mile corridor.

For the rest of the resources, an appropriate geographic boundary to the northeast was identified as parallel to and 0.5 mile beyond TH 10. To the southwest, the boundary was defined as parallel to and 0.5 mile beyond I-94. The western limits were defined as 0.5 mile west of the western-most limits of DEIS Alternative A within the City of St. Cloud. The eastern limits were defined as the eastern limits of the City of Becker. This FEIS does not re-evaluate the scale at which cumulative impacts were studied in the DEIS; however, discussion in this chapter of the FEIS is limited to potential cumulative impacts associated with the Preferred Alternative's area.

11.1.4 Past, Present and Future Conditions in the Project Area

Over the last 30 years, the project area has experienced high growth rates resulting in increased urbanization along the I-94 and TH 10 corridors as development extends southeast from the St. Cloud metropolitan area and northwest from the Twin Cities metropolitan area. Table 5.2 in Chapter 5 of this FEIS shows the percent of population growth in communities within the project area between 1970 and 2000. Although the project area is currently dominantly rural in nature, communities are anticipating that this trend of growth and development will continue, resulting in increasing urbanization/suburbanization over the next 40 years.

For the purposes of this analysis, the 'reasonably foreseeable future actions' are assumed to be the population growth and resulting development and infrastructure planned/anticipated by the communities in the project area. Ideally, all potential future development activities in the project area would be identified as part of this analysis so that their potential impacts could be taken into consideration in combination with those from the Preferred Alternative. However, given the large geographic area under consideration, and a general lack of specific information on potential future development activities (e.g., type, location, magnitude, timing), available information on general population and development plans/trends was used to estimate potential impacts from other actions.

Two major highway improvements were identified as part of the DEIS and have been considered as part of the cumulative impacts study. As described in Chapters 2 and 4 of this FEIS, IRC management/improvement plans have been prepared by Mn/DOT for the I-94 and TH 10 corridors in the project area. I-94 is planned to be converted to a six-lane facility from the TH 25 interchange in Monticello north to the location of the proposed Interregional Corridor Connection (proposed project that is the subject of this FEIS). The TH 10 corridor will be converted to a four-lane freeway from the proposed Interregional Corridor Connection north through St. Cloud, with local access interchanges on TH 10 at locations identified in the TH 10 corridor study. These future improvements to I-94 and TH 10 are separate and independent projects and will be built by the year 2030.

The *Mississippi Scenic Riverway CIS* describes the methodology used to develop the year 2040 population and employment projections for the area that was also used in this FEIS analysis. (Those projections drew from three main sources. One component divided the seven-county Metropolitan Council area into quadrants and rings, forecasting aggregate growth for each. For 2040 estimates, the 2030 projections were extended linearly out 10 more years. The second component was based on the St. Cloud Area Planning Organization's preliminary 2040 forecasts. The third component of the projections was consultations with the state demographer and an expert on state growth patterns.) It should be noted that discussions with communities within the project area indicate that the same amount of population and

development growth would occur with or without implementation of the Preferred Alternative. As shown in Table 5.2, the projected 2040 numbers indicate that the population in the project area communities is anticipated to increase at or above increases experienced over the past 30 years. This would result in substantial portions of the northern (e.g., St. Cloud) and southern (e.g., Becker) project area being impacted by continued expansion of development with additional, but lower intensity, development occurring in the central portion of the study area (e.g., Clearwater, Clear Lake).

11.2 EFFECTS ON RESOURCES

To the degree possible, given available information/resources, the following steps were taken to analyze potential cumulative effects:

- Summarize the existing condition of each potentially affected resource as it compares to past conditions.
- Summarize impacts to the affected resources from the Preferred Alternative as described in the previous chapters of this FEIS.
- Summarize impacts to the affected resources from other reasonably foreseeable future actions.
- Discuss the potential cumulative impacts to the resource based on consideration of effects of all past, present and future actions. Assessment of potential cumulative impacts includes consideration of special designations or standards that relate to each resource; ongoing regulatory authority, policies, or plans that afford some measure of protection to the affected resources; and measures that could avoid or minimize negative effects on the resources. This discussion will include consideration of the incremental cumulative impact of the Preferred Alternative compared to the impacts of other future foreseeable actions (i.e., development).

11.2.1 Wetlands

11.2.1.1 Existing Conditions

Wetlands within the project area have been substantially affected in the past due to draining/filling for agriculture (during early European settlement of the area) and subsequent degradation by surrounding land uses (i.e., agricultural and urban/suburban uses). The Minnesota Board of Water and Soil Resources (BWSR) estimates that in 1981, approximately 72 percent of the pre-settlement wetlands remained in Sherburne County and that approximately 22 percent of the pre-settlement wetlands remained in Wright County. Wetlands near agricultural land uses or population centers (e.g., Clearwater and Clear Lake) are often degraded by the introduction of nutrients and sediment and/or the presence of exotic or invasive species and are typically dominated by reed canary grass and cattails.

Refer to Section 7.5.3 of this FEIS for discussion of federal and state regulations regarding wetland impacts.

11.2.1.2 Impacts from the Preferred Alternative

As described in Section 7.5 of the FEIS, the Preferred Alternative will result in 6.46 acres of wetland impact. Refer to that section for discussion of efforts that have been made to avoid and minimize wetland impacts throughout the FEIS process.

