

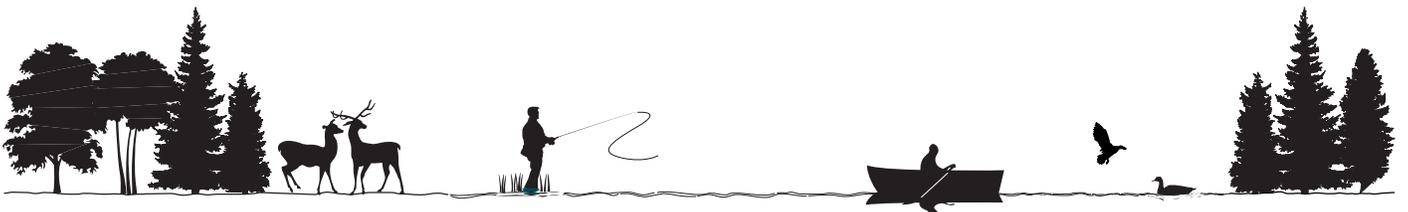


# Highway 371 North Improvement Project

Draft  
Environmental  
Impact  
Statement



December 2003



**TRUNK HIGHWAY 371  
In Cass and Crow Wing Counties, Minnesota**

**DRAFT ENVIRONMENTAL IMPACT STATEMENT AND DRAFT SECTION 4(f) EVALUATION  
Submitted Pursuant to 42 USC 4332 (2)(C), 49 USC 303, and Minn. Stat. Chap. 116D  
By the U.S. Department of Transportation Federal Highway Administration and the  
Minnesota Department of Transportation  
State Project Number: S.P. 1116-22**

COOPERATING AGENCIES  
U.S. Army Corps of Engineers  
Environmental Protection Agency  
U.S. Fish & Wildlife Service

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**ABSTRACT**

TH 371 is a major north-south highway that provides important links from U.S. Highway 10 and the Twin Cities metropolitan area (Minneapolis and St. Paul), north to the Central Lakes Region of Minnesota. It is also an important economic corridor connecting regional trade centers. Tourist travel along this segment of TH 371 creates high seasonal peaks that commonly cause substantial travel delays and unsafe driving conditions. The TH 371 project corridor extends from the intersection of Crow Wing County Road 18 in Nisswa, Minnesota to the intersection of Cass County Road 42 in Pine River, Minnesota. The proposed improvements include the construction of a four-lane limited access highway between the project termini. The existing two-lane highway does not meet design standards for the type and volume of traffic it carries. Other highway characteristics demonstrating the need for the project include high crash rates, large number of direct access points, pedestrian safety concerns, and heavy traffic congestion. Alternatives have been developed and are evaluated in this Draft EIS.

**COMMENTS ON THE DRAFT EIS** should be sent to the Mn/DOT staff person listed above.

## **Highway 371 North Improvement Project Draft Environmental Impact Statement (EIS) Key Dates**

- December 19, 2003 – Draft EIS Availability Notice Published in the Federal Register
- December 22, 2003 – Draft EIS Availability Notice Published in the Minnesota Environmental Quality Board (EQB) Monitor and Begin Official 45-Day Comment Period
- January 14, 2004 – Draft EIS Public Hearing and Open House, 5:00 p.m. to 8:00 p.m. at Pequot Lakes Schools. Identical Informational Presentations at 5:30 p.m. and 7:00 p.m.
- February 9, 2004 – Draft EIS Comment Period Ends

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November 14, 2003 Mn/DOT Cultural Resources Unit Letter to SHPO

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### Appendix E

MNDNR Correspondence

### Appendix F

Farmland Conversion Rating Form (AD 1006) and Correspondence Letters

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List of Acronyms

## **1.0 EXECUTIVE SUMMARY**

The proposed improvements to Trunk Highway (Highway) 371 are considered a Federal Class I Action because of its potential for significant impacts on the natural and physical environment. Therefore, this Environmental Impact Statement (EIS) has been prepared to discuss the environmental impacts of this proposed Class I action. This Draft EIS discusses all reasonable alternatives and summarizes the results of all studies, reviews, consultation, and coordination conducted on the potential environmental impacts of the action and alternatives. A Final EIS will be prepared following the selection of the preferred alternative. The Final EIS will describe environmental impacts in more detail and mitigation commitments for the preferred alternative.

The Minnesota Department of Transportation (Mn/DOT) proposes improvements to Highway 371 from Crow Wing County Road 18 in the City of Nisswa to Cass County Road 42 in the City of Pine River. The improvements include the construction of a four-lane divided highway with access control and service roads to serve existing developments. The total length of the project corridor is approximately 16 miles (Figure 1).

### **1.1 PURPOSE OF THE HIGHWAY 371 IMPROVEMENT PROJECT**

The purpose of this Draft EIS is to identify a preferred alternative for a transportation system improvement designed to solve critical travel safety and capacity problems. Identified transportation needs include:

- Improve safety
- Reduce congestion
- Correct design deficiencies

### **1.2 ALTERNATIVES**

As a result of the analysis and screening efforts conducted to date, the number of potentially feasible and prudent alternatives for improving Highway 371 and meeting the stated purpose and need objectives (Section 2.0) has been refined to include the options illustrated in Figure 1 and listed below.

- Alternative 1 – No-Build Alternative
- Alternative 2 – Existing Alignment
- Alternative 3 – Existing Alignment with a Pequot Lakes Bypass
- Alternative 4 – Existing Alignment with Pequot Lakes and Jenkins Bypasses
- Alternative 5 – Existing Alignment with a Jenkins Bypass

These alternatives are described in detail in Section 3.3.

Figure 1 – Project Location and Alternatives

### 1.3 PROJECT COST AND FUNDING SOURCE

Construction of the Highway 371 North Improvement Project will be funded from both federal and state resources. It is anticipated that federal funds would be the primary source of funding (80 percent) with a 20 percent state match. Construction cost estimates for the build alternatives are presented in Table 1. These cost estimates are based on a standard cost per mile of construction for the year 2003.

**Table 1  
Preliminary Cost Estimates (\$2003)**

<b>Alternative</b>	<b>Construction Costs Without Interchanges<sup>1</sup> (\$ millions)</b>	<b>Construction Costs With Interchanges<sup>1</sup> (\$ millions)</b>	<b>Right of Way and Acquisition Costs (\$ millions)</b>	<b>Total Costs Without Interchange Construction<sup>2</sup> (\$ millions)</b>	<b>Total Costs With Interchange Construction (\$ millions)</b>
Alternative 1	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>
Alternative 2	\$55,500,000	NA <sup>4</sup>	\$9,800,000	\$65,300,000	\$65,300,000
Alternative 3	\$57,000,000	\$75,000,000	\$15,600,000	\$72,600,000	\$90,600,000
Alternative 4	\$58,000,000	\$77,000,000	\$16,200,000	\$74,200,000	\$93,200,000
Alternative 5	\$53,800,000	\$63,800,000	\$13,900,000	\$67,700,000	\$77,700,000

<sup>1</sup> Includes frontage roads, local road connections, trail relocation, and wetland mitigation estimates

<sup>2</sup> Includes right-of-way costs associated with interchanges, but not the construction costs of building interchanges.

<sup>3</sup> There are no construction costs for the No-Build Alternative because no specific improvements have been identified.

<sup>4</sup> There are no interchanges with Alternative 2.

### 1.4 POTENTIAL ENVIRONMENTAL AFFECTS

A summary of the potential beneficial and adverse environmental effects associated with each alignment alternative is presented in Table 2. In many cases, the potential effects are common among one or more of the build alternatives because they share portions of the same alignment. Impacts shown on Table 2 are based on a preliminary right-of-way and/or construction limit. This assessment is intended to represent a worse case scenario in terms of potential impacts. Avoidance and minimization measures will be further applied during the detailed design of a single preferred alternative. For a complete description of the impacts shown in Table 2, the reader is encouraged to review Section 4.0 of this document.

**Table 2  
Summary of Impacts by Alternative**

Subject	ALTERNATIVES				
	Alternative 1 (No-Build)	Alternative 2 – Existing Alignment	Alternative 3 – Existing Alignment with Pequot Lakes Bypass	Alternative 4 – Existing Alignment with Pequot Lakes & Jenkins Bypasses	Alternative 5 – Existing Alignment with Jenkins Bypass
<b>Right-of Way/Relocation</b>					
Total Number of Potential Takings	None	10	16	19	18
Potential Residential Takings	None	5	7	14	14
Potential Commercial Takings	None	5	9	5	4
Total R/W Required (acres)	None	166 acres	405 acres	416 acres	280 acres
<b>Economics</b>	<ul style="list-style-type: none"> <li>Positively, Alternative 1 maintains the existing alignment and provides for the retention of all businesses.</li> <li>Adversely, the No-build would not address the congestion and safety issues, which would affect the local and regional economies. Access to businesses would be adversely affected as traffic volumes continue to grow making it more difficult to turn on and off highway.</li> </ul>	<ul style="list-style-type: none"> <li>Several of the businesses located along the existing alignment are highway commercial businesses (not destination-oriented) and rely heavily on the ability to capture revenue from drive-by traffic.</li> <li>Alternative 2 holds the greatest potential for benefits to existing highway commercial businesses.</li> <li>Positively, Alternative 2 will reduce congestion, which will enhance the regional economy.</li> </ul>	<ul style="list-style-type: none"> <li>Beneficial regional economic effects as mobility and connectivity of regional trade centers are improved.</li> <li>The through traffic that currently passes through Pequot Lakes would have the option of bypassing the community and could adversely affect highway commercial businesses.</li> <li>Potential for initial property tax loss; however, this would likely be offset through increased land value after the roadway improvement is made and relocations occur.</li> </ul>	<ul style="list-style-type: none"> <li>Same beneficial regional effects as Alternative 3.</li> <li>Potential adverse effects on local highway commercial businesses in Pequot Lakes (same as Alternative 3) and Jenkins.</li> <li>Same property tax and value effects for Pequot Lakes and Jenkins as described under Alternative 3.</li> </ul>	<ul style="list-style-type: none"> <li>The through traffic that currently passes through Jenkins would have the option of bypassing the community and could adversely affect highway commercial businesses. Therefore, the potential adverse effects on highway commercial businesses in Jenkins are the same as discussed under Alternative 4.</li> <li>Same property tax and value effects for Jenkins as described under Alternative 4.</li> </ul>
<b>Benefit-Cost Analysis</b>	• N/A	• Benefit-Cost Ratio: 3.7	• Benefit-Cost Ratio: 2.5	• Benefit-Cost Ratio: 2.4	• Benefit-Cost Ratio: 3.0
<b>Social and Community Impacts</b>	<ul style="list-style-type: none"> <li>No direct impact.</li> <li>Indirect effects include decreased access and extended travel time between homes and community resources due to higher levels of congestion on the highway.</li> </ul>	<ul style="list-style-type: none"> <li>Potentially have a direct effect on the community cohesion for Nisswa, Pequot Lakes, Jenkins, and Pine River since the highway corridor bisects the developed portions of these communities</li> <li>Potentially affect several churches, parks, and other community resources.</li> <li>A four-lane divided highway would enhance pedestrian safety by creating a refuge between the northbound and southbound travel lanes, allowing pedestrians the opportunity to cross one direction of travel at a time.</li> </ul>	<ul style="list-style-type: none"> <li>Alternative 3 would minimize community cohesion impacts in downtown Pequot Lakes.</li> <li>Potentially affect several churches, parks, and other community resources.</li> <li>Pedestrian mobility and local circulation would be improved by moving the peak traffic volumes out of the downtown district.</li> <li>Pedestrian safety would be enhanced as described under Alternative 2.</li> </ul>	<ul style="list-style-type: none"> <li>Alternative 4 would minimize community cohesion impacts in Pequot Lakes and Jenkins.</li> <li>Same beneficial and adverse impacts as described under Alternative 3 except the bypass of Jenkins would move the highway further away from the Jenkins City Park.</li> </ul>	<ul style="list-style-type: none"> <li>Alternative 5 would minimize community cohesion impacts in Jenkins.</li> <li>Same beneficial and adverse impacts as described under Alternative 4.</li> </ul>
<b>Land Use</b>	<ul style="list-style-type: none"> <li>Population growth and developments are anticipated to grow regardless of the highway project.</li> <li>With limited access control along the existing highway, continued linear commercial development along the highway will occur.</li> </ul>	<ul style="list-style-type: none"> <li>Potentially affect existing land uses through the expansion of right-of-way acquisition and changes in access.</li> <li>Additional development in the project area is anticipated to grow. However, highway construction by itself does not cause new development if there are not market forces that support new development and changes in land use.</li> <li>The proposed action is consistent with the Highway 371 Transportation and Land Use Plan, the Crow Wing County Comprehensive Plan, and the Cass County Comprehensive Plan.</li> </ul>			

**Table 2, Summary of Impacts (continued)**

SUBJECT	ALTERNATIVES				
	Alternative 1 (No-Build)	Alternative 2 – Existing Alignment	Alternative 3 – Existing Alignment with Pequot Lakes Bypass	Alternative 4 – Existing Alignment with Pequot Lakes & Jenkins Bypasses	Alternative 5 – Existing Alignment with Jenkins Bypass
<b>Park and Recreational Areas</b>	<ul style="list-style-type: none"> <li>No direct impacts.</li> <li>Existing conditions of direct discharge of runoff to water resources would remain unchanged.</li> <li>Indirect effects could be decreased access and extended travel time to recreational resources due to high levels of congestion.</li> </ul>	<ul style="list-style-type: none"> <li>Runoff controls and BMPs would benefit water quality and long-term recreational uses of these water resources for all build alternatives.</li> <li>Alternatives 2, 3, 4, and 5 will impact the Paul Bunyan Trail.</li> <li>Alternatives 2 and 5 would directly and indirectly impact Bobberland Park in Pequot Lakes. Indirect impacts would involve the widening of the highway into green space that is within the existing Mn/DOT right-of-way. This space would become utilized for the transportation improvement, but no parkland would be acquired as a result of the proposed improvements. Direct impacts would involve increase noise levels and potential changes in access to the park.</li> </ul>			
<b>Pedestrian and Bicycle Movements</b>	<ul style="list-style-type: none"> <li>No substantial change to pedestrian and bicycle movements from the existing conditions.</li> <li>An increase in congestion and a further deterioration of highway safety may lead to further safety concerns for pedestrians and bicyclists in the project area</li> </ul>	<ul style="list-style-type: none"> <li>Directly impacts the Paul Bunyan Trail due to the right-of-way needs of a four-lane highway and the constraints of adjacent natural and built environmental features.</li> <li>A four-lane divided highway provides a refuge for pedestrians/bicyclists crossing the highway and allows them the opportunity to cross one direction of traffic at a time.</li> </ul>	<ul style="list-style-type: none"> <li>Same adverse and beneficial impacts as described under Alternative 2.</li> <li>Removal of the highway through downtown Pequot Lakes would improve bicycle/pedestrian mobility and safety through downtown by reducing the peak traffic volumes.</li> </ul>	<ul style="list-style-type: none"> <li>Alternative 4 would have the same adverse and beneficial impacts as described under alternative 2 and 3.</li> <li>Removal of the highway through downtown Jenkins would provide the same types of improvements as discussed for Pequot Lakes under Alternative 3.</li> </ul>	<ul style="list-style-type: none"> <li>Alternative 5 would have the same adverse and beneficial impacts as described under alternatives 2 and 4.</li> <li>Removal of the highway through downtown Jenkins would provide the same types of improvements as discussed for Pequot Lakes under Alternative 3.</li> </ul>
<b>Environmental Justice</b>	<ul style="list-style-type: none"> <li>The project will not result in disproportionately high or adverse effects to minority populations or low-income populations since there are no readily identifiable groups within close geographic proximity of the project corridor. This is true for the No-Build Alternative and the build alternatives (Alternatives 2, 3, 4, and 5).</li> </ul>				
<b>Transit</b>	<ul style="list-style-type: none"> <li>Adversely affect transit service, specifically travel times, because higher levels of traffic congestion throughout the corridor will further impede traffic flow through the area.</li> </ul>	<ul style="list-style-type: none"> <li>Improved traffic operations would result in an improvement in transit travel times on routes that use roadways within the project area.</li> <li>Alternatives 3, 4, and 5 will make longer transit trips more efficient since these alternatives bypass the urban areas of Pequot Lakes and Jenkins.</li> <li>All of the build alternatives will improve single occupant vehicle travel times so the improvements are not likely to increase transit ridership directly</li> </ul>			
<b>Utilities</b>	<ul style="list-style-type: none"> <li>No direct impacts on existing utilities.</li> </ul>	Alternatives 2, 3, 4, and 5 will potentially impact utilities and may require the relocation and disruption of some local and regional utility services. No one alternative appears to have a greater potential for impacting utility lines.			
<b>Secondary and Cumulative Effects</b> Effects are anticipated throughout the project area; therefore, impacts among Alternatives 2, 3, and 4 would be similar.	<ul style="list-style-type: none"> <li>Continued development, potential water quality impacts and economic impacts would still occur.</li> <li>No opportunity for mitigation that could avoid or minimize effects.</li> </ul>	<ul style="list-style-type: none"> <li>Potential for cumulative and secondary impacts exists in issue areas related to land consumption; land development, agricultural land, wetlands, water quality, vegetation, and wildlife. These potential impacts are typically considered through local and county comprehensive planning efforts and can be avoided and/or minimized through land use controls and roadway access restrictions.</li> <li>In the context of the existing regulatory framework and the mitigation activities for project impacts, the overall cumulative effects to natural resources are expected to be minimal.</li> </ul>			

**Table 2, Summary of Impacts (continued)**

SUBJECT	ALTERNATIVES				
	Alternative 1 (No-Build)	Alternative 2 – Existing Alignment	Alternative 3 – Existing Alignment with Pequot Lakes Bypass	Alternative 4 – Existing Alignment with Pequot Lakes & Jenkins Bypasses	Alternative 5 – Existing Alignment with Jenkins Bypass
<b>Architectural/Historic and Archaeological Resources</b>	<ul style="list-style-type: none"> <li>No physical effect on any National Register eligible or listed properties. However, continued congestion may have negative effects on the value, economic viability, and setting of adjacent historic properties.</li> </ul>	<ul style="list-style-type: none"> <li>Directly impact the Pine River Depot with physical, audible, and visual impacts.</li> <li>Directly impact the Brainerd and Northern Minnesota Railway Corridor with physical impacts.</li> <li>The Molstad property may be audibly impacted.</li> <li>The Drew Cabin complex may be audibly and visually impacted.</li> </ul>	<ul style="list-style-type: none"> <li>Directly impact the Pine River Depot with physical, audible, and visual impacts.</li> <li>Directly impact the Brainerd and Northern Minnesota Railway Corridor with physical impacts.</li> <li>The Molstad property may be audibly impacted.</li> <li>The Drew Cabin complex may be audibly and visually impacted.</li> <li>Pequot Fire Lookout Tower may be audibly impacted</li> </ul>	<ul style="list-style-type: none"> <li>Directly impact the Pine River Depot with physical, audible, and visual impacts.</li> <li>Directly impact the Brainerd and Northern Minnesota Railway Corridor with physical impacts.</li> <li>The Molstad property may be audibly impacted.</li> <li>The Drew Cabin complex may be audibly and visually impacted.</li> <li>Pequot Fire Lookout Tower may be audibly impacted</li> </ul>	<ul style="list-style-type: none"> <li>Directly impact the Pine River Depot with physical, audible, and visual impacts.</li> <li>Directly impact the Brainerd and Northern Minnesota Railway Corridor with physical impacts.</li> <li>The Molstad property may be audibly impacted.</li> <li>The Drew Cabin complex may be audibly and visually impacted.</li> </ul>
<b>Contaminated Properties</b>	<ul style="list-style-type: none"> <li>The No-Build Alternative would have no direct impacts on existing contaminated properties.</li> <li>Remaining sites may affect groundwater over time.</li> </ul>	<ul style="list-style-type: none"> <li>Alternative 2 could potentially affect 61 sites categorized as having a medium or high risk for contamination.</li> </ul>	<ul style="list-style-type: none"> <li>Similar impacts as described under Alternative 2 except Alternative 3 would potentially impact 42 medium or high risk sites. 19 sites located in downtown Pequot Lakes would be avoided.</li> <li>Additional sites on the Pequot Lakes bypass alignment may be encountered that were not identified in the Phase I ESA</li> </ul>	<ul style="list-style-type: none"> <li>Similar impacts as described under Alternative 2 except Alternative 4 would potentially impact 35 medium or high risk sites. 26 sites located in downtown Pequot Lakes and Jenkins would be avoided. Additional sites on the bypass alignments may be encountered that were not identified in the Phase I ESA.</li> </ul>	<ul style="list-style-type: none"> <li>Similar impacts as described under Alternative 2 except Alternative 5 would potentially impact 54 medium or high risk sites. 7 sites located in downtown Jenkins would be avoided. Additional sites on the bypass alignment may be encountered that were not identified in the Phase I ESA.</li> </ul>
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>The project is not located in an area in which conformity requirements apply, and the scope of the project does not indicate that air quality impacts would be expected. The build alternatives would improve traffic operations, which would reduce the amount of time vehicles wait idling in heavily congested conditions and at cross street intersections waiting to access or cross the highway.</li> </ul>				
<b>Noise</b> Residential sites that potentially have noise affects greater than state standards.	<ul style="list-style-type: none"> <li>120 residential parcels exceed daytime standard.</li> <li>195 residential units exceed nighttime standard.</li> </ul>	<ul style="list-style-type: none"> <li>135 residential parcels exceed daytime standard.</li> <li>295 residential units exceed nighttime standard.</li> </ul>	<ul style="list-style-type: none"> <li>136 residential parcels exceed daytime standard.</li> <li>251 residential units exceed nighttime standard.</li> </ul>	<ul style="list-style-type: none"> <li>136 residential parcels exceed daytime standard.</li> <li>259 residential units exceed nighttime standard.</li> </ul>	<ul style="list-style-type: none"> <li>141 residential parcels exceed daytime standard.</li> <li>311 residential units exceed nighttime standard.</li> </ul>
<b>Water Quality and Surface Water Drainage</b>	<ul style="list-style-type: none"> <li>Alternative 1 would result in no increase of impervious surface.</li> <li>Water quality conditions may deteriorate as untreated runoff directly discharges to receiving water bodies.</li> </ul>	<ul style="list-style-type: none"> <li>Increases in impervious surface resulting from the expanded roadway would increase the amount and velocity of run off.</li> <li>Alternatives 2, 3, 4, and 5 provide an opportunity to collect, hold and treat run off. Most of the runoff from the expanded roadway would be directed to grassed medians, roadside ditches, or storm water treatment ponds.</li> </ul>			
<b>Floodplains</b>	<ul style="list-style-type: none"> <li>No change from existing conditions.</li> </ul>	<ul style="list-style-type: none"> <li>Alternatives 2, 3, 4, and 5 potentially affect two crossings of the Pine River, Nisswa Creek and Hay Creek.</li> <li>Alternatives 4 and 5 would have similar floodplain impacts as Alternatives 2 and 3 except for a new crossing of the Hay Creek floodplain.</li> </ul>			
<b>Geology/Groundwater</b>	<ul style="list-style-type: none"> <li>No change from existing conditions.</li> </ul>	<ul style="list-style-type: none"> <li>No direct effects to geology and/or groundwater.</li> <li>Alternatives 2, 3, 4, and 5 all include improvements located within two designated Wellhead Protection Areas for the City of Pine River wells. However, the improvements are not anticipated to create adverse effects on any public water supply system.</li> </ul>			
<b>Wetlands</b> (Based on preliminary construction limit)	<ul style="list-style-type: none"> <li>No direct wetland impacts.</li> </ul>	Approximately 22.28 acres.	Approximately 26.87 acres.	Approximately 27.87 acres.	Approximately 29.07 acres.