11.2.1.3 Impacts from Other Actions

Continued growth and development in the project area would likely result in increased potential for impacts to wetlands. Direct fill impacts would likely result from increasing development, although development would be required to follow the sequencing (avoidance, minimization, compensatory mitigation) procedures previously described.

Potential indirect impacts on wetlands from past and future development also occur from stormwater discharges into wetlands. Increased flow into wetlands can alter hydrology, causing changes in plant communities and disrupting life cycles of wetland inhabitants. Increases in stormwater flow and increased nutrients and sediment also contribute to wetland degradation.

The DEIS estimated that the future I-94 and TH 10 improvements would likely impact approximately an additional 23 acres of wetland. This is a very preliminary estimate and the impacts will be more specifically determined as part of a separate environmental review process for each project.

11.2.1.4 Potential for Cumulative Impacts

The majority of wetland impacts in the project area will likely result from planned future development rather than from construction of the Preferred Alternative, since future development will account for a much greater area of land disturbance. However, compared to the impacts of wetland drainage/conversion from pre-settlement to post-settlement conditions, which are considered substantial, the overall effect of future wetland impacts in the project area are anticipated to be small.

The Preferred Alternative, in combination with future development, is not anticipated to have an adverse cumulative impact on project area wetlands if existing federal and state regulatory programs in place to protect wetlands continue to be implemented. If adequate mitigation measures are not implemented, cumulative wetland impacts could be substantial.

It should be noted that, because the primary purpose of the Preferred Alternative is to provide a connection between two interregional facilities (and it therefore does not increase local access), the Preferred Alternative is not expected to contribute to such cumulative impacts substantially. In addition, local comprehensive plans and zoning ordinances are in place in order to protect sensitive resources and can be used to further minimize cumulative impacts.

11.2.2 Vegetation, Wildlife and Fisheries

11.2.2.1 Existing Conditions

Vegetation

As discussed in Section 6.5 of this FEIS, the project area is located in an area of central Minnesota historically occupied by prairie and oak woodland. From pre-settlement time to 1969, there was a substantial change in vegetation type as forest and prairie areas were converted into farmland; however, from the ‘past’ (defined as 1976 for this cumulative impact analysis) to the present there has not been a substantial change in vegetation.

The major topographical feature in the project area is the Mississippi River valley. Much of the river corridor contains numerous wooded islands. While some areas of agricultural fields exist within the river valley, the river floodplain and bluffs have been relatively unscathed by development and are commonly wooded with elm, ash, cottonwood and box elder. Various grass and shrub species are present in the non-forested floodplain areas. Floodplain and bluff forests, while interrupted occasionally by residential development and floodplain farmland, form a more or less continuous corridor along the Mississippi River.

Land use outside the river valley is generally dominated by farmland with scattered wetlands, lakes and woodlands. Of the original vegetation types found in the project area, true open prairie has been the most depleted, with the vast majority of prairie areas now being utilized for agriculture. Common agricultural land uses in the project area include corn, soybeans, potatoes, pasture and hayfields. The remaining prairie areas are in danger of being destroyed for agriculture or residential development and are also in danger of being overtaken by exotic species from gardens and lawns.

The project area includes several natural communities, including: dry oak savanna – barrens subtype; floodplain forest; wet meadow; oak forest – dry subtype; oak forest – mesic subtype; mesic prairie; rock outcrop; and oak woodland-brushland.

Wildlife

Woodlands, savannah and prairie in the project area provide habitat for a variety of animals, such as white-tailed deer, red and gray fox, woodchuck, raccoon, cottontail rabbit and coyote. Small mammals in the project area include chipmunk, squirrel, weasel and pocket gopher. The Mississippi River valley also provides abundant habitat for various songbirds, waterfowl and raptors, and serves as a migratory flyway for hundreds of bird species. Wetlands in the project area are also used as habitat and/or food source by numerous species, including muskrats, beavers, otters, turtles, herons, frogs and many species of invertebrates.

Fisheries

The Mississippi River is home to dozens of fish species. Game fish such as channel catfish, walleye, muskellunge and northern pike are present in the River with moderate to high abundance. No major fish habitat is present at the Preferred Alternative’s river crossing site. Fish Creek provides high quality fish habitat.

11.2.2.2 Impacts from the Preferred Alternative

As discussed in Section 6.5 of this FEIS, construction of the Preferred Alternative will directly impact some wildlife habitat and potentially create a barrier to wildlife movement along the river corridor.

11.2.2.3 Impacts from Other Actions

Vegetation/Wildlife

Future development and related roadway construction in the project area could result in additional loss of wooded areas and grasslands (especially prairies), including additional fragmentation of habitat. Additional development-related roadways would also create barriers for wildlife movement and result in increased wildlife mortality. Conversion of agricultural land to residential uses could result in changes to vegetative cover, for instance in the form of lawns and landscaping, which could in turn provide a different type of habitat that would support a variety of suburban wildlife species.

The DEIS indicated that the Sand Prairie Wildlife Management Area could be impacted by the future TH 10 corridor improvements. Further investigation of this area will occur as part of a separate environmental review process for that project.

Fisheries

Future development and associated roadways in the vicinity of the Mississippi River could affect the River, impacting fisheries. Fish in the River and Fish Creek could be affected by increased runoff and sedimentation if not properly mitigated as part of future developments.