**Table 2, Summary of Impacts (continued)**

SUBJECT	ALTERNATIVES				
	Alternative 1 (No-Build)	Alternative 2 – Existing Alignment	Alternative 3 – Existing Alignment with Pequot Lakes Bypass	Alternative 4 – Existing Alignment with Pequot Lakes & Jenkins Bypasses	Alternative 5 – Existing Alignment with Jenkins Bypass
<b>Vegetation</b> (Based on preliminary construction limit)	<ul style="list-style-type: none"> <li>No substantial change from existing conditions.</li> </ul>	<ul style="list-style-type: none"> <li>There are no state or national forests, large tree farms, or other unique vegetative features that are potentially affected by Alternatives 2, 3, 4, or 5. An old growth stand of conifers referenced in the MNDNR Natural Heritage Information System database located on the southwest side of the City of Pine River is not affected by the proposed build alternatives.</li> </ul>			
<b>Fish &amp; Wildlife Habitat</b>	<ul style="list-style-type: none"> <li>No benefits gained to fish habitats by water quality treatment applications that currently do not exist.</li> <li>No impacts to sensitive wildlife or their critical habitats are anticipated</li> </ul>	<ul style="list-style-type: none"> <li>Existing fish passage in Niswaa Creek and the Pine River will be maintained.</li> <li>No in-lake fish habitat impacts are expected due to dredge and fill activities from the build alternatives.</li> <li>There are no MNDNR Designated Trout Streams crossed or within close proximity of the build alternatives.</li> <li>No designated state Wildlife Management Areas (WMAs), Scientific &amp; Natural Areas (SNAs), MNDNR designated Shallow Game Lakes, federal National Wildlife Refuges (NWR), or Waterfowl Production Areas (WPAs) are within the vicinity of or potentially affected by the build alternatives.</li> <li>There are no known wildlife concentrations (i.e., wintering deer yards), colonial nesting bird colonies or rookeries, or other unique wildlife resources within the vicinity of Alternatives 2, 3, 4, and 5.</li> </ul>			
<b>State/Federal Threatened &amp; Endangered (T &amp; E) Species</b>	<ul style="list-style-type: none"> <li>No direct effects on state/federal T &amp; E species.</li> </ul>	<ul style="list-style-type: none"> <li>The MNDNR Natural Heritage database shows 28 State and Federally listed T &amp; E species occurrences within a one-mile radius of the project area. However, only one State and Federal listed T &amp; E occurrences (an active bald eagle nest) is potentially affected by the build alternatives. Effects on the nest area are being minimized by locating all proposed construction/expansion activities to the opposite side of the nesting area.</li> </ul>			
<b>Prime and/or Statewide Important Farmlands</b>	<ul style="list-style-type: none"> <li>The No-Build Alternative would have no effects on prime, unique, or statewide important farmland</li> </ul>	<ul style="list-style-type: none"> <li>Two statewide important farmland (731 Sanborn loamy sand, 0-3%) locations would be encountered along Alternatives 2, 3, 4, and 5. Both occurrences are found within Cass County where the four build alternatives share the same alignment. There is the potential of 7.3 acres of state important farmland being converted to a transportation use.</li> <li>No Prime or Unique farmlands would be encountered.</li> </ul>			
<b>Visual Resources</b>	<ul style="list-style-type: none"> <li>Minimal adverse/beneficial effects.</li> </ul>	<ul style="list-style-type: none"> <li>All of the proposed build alternatives will have an effect on the existing visual scene and resources for both travelers and neighbors. The proposed highway improvements will require additional pavement and clearing of some natural areas. Improvements along the corridor could also adversely and beneficially affect views of lakes, wetlands, and woods for the traveler, as well as neighbors residing in the project area.</li> </ul>			

## 1.5 PERMITS AND APPROVALS

It is anticipated that federal, state, and other local permits and approvals may be required for the proposed action. The following permits and approvals will likely be required for construction of the proposed action.

- Section 404 Permit – U.S. Army Corps of Engineers (USACE) and USFWS
- Section 401 Water Quality Certification – Minnesota Pollution Control Agency (MPCA)
- Public Waters Permit – Minnesota Department of Natural Resources (MNDNR)
- Approval for Section 4(f) Property Conversion – FHWA
- National Pollutant Discharge Elimination System (NPDES) Permit – MPCA
- Section 106 Concurrence – State Historic Preservation Office (SHPO)
- Wetland Conservation Act (WCA) Approval - Mn/DOT
- Municipal Approval – Cities of Nisswa, Pequot Lakes, Jenkins, and Pine River
- Final EIS – FHWA (Federal Highway Administration) and Mn/DOT
- Adequacy Determination – Mn/DOT
- Record of Decision (ROD) – FHWA
- Memorandum of Agreement (MOA) for Mitigation Measures – As Applicable
- Section 7 Consultation/Concurrence - USFWS

## 1.6 COORDINATION

Mn/DOT is committed to public and agency involvement/outreach at all levels in decision-making related to the Highway 371 North Improvement Project. Mn/DOT will continue to engage community organizations; area property owners; business owners; residents; and local, county, regional, state, and federal agencies in the development of this project.

The development and analysis of alternatives for this project was coordinated through the Highway 371 Technical Advisory Committee (TAC). The TAC was formed to establish a communication link with the affected communities and resource agencies. The committee represents a wide range of interests and will provide two-way communication between the agencies and groups they represent. Furthermore, the TAC will ensure community values/interests are being expressed. A complete list of members participating on the TAC is presented in Section 8.1 of this document.

Informational and coordination meetings have also been held with representatives from local, state, and federal agencies with approval and/or permit authority to discuss appropriate analysis methodology for different resource issues.

## **1.7 MAJOR PROPOSED ACTIONS BY OTHER AGENCIES**

Currently, there are no major projects being proposed by other agencies within the Highway 371 project area. However, several potential projects mentioned through the public involvement project included an expanded industrial park in the City of Pequot Lakes and a sanitary sewer project between the City of Pine River and Pequot Lakes. It is Mn/DOT's understanding that these projects are merely ideas at this time and no project development actions have taken place at this time.

## **1.8 UNRESOLVED OR CONTROVERSIAL ISSUES**

Section 8 provides a description of the public and agency coordination that has occurred during the development of this Draft EIS. Among the concerns of the agencies were impacts to the Paul Bunyan Trail and to area water resources. Other issues discussed with the public included potential economic impacts of the community bypass alternatives, access concerns, and potential noise impacts.

## **2.0 PURPOSE AND NEED FOR PROPOSED ACTION**

### **2.1 DESCRIPTION OF PROJECT**

#### **Project Location**

The Highway 371 project corridor is located in central Minnesota approximately 125 miles northwest of Minneapolis/St. Paul. The project corridor traverses the western border of Crow Wing County and the southern section of Cass County (Figure 2). The project limits extend from the intersection of Crow Wing County Road 18 in Nisswa, Minnesota to the intersection of Cass County Road 42 in Pine River, Minnesota. The total length of the project corridor is approximately 16 miles (Figure 3). The southern limits of the project corridor were selected at a point where the existing highway drops from a rural four-lane divided highway to a two-lane highway. The northern limits of the project (CR 42) are located just north of Pine River at a location where forecast traffic volumes drop to a level acceptable for a two-lane highway.

#### **Project Setting**

Highway 371 is a major north-south route on the Minnesota trunk highway system. Locally and regionally, Highway 371 connects citizens and communities to jobs, retail centers, and recreational/tourist destinations. Tourist travel along this segment of Highway 371 creates high seasonal traffic peaks. These peaks commonly cause traffic delays and congestion. From south to north, the highway corridor passes through the City of Nisswa (population 1,943), the City of Pequot Lakes (population 1,802), the City of Jenkins (population 287), and the City of Pine River (population 928).

The land use characteristics within the project area include urban areas with commercial and residential development, and rural/agricultural areas with scattered single-family residences, commercial businesses, resorts, and open space. The highway corridor abuts many important natural and recreational resources including the Paul Bunyan Regional Trail, numerous lakes, streams, and wetlands, as well as other natural communities.

#### **Project Background**

In Mn/DOT's Statewide Interregional Corridor (IRC) Study, completed in November 1999, Highway 371 was identified as a Medium Priority IRC because it connects regional trade centers, such as Brainerd/Baxter and Bemidji, to other centers including St. Cloud and the Twin Cities. In addition to the role of providing regional access, the road serves to provide access to residential, commercial, light industrial, and agricultural properties located along the corridor.

Figure 2 – State/County Location Map

Figure 3 – Highway 371 North Study Area Map

Several improvements to the Highway 371 corridor have recently occurred or are currently being pursued by Mn/DOT. A new four-lane bypass of Brainerd was completed in 2000, and a new interchange at the junction of Highway 371 and Business 371, located south of Brainerd/Baxter, was completed in 2002. Currently, Highway 371 is being expanded to a four-lane divided highway from the four-lane section south of Brainerd/Baxter to 0.5 miles north of Morrison County Road 48. Other improvements include completing the four-lane divided highway section south to Little Falls and the implementation of access management strategies (e.g., access closure, frontage/backage roads) along the highway between Highway 210 in Baxter and the City of Nisswa. The portion of Highway 371 being studied in this Draft EIS is presently a two-lane undivided rural highway. A short three-lane section of highway exists in downtown Pequot Lakes.

## **2.2 PURPOSE OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT**

The National Environmental Policy Act (NEPA) of 1969 requires that social, economic, and environmental considerations be included in the planning of projects that receive federal funding. The proposed reconstruction of Highway 371 is considered a Federal Class I Action because of its potential for significant impacts on the natural and physical environment. The EIS is a full disclosure decision-making document that discusses the environmental impacts of a proposed Class I Action. A Draft EIS discusses the purpose and need for the project, all reasonable alternatives to the proposed action, and summarizes the results of all studies, reviews, consultations, and coordination conducted on the environmental impacts of the action for all reasonable alternatives. A Final EIS identifies the preferred alternative and describes the environmental impacts and mitigation measures.

This Draft EIS has been prepared as part of the federal NEPA process and state environmental review process to fulfill requirements of both 42 USC 4321 et Seq. and Minnesota Statute 116D.

## **2.3 RESPONSIBLE GOVERNMENTAL UNITS**

Mn/DOT is the Responsible Governmental Unit (RGU) for the development of the Highway 371 project and the environmental documentation for this project. Mn/DOT is managing the project with the FHWA as a joint lead agency. The contact persons for the project are:

Tony Hughes, PE  
Project Manager  
Mn/DOT-District 3  
7694 Industrial Park Road  
Baxter, MN 56425  
(218) 828-2465  
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Cheryl Martin  
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380 Jackson Street, Suite 500  
St. Paul, MN 55101  
(651) 291-6120  
[cheryl.martin@fhwa.dot.gov](mailto:cheryl.martin@fhwa.dot.gov)

## 2.4 FUNDING AND SCHEDULING

### Funding

The Highway 371 North Improvement Project has been listed in the Mn/DOT (District 3 - Baxter) 10-year plan. It is anticipated that federal funds would be the primary source of funding (80 percent) with a 20 percent state match. Preliminary construction cost estimates for the alternatives under consideration in the Draft EIS are included in Section 3.3.

### Schedule for Environmental Review

Completion Date	Task/Activity
October 2002	Federal Notice of Intent
November 2002	Release of SD/DSDD for public comment; begin 30-day comment period
December 2002	Public Scoping Meeting
February 2003	Final Scoping Decision Document
February 2003	State EIS Preparation Notice
November 2003	Amended Scoping Decision Document
December 2003	Distribute Draft EIS for agency/public comment; start of Draft EIS comment period
January 2004	Public Hearing on Draft EIS
Early 2004	Selection of Preferred Alternative by Mn/DOT
Fall 2004	Distribute Final EIS
Fall 2004	Mn/DOT Adequacy Determination
Winter 2004	FHWA ROD
Spring 2005	Project Study Report Approved
2006-2010	Final Design and Right-of-Way Acquisition
2010-2011	Construction

## 2.5 NEED FOR PROPOSED ACTION

The purpose of this study is to identify an environmentally sensitive preferred alternative for a transportation system improvement designed to solve critical travel safety and congestion problems. The preferred alternative must be consistent with meeting these identified needs discussed below.

- Improve Safety – Crash rates and crash severities in several areas of the study corridor are much higher than average for similar-type roadways. Pedestrian safety is also an issue, particularly in the communities of Pequot Lakes, Jenkins, and Pine River.
- Reduce Congestion – Daily traffic demand at times reaches capacity for the segment of roadway between Nisswa and County Road 16 in Jenkins, and traffic increases dramatically during the summer peak periods, resulting in substantial congestion throughout much of the corridor. Traffic demand will nearly double by 2030, far exceeding the highway's capacity and severely degrading travel conditions in the area.

- Correct Design Deficiencies – The roadway's design is deficient given the current use of the roadway. The deficiencies include excessive access points, substandard curves limiting sight distance and design speeds, and locations with substandard shoulders and turn lanes.

Many of the issues described above are identified on Figure 4 and discussed in greater detail in the following sections.

## Improve Safety

Improving travel safety is a priority objective of Mn/DOT in managing the State Trunk Highway System. Identifying and addressing the segments of the trunk highway system that experience above average crash rates is an important first step in determining which highways should be studied for potential improvements.

To identify safety deficiencies along the Highway 371 study corridor, a review of the crash history since 1984 was conducted. From 1984 through 2001, there were 822 crashes on this section of Highway 371. A total of 282 crashes were reported during the 5-year period from January 1997 to December 2001. Table 3 summarizes the crash data for the corridor by each level of severity reported.

**Table 3**  
**Crash Severity Tabulation**

Crash Severity (code)	Crashes from 1984-2001 (18 years)		Crashes from 1997-2001 (5 years)	
	Total	Avg/Yr	Total	Avg/Yr
Fatal (K)	18	1.0	7	1.4
Incapacitating Injury (A)	25	1.4	6	1.2
Non-incapacitating Injury (B)	99	5.5	38	7.6
Possible Injury (C)	151	8.4	57	11.4
Property Damage (N)	529	29.4	174	34.8
<b>Total</b>	<b>822</b>	<b>45.7</b>	<b>282</b>	<b>56.4</b>

Summary based on Mn/DOT crash data.

The types of crashes in the 5-year analysis period are distributed as follows.

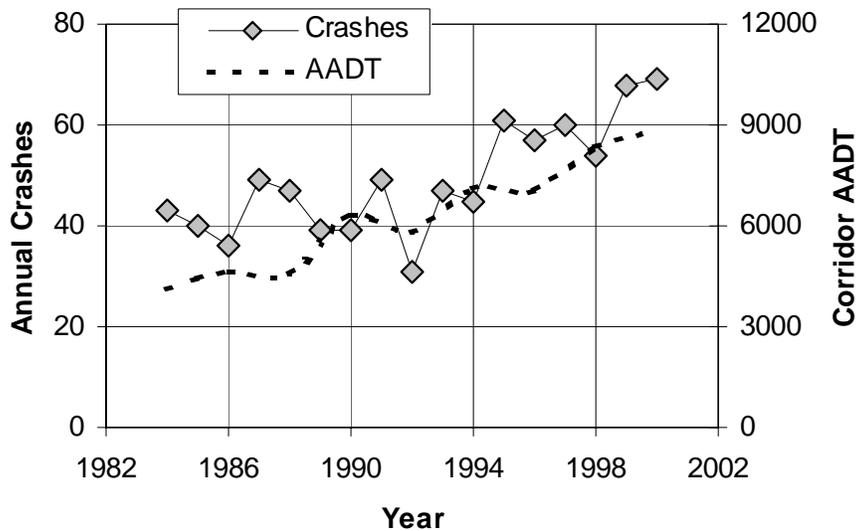
Collision with Pedestrian	1%
Collision with Animal	16%
Rear-end	19%
Right Angle	12%
Left Turn	6%
Head-on	4%
Sideswipe	7%
Run Off Road	13%
Other or Unknown	22%

Figure 4 – Highway 371 North Issues Map

Of the two collisions with a pedestrian, one resulted in an incapacitating injury and the other was fatal. Many crashes can be avoided through roadway design, especially those involving conflicts between vehicles. For example, 66 percent of all collisions between vehicles (rear-end, right angle, left turn, head-on, sideswipe, and run off road) were at an intersection or driveway or were intersection-related, and 47 percent of the crashes (run off road, sideswipe, head-on, left turn, collision with animal, and collision with pedestrian) could be a result of a high volume two-lane highway.

Table 3 shows that the number of crashes occurring per year is higher for the more recent analysis period than for the full 18-year period. Figure 5 illustrates the number of crashes that have occurred along this corridor each year since 1984. Also shown in that figure is how the corridor annual average daily traffic (AADT) has grown over the same years. The graph shows that as traffic volumes have grown, so has the overall number of crashes. This suggests that the expected continuation of traffic growth will result in more crashes if road improvements are not implemented.

Figure 5 – Highway 371 Traffic Projection



Comparing crash frequency relative to traffic volumes among similar facilities can bring attention to especially unsafe roadways. A crash rate per million vehicle miles (MVM) traveled over a 3 to 5-year analysis period is typically used for comparison. For example, a 1.5-mile segment of Highway 371 in Pequot Lakes had 55 crashes from January 1997 through December 2001 (5 years). The average daily traffic (ADT) volume during that time was approximately 10,500 vehicles per day. This volume (10,500 vehicles per day) is multiplied by both the number of days in the study period (1,826 days) and the length of the analysis segment (1.5 miles) to obtain 28.8 MVM. Thus, 55 crashes divided by 28.8 MVM is 1.9 crashes per MVM. This is meaningful because it is nearly double the Mn/DOT District 3 average for similar roads. Table 4 lists the 5-year crash rates, severity rates, and

severe crash history for several sections along the project corridor. The rates in bold are above Mn/DOT District 3 and statewide averages. In addition to these highway sections, eight intersections located on Highway 371 have a 5-year crash rate above the statewide average for similar intersections.

**Table 4  
Highway 371 Section Crash Statistics**

Highway 371 Section	Length (miles)	2000 AADT	5-Year Crash Rate	5-Year Severity Rate	District 3 Averages <sup>1</sup>		Statewide Averages <sup>1</sup>	
					Crash	Severity	Crash	Severity
Nisswa	2.2	10,500	1.0	2.1	1.0	2.3	1.2	2.6
Nisswa to Pequot Lakes	3.6	10,200	1.0	1.9	1.0	2.3	1.2	2.6
Pequot Lakes	1.5	10,500	<b>1.9</b>	<b>4.4</b>	1.0	2.3	1.2	2.6
Pequot Lakes to Jenkins	1.5	9,600	1.0	<b>3.3</b>	1.0	2.3	1.2	2.6
Jenkins	1.7	7,600	0.6	2.1	1.0	2.2	1.0	2.3
Jenkins to Pine River	4.3	7,100	0.5	1.2	1.0	2.2	1.0	2.3
Pine River	2.2	7,500	<b>1.7</b>	<b>3.5</b>	1.0	2.2	1.0	2.3

<sup>1</sup> Averages vary depending on the highway design and AADT.

A detailed traffic report was prepared for the Highway 371 corridor. The report, Traffic Report: Highway 371 North Improvement Project, August 2002, provides detailed crash information for the intersections listed below. The report is available for review at the Mn/DOT District 3 Office in Baxter.

- County Road 29/County Road 107 (Nisswa north limits)
- County Road 168/County Road 107
- County Road 11 (Main Street Pequot Lakes)
- County Road 17
- County Road 16 (Jenkins south limits)
- County Road 145 (Lilac Avenue in Jenkins)
- County Road 1/Ridge Avenue (Pine River)
- County Road 2/County Road 42 (Pine River)

Coupled with these areas showing high crash rates are the high severity of the crashes that do occur. Because severe and fatal crashes are infrequent events, it is prudent to tabulate crashes over a longer time – 18 years – to evaluate systematic effects (Mn/DOT records only go back to 1984, which limits greater review). Twenty-four people have died in the eighteen fatal crashes that have occurred in that 18-year timeframe. Figure 6 illustrates the fatal and high-severity injury crashes that have occurred from 1984 through 2001. As mentioned above, the distribution of these unsafe highway sections and intersections does not lend itself to isolated safety improvements. Improving capacity in the towns where volumes are higher and speeds are lower does not address the fatal and severe crashes that are occurring on rural sections between the cities. Over half the fatal collisions between vehicles were head-on crashes on the high-speed sections of this corridor, which can be a product of a high volume two-lane roadway.

Figure 6 – Fatal and Incapacitating Injury Crashes (1984-2001)

Beyond the statistics on crashes along the Highway 371 corridor, the safety issues that are present can be described through the recurring incidents that take place along the corridor each day as a result of the unique nature of the study area. These incidents include conflicts between through traffic and traffic entering or exiting the highway, conflicts between high-speed traffic and traffic slowing to turn off the highway, as well as conflicts between vehicles and pedestrians. These are the conflicts that generate the high crash rates that exist along Highway 371, and in turn, result in the need to consider improvements to address the current and increasing safety problem.

## **Reduce Congestion**

### **Existing Traffic Volumes**

The existing 2002 AADT volumes along the Highway 371 study corridor range from 5,900 north of Pine River to 14,600 south of Nisswa (see Figure 7). As illustrated in Figure 7, seasonal variation is considerable due to summer recreational use. July weekends have the highest ADT volumes with volumes as much as 70 percent greater than the annual average. June weekday traffic in 2002 ranged from 6,500 to 16,100 vehicles per day. Traffic operations data indicate that two-lane roadways begin to experience noticeable problems once they exceed 10,000 to 12,000 vehicles per day. Current traffic demand on summer holidays and weekends sometimes exceeds 19,000 vehicles per day. Furthermore, the corridor has reached its maximum hourly traffic volume limit during peak travel times and additional traffic is spreading to other times of the day. Heavy congestion and delay, once observed only during peak hours, is spreading throughout the day and will continue to worsen without capacity improvements.

Conditions along the Highway 371 corridor are unique because the numerous lakes and wetlands in the area have prevented the development of other north-south roads to service traffic originating from or destined to the communities in the study area. Because of the inability to develop new road corridors that would service the increasing traffic demand, the only practical alternative is improvement along the existing Highway 371 corridor, possibly with community bypasses.

### **Future Traffic Volumes**

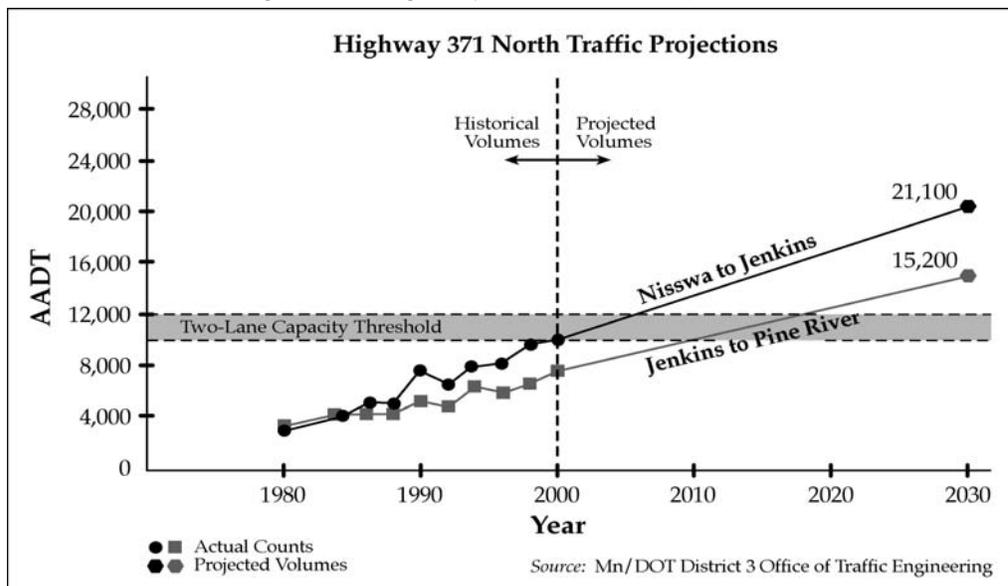
The methodology for establishing future traffic volumes for the study corridor described below is based on widely accepted industry standards and practices. The data sources used to develop future traffic volumes included information from traffic counts conducted in 2002 and 2003, Mn/DOT's automated traffic recorder stations on Highway 371 located north of the project and on Highway 10 south of the project, historical traffic volumes on highways and county roads in the study area from 1972 to the present, and an origin-destination study conducted in the Summer of 2002.

The design year for the study has been established as year 2030, which represents 20 years after the anticipated construction date of 2010.

Figure 7 – Existing 2002 and Forecast 2030 Average Annual Daily Traffic Volumes

Figure 8 illustrates the historical traffic growth and forecast to 2030. To account for the seasonal variation in traffic volume, the design condition considers a June 2030 weekday. These volumes are greater than the AADT by approximately 10 percent. Winter weekday traffic is about 27 percent less than the AADT, summer weekend traffic is typically 52 percent higher than the average, and summer holidays can exceed an 80 percent increase. All of these conditions must be incorporated into the decision-making process. Figure 7 illustrates various traffic volumes in 2002 and 2030 for the primary segments on this corridor.

Figure 8 – Highway 371 Traffic Projection



As shown in Figure 8, the forecast year 2030 AADT volumes along the Highway 371 study corridor are anticipated to average 21,100 south of County Road 16 in Jenkins and 15,200 north to Pine River. Seasonal variations in traffic volumes will remain sizable with up to 35,800 vehicles per day from Nisswa to Pequot Lakes on July weekends (see Figure 7). It should be noted that AADT volumes typically underestimate peak seasonal fluctuations. With these anticipated traffic volumes, the operational characteristics of existing Highway 371, as well as surrounding roads will severely deteriorate. As growth continues along the Highway 371 study corridor, traffic demand throughout the year will be well over the capacity of a two-lane roadway.

### Congestion

Under existing traffic conditions, Highway 371 experiences heavy levels of congestion during peak summer weekend recreational traffic periods. Backups and delays have been reported through Pequot Lakes, as well as approaching Nisswa from the north on Sunday afternoons.

Without improvements, the corridor is anticipated to operate in an extremely congested state between Nisswa and County Road 16 in Jenkins.

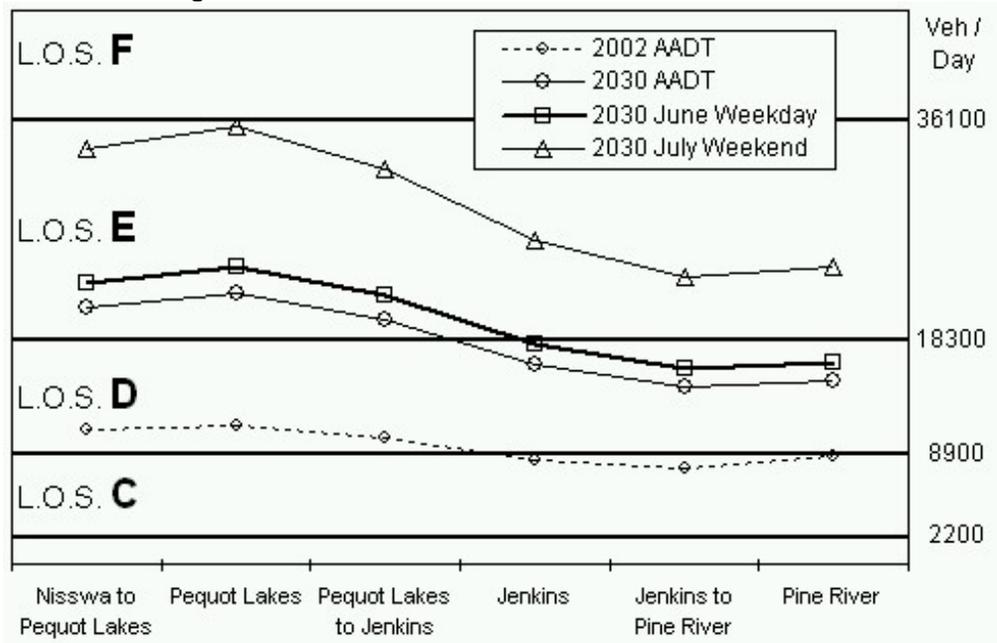
Furthermore, moderate congestion will be experienced north into Pine River. Capacity problems on Highway 371 are further complicated by poor access management conditions along the corridor.

Figure 9 depicts the levels of service (LOS) under 2002 and projected 2030 traffic volumes. LOS is a measure of delay and operating conditions defined by the Highway Capacity Manual (HCM) using a grading scale ranging from A to F. The LOS thresholds indicated on the figure are determined through HCM methodology and are based on the characteristics of this road.

LOS A and B on a two-lane highway indicate conditions when traffic demand is well below capacity and travel is rather unimpeded. At a LOS C, the average speed noticeably decreases and slower traffic and turning traffic quickly cause congestion. Through LOS D, traffic volumes approach a highway's functional capacity, stoppage and delays begin to occur, the average speed is substantially lower, and passing is unlikely to occur. At LOS E, traffic demand exceeds capacity, drivers are choosing other routes and times to travel, and any disturbance to the traffic flow, such as a turning vehicle, promptly drops this condition to a LOS F. A LOS F means traffic demand far exceeds capacity, heavy congestion is prevalent, long periods of stop and go conditions occur, and travel time is severely degraded.

As depicted in Figure 9, the project corridor from Nisswa to Jenkins is currently operating at a LOS D. The northern portions of the corridor from Jenkins to Pine River are currently operating at a LOS C. The entire corridor is expected to operate at LOS D or worse under all future conditions. Maintaining a LOS C is desired while a LOS D or better is acceptable.

Figure 9 – Levels of Service on Two-Lane Sections



## **Correct Design Deficiencies**

Highway 371 has numerous design deficiencies. These deficiencies influence the safety and quality of traffic flow on the corridor including intersection operation and safety. Design issues include, but are not limited to, the following.

- Limited passing opportunities arising from roadway geometry and compounded by high traffic volumes. There are 13 no passing zones heading northbound and 14 no passing zones heading southbound. In sum, 42 percent of the corridor is marked no passing.
- Absence of appropriate turn lanes and bypass lanes to minimize conflicts between turning traffic and through traffic.
- Poor visibility due to vertical and horizontal curves in the roadway.
- Excessive public and private access directly to Highway 371 resulting in increased conflicts between through traffic and turning/merging traffic. There are approximately 130 public and private access points on this section of Highway 371, or 8 per mile on average.
- Intersection geometry, skew, and visibility.
- Areas with narrow shoulders (e.g., downtown Pequot Lakes and Pine River).
- Excessive curvature tighter than desired design speed.
- Steep ditch slopes near lakes (Edna/Twin Lakes area) and wetlands.

In addition to hindering traffic flow, these design deficiencies directly relate to safety. Limited passing opportunity may cause driver frustration, attempts to pass when unsafe, and head-on collisions. Absence of turn lanes and bypass lanes contribute to sideswipe and rear-end collisions. Poor visibility contributes to collisions with other vehicles and with animals. Excessive access and poor intersection design creates unnecessary and unexpected conflicts between vehicles. Lastly, narrow shoulders and steep slopes contribute to irrecoverable run off the road incidents.

## **3.0 ALTERNATIVES**

The purpose of this section is to present the alternatives that were carried forward for review in this Draft EIS as defined in the Highway 371 North Improvement Project Amended Scoping Decision Document, November 2003. The alternatives, illustrated in Figure X, are evaluated in Section 4.0, Affected Environment and Environmental Consequences. The evaluation in Section 4.0 will provide the basis for selecting the preferred alternative.

### **3.1 ALTERNATIVES CARRIED FORWARD FROM THE AMENDED SCOPING DECISION DOCUMENT**

#### **Alternative 1 – No-Build Alternative**

Under the No-Build Alternative, Highway 371 improvements would be limited to normal pavement maintenance and minor transportation system management improvements, including shoulder widening, turn lanes, periodic shoulder bypass lanes, access consolidation, and minor geometric changes.

As noted in the Amended Scoping Decision Document, Alternative 1 is not a suitable solution for addressing the purpose and need objectives of the project. However, in accordance with federal and state regulations, the No-Build Alternative will be retained throughout the Draft EIS analysis process and will serve as a baseline for comparison of the build alternatives.

#### **Alternative 2 – Capacity Expansion on Existing Alignment**

This build alternative would reconstruct Highway 371 as a four-lane roadway on its existing alignment from County Road 18 in Nisswa to County Roads 2/42 in Pine River (Figure 10 and Figures A1 through A7 in Appendix A). The segments of highway between the communities would generally be rural in design with grass medians and ditches used for drainage. Typical right-of-way width in the rural areas would be 300 feet. Through the communities, the highway would be an urban design, which includes raised medians, drainage conveyed through storm sewers, and a typical minimum right-of-way width of 150 feet (Figure 11).

Efforts would be made to widen within existing Mn/DOT right-of-way to the extent practical. The existing right-of-way width varies from 80 feet to over 225 feet. It is anticipated that this alternative, if selected, may include several additional design options to reduce and avoid adverse social, economic, and natural environmental impacts.

#### **Alternative 3 – Existing Alignment with a Pequot Lakes Bypass**

This build alternative would reconstruct Highway 371 as a four-lane roadway on its existing alignment from County Road 18 in Nisswa to just north of County Road 107/168. At that location, Highway 371 would be reconstructed

on a new alignment extending along the east edge of the downtown Pequot Lakes area crossing County Road 11 approximately 0.6 miles east of the existing Highway 371/County Road 11 intersection. The bypass would continue north and cross County Road 16 approximately 0.3 miles east of the existing Highway 371/County Road 16 intersection. The bypass alignment then returns to the existing Highway 371 corridor on the south edge of downtown Jenkins and continues along the existing alignment through the Jenkins and Pine River areas (Figure 10 and Figures A8 through A14 in Appendix A).

The Pequot Lakes bypass segment of Alternative 3 from north of County Road 107/168 to north of County Road 16 would be access controlled with interchanges planned at the south end of the bypass, County Road 11, and County Road 16. Furthermore, an interchange is planned at County Road 15 in Jenkins. Limited access would be provided to serve some of the land uses along the existing highway between the County Road 16 and County Road 15 interchanges. All impacts and costs associated with the interchanges are included in the evaluation in Section 4.0, although it has not been determined whether the interchanges would be constructed with the initial expansion project or as part of a future project or projects.

The segments of highway between the communities would generally be rural in design with grass medians and ditches used for drainage. Typical right-of-way width in the rural areas would be 300 feet. Through the communities, the highway would be an urban design, which includes raised medians, drainage conveyed through storm sewer, and a typical minimum right-of-way width of 150 feet (Figure 11).

Efforts would be made to maximize use of existing Mn/DOT right-of-way to the extent practical. The existing right-of-way width varies from 80 feet to over 225 feet. It is anticipated that this alternative, if selected, would include a turnback of the existing highway through Pequot Lakes and may include several additional design options (e.g. steeper slopes, narrower median or right-of-way) to reduce and avoid adverse social, economic, and natural environmental impacts.

#### **Alternative 4 – Existing Alignment with a Pequot Lakes Bypass and Jenkins Bypass**

This build alternative would reconstruct Highway 371 as a four-lane roadway on its existing alignment from County Road 18 in Nisswa to just north of County Road 107/168. At that location, Highway 371 would be reconstructed on a new alignment extending along the east edge of the downtown Pequot Lakes area crossing County Road 11 approximately 0.6 miles east of the existing Highway 371/County Road 11 intersection. The bypass would continue northwest and cross County Road 16 immediately west of the existing Highway 371/County Road 16 intersection and extend around the west side of downtown Jenkins on a new alignment crossing County Road 15/115 approximately 0.3 miles west of the existing

Highway 371/County Road 15 intersection. The alignment then returns to the current Highway 371 corridor near the Crow Wing/Cass County line and continues along the existing alignment north through Pine River (Figure 10 and Figures A15 through A21 in Appendix A).

The bypass segments of Alternative 4 from north of County Road 107/168 in Pequot Lakes to north of County Road 15 in Jenkins would be access controlled with interchanges planned at the south end of the Pequot Lakes bypass, County Road 11, County Road 16, and County Road 15. All impacts and costs associated with the interchanges are included in the evaluation in Section 4.0, although it has not been determined whether the interchanges would be constructed with the initial expansion project or as part of a future project or projects.

The segments of highway between the communities would generally be rural in design with grass medians and ditches used for drainage. Typical right-of-way width in the rural areas would be 300 feet. Through the communities, the highway would be an urban design, which includes raised medians, drainage conveyed through storm sewer, and a typical minimum right-of-way width of 150 feet (Figure 11).

Efforts would be made to maximize use of existing Mn/DOT right-of-way to the extent practical. The existing right-of-way width varies from 80 feet to over 225 feet. It is anticipated that this alternative, if selected, would include a turnback of the existing highway through Pequot Lakes and Jenkins and may include several additional design options (e.g. steeper slopes, narrower median or right-of-way) to reduce and avoid adverse social, economic, and natural environmental impacts.

### **Alternative 5 – Existing Alignment with a Jenkins Bypass**

This build alternative would reconstruct Highway 371 as a four-lane roadway on its existing alignment from County Road 18 in Nisswa to just south of County Road 16. At that location, Highway 371 would be reconstructed on a new alignment extending along the west edge downtown Jenkins crossing County Road 15/115 approximately 0.3 miles west of the existing Highway 371/County Road 15 intersection. The alignment then returns to the current Highway 371 corridor near the Crow Wing/Cass County line and continues along the existing alignment north through Pine River (Figure 10 and Figures A15 through A21 in Appendix A).

The bypass segment of Alternative 5 from County Road 16 to north of County Road 15 in Jenkins would be access controlled with interchanges planned at County Road 16 and County Road 15. All impacts and costs associated with the interchanges are included in the evaluation in Section 4.0, although it has not been determined whether the interchanges would be constructed with the initial expansion project or as part of a future project or projects.

Figure 10 – Build Alternatives

The segments of highway between the communities would generally be rural in design with grass medians and ditches used for drainage. Typical right-of-way width in the rural areas would be 300 feet. Through the communities, the highway would be an urban design, which includes raised medians, drainage conveyed through storm sewer, and a typical minimum right-of-way width of 150 feet (Figure 11).

Efforts would be made to maximize use of existing Mn/DOT right-of-way to the extent practical. The existing right-of-way width varies from 80 feet to over 225 feet. It is anticipated that this alternative, if selected, would include a turnback of the existing highway through Jenkins and may include several additional design options (e.g. steeper slopes, narrower median or right-of-way) to reduce and avoid adverse social, economic, and natural environmental impacts.

### **Preliminary Cost Estimates**

As noted previously, construction of the Highway 371 North Improvement Project will be funded from both federal and state sources. It is anticipated that federal funds would be the primary source of funding (80 percent) with a 20 percent state match.

For advance planning purposes, Mn/DOT had previously identified a programming construction cost estimate of \$45,000,000 (2002 dollars). With the development and definition of more specific improvement alternatives, preliminary cost estimates were prepared to assist in evaluation of each of the build options described above. For the alternatives involving potential interchanges (Alternatives 3, 4, and 5), estimates were developed to reflect costs with and without interchange construction. This was done because construction of any or all the proposed interchanges might not occur until sometime after the highway is complete. However, to ensure the land area required for each interchange is reserved, the right-of-way cost for each interchange was included in all scenarios. The cost estimates are presented in Table 5 below.

**Table 5  
Preliminary Cost Estimates (\$2003)**

<b>Alternative</b>	<b>Construction Costs Without Interchanges<sup>1</sup> (\$ millions)</b>	<b>Construction Costs With Interchanges<sup>1</sup> (\$ millions)</b>	<b>Right of Way and Acquisition Costs (\$ millions)</b>	<b>Total Costs Without Interchange Construction<sup>2</sup> (\$ millions)</b>	<b>Total Costs With Interchange Construction (\$ millions)</b>
Alternative 1	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>
Alternative 2	\$55,500,000	NA <sup>4</sup>	\$9,800,000	\$65,300,000	\$65,300,000
Alternative 3	\$57,000,000	\$75,000,000	\$15,600,000	\$72,600,000	\$90,600,000
Alternative 4	\$58,000,000	\$77,000,000	\$16,200,000	\$74,200,000	\$93,200,000
Alternative 5	\$53,800,000	\$63,800,000	\$13,900,000	\$67,700,000	\$77,700,000

<sup>1</sup> Includes frontage roads, local road connections, trail relocation, and wetland mitigation estimates.