11.2.2.4 Potential for Cumulative Impacts

The Preferred Alternative, in combination with other future actions, will have an impact on vegetation, wildlife and fisheries within the project area. The majority of impacts will likely result from future development since future development will account for a much greater amount of habitat conversion than the Preferred Alternative. Compared to the substantial vegetation (and resulting wildlife) impacts that have occurred since pre-settlement times, overall cumulative impacts to vegetation and wildlife are anticipated to be small.

The Preferred Alternative, in combination with future development, is not anticipated to have a substantial adverse cumulative impact on these resources if appropriate mitigation measures are implemented. It should be noted that, because the primary purpose of the Preferred Alternative is to provide a connection between two interregional facilities (and it therefore does not increase local access), the Preferred Alternative is not expected to contribute to such cumulative impacts substantially. In addition, local comprehensive plans and zoning ordinances are in place in order to protect sensitive resources and can be used to further minimize cumulative impacts. Development controls, conservation easements, tree replacement requirements and other measures to protect or increase available wildlife habitat would mitigate impacts, if regulatory agencies in combination with local jurisdictions work together to undertake such actions. If extensive development is allowed to occur without adequate mitigation (i.e., if existing or proposed development standards for within the riverway were to be relaxed in future rule-making), the resulting cumulative impacts could be substantial.

11.2.3 State/Federal Threatened and Endangered Species

11.2.3.1 Existing Conditions

As identified in Section 6.6 of this FEIS, no state/federal threatened, endangered or special concern species were identified as being present within the Preferred Alternative corridor.

The DEIS also reported that the loggerhead shrike (*Lanius ludovicianus*), which is identified as a state-listed threatened species, may be in the vicinity of the future TH 10 corridor improvements. It is unknown at this time whether or not the proposed improvements to that corridor will impact the loggerhead shrike. That project's study area will need to be reviewed/surveyed prior to final design and construction of TH 10 corridor improvements to determine if this species is located within the proposed roadway improvement areas. If the species is identified within the vicinity of the proposed improvements, Mn/DOT will work with the MnDNR to establish appropriate avoidance, minimization and mitigation measures.

11.2.4 Farmland

11.2.4.1 Existing Conditions

With the exception of developed land within the cities of Clearwater and Clear Lake, the project area is dominated by agricultural land uses.

11.2.4.2 Impacts from the Preferred Alternative

As discussed in Section 6.3 of this FEIS, the Preferred Alternative will require the conversion of 152.1 acres of "prime and unique" and "statewide important" farmland. This does not represent a substantial impact to farmland (less than 0.1 percent of the total farmland within each county).

11.2.4.3 Impacts from Other Actions

Future growth in the project area would include the development of areas that are currently used primarily for agricultural purposes, resulting in the conversion of agricultural land into residential and commercial uses. However, the rate and extent of farmland conversion to urban land uses is dependent on a number of factors, including land values and tax rates for development versus for agriculture; overall farm economy trends; age of farm owners; and proximity of farmland to existing developed areas. The location and degree of land conversion in the project area will also be guided by local zoning regulations.

The DEIS estimated that an additional 350 acres of farmland impacts could result from future TH 10 and I-94 corridor improvements. This is a preliminary estimate and the impacts will be more specifically determined as part of a separate environmental review process for each project.

11.2.4.4 Potential for Cumulative Impacts

The Preferred Alternative, in combination with future development, could result in a substantial loss of valuable farmland within the project area if development pressure occurs. However, the incremental impact of the Preferred Alternative on farmland would be small compared to the

impact from future development, which would impact more farmland. In order to protect farmland within the project area, local governmental units have the authority to regulate development and can take measures to protect farmland as part of their local planning efforts.

Because the primary purpose of the Preferred Alternative is to provide a connection between two interregional facilities (and it therefore does not increase local access), the Preferred Alternative is not expected to contribute to such cumulative impacts substantially. In addition, local comprehensive plans and zoning ordinances are in place in order to protect resources such as farmland and can be used to further minimize cumulative impacts.

11.2.5 Traffic Noise

11.2.5.1 Existing Conditions

As addressed in Section 6.2, state and federal standards are used to regulate traffic-related noise. Certain land uses such as residential units, parks, and recreation areas are more sensitive to noise impacts. Where sensitive receptors are located near high-volume roadways, noise levels that exceed state and federal noise standards are common, especially during peak traffic hours. Existing noise levels in the project area vary from the high-40s dBA (well below state daytime and nighttime standards) in isolated areas, to levels in the 70 dBA range (above state daytime and nighttime standards) at I-94 and along TH 24. Throughout the project area, similar exceedances would be expected in development areas near major roadways, while more rural areas would be expected to be below both daytime and nighttime standards.

11.2.5.2 Impacts from the Preferred Alternative

Construction of the Preferred Alternative will result in an increase of L_{10} noise levels from 2 to 14 dBA over existing conditions in areas adjacent to existing roadways near the Preferred Alternative corridor, and up to 13 dBA in isolated areas currently not exposed to traffic noise.

11.2.5.3 Impacts from Other Actions

Anticipated land development within the project area will both increase the number of sensitive receptors and the number of roadways that generate traffic noise, as well as other sources of noise. The effects of traffic noise on sensitive receptors involve several characteristics, such as the distance between the noise source and sensitive receptor, the amount of traffic on a particular road, natural or man-made barriers, the layout of adjacent neighborhoods, topography and many other factors.