<sup>2</sup> Includes right-of-way costs associated with interchanges, but not the costs of building interchanges.

<sup>3</sup> There are no construction costs for the No-Build Alternative because no specific improvements have been identified.

<sup>4</sup> There are no interchanges with Alternative 2.

Figure 11 – Typical Sections

## **4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES, SOCIAL, ECONOMIC, AND ENVIRONMENTAL IMPACTS**

### **4.1 SOCIAL AND COMMUNITY IMPACTS**

#### **Right-of-Way and Relocation**

##### **Affected Environment**

The right-of-way evaluation was based on potential right-of-way needs for each alternative. To the extent possible, the alternatives utilize existing state and local government-owned right-of-way. The following guidelines were used in determining the right-of-way acquisition needs for the alternatives.

- Right-of-way acquisition was calculated by taking the total amount of land within the preliminary right-of-way corridor that falls outside any existing right-of-way.
- A 300-foot corridor is desirable in rural sections and a 150-foot corridor is desirable in urban sections.
- All locations where no existing right-of-way exists (bypasses) were designed using a 300-foot right-of-way corridor.
- Existing Highway 371 right-of-way ranges from approximately 80 feet in downtown Pine River to 225 feet in rural areas north of Nisswa.
- An 80-foot right-of-way corridor is desirable for frontage roads, but may be less in constrained areas.
- An existing 66-foot right-of-way was assumed and applied to all segments of an alternative that utilizes an existing roadway.

##### **Environmental Consequences**

###### Alternative 1 – No-Build

There would be no right-of-way acquisition required under the No-Build Alternative. However, future road improvements to the surrounding county roads and local streets may require additional right-of-way and access closures for improvements that become necessary to accommodate increased traffic demands that spill over from Highway 371 under this alternative.

###### Alternatives 2, 3, 4, and 5

Alternatives 2, 3, 4, and 5 will require additional right-of-way to accommodate the proposed improvements. The amount of right-of-way needs and the acquisition of access points vary considerably. An estimated range of right-of-way for each of the build alternatives is presented in

Table 6. The acquisition of access control for the preferred alternative will be discussed in the Final EIS.

**Table 6  
Potential Right-of-Way Acquisition**

<b>Alternative</b>	<b>Additional Right-of-Way Needed (acres)<sup>1</sup></b>
Alternative 1 – No-Build	0
Alternative 2 - Existing Alignment	166
Alternative 3 - Existing Alignment with Pequot Lakes Bypass	405
Alternative 4 - Existing Alignment with Pequot Lakes and Jenkins Bypass	416
Alternative 5 – Existing Alignment with Jenkins Bypass	280

<sup>1</sup> Right-of-way impacts are based on a preliminary right-of-way corridor and would likely change for the preferred alternative as additional details of the preliminary design are determined.

### **Relocation**

Highway construction quite often requires the relocation of residential, commercial, and farm properties. The acquisition of property is one of the most obvious impacts associated with highway construction. The number of properties impacted and, consequently, the total acquisition and relocation costs, varies with each alternative. The purpose of this section is to describe the potential relocation of residential structures (including seasonal homes/cabins and farmsteads), and commercial businesses associated with each build alternative. The types of businesses located within the project area range from convenience-oriented (gas stations and restaurants) to destination-oriented (specialty shops). The identification of potential relocations was achieved by means of aerial photographs and field verification. Again, a preliminary right-of-way corridor was used to determine potential relocations. Residential and commercial structures that fell within the preliminary right-of-way corridor were identified as potential acquisition or relocation sites. The results of the assessment are presented in Table 7.

As presented in the assessment, there are a number of potential relocations associated with Alternatives 2, 3, 4, and 5. The assessment presents a worst case scenario and, to the extent practical, attempts will be made to limit relocation impacts through design measures, such as minor alignment shifts that could be incorporated into the design of the preferred alternative.

Business displacement under the build alternatives ranges from four to nine commercial properties. These properties include a nursery, used car sales, real estate sales, commercial storage, and light manufacturing facilities. A transmission tower and a Mn/DOT maintenance facility are also impacted. The services provided by these properties are currently provided by other establishments within the study area. The total number of employees at these businesses is estimated to be relatively small (less than 30). The retail operations noted are presently on sites that offer good highway access and visibility. A comparison of the characteristics of the sites to be acquired and the various existing commercial zoning districts indicate that there is a good chance of finding suitable replacement sites for these businesses. It is

expected that some or all of these businesses will be able to find new locations within the TH 371 corridor. However, the distance from the highway, type of access, and visibility may be somewhat different from existing conditions.

**Table 7  
Total Relocations (Residential and Commercial/Business)**

Alternative	Number of Relocations		
	Residential	Commercial /Business	Total
Alternative 1 – No-Build	0	0	0
Alternative 2 – Existing Alignment	5	5	10
Alternative 3 – Existing Alignment w/ Pequot Lakes Bypass	7	9	16
Alternative 4 – Existing Alignment w/ Pequot Lakes and Jenkins Bypass	14	5	19
Alternative 5 – Existing Alignment w/ Jenkins Bypass	14	4	18

Note: This table reflects the sum of potential relocations based on building sites that have structures that fall within the preliminary right-of-way corridor. Further avoidance measures could be considered during the final design phase of the preferred alternative that would further reduce the number of relocations.

### **Mitigation**

Following the selection of a preferred alternative the preliminary design phase will focus efforts to minimize relocation impacts to the greatest extent possible.

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and 49 CFR Part 24 provide that assistance be granted to persons, businesses, farms, and non-profit organizations that may be displaced by public improvements, such as this highway project.

Mn/DOT will provide relocation assistance for persons displaced by the project without discrimination. Advisors are available to explain relocation details, policies, and procedures with potentially displaced individuals. The advisors will work with a displacee in locating comparable replacement property and will work directly with property occupants to assist with their specific relocation plans.

Residential displaces are entitled to advisory services and the reimbursement of some of the costs associated with relocation. These may include moving expenses, replacement housing costs, increased rental or mortgage payments, closing costs, and other valid relocation costs. The replacement dwelling to which a displacee relocates must be “decent, safe, and sanitary”, meaning it must meet all the minimum requirements established by federal regulations and conform to all housing and occupancy codes.

If necessary, Last Resort Housing provisions will be implemented to ensure that comparable replacement housing is available to each displacee. These provisions may include increased replacement housing payments or other alternate methods based on reasonable costs.

Relocation assistance will also be made available to businesses, farms, and non-profit organizations. In addition to advisory services, payment may be made for certain expenses pertaining to:

- Moving Costs
- Loss of tangible personal property as a result of relocation or discontinuance of a business
- Reestablishment expenses
- Costs incurred in searching for a replacement site
- Fixed payment in lieu of moving and reestablishment costs

## **Economic Environment**

### **Affected Environment**

The economies of Nisswa, Pequot Lakes, Jenkins, Pine River, Crow Wing County, and Cass County have grown steadily over the past decade, led primarily by the tourism industry. Business establishments are located along the highway throughout the project corridor, with larger concentrations in the downtown districts of the three communities. Businesses in the project corridor include, but are not limited to, restaurants, convenience stores/gas stations, specialty/gift shops, lodging establishments, light industrial/manufacturing businesses, and many other service-oriented and professional businesses.

Table 8 summarizes employment by broad category for the jurisdictions in the project corridor for 2000. Services account for the largest portion of employees in the area, with trade, manufacturing, and construction comprising the majority of remaining employees in the area.

**Table 8  
Employment By Industry Sector in 2000**

Industry Sector	Number of Employees					
	Crow Wing County	Cass County	Nisswa	Pequot Lakes*	Jenkins	Pine River
Agriculture, Forestry, Fishing/hunting, and Mining	290	488	9	0	1	7
Construction	2,133	1,135	95	65	19	24
Manufacturing	3,406	1,120	84	100	22	28
Transportation, Warehousing, and Utilities	941	463	36	14	2	7
Wholesale & Retail Trade	4,388	1,908	206	146	21	68
Finance, Insurance, and Real Estate	1,390	611	71	33	8	25
Services	12,056	5,234	448	415	79	157
Public Administration	1,108	699	21	21	2	6
Totals	25,712	11,658	970	794	154	322

Source: 2000 U.S. Census Bureau

\* Includes 2000 Census Data for Sibley Township

## **Economic Consequences**

Economic impacts (beneficial and adverse) through property acquisition are an inevitable result of highway construction. These impacts involve different sources, including the tax revenue loss to the communities, school districts, and counties from effects on land values. Other economic effects are associated with project construction, which may include losses in revenue due to temporary changes in access to commercial establishments and/or detours.

Major highway improvements create impacts on the economy at both the regional and local level. At the regional level, the impacts relate to the relative accessibility of the area within the region, state, and nation and the ease of transporting both goods and persons to and from within these areas. At the local level, highway improvements can impact the viability of individual businesses through location changes, right-of-way acquisitions, or modification in access. This in turn impacts employment opportunities at each of the affected areas.

### Regional Economic Impacts

Highway 371 serves as an important element of the transportation infrastructure system at both the regional and local level. Regionally, the highway functions as a medium priority interregional corridor providing a vital link between the regional trade centers of St. Cloud, Brainerd/Baxter, and Bemidji. Highway 371 provides not only a means of transporting goods to market, but has increasingly become a main commuter route between Brainerd/Baxter and the communities to the north (Nisswa, Pequot Lakes, Jenkins, and Pine River). Furthermore, the highway is an important route for seasonal recreational users who travel to cabins or resorts in the central Minnesota lakes area from the Twin Cities metropolitan area.

#### *Alternative 1 – No-Build Alternative*

The No-Build Alternative is not expected to pose any short-term negative impacts on the regional economy. However, adverse long-term economic impacts could result without the expanded roadway capacity. The LOS on the highway, as well as the local streets will continue to deteriorate under the No-Build Alternative due to increased daily traffic volumes, which will result in increasingly unpredictable travel times between and within regional and local trade centers.

#### *Alternatives 2, 3, 4, and 5*

Reconstructing the existing alignment, including the potential community bypasses in Pequot Lakes and Jenkins, is not expected to pose any adverse economic impacts on the regional economy. A four-lane divided highway will improve the capacity of the roadway and accessibility of the area on a regional and statewide basis in terms of decreased travel times and improved safety, which would contribute toward maintaining a positive economic climate for regional growth. Alternatives 3, 4, and 5 would slightly improve

connectivity and mobility between and through the communities because of improved travel times associated with the bypass alignments.

### Local Economic Impacts

Economic impacts on a local community resulting from a highway improvement project occur primarily from highway realignment, highway construction, right-of-way acquisition, and relocations.

#### *Alternative 1 – No-Build Alternative*

Adverse impacts under the No-Build Alternative would result due to increased congestion during peak travel periods, which may discourage pass-through traffic from stopping at convenience-oriented or tourist related businesses located along the corridor. Peak travel periods will continue to be extended, and periods of congestion will become more frequent and severe, potentially causing patrons to find other locations to obtain their goods and services, which will make it increasingly difficult to operate these types of businesses. Positively, the No-Build Alternative would maintain the existing road alignment and would provide for the retention of all existing businesses along the highway in their present locations. Also, no current employees would be displaced because no business relocations would be necessary.

It is not possible to quantify the level to which the No-Build Alternative would affect long-term development potential. However, it is expected that the No-Build Alternative would have an adverse effect on the local economy over time as traffic movement is impaired on the highway that is an important link between regional trade centers, for movements within the central Minnesota lakes area, and for access to existing nearby businesses. Commercial, industrial, and residential growth will continue to occur in the project area, but some potential development may locate to another portion of the region or state if access and mobility were more favorable.

The current property tax base would not be directly affected under the No-Build Alternative because no additional right-of-way would be required. However, the property tax base may not increase as rapidly under the No-Build Alternative to the extent that the local economy is impaired by the increasing congestion and safety issues.

#### *Alternative 2*

Alternative 2 has the potential to result in beneficial and adverse economic impacts to the existing businesses and communities in the project area. Adverse economic impacts associated with Alternative 2 may be the potential loss of property taxes through right-of-way acquisitions and relocations. Property tax loss may be offset through increased land value after the roadway improvement is made and through the reestablishment of acquired residences and businesses after relocation. Overall, the improvements in regional accessibility and safety should contribute toward maintaining a positive economic climate for growth within the communities in the project area. Long-term positive economic effects of this alternative may include new

opportunities for local businesses, industry, and tourism, and associated increases in jobs, sales, and consumer savings related to savings in transportation costs. Furthermore, this alternative would remove several of the existing constraints (i.e., congestion and safety issues) on the highway that are viewed as a hindrance to businesses. The business economy may experience adverse impacts associated with restrictions in access between Highway 371 and the local streets.

In the Nisswa area, the Highway 371 improvements under Alternative 2 do not appear to have any direct impacts on existing businesses. However, the relocation of the Crow Wing County Road 18/Highway 371 intersection would alter access to the central business district in downtown Nisswa.

In Pequot Lakes, Jenkins, and Pine River, Alternative 2 may require the acquisition of several commercial enterprises. There are potential relocation sites available and in some cases on the same property that the existing business is located. Alternatively, business relocations could occur on other commercially zoned vacant property located along the highway corridor.

The most common impact on existing businesses will likely be access modifications. Changes in access will include closing and consolidating access points to reduce the total number of access points to the highway. Furthermore, several business access points will be limited to right-in/right-out access. This may create minor adverse impacts as some patrons may find it more difficult to access a particular business establishment.

Several of the businesses located along the existing alignment are highway commercial businesses (not destination-oriented) and rely heavily on the ability to capture revenue from drive-by traffic. Alternative 2 holds the greatest potential for benefits to existing highway commercial businesses.

#### *Alternatives 3, 4, and 5*

The community bypass elements of Alternatives 3, 4, and 5 (Pequot Lakes and Jenkins) would remove a large portion of the through traffic from the downtown areas of these communities. The economic impacts of Alternatives 3, 4, and 5 are dependent on several factors including, but not limited to, the following.

- Location of business
- Type of business (i.e., traffic-serving vs. destination-oriented)
- Future community land use decisions
- The community and individual business action to proactively address changes

Past experiences across the country have shown that political and business leadership in a community plays an essential role in the evolution of a community before, during, and after a bypass is constructed.

A variety of bypass studies have been conducted throughout the country that assessed the potential impacts on local economies. These studies included highway bypasses of communities in Wisconsin, Kansas, Texas, North Carolina, and Washington State. The populations of the studied communities ranged from a few hundred to several thousand people. These studies typically looked at highway commercial businesses that are commonly thought to be highly dependent upon impulse purchases from pass-by vehicles. The studies measured economic impacts (both beneficial and adverse) in terms of employment and total sales.

A bypass study titled Economic Impact Analysis: St. Croix River Crossing – Minnesota TH 36/Wisconsin STH 64, prepared by the Mn/DOT, the Wisconsin Department of Transportation, and the Economic Development Research Group, July 1999, provides a summary of several community bypass studies. The study concludes the following.

“The wide range of highway bypass studies carried out around the country provides a generally consistent story. They indicate that highway bypasses are seldom either devastating or the savior of a community business district. The locational shift in traffic can cause some existing individual businesses to experience adverse economic effects or to relocate, but net economic impacts on the broader community are usually relatively small (beneficial or adverse). Communities and business districts that have a strong identity as a destination for visitors or for local shoppers are the ones most likely to be strengthened due to the reduction in traffic delays through their centers. However, there is also a broad perception that adequate signage to the bypassed business center is an important need for ensuring its continued success.”

The majority of the studies identify highway commercial businesses as having the greatest potential for adverse impacts. A downtown bypass of Pequot Lakes and/or Jenkins may result in a reduction in sales for existing highway commercial businesses due to reduced visibility and loss of vehicles passing through the communities. These businesses have a greater potential of experiencing adverse effects from a bypass as compared to a destination-oriented business (e.g., specialty shops, hardware store, and professional services).

Similar to improving Highway 371 through Pequot Lakes and Jenkins, additional adverse economic impacts associated with the bypasses include the potential loss of property taxes. Alternatives 3, 4, and 5 would remove property, residences, farm operations, and businesses from the local tax rolls as a result of right-of-way acquisition. Property tax loss, however, is typically offset through increased land value after the roadway improvement is made and through the relocation of acquired residences and businesses.

Long-term positive economic effects may include opportunities for implementation of planned development, the accessibility of new land for business opportunities on the bypasses, improved traffic flow, reduction of

truck traffic, and less congestion in the downtown areas, which will provide for a more accessible and pedestrian-friendly environment.

### **Mitigation**

No mitigation is proposed.

### **Traffic Assessment**

The corridor operational analysis was based on the Highway Capacity Manual (2000) and facilitated by microscopic traffic simulation. Synchro/SimTraffic is a common traffic analysis and simulation software package, and it allows rapid evaluation of many alternatives.

In addition to broad corridor performance assessments, additional attention was given to traffic operations and alternatives within the communities of Pequot Lakes, Jenkins, and Pine River. A detailed evaluation is also necessary for the purposes of the benefit-cost analysis and evaluation of community bypasses.

Each of the five alternatives has a unique set of turning movement volumes. The first is for a no-build situation; the second is for a build-in-town situation and includes traffic rerouting due to access consolidation within Pequot Lakes, Jenkins, and Pine River; the third set of turning movement volumes is for a Pequot Lakes bypass alternative; and the last set includes a west bypass of Jenkins.

Peak hour turning movement counts were collected at several intersections for each community, balanced, and forecast to 2030 levels. The design and evaluation condition is a June weekday peak hour. These volumes are approximately 10 percent greater than the annual average daily volumes. In addition, a July weekend peak hour was evaluated to assess each alternative's capacity to carry typical recreational peak traffic. July weekend volumes are approximately 60 percent greater than the annual average. Refer to the Purpose and Need discussion (Section 2.0) for a summary of traffic volumes and forecasts.

### **Summary of Existing Traffic Conditions**

#### Pequot Lakes

Traffic volumes in the Pequot Lakes area are anticipated to grow by about 94 percent between 2002 and 2030. This area currently experiences heavy congestion during peak times of the year, particularly along Highway 371 and County Road 11.

In 2002, traffic operations on a typical June weekday peak hour remained adequate. Intersections generally operated at an acceptable LOS. Side street approaches at two-way stop-controlled intersections were well below capacity.

## Jenkins

Traffic volumes on Highway 371 through Jenkins are anticipated to grow by about 92 percent between 2002 and 2030. However, traffic operational issues are not as severe as they are in Pequot Lakes. The population of Jenkins is less than one-third the population of Pequot Lakes, and there are no side roads with volumes as high as County Road 11 in Pequot Lakes.

The peak hour entering volume at the County Road 16 intersection is nearly 1,000 vehicles per hour, with heavy turning movements between the south and east. However, this volume is smaller than volumes in Pequot Lakes and only two-thirds the volume of the Highway 371 and County Road 11 intersection.

On a typical June 2002 weekday, peak hour levels of service on all side road approaches in Jenkins were adequate. The north and south through movements on Highway 371 experience negligible intersection delay.

## Pine River

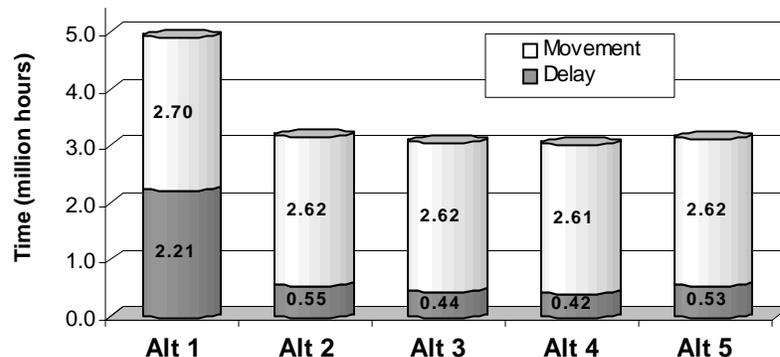
Traffic volumes through Pine River are anticipated to grow by about 70 percent between 2002 and 2030. As with Jenkins, traffic operational issues are not as severe as they are in Pequot Lakes because of lower volumes.

The intersections with Highway 84 and County Roads 2/42 are the two busiest. On a typical June 2002 weekday, operations on all side road approaches were adequate, including the eastbound approach from County Road 2 and the signalized intersection with Highway 84.

## **Summary of Forecast (Year 2030) Traffic Conditions**

The figure below summarizes the total network travel time estimate for 2030, divided into movement time and delay time. The total travel time for Alternative 2 is reduced by about 35 percent compared to the No-Build Alternative. The delay component of the travel time shows a 75 percent to 80 percent decrease for any of the three build alternatives.

Figure 12 – Estimated Year 2030 Total Travel Time



### Alternative 1

By 2030, daily traffic volumes are well beyond the typical two-lane highway threshold of 12,000 vehicles per day.

In Pequot Lakes, traffic volumes in the 2030 No-Build alternative are well over the capacity of the road.

Side road traffic volumes through Jenkins are near or above capacity. The County Road 16 westbound approach is well over capacity.

Through the remainder of the corridor and Pine River, several side road traffic volumes in the No-Build Alternative are near or above capacity. County Roads 1, 2, and 42 approaches in Pine River will operate very poorly.

### Alternative 2

This alternative includes several access consolidation measures through the communities. An adequate LOS is achieved for the north and south through movements along Highway 371.

In Pequot Lakes, County Road 11 and other side street approaches will be well over capacity, and several improvements will be needed to achieve acceptable operations. The improvements to County Road 11 in Pequot Lakes include expanding to a three-lane cross-section, adding a traffic signal at the intersection with County Road 112, providing exclusive right and left turn lanes at key intersections, including Government Drive and County Road 112, and restricting access where feasible. These improvements are not assessed in this Draft EIS and would be the responsibility of others to implement.

All intersections through Jenkins operate adequately assuming a traffic signal at the County Road 16 intersection.

In Pine River, all intersections would operate adequately assuming traffic signals are included at Highway 84 and at the County Road 2/42 intersection.

### Alternative 3

The Pequot Lakes bypass transfers roughly two-thirds of the traffic from the existing alignment to the bypass alignment. Because of the reduction of traffic along the original Highway 371 alignment in Pequot Lakes, the operations at those intersections are adequate, and all movements are well within capacity.

The total traffic volume entering the intersection of existing Highway 371 and County Road 11 in the year 2030 is forecast to be about 5 percent greater than 2002 levels. Therefore, by 2030, with a Pequot Lakes bypass, traffic volumes along the current Highway 371 alignment in Pequot Lakes will be roughly equal to the existing condition.

County Road 11 traffic between existing Highway 371 and the proposed bypass is reduced by about 17 percent compared to volumes under Alternative 2. This reduction is sufficient to achieve adequate operations with

only the addition of a signal at County Road 112 and short turn lanes at key intersections. Operations throughout the remainder of the corridor are the same as in Alternative 2.

Alternative 4

As discussed under Alternative 3, the Pequot Bypass transfers approximately two-thirds of the traffic to the bypass alignment. Intersection operations in Pequot Lakes will be the same as discussed under Alternative 3.

The Jenkins Bypass assumes interchanges at County Road 16 and at County Roads 15/115. Approximately three-quarters of the traffic volume is transferred to the bypass. All intersections and approaches in Jenkins will operate adequately. Operations throughout the remainder of the corridor are the same as in Alternative 2.

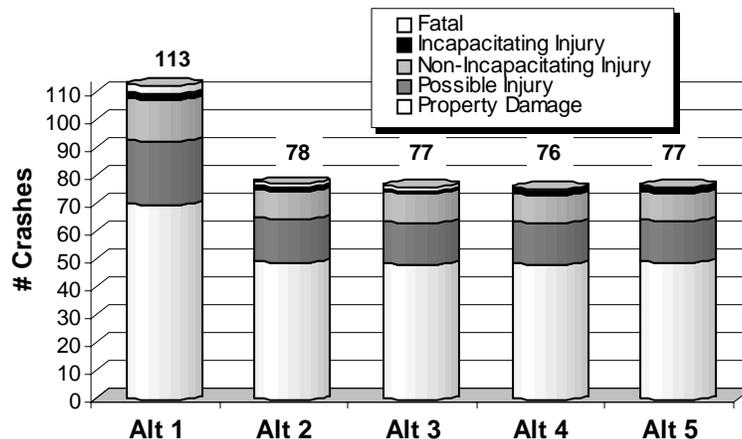
Alternative 5

As discussed under Alternative 4, the Jenkins Bypass transfers approximately three-quarters of the traffic to the bypass. All intersections and approaches in Jenkins will operate adequately and operations throughout the remainder of the corridor are the same as in Alternative 2.

**Safety and Crashes**

As discussed in the Purpose and Need section, a chief objective of the proposed project is to improve the safety of the Highway 371 corridor. A new roadway can improve safety by reducing both crash frequency and crash severity. Based on historical trends, in the No-Build Alternative, over 100 crashes are anticipated in the year 2030, approximately 5 percent of which may be fatal or incapacitating injury crashes. The division between the five crash types is depicted in the figure below.

Figure 13 – Estimated Year 2030 Crashes by Type



Through and analysis of past crashes, it has been determined that any of the build alternatives should reduce the frequency of crashes by about 32 percent. The differences between the five build alternatives are not

substantial. While the freeway bypasses do have lower crash rates, the traffic remaining on the existing alignment counteracts most of the gain.

In addition to improving the overall crash frequency, the build alternatives reduce the severity of those crashes. The four-lane divided road improvements are estimated to reduce fatal and incapacitating injury crashes by 50 to 60 percent.

## **Benefit-Cost Analysis**

A benefit-cost analysis was conducted as part of the Draft EIS to quantify the relative benefits and costs of the build alternatives. In this analysis, quantified benefits greater than or equal to the quantified costs (benefit-cost ratio greater than one) represent an economically valuable alternative/option. The monetary benefit for the alternative/options was quantified in terms of reduced vehicle miles traveled (VMT), vehicle hours traveled (VHT), crashes, and operational and maintenance costs. The costs include construction, right-of-way acquisition, building acquisitions, and bridges. Remaining capital values were subtracted from these costs. The costs in Table 9 are based on cost assumptions described below and were time-valued for the benefit-cost analysis.

### **General Assumptions for the Benefit-Cost Analysis**

- A 20-year benefit period was identified based on a 2010 construction year and a 2030 design year.
- VMT, VHT, and crash reduction results are comprehensive and include both the Highway 371 corridor and intersecting roads affected by the build alternatives.
- Historical crash data was used to determine crash reductions.
- Anticipated crashes were determined by coupling the expected traffic volume on each road segment with a crash rate. The historical crash rate was used in the case of an unimproved road. Where highway improvements are made under the alternatives, Mn/DOT average crash rates based on facility type and traffic volumes were used. Thus, crashes are reduced on a given road segment by reducing the volume and/or improving the facility.
- For consistency with projected traffic growth, linear interpolation was used between 2010 and 2030 to calculate yearly VHT, VMT, and crashes.
- Assumed pavement grading and drainage costs accounted for 45 percent of the total project cost minus engineering and structures.
- Assumed pavement sub-base and base costs accounted for 20 percent of the total project cost minus engineering and structures.
- Assumed pavement surface costs accounted for 35 percent of the total project cost minus engineering and structures.

**Table 9  
Cost Assumptions**

Item	Estimated Cost
Construction:	
Rural four-lane cost/mile	\$1,800,000
Urban four-lane cost/mile	\$2,500,000
Routine Maintenance cost/lane/mile/year	\$2,860
New Road Preventive Maintenance	
Route and seal cost/lane/mile/year 3	\$3,000
Mill and overlay cost/lane/mile/year 12	\$60,000
Bridge Structure cost per sq./ft.	\$85-100
Building Acquisition:	
Residential homes	\$200,000-500,000
Commercial businesses	\$500,000
Right-of-Way:	
Property/acre	\$10,000-120,000

**Cost Estimating Assumptions**

The unit cost assumptions in Table 10 were used to estimate the costs for the build alternatives. These values were obtained from the Mn/DOT District 3 Office in Baxter. Right-of-way and relocation costs were based on a preliminary construction limit and proposed right-of-way line. Right-of-way acquisition was computed as the existing right-of-way subtracted from the needed right-of-way.

The results of the analysis show that Alternatives 2, 3, and 4 are all economically valuable from a benefit-cost standpoint (Table 10).

**Table 10  
Benefit-Cost Ratio for the Highway 371 Alignment Alternatives**

	Alternative 2	Alternative 3	Alternative 4	Alternative 5
VMT & VHT Benefit	\$110,890,000	\$111,460,000	\$109,260,000	\$108,740,000
Crashes Benefit	\$52,300,000	\$51,030,000	\$50,800,000	\$52,100,000
O&M Benefit	(\$4,050,000)	(\$4,850,000)	(\$5,090,000)	(\$2,130,000)
<b>Total Benefit</b>	\$159,150,000	\$157,640,000	\$154,980,000	\$158,680,000
Total Costs (Present Value)	\$56,180,000	\$75,290,000	\$85,320,000	\$67,930,000
Remaining Capital Value	\$13,000,000	\$17,370,000	\$20,240,000	\$15,910,000
<b>Total Cost – RCV</b>	\$43,180,000	\$57,920,000	\$65,080,000	\$52,030,000
<b>Benefit-Cost Ratio</b>	<b>3.7</b>	<b>2.5</b>	<b>2.4</b>	<b>3.0</b>

Notes: Year 2003 dollars; Discount Rate=4.5% with no inflation.

## Social and Community Environment

### Affected Environment

#### Population

The project study area population varies depending on if it is a rural area (north of Jenkins) or an urban area (downtown Pequot Lakes or Pine River). Between 1990 and 2000, Cass County and Crow Wing County and the Cities of Nisswa, Pequot Lakes, Jenkins, and Pine River all experienced increases in growth (see Table 11). The largest gain was in the City of Nisswa with a population increase of 28.8 percent. The City of Pequot Lakes (including Sibley Township that has now been incorporated into the City) experienced a double-digit percentage increase (14.5%). Furthermore, Cass County's and Crow Wing County's population increased by 24.6 percent and 24.5 percent, respectively from 1990 to 2000. While these population changes result in large percentage increases, the total population change for the communities within the project area between 1990 and 2000 was an increase of approximately 1,000 people.

The reasons for the population growth are varied, but trends indicate that a number of people are establishing permanent residences in the lakes region of Central Minnesota. A large percentage of the housing units in the lakes region are seasonal residences, and in the past, have not been occupied year-round. The proximity to numerous natural recreation features and abundance of lakes, coupled with numerous people reaching retirement age, have all contributed to the trend of settling year-round in what has traditionally been seasonal housing areas.

**Table 11**  
**1990 and 2000 Population and Percent Change**

<b>Jurisdiction</b>	<b>1990 Population</b>	<b>2000 Population</b>	<b>% Change 1990-2000</b>
City of Nisswa	1,391	1,953	28.8
City of Pequot Lakes*	843	947	11.0
Sibley Township*	697	855	18.5
City of Jenkins	262	287	8.7
City of Pine River	871	928	6.1
Wilson Township	426	551	22.7
Crow Wing County	44,249	55,099	24.5
Cass County	21,791	27,150	24.6

Source: 1990 and 2000 United States Census Bureau.

\*Note: In 2002, Sibley Township was incorporated into the City of Pequot Lakes.

There are several community resources that exist in close proximity to the existing highway corridor. Generally speaking, community resources include churches, schools, cemeteries, libraries, etc. Consultation with city officials from the Cities of Nisswa, Pequot Lakes, Jenkins, and Pine River have resulted in the identification of the following community resources that may

be impacted through right-of-way acquisition for the highway improvements associated with the alternatives under consideration (see Figure 14).

- Lake Area Food Shelf – located north of the Crow Wing County Road 107/168 and Highway 371 intersection in Pequot Lakes
- Grace United Methodist Church – located south of downtown Pequot Lakes
- Pequot Lakes Baptist Church – located at the intersection of old Highway 371 and Derkson Road
- Gloria Dei Lutheran Church – located on the west side of Highway 371 between Pillsbury Street and West Lake Road in Pequot Lakes
- Pequot Lakes City-Owned Building (Old Sibley Township Town Hall) – located northeast of downtown Pequot Lakes on County Road 112
- Jenkins Congregation of Jehovah's Witnesses Church – located west of Highway 371 near the intersection of Crow Wing County Road 15 in Jenkins
- Pine River Chamber of Commerce and Information Center – located adjacent to the Paul Bunyan Trail in downtown Pine River
- Cass County Fairgrounds – located east of Highway 371 near the intersection of Cass County Road 42 in Pine River.

The schools that serve the residents of the project study area are located in Nisswa, Pequot Lakes, and Pine River.

There are several cemeteries in the project study area, but none of them appear to be impacted by the build alternatives.

In addition to the above referenced community resources, MNDNR public boat landings located on Edna Lake and East Twin Lake represent important community assets given the importance of water-based recreation in the study area.

Park resources are addressed in the Parks and Recreation section of this Draft EIS.

## **Environmental Consequences**

### Alternative 1 – No-Build Alternative

Under Alternative 1, none of the existing community resources would be directly affected. This alternative would remain on the existing alignment and, therefore, would not create any direct effects. Indirect effects to these resources could include decreased access and extended travel time between homes and community resources due to higher levels of congestion on the highway. Also, pedestrian mobility throughout the community would continue to experience conflicts with having to cross Highway 371.

Figure 14 – Community Resources

### Alternative 2 – Existing Alignment

Improving the existing highway alignment will have a direct effect on the community cohesion for the communities located along the corridor (Nisswa, Pequot Lakes, Jenkins, and Pine River) since the highway corridor bisects some of the developed portions of these communities. The expansion of the existing alignment will require the acquisition of property and alter access to community resources. The potentially affected resources include, Lake Area Food Shelf, Grace United Methodist Church, Pequot Lake Baptist Church, Gloria Dei Lutheran Church, Jenkins City Park, Jenkins Congregation of Jehovah's Witness, and the Cass County Fairgrounds. The preliminary construction limits indicate the impacts to these resources would be limited to partial acquisition of the properties for right-of-way needs, but that access to several of these community resources would be altered. Since the right-of-way impacts are based on the preliminary design, the exact amount of land required from each community resource was not calculated.

Alternative 2 passes through the downtown areas in the Cities of Pequot Lakes, Jenkins, and Pine River. Currently, the highway is a three-lane section through Pequot Lakes and a two-lane section through Jenkins and Pine River. An urban four-lane divided highway design within the cities could provide beneficial and adverse effects. The urban four-lane divided highway design would create a refuge between the northbound and southbound travel lanes, allowing pedestrians the opportunity to cross one direction of travel at a time to access destinations on the other side of the highway. Furthermore, an improved urban four-lane divided highway would reduce the number of direct access points to the highway. An access-controlled highway would also reduce the amount of conflict points and improve safety by reducing crashes. However, restricted access to the highway may affect the circulation of local trips within the community and may create longer local trips. While access to community resources may be altered, it will still be provided following the completion of the project. This will result in increased traffic on local roadways and may require local projects to expand capacity on the local system.

### Alternative 3 – Existing Alignment with Pequot Lakes Bypass

Alternative 3 would minimize the community cohesion impacts in downtown Pequot Lakes. Pedestrian mobility and local circulation would be improved by moving the peak traffic volumes out of the downtown district. Furthermore, a Pequot Lakes bypass would avoid right-of-way impacts to the following community resources, Pequot Lakes Baptist Church, Gloria Dei Lutheran Church, and Bobberland Park.

As a result of the bypass, the realigned highway would likely impact the Pequot Lakes city-owned building (Old Sibley Township Town Hall) and the Jenkins Jehovah Witness Church property. This impact would potentially require the acquisition and relocation of the city-owned building, and the preliminary construction limits indicate the impact to the Jehovah Witness Church property would be limited to right-of-way acquisition with no direct

effect to the church building or parking area. The potential effects to the remaining portions of the corridor would remain the same as described for Alternative 2.

#### Alternative 4 – Existing Alignment with Pequot Lakes and Jenkins Bypasses

Alternative 4 would minimize the community cohesion impacts in downtown Pequot Lakes and Jenkins. Pedestrian mobility and local circulation would be improved by moving the highway out of the downtown districts. Furthermore, the Pequot Lakes and Jenkins bypasses would avoid potential right-of-way impacts to the same resources discussed under Alternative 3.

As a result of the bypasses, the realigned highway would potentially impact the same community resources list under Alternative 3.

#### Alternative 5 – Existing Alignment with Jenkins Bypass

Alternative 5 would minimize the community cohesion impacts in downtown Jenkins. Pedestrian mobility and local circulation would be improved by moving the highway out of the downtown district.

As a result of the bypass, the realigned highway would likely impact the Jehovah Witness Church property. However, the impact would be limited to right-of-way acquisition for a new CR 115 connection. No direct effects to the church building or parking areas are anticipated. The potential effects to the remaining portions of the corridor would remain the same as described for Alternative 2.

### **Mitigation**

Mitigation measures for acquisition and relocations are described under the Right-of-Way and Relocation section of this Draft EIS. Landscaping will be considered for the preferred alternative to mitigate potential adverse visual effects. This would require some type of cooperative agreement between Mn/DOT and the local unit of government. The financial responsibility of Mn/DOT and the local government for landscaping and other visual enhancements would need to be determined in the final design phase.

### **Land Use**

#### **Affected Environment**

The project study area falls in parts of two counties in central Minnesota – Cass County and Crow Wing County. This region of the state is renowned for its lake-based recreational activities. The abundance of recreational activities has led to both seasonal and year-round oriented developments including housing and commercial interests.

The Highway 371 corridor's landscape is diverse, ranging from moderate-sized cities to small towns, rural residential development, forested areas, and farmsteads. Cass and Crow Wing Counties have experienced unprecedented growth during the past 10 to 20 years. This growth includes new year-round

residents around the area lakes, increased job opportunities, and the expanding tourism industry. This trend mirrors a statewide trend spurred by a growing state population, increasing number of retirees, convenient access via the highway system, and the proximity to the Twin Cities metropolitan area (St. Paul and Minneapolis).

There are four incorporated municipalities in the project study area. At the south end of the study area is the City of Nisswa (2000 population of 1,953). Nisswa provides several important services including a commercial business district, elementary school, and municipal services.

Immediately north of Nisswa is the City of Pequot Lakes, which has recently incorporated all of Sibley Township. The combined 2000 population of Pequot Lakes and Sibley Township is 1,802. The City of Pequot Lakes is a secondary service center with a mix of commercial and industrial development. Higher density residential development exists within close proximity of the downtown district, while low-density residential development remains throughout the rural areas of Pequot Lakes. A public school complex is located west of Highway 371 and services elementary school age students, as well as high school students. A new school site is being proposed east of downtown between Pequot Lakes and Breezy Point on County Road 11.

The City of Jenkins is located north of Pequot Lakes. The southern city limits begin near the Crow Wing County Road 16 intersection and extend north to the Crow Wing/Cass County line. Jenkins is largely rural in nature and provides limited commercial services, such as convenience stores and a few other retail stores. Jenkins had a 2000 population of 287 people.

At the north end of the project corridor is the City of Pine River. The majority of the city limits is located east of Highway 371, but some commercial and residential development located within the City is located on the west side of the highway. Pine River is similar to Pequot Lakes in that it is a secondary service center with a mix of commercial, industrial, and residential development. A public school complex is located just outside of the city limits and serves students kindergarten through 12<sup>th</sup> grade.

The portions of the corridor outside the urban areas are primarily rural in nature with lakes, woodlands, open space, sparse single-family residential units, and farmland.

## **Environmental Consequences**

### **Potential Impacts to Existing Land Uses**

The purpose of this section is to summarize some of the potential impacts to the built and natural environment as they relate to land use. A more detailed analysis of specific land use impacts can be found throughout the social, economic, and environmental impact sections, such as Right-of-Way and Relocation, Vegetation, Wetlands, Economics, Social and Community Impacts, and several others.

### *Alternative 1 – No-Build Alternative*

Under Alternative 1, little change would occur to existing land uses in the project study area. Minor safety improvements could require the need to acquire some new right-of-way, but the No-Build Alternative would not create a substantial change in existing land use. However, population growth and land use developments are anticipated to grow regardless of the highway improvements. With limited access control along the existing highway, continued commercial development along the highway frontage will occur and be difficult to control, which would further degrade highway safety and mobility. This growth would also include developments and redevelopment of seasonal dwellings that are being converted to year-round residences.

### *Alternative 2 - Existing Alignment*

Future land use in the project area is determined by many factors, including the availability of municipal services (sewer and water), environmental amenities (hills, trees, and water), and economic conditions. Construction of a new or improved highway can create conditions that change land use development patterns. However, highway construction by itself does not cause new development if there are not market forces that support new development and changes in land use. Furthermore, in order for potential land use changes to occur, the development plans would have to be consistent with local land use and zoning regulations.

Under Alternative 2, there would be impacts to the existing land use. Alternative 2 would require the expansion of the existing right-of-way, much of which would need to occur north of Pequot Lakes where the existing right-of-way is considerably less than the southerly end of the project corridor. Right-of-way acquisition would necessitate the relocation of residential structures and up to five commercial establishments. Future development is anticipated to occur under Alternative 2. Under the assumption that the highway alternative will have some attraction for development, it is anticipated that development will continue to occur along the existing highway alignment rather than vacant land located away from the highway. Access control provisions may serve to focus future development at or near intersections first.

### *Alternative 3 – Existing Alignment with Pequot Lakes Bypass*

Alternative 3 would have similar land use impacts as described under Alternative 2. Furthermore, the expansion of right-of-way along the bypass alignment would convert woodlands and farmlands to highway right-of-way and may create a higher demand for development on parcels adjacent to the new right-of-way.

Along the bypass, access would be limited to the primary intersection/interchanges. Access to new development would need to be provided from local roads. New local road systems would result in deeper development patterns and reduce linear (strip) development patterns.