As development in the project area increases, traffic volumes along county roads are also anticipated to increase, thereby generating noise levels that could approach state regulatory thresholds. However, unlike interstate and trunk highways, these county roads would not be subject to compliance with state noise requirements. To minimize/mitigate traffic noise impacts to noise sensitive development, local governments can work with developers to locate these types of development away from high volume roadways and/or require developers to incorporate noise mitigation strategies (e.g., insulation, berming, etc.) into development plans.

11.2.5.4 Potential for Cumulative Impacts

The number of sensitive receptors experiencing noise levels exceeding state standards is expected to increase in the project area as development and traffic levels increase. However, the potential for adverse cumulative noise impacts will be minimized if appropriate mitigation measures are implemented. Where feasible, noise mitigation along high-volume roadways (e.g., interstates and trunk highways) will be considered to satisfy state and federal requirements, lessening potential cumulative noise impacts. In addition, the identification of the Preferred Alternative will allow local governments to plan for future land development to be located away from its corridor to minimize noise impacts to sensitive receptors. Local government units also have the authority to decrease noise impacts on sensitive receptors by requiring appropriate subdivision design that would create a buffer to reduce the impacts of traffic noise on sensitive receptors, requiring noise insulation or restricting time periods when noise can be generated. Future residential development should consider the recommended setback distances discussed in Section 6.2.3 of this FEIS to avoid and minimize traffic noise impacts. This information will be provided to local land use officials for consideration in land use planning strategies. If appropriate mitigation is not implemented for the Preferred Alternative and future development, the resulting cumulative impacts could be substantial.

11.2.6 **Cultural Resources**

11.2.6.1 Existing Conditions

'Historic Values' was one of the criteria identified for including the Mississippi River in the state Wild and Scenic River system. This cumulative impacts analysis includes consideration of important historical structures and archaeological sites along the corridor.

The 2003 *Mississippi Scenic Riverway Management Plan* identifies several cultural and historical features along the riverway. In addition, a predictive model for archaeological resources in Minnesota, Mn/Model, indicates that the majority of the river corridor has a high potential for the presence of surface and buried archaeological resources since native peoples and early European settlers tended to concentrate in the vicinity of riverways.

Additional structures within the project area corridor may be added to the list of potentially significant historical sites between now and 2040, since consideration for eligibility as a historic structure requires an age of 50 years or more.

11.2.6.2 Impacts from the Preferred Alternative

As discussed in Chapter 8 of this FEIS, no eligible or listed NRHP properties/resources are located within the Preferred Alternative's Area of Potential Effect (APE). During the DEIS comment period, a potential pioneer burial ground was identified within proximity of the Preferred Alternative corridor but will not be directly impacted. At the time of right of way acquisition, the Minnesota State Archaeologist will be contacted to confirm that all impacts to that potential resource have been avoided.

11.2.6.3 Impacts from Other Actions

Unless development projects are large enough to require state or federal environmental review (including consideration of potential cultural resource impacts), future development could affect cultural resources unless local governments have identified the resources. Unmapped archaeological resources along the riverway could also be impacted directly by development or infrastructure construction or by impacts resulting from excavation for borrow or fill material for development or roadway construction. Future impacts to known historic structures and sites can be avoided if these sites are identified in local planning documents and measures are taken during local government review of future development projects to protect these resources.

11.2.6.4 Potential for Cumulative Impacts

Substantial cumulative impacts to cultural resources are not anticipated in the future given the level of state and federal regulation to avoid and minimize impacts to potentially significant cultural resources. Riverway management strategies also include identification and protection of these resources. However, if identified important cultural resources impacts are not monitored by local governments responsible for approving future development, and if identified resources are not avoided/mitigated, then substantial cumulative impacts could result.

11.2.7 Visual

11.2.7.1 Existing Conditions

Visual character varies considerably within the project area, including natural areas, agricultural areas, rural residential, and developed or urbanized areas. Visual elements within the project area can be divided into two groups: natural and cultural. Natural elements include those visual elements not constructed by humans: the Mississippi River valley, wetlands, forests and open grassland remnants. Cultural elements include those visual elements that are the result of human modification of the natural environment or construction activities such as clearing for agriculture and construction of homes, businesses, and existing roadways. Together, the natural and cultural environments combine to create the four general types of landscapes found within the project area that are itemized in Section 6.7.1.1 of this FEIS.

11.2.7.2 Impacts from the Preferred Alternative

As discussed in Section 6.7, the Preferred Alternative includes the construction of a new major roadway through a primarily rural environment and will result in changes to the natural visual elements of the project area (e.g., the rural landscape and the Mississippi River corridor) which would alter the existing visual quality by converting the existing landscape into a highway landscape. The Preferred Alternative will also result in visual/scenic impacts to the Riverway (described in detail in Section 6.10 of this FEIS). The Preferred Alternative's new river crossing will constitute an additional visual impact to the Riverway.

11.2.7.3 Impacts from Other Actions

The project area will experience increased development as the Twin Cities metropolitan area expands northwesterly and the St. Cloud metropolitan area expands southeasterly. It will change

from a primarily rural/agricultural area to a more urban/suburban environment. The extent of visual impacts resulting from future development is dependent on how development is allowed to occur.

In addition to substantial growth in the rural portions of the project area, development would also likely occur adjacent to the Riverway, affecting the aesthetic values of the Mississippi River valley. The affect of future development on the visual quality of the river will depend on the land use and vegetation management ordinances implemented by communities along the Riverway and the extent to which communities and residents along the Riverway adopt river stewardship as part of their development philosophy. The recently completed *Mississippi Scenic Riverway Management Plan* includes recommendations for increasing natural vegetation retention requirements for new development along the Riverway. If these proposed recommendations are adopted during rule making and implemented by local governments they will help to protect the scenic character of the Riverway.