#### *Alternative 4 – Existing Alignment with Pequot Lakes and Jenkins Bypasses*

Alternative 4 would have similar land use impacts as described under Alternatives 2 and 3.

#### *Alternative 5 – Existing Alignment with Jenkins Bypass*

Alternative 5 would have similar land use impacts as described under Alternatives 2 and 3.

#### Consistency With Existing Land Use Plans

##### *Cass County Comprehensive Plan Update*

The Cass County Comprehensive Plan, dated February 1993, has a section dedicated to transportation and specifically mentions Highway 371 as being studied by Mn/DOT for improvements to ensure future performance of the state highway system. Highway 371 is a heavily traveled road in Cass County and is a vital link to regional trade centers, such as Bemidji, Brainerd/Baxter, St. Cloud, and the Twin Cities. Based on the importance of Highway 371 to Cass County, the proposed build alternatives are consistent with their Comprehensive Plan.

##### *Crow Wing County Comprehensive Plan*

The Crow Wing County Comprehensive Plan (1994) also includes a transportation element. The plan identifies several recommendations that are applicable to the Highway 371 project. The plan calls for improving safety for the motoring public, maintaining mobility of the transportation system, and limiting the number of residential driveways on high-speed roads. The proposed project would help address these recommendations. Limiting direct access to Highway 371 and providing a safer facility for pedestrians in urban areas are two of the objectives of the improvement project. Based on this review, all the build alternatives are consistent with the Crow Wing County Comprehensive Plan.

##### *Highway 371 Transportation and Land Use Plan*

The Highway 371 Transportation and Land Use Plan (June 2000) encompassed a section of Highway 371 from the City of Fort Ripley in Morrison County to the City of Cass Lake in Cass County. The plan identified several highway improvements including capacity expansion and the implementation of access management strategies. All the build alternatives are consistent with the Highway 371 Transportation and Land Use Plan.

#### **Mitigation**

No mitigation is required. However, further discussions will occur with local units of government once the preferred alternative has been selected to discuss the potential land use changes that may result in conjunction with the highway reconstruction project.

## **Parks and Public Recreational Areas**

### **Affected Environment**

The Brainerd Lakes Area is rich with recreational opportunities including lakes, public boat landings, parks, trails, and forestlands. The public recreational facilities located in close proximity to the highway improvements are illustrated on Figure 14 (see Social and Community Environment section).

### Section 4(f) Resources

Section 4(f) legislation as established under the Department of Transportation Act of 1966 (49 USC 303, 23 USC 138) provides protection for publicly owned parks, recreation areas, historic sites, wildlife, and/or waterfowl refuges from conversion to a transportation use. Additional protection is provided for outdoor recreational lands under the Section 6(f) legislation (16 USC 4602-8(f) (30)) where Land and Water Conservation (LAWCON) funds were used for the planning, acquisition, or development of the property.

The following park and recreational properties are considered Section 4(f) resources and are assessed in detail in the Draft Section 4(f) Evaluation (attached to the back of this Draft EIS in Appendix B). There are no Section 6(f) resources in the study area.

- Paul Bunyan Regional Trail
- Bobberland Park
- Jenkins Park
- Edna Lake Boat Landing
- East Twin Lake Boat Landing

### Water Resources

Several lakes exist within the project study area. The area just north of Nisswa contains several recreational lakes that are in close proximity to the highway, including Nisswa Lake, Lower Cullen Lake, Lake Edna, West Twin Lake, and East Twin Lake. Additionally, the highway corridor crosses over Cullen Brook, Hay Creek, and the Pine River. None of the waterways are designated as wild and scenic waterways or canoe routes.

These water resources provide area residents and visitors with a wide range of recreational opportunities including fishing, boating, canoeing, and birding.

### Trails

The Paul Bunyan Regional Trail and other bicycle facilities are discussed in the Pedestrian and Bicycle Movements section of this Draft EIS.

### Public Boat Landings

Within close proximity to the highway, there are public boat landings found on Edna Lake and East Twin Lake. The landing on Edna Lake is located on property owned by Mn/DOT, but the MNDNR operates and maintains the boat landing at this site. The East Twin Lake boat landing is located east of Highway 371 and Paul Bunyan Trail. In addition, there is an unofficial boat landing located on West Twin Lake that is located within the Highway 371 right-of-way. The site is merely a pull-off from the highway where boats have been able to access the lake in the past. No public funds have been used to establish or maintain the site. Several other landings are found within the project area, but are not in close proximity to Highway 371 or any of the build alternatives.

### Parklands

The Nisswa Community Park is located northeast of the highway in downtown Nisswa. The park includes recreational facilities, such as play areas, athletic fields and facilities, and open space.

Evergreen Park is a small neighborhood park located south of downtown Pequot Lakes. The site includes recreational facilities, such as a play area, tennis courts, playground equipment, and open space.

Bobberland Wayside Park is a linear park in downtown Pequot Lakes that is located between Highway 371 and the Paul Bunyan Trail. The park is split nearly in half by Crow Wing County Road 11. The park contains a Visitor's Center, parking lot/trailhead, gazebo shelter, and open space.

The Jenkins City Park is located adjacent to Highway 371 between 3<sup>rd</sup> Street and Crow Wing County Road 15 in Jenkins. The park is a small parcel of land containing play equipment and open space.

Several other public parklands are located in the area, but are not located in close proximity to Highway 371 or any of the build alternatives.

## **Environmental Consequences**

### Water Resources

#### *Alternative 1 – No-Build*

There would be no direct adverse effects to the recreational use of area lakes or waterways (rivers and streams) under the No-Build Alternative. However, existing conditions of direct discharge of runoff would remain unchanged. Water quality effects are discussed in greater detail under the Water Quality section of this Draft EIS. Indirect effects of the No-Build Alternative could be decreased access and extended travel time to lakes due to high levels of congestion.

### *Alternatives 2, 3, 4, and 5*

Alternative 2 will require roadway improvements adjacent to several lakes, will increase the amount of impervious surface throughout the project area, and will require the crossing of Cullen Brook and the Pine River. However, the implementation of runoff controls and Best Management Practices (BMPs) will create a net benefit for water quality and long-term recreational uses of these water resources.

The Pequot Lakes bypass (Alternatives 3 and 4) and the Jenkins bypass (Alternatives 4 and 5) will increase the amount of impervious surface, but with the implementation of runoff controls and BMPs the bypasses would not create adverse impacts on any lakes in the area.

### Trails

#### *Alternative 1 – No-Build*

There would be no direct adverse effects to area trails under the No-Build Alternative.

#### *Alternatives 2, 3, 4, and 5*

Potential impacts to the Paul Bunyan Trail and other trails in the project corridor are described in the Pedestrian and Bicycle Movement section of this Draft EIS.

### Public Boat Landings

#### *Alternative 1 – No-Build*

There would be no direct effects to any of the public boat landings under the No-Build Alternative. However, it is expected that the No-Build Alternative would have an adverse effect on access and mobility over time as traffic movements are further impaired on Highway 371, which provides access to the boat landings.

#### *Alternatives 2, 3, 4, and 5*

The boat landings located on Edna Lake and East Twin Lake are far enough away from Highway 371 that the landings will not be directly impacted by the proposed highway improvements. Access to either site may be changed as a result of changes in access conditions along Highway 371. However, access will be maintained and full access intersections will be designed to accommodate larger recreational vehicles (i.e., trucks with boat trailers, RVs, etc.). The unofficial boat landing located on West Twin Lake and inside the existing highway right-of-way will be impacted by all of the build alternatives as a result of the proposed improvements. However, a slight alignment shift has been proposed in the area of the boat landing that may allow for establishment of a more functional and safe designated landing. The MNDNR has stated that they would like to maintain a low use access to West Twin Lake at or near the location of the existing access site.

## Parklands

### *Alternative 1 – No-Build*

There would be no direct effects to parklands under the No-Build Alternative. However, it is expected that the No-Build Alternative would result in adverse effects on parklands over time as noise levels increase and traffic movements are further impaired on Highway 371, which provides an important access to these sites.

### *Alternatives 2, 3, 4, and 5*

The Nisswa Community Park would not be directly affected by any of the build alternatives.

Evergreen Park would not be directly affected by the proposed Highway 371 improvements, but the highway widening under Alternatives 2 and 5 would potentially bring the northbound lanes closer to the park. Indirect impacts for Evergreen Park may include changes in access for the local streets that access Highway 371 and increased noise levels.

Alternatives 2 and 5 would not directly impact Bobberland Wayside Park located in Pequot Lakes. Alternatives 2 and 5 would however require the widening of the existing highway to the east in downtown Pequot Lakes, which would require the conversion of green space to a highway use in existing highway right-of-way adjacent to the park. Indirect impacts to the park may include changes in access for the local streets that access Highway 371 and increased noise levels. Alternatives 3 and 4 would not directly affect the Bobberland Wayside Park.

Alternatives 2 and 3 would potentially affect the City Park located in downtown Jenkins. While the majority of the widening of an in-town alignment would be to the west, there is the potential for adverse impacts on the Jenkins City Park. Indirect impacts may include changes in access for the local streets that access Highway 371 and increased noise levels. Alternatives 4 and 5 would not directly affect the Jenkins City Park.

## **Mitigation**

Mitigation measures for impacts to the Paul Bunyan Regional Trail are discussed in the Section 4(f) Evaluation, which is attached in Appendix B of this Draft EIS. No further mitigation for recreational resources is anticipated at this time.

## **Pedestrian and Bicycle Movements**

### **Affected Environment**

#### Bicycle Facilities

The Paul Bunyan Regional Trail is located within the project corridor. The trail primarily follows the former Burlington Northern Railroad grade. The trail has a paved surface for approximately 54 miles between the City of Brainerd and

the City of Hackensack. The Paul Bunyan Trail parallels Highway 371 throughout the entire project corridor and in several places is immediately adjacent to the highway. At the south end of the project corridor, the trail runs through downtown Nisswa and is located east of Highway 371. Between the Cities of Nisswa and Pequot Lakes, the distance the trail is set back from the highway varies from being immediately adjacent to the highway to being several hundred feet east of the highway. The trail crosses over the highway on a bridge near the northerly end of Pequot Lakes. From this point, the trail parallels the highway on the west side until reaching the northern limits of the proposed improvement project in the City of Pine River.

The trail provides an array of recreational opportunities, including bicycling, in-line skating, walking, and snowmobiling. Plans are currently underway to connect the Paul Bunyan Trail to the Heartland State Trail, which runs between the Cities of Park Rapids and Cass Lake. Ultimately, the two trails could be an improved recreational trail network between the Cities of Brainerd/Baxter, Park Rapids, Cass Lake, and Bemidji.

Crow Wing County has designated the paved shoulders along County Road 16 as a bicycle route. This route runs from the intersection of Highway 371/County Road 16 east to the Crosslake area.

#### Pedestrian Facilities

Several high pedestrian traffic areas exist along the Highway 371 project corridor, which include downtown Nisswa, downtown Pequot Lakes, downtown Jenkins, and downtown Pine River.

As mentioned earlier in this section, the Paul Bunyan Trail extends throughout the project area and serves as the only continuous pedestrian facility within the project corridor.

### **Environmental Consequences**

#### Alternative 1 – No-Build

The No-Build Alternative will not have any direct effect on pedestrian and bicycle movements that currently exist in the project area. However, an increase in congestion and a further deterioration of highway safety may lead to further safety concerns for pedestrians and bicyclists in the project area. These safety conditions would be compounded in the downtown areas of Nisswa, Pequot Lakes, Jenkins, and Pine River.

#### Alternatives 2, 3, 4, and 5

In several locations, Alternatives 2, 3, 4, and 5 directly impact the Paul Bunyan Trail due to the right-of-way needs of the build alternatives and the constraints of adjacent natural and built environmental features (e.g., lakes, wetlands, residential/commercial development). Figures A1 through A21, located in Appendix A depict the locations where the trail would be potentially impacted and relocated under the build alternatives. The potential realignment of the trail may also enhance the users' experiences since the

trail may be relocated further away from the highway (e.g., West Twin Lake area) to areas with greater scenic amenities.

A Draft Section 4(f) Evaluation has been completed, which outlines the areas where potential trail impacts are anticipated (see Appendix B).

Alternatives 2 and 5 may require the redirection of pedestrian movements in Pequot Lakes to the remaining access and crossing opportunities. Pedestrian facilities constructed to accomplish this will enhance the pedestrian system. Furthermore, a four-lane divided highway would provide a refuge for pedestrians and bicyclists crossing the highway and would allow them the opportunity to cross one direction of traffic at a time. Alternatives 2 and 5 may include additional design options that would benefit pedestrian movements including additional bicycle/pedestrian crossings. A potential pedestrian bridge/underpass has been discussed with the City of Pequot Lakes because there are a high number of pedestrians crossing the highway to access the school complex. A pedestrian bridge/underpass is not proposed as a part of this project. However, Mn/DOT will continue to coordinate with the City of Pequot Lakes to determine if the City wishes to pursue a pedestrian bridge/underpass.

Alternative 3 would have the same adverse and beneficial impacts as described under Alternative 2. However, the removal of the highway through downtown Pequot Lakes would improve bicycle/pedestrian mobility and safety through downtown by reducing the peak traffic volumes, allowing more frequent signalization, and leave adequate right-of-way for possible sidewalks.

Alternative 4 would have the same adverse and beneficial impacts as described under alternative 2 and 3. Furthermore, the removal of the highway through downtown Jenkins would provide an opportunity to implement the same types of improvements as discussed for Pequot Lakes under Alternative 3.

None of the five build alternatives are anticipated to adversely affect the Crow Wing County bicycle route along County Road 16 between Highway 371 and the Crosslake area. Under all the build alternatives, the proposed changes at the Highway 371/County Road 16 intersection would enhance pedestrian/bicycle safety by providing a safer connection to the Paul Bunyan Regional Trail.

### **Mitigation**

Improving bicycle and pedestrian movements and safety throughout the project area is a safety goal identified in the Project Purpose and Need section. Efforts to further enhance pedestrian and bicycle accessibility, circulation, and safety within the project area will be considered during the detailed design phase of the preferred alternative. Improvements could include adding advisory signage or constructing controlled crossing locations (pedestrian bridge or underpass). All pedestrian facilities will be designed in

accordance with the Americans with Disabilities Act. Ongoing coordination efforts with the MNDNR and Cities will continue in the detail design phase.

## Environmental Justice

This section has been prepared in accordance with the Executive Order 12898, Federal Action to Address Environmental Justice in Minority and Low-Income Populations, dated February 11, 1994. Executive Order 12898 requires each federal agency (e.g., FHWA), to the greatest extent practicable and permitted by law, and consistent with principals set forth in the report on the National Performance Review, to achieve “environmental justice as part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” The proposed project has federal funding and federal permit requirements and is, therefore, a federal project for purposes of compliance with the Executive Order.

### Project Area Demographics

Demographic statistics from the 2000 Census were compiled at the most refined level practical and used to characterize the population in the project area. The 2000 Census data shows that whites comprise the majority of the population, see Table 12 below.

**Table 12  
Demographics of the Project Study Area**

<b>2000 Census Data Population By Race</b>	<b>City of Nisswa</b>	<b>City of Pequot Lakes<sup>1</sup></b>	<b>City of Jenkins</b>	<b>City of Pine River</b>	<b>Wilson Township</b>
Total Population	1,953	1,802	287	928	551
White	1,931	1,774	281	898	539
Black or African American	5	10	0	7	0
Hispanic or Latino	8	2	3	7	4
American Indian and Alaska Native	2	5	2	10	5
Asian	3	6	1	2	1
Native Hawaiian or other Pacific Islander	2	0	0	0	1
Some other race	2	5	0	4	1
2000 Median Household Income (\$)	48,306	31,686	34,167	23,480	30,833
2000 Poverty Level (%)	4.9	11.9	10.1	16.7	18.9

Source: 2000 U.S. Census Bureau Data

<sup>1</sup> Pequot Lakes data includes 2000 census data for Sibley Township

The census data presented in the table above demonstrates a macro-level review of the demographic conditions. These figures are not necessarily indicative of those people that would be affected by Alternatives 2, 3, or 4, but are indicative of the project study area as a whole.

## **Public Involvement/Outreach**

From the beginning of the project, Mn/DOT has been committed to public involvement efforts aimed at reaching all individuals and groups located within, or having an interest in, the project area. These efforts are described in Section 8.0 of this Draft EIS.

## **Environmental Justice Determination**

To supplement the minority and economic information provided by the U.S. Census Bureau, field inspections were conducted, and direct contacts were made with local government offices to assist in determining if there are any readily identifiable minorities or low-income populations living in close geographic proximity of the project area. Contacts included the Crow Wing County Community Health Services Department and Cass County Human & Health Services Department.

As defined by the Executive Order and based upon field investigations and knowledgeable local government officials, the Highway 371 project will not result in disproportionately high or adverse effects to minority populations or low-income populations since there are no readily identifiable groups within the project area. This is true for the No-Build Alternative and the build alternatives (Alternatives 2, 3, 4, and 5).

## **Transit Services**

### **Affected Environment**

Both Crow Wing County and Cass County have limited public transit services at this time. Plans for a countywide program providing flexible/fixed route and dial-a-ride service has been developed for Crow Wing County and awaits state funds. Mn/DOT Office of Transit provides funding for the dial-a-ride service operations within the City of Pine River. Pequot Lakes also has limited transit service that is funded from local sources. The Cass County Council on Aging & Veterans Services offers a dial-a-ride volunteer driver program to assist elderly populations with travel within the County; however, no countywide program has been developed and implemented.

### **Environmental Consequences**

The Highway 371 alternatives will impact the transit services to the extent that the alternatives impair or improve the ability of the transit provider to efficiently and economically deliver services.

#### Alternative 1 – No-Build

The No-Build Alternative will negatively affect the quality of transit service, specifically travel times, because higher levels of traffic flow and traffic congestion expected to occur throughout the corridor will further impede traffic flow through the project area.

### Alternatives 2, 3, 4, and 5

Alternatives 2, 3, 4, and 5 have a potentially positive impact on the quality of transit service in and beyond the corridor. The improved traffic operations over the No-Build Alternative would result in an improvement in transit travel times on routes that use roadways within the project area. Alternatives 3, 4, and 5 will make slightly longer transit trips more efficient since these alternatives bypass the urban areas of Pequot Lakes and Jenkins. However, all of the build alternatives will improve single occupant vehicle travel times so the improvements are not likely to increase transit ridership directly.

Short-term adverse impacts to transit services may result from construction activities. Minor detours or construction delays associated with the improvements could temporarily disrupt transit services.

### **Mitigation**

Once the preferred alternative is selected and designed, a construction staging plan will be prepared and can be shared with transit providers to minimize impacts on transit routes and efficiency of service.

## **Utilities**

### **Affected Environment**

There are several local and regional utility lines and distribution and/or transmission facilities that can be found within the project area. These utilities include local electric and telephone distribution lines, natural gas pipelines, and fiber optic communication lines.

### **Environmental Consequences**

#### Alternative 1 – No-Build

There would be no direct effects to utilities as a result of the No-Build Alternative.

#### Alternatives 2, 3, 4, and 5

Alternatives 2, 3, 4, and 5 will potentially impact utilities and may require the relocation and disruption of some local and regional utility services. No one alternative appears to have a greater potential for impacting utility lines.

### **Mitigation**

Further minimization measures of the preferred alternative will be considered to reduce potential impacts to local and regional utility lines. These efforts may include minor shifts in the alignment or alterations to the typical roadway cross-section.

## **Secondary and Cumulative Impacts**

The Highway 371 North Improvement Project will have three categories of potential impacts, direct, cumulative, and secondary. Direct impacts are well

defined, occur within the proposed highway corridor, and are a specific result from the proposed improvements (i.e., right-of-way acquisition/relocations, loss of vegetation, removing agricultural land from production). Secondary and Cumulative impacts are defined by the Council on Environmental Quality (CEQ) as the following.

Secondary (Indirect) Effects: "Effects that are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induce changes in the pattern of land use, population density or growth rate, and related effects on air and water on other natural systems, including ecosystems." (40 CFR 1508.8(b))

Cumulative Effects: "Impacts on the environment that result 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." (40 CFR 158.7)

In order to ensure a project's total benefits and costs are evaluated, direct, secondary, and cumulative impacts must be evaluated. An assessment of cumulative and secondary impacts from past, present, and reasonably foreseeable projects was completed for the Highway 371 corridor from St. Cloud to Cass Lake in a document entitled Technical Report: Assessment of Cumulative and Secondary Environmental Impacts, Trunk Highway 371 Corridor, November 2001. This document is available for review at the Mn/DOT District 3 Office in Baxter. The document was prepared in accordance with the requirements of NEPA and guidance from the CEQ, Considering Cumulative Effects Under the National Environmental Policy Act (1997).

Due to the broad range of cumulative impacts, the Technical Report assessed the potential cumulative and secondary impacts for a large geographic area that stretched from St. Cloud to Cass Lake and included the following counties, Stearns, Benton, Morrison, Crow Wing, and Cass. The Highway 371 North Improvement Project (Nisswa to Pine River) was considered in the cumulative and secondary impact assessment.

## **Conclusions**

Substantive cumulative and secondary effects from the Highway 371 North Improvement Project are not anticipated. However, the proposed action may affect several resources in the study area either directly or indirectly.