11.2.7.4 Potential for Cumulative Impacts

The Preferred Alternative, in combination with future development, will result in changes to the project area's existing landscape, changing the visual character of the study area from dominantly rural to dominantly suburban. The Preferred Alternative will result in a smaller amount of visual impacts than future development, based on the area of land that would be converted to non-rural uses. Local communities can mitigate visual impacts through local land use and development regulations. Section 11.2.8 below includes a description of the potential cumulative visual impacts on the scenic and recreational values of the Mississippi Scenic Riverway.

Because the primary purpose of the Preferred Alternative is to provide a connection between two interregional facilities (and it therefore does not increase local access), the Preferred Alternative is not expected to contribute substantially to such cumulative impacts. In addition, local comprehensive plans and zoning ordinances are in place in order to protect sensitive resources and can be used to further minimize cumulative impacts. If adequate mitigation is not implemented for future development and the Preferred Alternative, the resulting cumulative impacts could be substantial.

11.2.8 Mississippi Scenic Riverway

11.2.8.1 Existing Conditions

The Mississippi River is designated as a state Wild and Scenic River for the 53-mile length of river from the 10th Street dam in St. Cloud to the western border of the Cities of Anoka and Champlin in the Twin Cities. Specifically, it is designated as 'scenic' from the 10th Street bridge in St. Cloud to the TH 24 bridge in Clearwater and 'recreational' from Clearwater downstream to Anoka. Beyond the FEIS project area, the Mississippi River is also designated as a state Critical Area and as a component of the National Park System (Mississippi National River and Recreation Area [MNRRA]) from its confluence with the Crow River (in Dayton) downstream to just south of Hastings, Minnesota.

This section focuses on describing impacts to the scenic and recreational aspects of the riverway as they relate to riverway users and as they relate to the ‘scenic’ and ‘recreational’ designations. Impacts related to other values of the riverway are discussed in less detail since they are described in greater detail in other sections of this chapter and in the *Cumulative Impacts Study for the Mississippi Scenic Riverway (Mississippi Scenic Riverway CIS)*.

Since recreational users of the riverway move throughout the corridor (i.e., not just at the location of the Preferred Alternative’s river crossing), the potential cumulative impacts from the combined effects of the Preferred Alternative as they relate to anticipated future development and from other potential river crossings along the 53-mile segment of the river also needs to be considered. Thus, for this FEIS cumulative impact assessment, the geographic boundary for the riverway extends along the riverway from the 10th Street dam in St. Cloud to the western border of the cities of Anoka and Champlin. This FEIS does not re-evaluate the scale at which cumulative impacts were studied in the DEIS; however, discussion in this chapter of the FEIS is limited to potential cumulative impacts associated with the Preferred Alternative’s area.

11.2.8.2 Impacts from the Preferred Alternative

As discussed in Section 6.10, the Preferred Alternative’s potential impacts to the scenic quality and recreational use of the riverway relate to its introduction of a new bridge (a strong visual element across the Riverway) and traffic noise and light pollution. The impacts of the Build Alternatives varied, dependent on where they were located with respect to less developed areas or areas of high scenic quality in the riverway. The Preferred Alternative creates a new river crossing approximately 1.6 miles downstream from the TH 24 crossing.

Existing breaks in forest vegetation around the Preferred Alternative’s crossing corridor mean that the Preferred Alternative will involve visual impacts on adjacent development, although much of the area has retained vegetative cover along the river banks and bluff. Given the area’s classification as a “rural residential” district (with associated limitations on future vegetative clearing), it is reasonable to expect that some degree of cover will be maintained into the future.

11.2.8.3 Impacts from Other Actions

Other foreseeable actions that may occur within the Mississippi Scenic Riverway corridor by year 2040 include: 1) additional development along the riverway and 2) construction of additional bridges across the riverway to meet projected travel demands. As noted previously, the *Cumulative Impacts Study for the Mississippi Scenic Riverway (Mississippi Scenic Riverway CIS)* was prepared in 2003 to assess the potential cumulative impacts to the riverway. The findings of that study are the basis of the following discussion.

Additional Development Along the Riverway

As noted in Section 11.1.4 of this FEIS, the Riverway is located in an area of increasing development that is anticipated to continue into the future as the Twin Cities and St. Cloud metropolitan areas continue to expand. Future development of land immediately adjacent to the riverway is anticipated to occur as part of this overall expansion. The impacts from this development were included in the *Mississippi Scenic Riverway CIS* ‘Future Development’ scenario.

The Future Development scenario included anticipated growth in communities along the riverway through 2040. Assuming development would be consistent with the rivertown and rivertown expansion districts identified in the 2003 *Riverway Management Plan*, extensive development would likely occur adjacent to the riverway from Monticello downstream to the Twin Cities and from St. Cloud downstream to approximately St. Augusta Island – potentially affecting approximately 25 to 40 percent of the length of the riverway to varying degrees. One quarter of the length of the riverway would have relatively intensive rivertown uses on at least one side of the river. The rivertown district would allow for more intensive development densities than the other riverway districts, and although it utilizes setback and shoreland vegetation preservation requirements, this district has, or would likely have in the future, development that is more visible from the river than development in the other lower density land use districts. An additional 15 percent of the length of the river is proposed for rivertown expansion district designation, with densities of up to one unit per acre, but also with a shore impact zone requirement to protect at least 75 percent of the natural vegetation along the shore, to help maintain a more ‘natural’ character along the river.

All development adjacent to the riverway would be subject to existing and potential future zoning requirements. Existing zoning within the ‘scenic’ and ‘recreational’ designation areas limits lot sizes and densities, restricts building heights and specifies water and bluff setback requirements based on the 1976 *Riverway Management Plan* recommendations. If the standards proposed in the 2003 *Riverway Management Plan* are enacted as a result of updated rulemaking, additional requirements would be adopted for increasing bluff setbacks and for protecting native vegetation (preserve at least 75 percent of natural vegetation) along the river. The net result would be increased development along the riverway, with resulting visual, noise, vegetation, wildlife, erosion/sedimentation, and other impacts from the existing and future development. However, the impacts to the scenic/recreational values and natural/scientific values of the riverway would be moderated by the development standards described above.

Additional Bridges Across the Riverway

In anticipation of increased traffic levels resulting from the projected increased population and commercial development described in Section 11.1.4 of this FEIS, transportation planners from Mn/DOT, the St. Cloud APO and the Twin Cities Metropolitan Council have identified the need for additional capacity and/or new bridge crossings over the Mississippi Scenic Riverway to facilitate travel between communities on either side of the river and/or to facilitate regional trips across the river. These planning efforts have identified the independent need for two new/increased capacity crossings, in addition to Preferred Alternative, in order to meet projected travel demands within the next 20 years:

- The 33rd Street crossing in the southeast corner of the St. Cloud metropolitan area, under study by the St. Cloud APO, located in the Mississippi Scenic Riverway.
- The Dayton-Ramsey crossing between the Cities of Dayton and Ramsey in the northwest Twin Cities metropolitan area, under study by Mn/DOT, located in the Mississippi Scenic Riverway and the Critical Area/MNRRRA.

These projects are currently in separate (independent) scoping-level studies, in anticipation of preparation of Environmental Impact Statement (EIS) documents as each study process continues. Implementation for each of these projects is likely to be 10 to 20 or more years in the future.

In addition to these two proposed river crossings, travel forecasting performed for the *Mississippi Scenic Riverway CIS* identified the potential need for two more crossings within the Mississippi Scenic Riverway—one located east of the existing TH 25 crossing in Monticello and one located west of Elk River—to meet future travel demands. No active planning is occurring for bridges at these locations. Expected development of these crossings is anticipated to be beyond 20 years.

One way of assessing the potential impact of additional bridge ‘intrusion’ on the ‘natural’ experience of a recreational river user traveling down the river is to compare the existing bridge spacings with potential future bridge spacings of the Preferred Alternative. MnDNR staff compiled the following bridge encounter scenarios, based on the existing and maximum number of additional future bridges (assuming that the potential bridge west of Elk River is located 4.6 miles upstream from the County Road 42 bridge).

Current Bridge Encounters

There is a canoe put-in at the upstream limit of the Mississippi Scenic Riverway at River Mile 926.1 in St. Cloud. Heading downstream today, or if no bridges are constructed in the future, the river user would encounter the following bridges:

Highway 24 at Clearwater	12.9 miles
Highway 25 at Monticello	16.7 miles
County Road 42 at Elk River	12.6 miles
Highway 101 at Elk River	1.1 miles
Highway 169 at Anoka	11.2 miles (this is beyond the downstream limit of the Mississippi Scenic Riverway)

With up to five additional proposed bridges, encounters by river users would become much more frequent. Beginning at the same point, as a “worst case,” the future river user would encounter the following bridges for the Preferred Alternative scenario, in combination with the other (up to four) additional bridges identified in the *Mississippi Scenic Riverway CIS*:

Future Scenario: Preferred Alternative

33rd Street at St. Cloud	2.6 miles
Highway 24 at Clearwater	10.3 miles
I-94/TH 10 Alternative C	1.6 miles
Highway 25 at Monticello	15.3 miles
Potential Monticello bridge	1.0 miles
Potential West Elk River bridge	7.0 miles
County Road 42 at Elk River	4.6 miles
Highway 101 at Elk River	1.1 miles
Dayton/Ramsey	7.0 miles
Highway 169 at Anoka	4.2 miles (this is beyond the downstream limit of the Mississippi Scenic Riverway)

Comparison of existing with the Preferred Alternative's future bridge scenario demonstrates that the 'natural experience' on the riverway would change due to more frequent bridge encounters if up to five additional bridges were constructed compared to existing or Future Development (but no additional bridges) conditions.

The cumulative impacts on the scenic ('natural') quality of the riverway from up to five additional bridges was also assessed in the *Mississippi Scenic Riverway CIS* based on the location of the potential future bridges relative to developed or undeveloped areas. Developed areas would include the segments along the riverway designated for river town or river town expansion districts on at least one side of the river in the 2003 *Riverway Management Plan*, with the remainder of the riverway being considered as relatively undeveloped. Assuming a 'worst case' condition (the maximum possible bridges in undeveloped areas), bridge visibility would result in approximately three additional river-miles (or an additional six percent of the total length of the riverway) of intrusion of development into the "undeveloped" riverway landscape. This assumes a 'worst case' scenario of one mile downstream visibility for each bridge.