Potential for cumulative and secondary impacts exists in issue areas related to land consumption; land development, wetlands, water quality, vegetation, and wildlife. These potential impacts are typically considered through local and county comprehensive planning efforts. These impacts can be avoided and/or minimized through land use controls and roadway access restrictions. Furthermore, state agencies can work with local jurisdictions to develop resource preservation plans. Mn/DOT recently participated in a planning

study entitled Highway 371 Transportation and Land Use Plan, June 2002. Furthermore, several jurisdictions in the study area have recently or are currently revising their comprehensive plans that assist in land use and transportation policies, regulations, and decisions. Local development controls could greatly assist in protecting or even enhancing sensitive resources in the study area, if local units of government are willing to implement protective actions and enforce strong land use regulations.

Through the use of BMPs for new developments, redevelopments, and highway improvements, cumulative, and secondary impacts can be avoided or greatly reduced.

Once a preferred alternative is selected, mitigation opportunities will be further assessed and incorporated into the final design of the highway to address impacts created from the preferred alternative. Governmental agencies responsible for regulating effects on social, economic, and natural resources through permitting and approvals, in conjunction with planning and zoning processes at the state and local government level, can greatly assist in the protection and minimization of impacts on natural resources from individual developments and projects. Specific BMPs and construction agreements can be used to avoid, minimize, and mitigate potential effects that are identified during the permitting and approval processes for individual projects.

In the context of the existing regulatory framework and the mitigation activities for project impacts, the overall cumulative effects to natural resources are expected to be minimal. Further avoidance and minimization of cumulative effects to resources can be identified during the permitting and approval processes of individual projects within the study area.

## **Architectural and Archaeological Resources**

### **Consultation**

Section 106 of the National Historic Preservation Act (NHPA) of 1966 (amended June 17, 1999) requires federal agencies to take into account the effects of their undertakings on historic properties. The Advisory Council on Historic Preservation (ACHP) issues regulations that implement Section 106 of NHPA at 36 CFR Part 800, Protection of Historic Properties. By definition, historic properties are properties eligible for or listed on the National Register of Historic Places (NRHP). Federal undertakings refer to any federal involvement including funding, permitting, licensing, or approval. Section 106 sets up the review process whereby a federal agency consults with the ACHP, the Minnesota State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officers (THPO) as required, other interested parties, and the public to identify, evaluate, assess effects, and mitigate adverse impacts on any historic properties affected by their undertaking.

A consultation effort with Native American tribes was undertaken in publication of the Highway 371 North Improvement Project Scoping Decision

Document. Copies of the document were distributed to the Bad River Band of the Lake Superior Chippewa Indians, Boise Fort Band (Nett Lake), Fond du Lac Reservation, Grand Portage Reservation, Keweenaw Bay Tribal Council, Lac Courte Orielles, Lac Vieux Desert Band, Leech Lake Reservation, Red Cliff Band, Sokaogon Chippewa, St. Croix Council, Upper Sioux, Shakopee Mdewakanton, White Earth Reservation, and the Mille Lacs Band of Ojibwe.

Public involvement through the 106 process is being addressed through the use of a cultural resources informational station at all public meetings/open houses.

### **Affected Environment (Area of Potential Effect)**

#### Architecture

The project's geographical area of potential effect (APE) for standing structures is broader than the archaeological APE and encompasses land subject to the undertaking's potential right-of-way acquisition and construction activity, but also includes areas of visual and auditory effects and other possible direct and indirect impacts during and after construction. Generally, the build alternatives follow the same corridor with the exception of the bypass alignments near Pequot Lakes and Jenkins. The existing corridor has a fairly high level of development and was intensively surveyed for potentially eligible or eligible sites. The APE corridor, generally several hundred feet wide, included areas on both sides the corridor outside the proposed right-of-way. Buildings falling within the APE were considered worthy of inventory and evaluation if they met minimum thresholds for integrity (general retention of massing, fenestration, and materials) and age (50 years or older). A Phase I Survey and Phase II Evaluation of Trunk Highway 371 and Alternative Alignments, Cass and Crow Wing Counties, Minnesota (August 2003) was completed. Five properties (Drew Cabin Complex, Molstad Property, A.L. Cole Memorial Building, Pequot Fire Lookout Tower, and the Brainerd and Northern Minnesota Railway) required Phase II evaluation, which resulted in a recommendation that all but the Cole Building are eligible for the NRHP. The Pine River Depot had previously been evaluated and recommended as eligible for listing on the NRHP.

#### Archaeology

The archaeological APE (separate from the architectural APE) for the build alternatives consists of the 300-foot wide proposed right-of-way, which encompasses all proposed ground disturbing construction. The APE for archaeological resources does not consider any ground disturbances outside of this right-of-way due to other potential and yet to be identified activities (e.g., temporary material and equipment staging, aggregate pits). These additional areas will be reviewed once they are identified.

## **Environmental Consequences**

### Alternative 1 – (No-Build Alternative)

The No-Build Alternative will not physically affect any National Register eligible or listed properties along the corridor. However, continued congestion along this route may ultimately have negative effects on the value, economic viability, and setting of adjacent historic properties.

### Alternatives 2, 3, 4, and 5

#### *Architecture*

A Phase I Survey and Phase II Evaluation of Trunk Highway 371 and Alternative Alignments, Cass and Crow Wing Counties, Minnesota (October 2003) (see letter in Appendix C) indicates that the build alternatives contain five National Register-eligible properties (Molstad property (CW-NSC-014), Drew Cabin complex (CW-NSC-013), Pequot Fire Lookout Tower (CW-SIB-012), and Pine River Depot (CA-PRC-006) and the Brainerd and Northern Minnesota Railway). All build alternatives are likely to directly impact the Pine River Depot and the Brainerd and Northern Minnesota Railway with physical, audible, and visual impacts. The Molstad property will not be physically or visually impacted, but may be audibly impacted by the build alternatives. The Drew Cabin complex will not be physically impacted, but may be audibly and visually impacted by the build alternatives. Alternatives 3 and 4 will not physically impact the Pequot Fire Lookout Tower, but may create visual or audible impacts to the site. A Draft Section 4(f) Evaluation has been prepared that further discusses the potential direct impacts to the Pine River Depot and the Brainerd and Northern Minnesota Railway.

#### *Archaeology*

A Phase I Archaeological Survey was conducted for the APE for each build alternative. The Survey results indicate there are no known archaeological sites within the APE of the build alternatives.

## **Mitigation Measures**

Any sites or architectural properties eligible to the National Register will be further evaluated for effects once the preferred alternative is selected and additional design details are available. Consultation will take place with all interested agencies, groups, or individuals. If avoidance of any eligible property is not possible, a Phase III mitigation procedure will be undertaken. All impacts and mitigation measures will be incorporated into the Final EIS and a Memorandum of Agreement (MOA) will be completed.

## **Contaminated Properties**

### **Affected Environment**

The presence of potentially contaminated properties (defined as properties where soil and/or groundwater is impacted with pollutants, contaminants, or hazardous materials) is a concern in the development of highway projects

because of potential liabilities associated with ownership of such properties, potential cleanup costs, and safety concerns associated with construction personnel encountering unsuspected wastes or contaminated soil or groundwater.

A Phase I Environmental Site Assessment (ESA) was completed in July 2003. The Phase I ESA included a site visit, and a historical review of reasonably ascertainable databases for properties within specified search radii that are on federal and/or state records. These properties may have had a known or suspected release or spill of chemicals, or identified as storing hazardous materials and/or other potential pollutants. The Phase I ESA also included a review of historical aerial photographs, fire insurance maps, interviews with local government officials and property owners to obtain additional information regarding the identified properties.

Using the resources described above, properties with known or suspected use or storage of hazardous substances were identified. Another step in the review process was to categorize the sites based on their potential level of contamination. A complete description of the sites and databases used in the determination of potential of contamination is included in the Limited Phase I Environmental Assessment Report – Highway 371 Pine River to Nisswa, July 2003, which is available for review at the Mn/DOT District 3 Office in Baxter. The report includes a written summary of the file search and provides location maps of the identified sites.

According to the Phase I ESA, there are 115 identified sites that may be potentially contaminated and were in close proximity to the existing Highway 371 alignment. Of these sites, 17 were categorized as having a high risk potential for contamination, 44 were categorized as having a medium risk potential, and 54 were categorized as having a low risk potential.

### **Environmental Consequences**

Contaminated materials encountered during highway construction projects must be properly handled and treated in accordance with state and federal regulations. Improper handling of contaminated materials can worsen their impact on the environment. Contaminated materials also cause adverse impacts to highway projects by increasing construction costs and causing construction delays, which also can increase project costs.

#### Alternative 1 – No-Build

The No-Build Alternative would have no direct impacts on existing contaminated properties. However, remaining sites could potentially affect groundwater.

#### Alternatives 2, 3, 4, and 5

Alternative 2 could potentially affect 61 sites categorized as having a medium or high risk for contamination.

Alternative 3 (existing alignment with Pequot Lakes bypass) could potentially affect 42 medium or high-risk sites. There are 19 sites located in downtown Pequot Lakes that would be avoided. Additional sites on the bypass alignment may be encountered that were not identified in the Phase I ESA.

Alternative 4 (existing alignment with Pequot Lakes and Jenkins bypasses) could potentially affect 35 medium or high-risk sites. There are 26 sites located in downtown Pequot Lakes and Jenkins that would be avoided. Additional sites on the bypass alignment may be encountered that were not identified in the Phase I ESA.

Alternative 5 (existing alignment with Jenkins bypass) would potentially affect 54 medium or high-risk sites. There are 7 sites located in downtown Jenkins that would be avoided. Additional sites on the bypass alignment may be encountered that were not identified in the Phase I ESA.

The potential for additional medium or high risk sites on the various bypass alignments is not likely because the predominant land use in the area of the bypass alignments is agricultural, forestland, and open space.

### **Mitigation**

The locations of all properties identified in the Phase I ESA will be evaluated for their potential to impact the preferred alternative through the construction and/or right-of-way process. All potentially contaminated properties with a potential to impact the preferred alternative will be drilled and sampled, if necessary, to determine the extent and magnitude of contaminated soil or groundwater in the areas of concern. The results of the drilling investigation will be used to determine if the impact of contaminated materials on the project can be avoided or minimized. If necessary, a plan will be developed for properly handling and treating contaminated soil and/or groundwater. Mn/DOT will work with the MPCA Voluntary Investigation and Cleanup Unit and/or the Voluntary Petroleum Investigation and Cleanup Unit, if appropriate, to obtain assurances that Mn/DOT's contaminated site cleanup work and/or contaminated site acquisition will not associate it with long-term environmental liability for the contamination. Any contaminated site cleanup work will be conducted in compliance with all state and federal laws and regulations.

## **4.2 NATURAL ENVIRONMENT**

### **Air Quality**

#### **Affected Environment**

According to the Intermodal Surface Transportation Efficiency Act of 1991, a federal agency may not approve or fund a transportation project unless it conforms to the State Implementation Plan (SIP) for air quality as required by Section 176 (c)(4) of the Clean Air Act Amendments (CAAA) of 1990. Section 176 (c)(4) of the CAAA would cover projects funded under Title 23 U.S.C. (Federal Aid Highways Act). To conform to the SIP, a project cannot

cause or contribute to a new violation of any National Ambient Air Quality Standard (NAAQS), increase the frequency or severity of any existing violation of any NAAQS, or delay timely attainment of any NAAQS or any required interim emissions reductions or other milestones.

In 1999, the EPA redesignated the Twin Cities seven county metro area, portions of Wright County, and the Cities of Duluth and St. Cloud to attainment status for carbon monoxide, subject to the requirement to develop a maintenance plan. Those geographic regions are now considered maintenance areas for carbon monoxide. The proposed project study area is not located within a maintenance area for carbon monoxide.

### **Environmental Consequences**

The project is not located in an area in which conformity requirements apply, and the scope of the project does not indicate that air quality impacts would be expected. In fact, the proposed highway improvements, under all the build alternative, will improve traffic operations along this segment of Highway 371, which will reduce the amount of time vehicles wait idling in heavy congested conditions and at cross street intersections waiting to access or cross the highway. Therefore, no further air quality analysis is necessary.

### **Mitigation**

No mitigation measures are proposed since no air quality impacts are anticipated as a result of the proposed project.

### **Noise**

#### **Affected Environment**

A noise analysis was conducted for the study area and is documented in a technical memorandum available for review at the Mn/DOT District 3 Office. The findings of this analysis are presented below.

An analysis of the existing and post-development traffic noise levels was conducted using Mn/DOT's MINNOISE computer model and traffic predictions prepared as part of the Scoping Document and Draft EIS. Modeled results were compared to Minnesota state noise standards and federal noise abatement criteria to determine the potential effects of the project for the various alternatives. The noise generated by a roadway is a function of many factors including:

- The number and mix of vehicles using the road (cars, heavy trucks, buses, motorcycles).
- The condition of those vehicles- is there an unusual number in disrepair?
- The speed of travel.
- The condition of the road surface at speeds where tire noise is of consequence.

- Traffic characteristics (platooning of vehicles due to traffic lights vs. steady stream of traffic).
- Other characteristics of the surrounding environment, such as steep hills, valleys, and bridges.

The propagation of sound from a roadway is a function of the following.

- The Type of Roadway – Limited access roads (where sound decays at a rate of 3 decibels per doubling of distance from the noise centerline of the road) vs. arterial roadways (where sound decays 6 decibels for every doubling of distance from the noise centerline of the road).
- Weather Conditions – Temperature inversions can bend the sound waves downwards, resulting in higher than normal noise levels on neighborhoods long distances away from a roadway.
- Topography – Earth berms and buildings will block some of the noise from the roadway to others further away or to neighbors on the opposite side of the roadway.
- Ground Cover – A substantial distance of thick vegetation between the roadway and the adjacent properties will result in lower noise levels than paved surfaces; however, a single row of trees between the roadway and the adjacent developments has very little influence on the noise received from the roadway.

In areas where a potential noise impact is identified, the feasibility of providing noise mitigation must be investigated. The decision on whether or not noise mitigation is provided as part of the construction of the preferred alternative and what type of mitigation is appropriate is a function of a number of criteria. Following selection of a preferred alternative, a detailed noise mitigation plan will be developed. The following is a discussion of the criteria, which will be used to determine if noise mitigation is feasible, and the alternative types of noise mitigation, which will be considered.

### Minnesota Noise Standards

Minnesota Rules Chapter 7030.0040, Subpart 2, provide the Minnesota standards for noise. These standards describe the limiting levels of sound established on the basis of present knowledge for the preservation of health and welfare. These standards are designed to be consistent with sleep, speech, annoyance, and hearing conversation requirements for receivers within areas grouped according to land use activities. The Minnesota standards are as follows.

Noise Area Classification	Daytime dBA 7:00 a.m. to 10:00 p.m.		Nighttime dBA 10:00 p.m. to 7:00 a.m.	
	L <sub>10</sub>	L <sub>50</sub>	L <sub>10</sub>	L <sub>50</sub>
NAC-1 (Residential)	65	60	55	50
NAC-2 (Commercial)	70	65	70	65
NAC-3 (Industrial)	80	75	80	75

L<sub>10</sub> means the sound level that is exceeded for 10 percent of the time for a one-hour period. L<sub>50</sub> means the sound level that is exceeded 50 percent of the time for a one-hour period. Sound levels are expressed in dBA. A dBA is a unit of sound level expressed in decibels and weighted for the purpose of determining the human response to sound.

### Federal Noise Abatement Criteria

Projects receiving federal funding are required to determine and analyze expected noise impacts and noise abatement criteria contained in 23 CFR Part 772. The rule provides procedures for noise studies and noise abatement measures to help protect the public health and welfare, it describes noise abatement criteria, and establishes requirements for information to be given to local officials for use in planning and design.

Federal noise abatement criteria require mitigation to be considered when the post-development noise levels for nearby sensitive receptors approach or exceed 70 dBA or when there is a substantial increase in noise levels (5 dBA or greater). The modeled L<sub>10</sub> noise level for the worst-case hour is used for comparison to this standard.

### Existing Traffic Noise

The existing highway noise levels were monitored on August 20-22, 2002. Additional noise monitoring was conducted at two private properties (lake homes/cabins) on November 6-7, 2002. The purpose of the monitoring is to establish base case conditions along Highway 371 and to assist in calibrating the noise prediction model. The nine monitoring sites are shown on Figure 15. Monitoring results for existing noise levels are provided in Table 13. Sound levels are expressed in dBA, which is a unit of sound level expressed in decibels and weighted for the purpose of determining the human response to sound.

**Table 13  
Highway 371 Monitored Noise Levels (dBA)**

Site Number	Date	Time	L <sub>10</sub>	L <sub>50</sub>	Distance to Highway Centerline (feet)
1	8/20/02	1:51 – 2:44 p.m.	64.5	57.5	134'
2	8/20/02	4:11 – 4:57 p.m.	70.5	64.5	124'
3	8/21/02	9:44 – 10:46 a.m.	67.5	62.0	114'
4	8/21/02	11:17 am – 12:18 p.m.	65.0	58.5	115'
5	8/22/02	9:53 – 10:54 a.m.	61.5	56.0	125'
6	8/22/02	9:53 – 10:53 a.m.	50.5	46.5	350'
7	8/22/02	12:17 – 1:18 p.m.	64.5	57.0	174'
8	11/06/02	2:10 – 3:11 p.m.	57.5	51.0	Approximately 725'
9	11/07/02	8:40 – 9:44 a.m.	54.5	50.5	Approximately 2500'

Figure 15 – Noise Monitoring Sites

## **Environmental Consequences**

The probable noise impacts of the alternatives under consideration have been analyzed and documented in the Highway 371 Preliminary Traffic Noise Analysis Report. This section will summarize the findings of the noise analysis. A copy of the complete report is available for review at the Mn/DOT District 3 Offices in Baxter.

### Noise Model

The MINNOISE model is a modified (modified by Mn/DOT) version of the FHWA's Optima/Stamina model that is used to predict highway noise levels. .

### Model Assumptions

Noise level predictions were based on the following data and assumptions.

- Existing and forecast traffic data prepared as part of the Scoping Document and Draft EIS was used for the analysis.
- Modeling was limited to the maximum daytime and nighttime peak hour traffic volumes for each alternative.
- Existing noise levels were monitored at nine locations and used to assist in the calibration of the model.
- The terrain was assumed to be soft ( $\alpha = 0.5$ ), level, and free from obstacles between the highway and receptor locations.
- Atmospheric effects on noise levels were not considered due to the proximity of the roadway to the receptors.
- For segments with four lanes, the receiver was assumed to be on the busier side of the road. The busier side of the road was assumed to carry 54 percent of the traffic.
- Traffic noise levels were predicted based on constant operating speeds for the existing and proposed posted speed limits.
- The noise analysis assumed that approximately 2.5 percent of the traffic is heavy vehicles and approximately 3.5 percent is medium trucks.
- The nighttime peak hour was assumed to have 25 percent of the daytime peak hour traffic.

### Model Results

Noise levels were modeled for the year 2030 (based on the projected 2030 traffic volumes) for the No-Build and build alternatives. Model results for Alternatives 1, 2, 3, 4, and 5 were calculated and presented in a distance from the corridor centerline to determine a daytime noise contour ( $L_{10}=65$  dBA and  $L_{50}=60$  dBA) and a nighttime noise contour ( $L_{10}=55$  dBA and  $L_{50}=50$  dBA). As a means of documenting the number of potentially affected sensitive receivers, the centerline for each alternative and the maximum

impact criteria contours for both daytime and nighttime were put into a Geographic Information System (GIS) layer and mapped. The total number of sensitive receivers (residential parcels and dwelling units) were then calculated for each alternative. Table 14 presents the projected maximum noise impacts on existing residential parcels and dwellings for daytime and nighttime noise standards. Figure 16 depicts the maximum daytime and nighttime noise contours and shows concentrations of potential noise impacts.

**Table 14  
Potential Noise Impacts to Residential Properties**

<b>Alternative/Option</b>	<b>Number of Residential Parcels Located Within the Maximum Distance Where Exterior Noise Would Exceed Daytime Standards</b>	<b>Number of Residential Units Located Within the Maximum Distance Where Exterior Noise Levels Would Exceed Nighttime Standards</b>
Alternative 1 – No-Build	120	196
Alternative 2	135	295
Alternative 3	136	251
Alternative 4	136	259
Alternative 5	141	311

Note: The impact distance from the centerline of the roadway was dependent upon the forecast 2030 ADT volumes.

### **Mitigation**

Noise mitigation will be provided where a noise impact exists and it is reasonable and feasible to mitigate impacts. After selecting the preferred alternative, a detailed noise mitigation feasibility assessment will be conducted to determine if and where noise mitigation is required.

Mn/DOT has a standard set of criteria used to determine where noise walls are reasonable and feasible to construct. According to these criteria, noise wall locations are considered when one of the following factors exist:

- The noise levels in a neighborhood are presently in excess of the state's noise standards.
- The predicted noise levels in a neighborhood are expected to be in excess of the state's noise standards for the design year of the project. Mn/DOT usually considers the design year to be 20 years after the start of construction.
- The noise levels in a neighborhood are predicted to be "substantially" above current noise levels in the project design year. "Substantial" is defined as 5 dBA or greater.
- The predicted noise level approaches or exceeds the standard. Approaching is defined as the predicted level being within 1 decibel from the standard.