In addition to the scenic/recreational impacts described above, additional river crossing bridges can contribute to cumulative vegetation, wildlife, fisheries, and water quality impacts, contributing to impacts to the natural/scientific values of the riverway. Impacts can be avoided/minimized through project location/design, as described in greater detail in the *Mississippi Scenic Riverway CIS*.

11.2.8.4 Potential for Cumulative Impacts

As described in the previous sections, future total development has the potential to affect approximately 25 to 40 percent of the length of the riverway to varying degrees. One quarter of the length of the riverway would have relatively intensive rivertown uses on at least one side of the river. The rivertown district would allow for more intensive development densities than the other districts, and although it utilizes setback and shoreland vegetation preservation requirements, this district has, or would likely have in the future, development that is more visible from the river than development in the other lower density land use districts. An additional 15 percent of the length of the river is proposed for rivertown expansion district designation, with densities of up to one unit per acre, but also with a shore impact zone requirement to protect at least 75 percent of the natural vegetation along the shore, to help maintain a more 'natural' character along the river. The potential construction of up to five additional bridges would bring the total number of bridges across the riverway up to nine bridges. The intrusion of new bridges on undeveloped areas (outside river town and river town expansion districts), when added to the development intrusions, could result in up to three additional river miles of bridge visibility impact, effectively adding the incremental impacts of six percent more visual intrusion into relatively undeveloped sections of the riverway.

Future development and related infrastructure within the riverway will also contribute to cumulative impacts to the natural/scientific values of the riverway, including wildlife, vegetation, fisheries and water quality. Development beyond the riverway management boundary, but within the Mississippi River watershed, will also contribute to cumulative impacts to water quality in the riverway.

As noted in the *Mississippi Scenic Riverway CIS*, the actual extent of cumulative impacts that will occur from future development and additional bridges is dependent on how effectively mitigation strategies are implemented during development of future projects. Adoption of the development standards proposed in the 2003 *Riverway Management Plan* and implementation of clustering and other low-impact development strategies would help reduce the cumulative scenic and natural/scientific impacts of future development. Promotion of river stewardship is also emphasized as a management strategy in the 2003 *Riverway Management Plan*. Involving residents of the riverway in education and action programs would help promote better stewardship by individual landowners, potentially minimizing impacts of erosion/sedimentation, vegetation clearing, setback violations, illegal structures and other potential visual intrusions on the riverway. Section 6.10.3 of this FEIS outlines mitigation strategies that can be implemented in all future bridge projects to minimize impacts to the scenic character of the riverway.

As described in the *Mississippi Scenic Riverway CIS*, the Preferred Alternative, in combination with future development, could result in additional future impacts that could threaten two of the values for which the Scenic Riverway was established: scenic quality and recreational user quality of the Riverway. However, mitigation strategies were identified in the study that, if implemented, would minimize and/or alleviate impacts to the riverway such that the values for which it was designated as a Wild and Scenic River would not be substantially impaired. Detailed descriptions of potential mitigation strategies for the Mississippi Scenic Riverway are included in the *Mississippi Scenic Riverway CIS*. The study also noted that implementation of mitigation strategies will require on-going planning, education and regulatory efforts by many parties, including state resource protection agencies, local governments, regional planning agencies, regional water agencies, local citizens and Riverway users, and transportation agencies.

It is important for these parties to recognize the potential for future cumulative impacts that could impair the quality of all values of the riverway, and the need to work together to implement planning and mitigation strategies to avoid, minimize and alleviate potential future impacts to the riverway. As has been noted previously, the Preferred Alternative river crossing is located in an area designated as a “rural residential” land use district. Because limited vegetative clearing is to be permitted in this district, continued use of such planning tools can help minimize potential future impacts to the riverway.

11.2.9 Water Quality

11.2.9.1 Existing Conditions

The project area lies within the Mississippi River watershed, with sub-watersheds that include various rivers, lakes, streams and wetland features. All of the sub-watersheds ultimately drain to the Mississippi River. A considerable portion of the drainage area of the River is located above the northern limits of this cumulative impacts analysis, thus water quality within the Riverway segment of the Mississippi River is influenced by land uses and water quality improvement practices upstream from the Riverway. Impacts of localized land uses (e.g., erosion, pollutant discharge, etc.) can also have an effect on the quality of the River. According to the *Mississippi Scenic Riverway Management Plan*, water quality in the portion of the River that is located within the project area is generally good. However, in 2002 the section of the Mississippi River from the Clearwater River to the Elk River was added to the MPCA’s list of impaired waters. Smaller water bodies within the project area are affected by drainage from adjacent land uses.

11.2.9.2 Impacts from the Preferred Alternative

As described in Section 7.1.2 of this FEIS, the Preferred Alternative will increase the amount of impervious surface area within its corridor, thus increasing the quantity of stormwater runoff. If not properly mitigated, increased runoff volumes could result in a variety of negative impacts on receiving water bodies, including increased chances of flooding, erosion of streambanks and drainage ways, decreased ground water base flow due to less infiltration and degraded water quality.

As described in Section 7.2.3 of this FEIS, the Preferred Alternative includes design features that effectively treat roadway and bridge runoff prior to discharge into surface waters, including roadside ditches and storm water basins. In addition to runoff treatment, standard specifications will be required for erosion/sedimentation prevention and control during construction.

11.2.9.3 Impacts from Other Actions

Future development in the project area will convert primarily agricultural land uses into suburban/urban land uses. It is possible that some improvement in surface water quality may result from the conversion of agricultural land to residential/commercial uses, since developments that disturb one acre or more of land are required to conform to NPDES permit requirements, including implementation of best management practices to improve water quality of discharge from the development; agricultural land uses are *not* subject to surface water quality management requirements. However, the *Mississippi Scenic Riverway Management Plan* identifies threats that could affect the River's water quality in the future. Municipal wastewater discharges into the river and rapid urban development along the corridor are two threats that contribute to water quality problems in the River, as evidenced by its inclusion in the 'impaired waters' list (due to high fecal coliform levels). Agricultural uses, which often include the application of pesticides and nutrients (e.g., nitrogen and phosphorous) also threaten the River's water quality.

The two communities most directly affected by the project, the cities of Clearwater and Clear Lake, have a Joint Powers Agreement (1975), the purpose of which is "the joint acquisition of waste water disposal facilities." A Clear Lake-Clearwater Sewer Authority was established to administer this agreement. In conversations with the City of Clear Lake, there is ongoing planning for water disposal/quality issues, with a planned expansion of this facility by November 2006 to serve anticipated development.

Future residential and commercial development in the project area will result in increased impervious surface areas and thus an increase in stormwater runoff. As discussed above in Section 11.2.9.2, increased runoff volumes can result in a variety of negative impacts on receiving water bodies if not properly mitigated. However, it is anticipated that future development will continue to be required to implement stormwater management (detention and treatment) practices to reduce the magnitude of these impacts, including, at a minimum, implementation of practices in conformance with federal NPDES requirements for construction activities, thereby mitigating potential development impacts to surface waters.

11.2.9.4 Potential for Cumulative Impacts

There are federal and state surface water management regulations in place that require mitigation for proposed development and bridge and roadway projects. Adequate treatment of sanitary sewage discharges from future developments will be important in maintaining the water quality of the Mississippi River. Given the design standards and management controls available for protecting the quality of surface waters and the rate of stormwater discharge, it is likely that potential impacts of the Preferred Alternative, along with future development, will be minimized or mitigated to a substantial degree (possibly even resulting in an overall improvement in water quality compared to existing conditions), and adverse cumulative impacts to water quality and quantity are not anticipated. In addition, because the primary purpose of the Preferred Alternative is to connect two interregional facilities (and it therefore does not increase local access), it is not expected to contribute to the cumulative impacts of increased development substantially. Furthermore, local comprehensive plans and zoning ordinances are in place in order to protect sensitive resources and can be used to further minimize cumulative impacts. However, if these mitigation strategies are not implemented, substantial cumulative impacts to water quality could result.

11.3 CONCLUSIONS

The potential for cumulative impacts resulting from the Preferred Alternative, combined with the future land use and associated infrastructure planned for the project area, was examined for those resources with the greatest potential for cumulative impacts, including: wetlands; vegetation, wildlife and fisheries; farmland; traffic noise; visual; water quality; and the Mississippi Scenic Riverway. The Mississippi Scenic Riverway was determined to be a resource with the greatest potential for substantial cumulative impacts from the Preferred Alternative in combination with other foreseeable future actions (future development and additional river crossing bridges). The other resources analyzed in this cumulative impacts assessment could also be susceptible to substantial future cumulative impacts if mitigation strategies are not adequately implemented. The implementation of mitigation strategies (e.g., state and federal regulations, local land use practices, etc.) is key in avoiding/minimizing the extent and severity of impacts from the Preferred Alternative and future development.

As discussed in Chapter 5 of this FEIS, local land use and comprehensive plans are currently being updated to plan for and minimize potential impacts of the Preferred Alternative and other likely development and improvement trends. The cities of Clearwater and Clear Lake acknowledge their existing connections along the I-94/TH 10 growth corridor and anticipate future growth and development pressures (including the construction of the proposed new river crossing). They have worked to coordinate future land use and development plans to achieve orderly development of the project area. As noted in Section 5.2.1.2 of this FEIS, natural resource protection is a goal of both communities. Protected waters, wetlands and floodplains are mapped with the objective of “protect[ing] all environmentally sensitive areas and unique physical features.” An additional goal is to “ensure that private, as well as development initiatives do not encroach on sensitive habitats or ecosystems of the natural environment both within a local and regional context.” A series of planning objectives and policies were adopted to achieve this goal. These objectives and policies focus on ensuring that development is compatible with features of the natural environment, and restrict new development and the expansion of existing activities where environmental damage may result.

The relationship between major transportation investment projects and changes in surrounding land uses is one of ongoing debate amongst policy analysts and researchers at universities and elsewhere. What is not debatable is that all communities are aided by having well-crafted and forward-looking plans and ordinances guiding their future growth. Mn/DOT has no authority or controls over land uses outside the roadway right of way and, as the project proposer, has no ability or authority to directly involve themselves in these controls. Projects proposed by Mn/DOT, including the new interregional connection, certainly affect local jurisdictions' land use plans, if in no other way by necessitating the reservation and acquisition of corridor right of way. The Preferred Alternative will likely not be constructed until eight to 10 years from the publication of this FEIS. This time period provides all interested parties, the local units of government, and the agencies with jurisdiction over the resources of concern within the project area adequate time to enhance existing land use plans and ordinances to ensure that resources of concern throughout the project area are protected, not only from the direct effects of this project but from the indirect and cumulative impacts that may result from other future development.