Figure 16 – Noise Contours and Potential Impacts

If one of the above conditions is met, noise walls are considered for construction based on the following factors: project significance, noise wall feasibility, cost reasonableness, and community support. In order for a noise wall to be constructed by Mn/DOT, it must be able to be constructed at a "reasonable" cost. "Reasonable" cost is currently defined by Mn/DOT as \$3,250/dBA. This is determined by dividing the total cost of a wall (currently estimated at \$15 per square foot) by the total decibel reduction for houses that are predicted to receive at least a 5-decibel reduction.

The feasibility of noise mitigation relates to engineering consideration. Is it physically possible to construct or implement effective noise mitigation? Reasonableness is more of a subjective criteria and may consider a number of factors including the following.

- Future Noise Level in Relation to Standards and Criteria – As identified in the noise impact analysis, there are a number of locations in the alignment alternatives where future noise levels are expected to exceed state noise standards and federal noise abatement criteria levels. These are the primary areas where noise mitigation will be considered.
- Existing Noise Levels – The change in noise levels caused by the proposed project is a consideration in determining the reasonableness of noise mitigation. As described in the noise impact analysis, future noise levels are generally not expected to be substantially greater (5 dBA or more) than existing noise levels.
- Views of Affected Residents – Noise barriers may have a perceived negative visual or aesthetic impact. The views of the people who will be affected by barriers must be considered and their input received before a noise barrier is constructed.
- Amount of Noise Reduction – Generally, noise mitigation will only be provided if a substantial noise reduction can be provided to a number of sensitive receptors. In some cases, a substantial noise reduction may not be possible because of the physical relationship of the sensitive receptors (residential sites) to the highway. In general, a noise barrier must block the line of sight between the roadway and the receiver to achieve a substantial noise reduction. However, if the receiver is affected by multiple roadway noise sources or is relatively far from the roadway, blocking the line of sight may not provide substantial noise reduction.
- Number of Sensitive Receptors Protected – The reasonableness of noise mitigation is related to the number of sites protected by a particular noise mitigation measure.
- Cost – The cost of noise mitigation must be considered in relation to the potential benefits of the mitigation. The cost of constructing noise mitigation to protect a small number of receptors can be prohibitive and may not be considered reasonable.

- Zoning/Land Use Planning – The zoning and future land use development land should be considered prior to constructing noise mitigation. A noise barrier blocking the view of the highway would generally not be considered desirable for commercial land uses dependent on highway visibility. In an area with mixed residential and commercial land uses, the expected future land use in the area should be considered when determining if noise mitigation is warranted.

The noise mitigation options are very limited within the project area due to the close proximity of the residences to the roadway, the sparsely spaced residences in rural areas, the limited roadway right-of-way and the potential for multiple driveway and/or roadway access points. Potential mitigation and abatement sites will be defined once the preferred alternative is selected. Typical noise mitigation and abatement options that can be considered by Mn/DOT include the following.

#### Noise Barriers

Noise walls and/or earthen berms can be used to screen adjacent residential areas. Generally, noise walls are not cost effective in sparsely developed areas. Earthen berms require considerable right-of-way width for the side slopes. Also to be effective, noise walls and berms should be high enough to block the line of sight between the roadway and the receiver and should be continuous with few gaps, which often times conflict with local property access needs.

#### Vegetation

Vegetative screens can have some effectiveness in reducing noise impacts, but they require a substantial amount of space. A stand of extremely dense vegetation 15 to 20 feet high and 100 feet wide with no line of sight to the roadway can reduce noise by approximately 5 dBA. Some vegetative screening will be considered for the preferred alternative. Landscape recommendations will be considered during the design phase.

#### Truck Bans

Medium and heavy trucks dominate the higher noise levels generated by roadways. However, this section of Highway 371 provides a major link between regional trade centers, as well as provides access to local businesses, for shipping and receiving goods and services. A truck ban is not a practical option given Highway 371 is designated an interregional corridor.

#### Speed Limits

There is a direct correlation between faster speeds and higher tire noise from vehicles.

#### Local Government Noise Mitigation Options

Noise mitigation and abatement options that can be considered by local units of government include the following.

### *Buffering via Zoning Ordinance*

Roadway rights-of-way and building setback requirements can be used within zoning ordinances to increase the distance from the highway. This option would help prevent future impacts; however, existing developments would obviously not be benefited unless redevelopment occurred.

### *Acoustical Site Planning*

Site planning can be used for the arrangement of buildings to shield more sensitive land uses from noise impacts. Residences can also be orientated away from the noise source. Acoustical construction techniques include:

- Installing triple pane windows.
- Designing floor layouts to place bedrooms away from exterior walls facing the highway.
- Reconstructing buildings to eliminate windows or other openings and incorporating increased wall thickness.

Some of the newer developments along existing Highway 371 may have already implemented some of the above techniques. Several building sites along the corridor have garages and storage buildings between the residences and the highway. Mn/DOT will work with local government jurisdictions to provide guidance for future construction near the preferred alternative for Highway 371, as requested.

### *Coordination with Local Officials*

The Highway 371 Preliminary Noise Analysis Report has been made available for federal, state, regional, and local officials, as well as to the general public. Appropriate comments received on this Draft EIS will be incorporated into the preliminary design plans for the selected alternative and into the Final EIS. Input will also be used in the development of potential abatement plans and will be used in the Final Noise Analysis Report, which will address noise impacts and mitigation along the selected alignment.

## **Water Quality and Surface Water Drainage**

### **Affected Environment**

The affected environment to be considered for water quality and surface water drainage includes the roadway drainage system and the surrounding water resources. Several important water resources are located in the project area. In the southerly portion of the project area, there are several lakes (Lower Cullen, Nisswa, Edna, West Twin, and East Twin) and a creek (Cullen Brook). In the northerly portion, the existing Highway 371 alignment crosses the Pine River at two locations. In addition to these important bodies of water, several wetlands are present in the vicinity of the existing corridor. With the exception of two major wetlands located south and north of the City of Jenkins, most of the wetlands are isolated and relatively small in size.

Existing surface water drainage from Highway 371 currently discharges directly to lakes, rivers, and wetlands. Roadway runoff can contribute sediment and attached phosphorous to these water resources. The existing impacts that occur directly from Highway 371 are associated with maintenance of the roadway surface, deicing during the winter, and storm water runoff. In large part, pollutants from deicing and storm water are transported to vegetated road shoulders prior to reaching receiving water bodies. However, in areas where the road is close to a water resource, such as Nisswa Lake, Lower Cullen Lake, West Twin Lake, and the Pine River, there is limited area for treatment and any existing buffers are very narrow. Most wetlands in the project area are buffered from direct pollutant discharge by the vegetated road shoulders, but in several locations, these buffers are relatively narrow.

## **Environmental Consequences**

### Alternative 1 – No-Build

The No-Build Alternative would result in no increase of impervious surface. However, the existing drainage system would continue to allow untreated runoff to discharge directly into receiving water bodies.

### Alternatives 2, 3, 4, and 5

Alternatives 2, 3, 4, and 5 include the construction of a four-lane divided highway. These build alternatives have the potential to affect the local hydrology by altering the existing drainage patterns for surface water. If surface water circulation and flow is impeded by the proposed improvements, undesirable accumulation of standing water may occur. If groundwater circulation is effected, the groundwater table may temporarily rise in some areas and decline in others. As a result, culverts and bridges will be incorporated into the design of the preferred alternative in order to allow surface water from the surrounding watersheds to maintain their existing paths.

The need for surface water quality treatment strategies stem from research that indicates that storm water contains a series of pollutants, some tied to sediment particles and some dissolved in the water. The concentration of these pollutants in highway storm water runoff is relatively small. Phosphorous is a contaminant of particular concern because increased levels of the nutrient can lead to increased algae growth and associated water quality concerns. Impervious surfaces tend to generate higher loads of suspended sediment and associated pollutants than pervious, undeveloped surfaces. The runoff from farmland or chemically treated lawns, however, can have much higher concentrations of phosphorus and other nutrients as compared to roadway runoff.

## **Mitigation**

The proposed rural four-lane design of the preferred alternative will include roadside ditches, as well as a grassed median between the northbound and

southbound lanes. If the preferred alternative includes an urban section (through downtown Pequot Lakes, Jenkins, or Pine River), the proposed drainage system will include curb and gutter and storm water detention ponds. Otherwise, most of the runoff from the roadway will drain to a grassed median, roadside ditches, or storm water treatment pond. Some of the low points along the corridor will serve as points of discharge to the surrounding areas. Once a preferred alternative is selected, the topographic and hydrographic information will be analyzed in detail and drain passages across the proposed highway (i.e., bridges and culverts) will be planned.

The EPA led the efforts in establishing guidelines and regulations to address storm water runoff treatment at the national level. In Minnesota, more specific guidelines have been developed by the MPCA. Detention basins (ponds) are the most widespread method of retaining the suspended particles and improving the quality of the storm water runoff from developing areas with a high percentage of impervious surface. However, other treatment methods have been developed and found to be highly effective. The methods to route, contain, and treat the storm water in order to limit its adverse impact on the surrounding environment are referred to as BMPs.

The typical section of the proposed rural four-lane highway will use a grassed center median and roadside ditch as a method for containing and treating the storm water runoff from the roadway. The BMPs best suited for containing and treating the storm water runoff are the grassed swales with separating berms and the vegetated filter strips.

Grassed swales or vegetated swales are densely vegetated drain ways with slightly sloped bottoms. The role of the vegetation is to reduce flow velocity and provide sediment settling and filtration. Typically, tall rigid grasses with extensive root systems are desirable. The grassed swales can be implemented along the median and along the roadside ditches. To slow the flow velocity and retain the runoff, berms perpendicular to the direction of flow are installed at prescribed intervals. The berms allow for slow and complete drainage as the rainfall recedes. A drain system may be built at the bottom of each berm to ensure proper drainage and prevent permanent accumulation of standing water. The slopes of the berms tend to be relatively flat to allow for mowing and other maintenance operations. It is important to notice that separating berms cause grass swales to function essentially as retention basins and can virtually retain all of the sediment washed away by storm water runoff. Thus, the grassed swales can simultaneously provide excellent runoff control and storm water treatment. Swales can also provide additional benefits, such as erosion control and pleasant aesthetics.

Filter strips may be used in low areas where the topography of the adjacent terrain does not allow for construction of a roadside ditch. Occasionally referred to as vegetated strips, filter strips are densely vegetated areas with generally flat slopes designed to treat sheet flow runoff from nearby impervious surfaces. Although filter strips alone do not provide a high sediment and pollutant removal rate, their use can be effective in treating

low levels of runoff. To enhance the efficiency of filter strips, if the topography of the terrain permits, a short (i.e., 1-foot high) berm should be constructed at some distance down gradient. Filter strips should be implemented in areas of uniform slope where sheet flow occurs. Filter strips reduce the flow velocity of runoff and promote filtration and infiltration of sediment particles and associated pollutants. Filter strips consist of sod-forming vegetation, primarily tall, thick, dense native grasses with extensive roots. Besides the runoff control and storm water treatment benefits, filter strips also provide erosion control, pleasant aesthetics, and promote bio-diversity.

The grassed swales together with the filter strips have the potential to contain and treat the majority of the roadway runoff. Both BMPs are relatively easy to construct and maintain once the vegetation is established. The capacity of grassed swales with berms can be designed to accommodate the runoff generated by large rainfall events. The vegetated filter strips can retain a portion of the suspended sediment associated with the remaining fraction of the runoff that cannot be contained in the median area or the roadside ditches.

Storm water detention ponds will likely be planned at some of the low points along the corridor. These detention ponds will be used as end of the line runoff control and storm water treatment. Additional detention ponds could be constructed along the profile and at locations where sensitive bodies of water need to be protected.

As part of the requirements of the NPDES permit, a storm water runoff plan will be completed. The plan will identify the type and location of BMPs, which will then be incorporated into the final design of the preferred alternative. Furthermore, Mn/DOT will continue to coordinate efforts with the resource agencies to ensure water quality and surface water drainage concerns are addressed in the design of the preferred alternative.

## **Floodplains and Water Body Modifications**

### **Affected Environment**

Presidential Executive Order 11988 – “Floodplain Management” and Minnesota Statutes 103F.101 to 103F.155 require federal and state agencies, in carrying out their proposed projects, to provide leadership and action to reduce the risk of flood loss and minimize the impacts of floods on human safety by floodplains. Floodplains have been designated and mapped for the Federal Emergency Management Agency as part of the National Flood Insurance Program.

The following floodplain assessment was developed under the guidance of the Mn/DOT Highway Project Development Process Manual, Part II, Section D. Supporting references include the United States Geological Service (USGS) Quadrangle Maps, and aerial photos for the project area. Flood Insurance

Rate Maps and MNDNR Ordinary High Water Levels do not exist for the subject floodplains discussed below.

### **Environmental Consequences**

#### Alternative 1 – No-Build Alternative

Under Alternative 1, no new transverse or longitudinal floodplain crossings would occur, and no new floodplain impacts are anticipated. The existing two-lane alignment currently has a transverse crossing of the Hay Creek floodplain, two transverse crossings of the Pine River floodplain, and a transverse crossing of Cullen Brook that interconnects Nisswa Lake to Lower Cullen Lake.

#### Alternative 2 – Existing Alignment

Improving the existing alignment would result in an expanded width of the existing transverse floodplain crossings, which included 1) Pine River north (also known as Norway Brook) with an estimated 100-foot transverse crossing above the 100-year flood elevation of 1,280 mean sea level (msl); 2) Pine River South with an estimated 120-foot transverse crossing above the 100-year flood elevation of 1,270 msl; 3) Hay Creek with an estimated 210-foot transverse crossing above the 100-year flood elevation of 1,285 msl, and 4) Cullen Brook between Nisswa and Lower Cullen Lakes with a 1,750-foot transverse crossing above the 100-year flood elevation of 1,196 msl. The existing Highway 371 roadway grade at these floodplain crossings are above the 100-year flood elevation as shown in Table 15.

**Table 15  
Existing Highway 371 Roadway Grade Elevations at Floodplain Crossings  
Compared to Estimated 100-Year Flood Elevation**

<b>River Crossing By Waterway Name</b>	<b>Highway 371 Roadway Elevation</b>	<b>100-Year Flood Elevation</b>	<b>Height of Roadway Grade Above 100-Year Floodplain</b>
Pine River South	1,278 msl	1,270 msl	8 feet
Pine River North (Norway Brook)	1,283 msl	1,280 msl	3 feet
Hay Creek	1,292 msl	1,285 msl	7 feet
Cullen Brook	1,202 msl	1,196 msl	6 feet

There has been no history of overtopping the highway at these existing transverse floodplain encroachments. No substantial impacts on natural and beneficial floodplain values, and no increased risk of flooding is anticipated as a result of Alternative 2. This alternative will not result in incompatible floodplain development. Alternative 2 involves the modernization of existing floodplain encroachments, and no new access into the floodplains will be provided. Based on the above, no floodplain impacts are expected from Alternative 2.

### Alternative 3 – Existing Alignment with Pequot Lakes Bypass

Alternative 3 would have the same floodplain impacts as discussed under Alternative 2. Based on the analysis, no floodplain impacts are expected from Alternative 3.

### Alternative 4 – Existing Alignment with Pequot Lakes and Jenkins Bypasses

Alternative 4 would have similar floodplain impacts as discussed under Alternative 2 except for a new crossing of the Hay Creek floodplain. A new transverse crossing of Hay Creek would need to occur, approximately 0.25 miles to the east of the existing transverse crossing of Hay Creek. The new Hay Creek crossing by Alternative 4 would involve approximately 100 feet of a transverse crossing. The existing Highway 371 roadway grade at the three existing floodplain crossings is above the 100-year flood elevation as shown in Table 16. No increased risk of flooding is anticipated under Alternative 4.

### Alternative 5 – Existing Alignment with Jenkins Bypass

Alternative 5 would have the same floodplain impacts as discussed under Alternatives 2 and 4. Based on the analysis, no floodplain impacts are expected from Alternative 5.

**Table 16**  
**Lengths of Transverse Floodplain Crossings Per Alternative**

<b>Floodplain Name &amp; 100-yr. Flood Elevation</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>	<b>Type of Crossing*</b>
Pine River South 1,270 msl	120 feet	120 feet	120 feet	120 feet	Expand Existing
Pine River North (Norway Brook) 1,280 msl	100 feet	100 feet	100 feet	100 feet	Expand Existing
Hay Creek 1,285 msl	210 feet	210 feet	150 feet	150 feet	Alts. 2 and 5 Expand Existing Alts. 3, 4 New Transverse
Cullen Brook	1,750 feet	1,750 feet	1,750 feet	1,750 feet	Expand Existing

Notes: msl = Mean Sea Level

\*Expand Existing = Reconstructing road at existing Highway 371 transverse crossing

### **Mitigation**

The project is not anticipated to change or diminish the course, current, or cross-section of public waters, by any means, including filling, excavating, or placing of materials in or on the beds of public waters. Mitigation of the transverse crossings referenced above would involve construction of the roadway grade above the 100-year flood elevation. No adverse impacts to natural or beneficial floodplain values are anticipated. Adequate fish passage is currently provided and will be maintained or improved at each crossing. Wetland sequencing measures (avoidance, minimization, mitigation) will be implemented at floodplain crossings that involve wetlands. Boat passage will be maintained, and no known public access areas are within the scope of effect of these transverse floodplain crossings. No channel changes are expected to occur. Lastly, the MNDNR Natural Heritage Database Information

system shows no occurrences of rare, threatened, or endangered species at these existing and proposed transverse crossings.

## **Geology/Groundwater**

### **Affected Environment**

#### Bedrock Geology

The bedrock geology of the project area and all alternatives consists of Middle Precambrian metamorphic and sedimentary rocks, none of which are exposed in the project area. Middle Precambrian bedrock formations in central, east central, and northeast Minnesota are partially outlined by the iron formations of the Mesabi, Gunflint, and Cuyuna ranges. The surface of the bedrock is approximately 800 to 900 feet above msl, which is approximately 200 to 400 feet below the existing ground surface, or beneath the glacially deposited till deposited in the Quaternary Period. The bedrock type is predominantly dolomites, quartzites, and black shales. Some granite intrusions may be present in scattered locations.

#### Hydrogeology

The Middle Precambrian bedrock in the project area is not considered an aquifer. Most sedimentary rocks in the formation have undergone metamorphic changes and lack the compositions and porosity to provide functions as an aquifer. Saturated and surficial aquifers in the project area are small, isolated, and widespread mostly within the quaternary glacial till deposits. These tend to supply some individual water sources in the area. Buried sand and gravel aquifers are the main sources of water in the project area. These are 3 to 20-foot thick buried aquifers that are overlain by a confining unit and are discontinuous. Confining unit thickness varies widely, but is typically greater than 30 feet in the project area (United States Geological Survey, 1998).

#### Quaternary Geology

The project area is located primarily in sandy outwash plains associated with or adjacent to surrounding moraine complexes. In the project area from Nisswa to the north side of Jenkins, the project area is within an outwash plain primarily associated with the St. Croix Moraine Association. On the north side of Jenkins, the project area enters onto outwash deposits associated with the Alexandria Moraine Association. Continuing to the north, the project area enters a small lobe of ground moraine from the St. Croix Association. On the south side of the City of Pine River, the project area re-enters the outwash plain associated with the Alexandria Moraine Association through the north end of the project area. The till thickness in the project area is 150 to 300 feet in the outwash plain areas and slightly thicker in the moraine locations. The surface topography ranges from flat to moderately hilly. The entire area is rich with lakes and smaller topographic depressions that form many wetland basins in the project area.

### Wellhead Protection Zones, Sole Source Aquifer, Wells

The Minnesota Department of Health (MDH) designated a wellhead protection area in the City of Pine River (Figure 17). Two separate wellhead protection areas occur on both sides of existing Highway 371 and are within the Drinking Water Supply Management Area for the City.

The MDH Wellhead Area Protection Program defines a groundwater recharge area for a municipal well (or well field) and establishes protective measures against potential groundwater contaminants. There are no other wellhead protection zones in the project area. The Cities of Jenkins, Nisswa, and Pequot Lakes have municipal wells in the area, but they would not likely be impacted by the proposed project.

An inventory of private wells in the project area was not completed. However, the number and locations of private wells can be associated with existing and past development in the project area. Improperly abandoned wells may exist within the project area.

There are no designated sole source aquifers in the project area.

### **Environmental Consequences**

#### Alternative 1 – No-Build

There would be no direct effects to geology and/or groundwater as a result of the No-Build Alternative.

#### Alternatives 2, 3, 4, and 5

There would be no direct effects to geology and/or groundwater as a result of Alternatives 2, 3, 4, and 5. All the build alternatives would include highway improvements located adjacent to two designated wellhead protection areas for the City of Pine River wells (see Figure 17). No improvements are anticipated to be within the designated wellhead protection areas and the type of improvements will not create adverse effects on any public water supply system.

### **Mitigation**

The State of Minnesota recognized the need to implement a statewide emergency response system for reporting, assessing, containing, and cleaning up spills of pollutants, contaminants, and/or hazardous materials that can adversely affect groundwater. Minnesota Statute §115.061 requires responsible parties to immediately notify the state duty officer of spills. Minnesota Statute §115E.09 and §299K.07 established a number of controls and programs, including but not limited to, the following.

- A 24-hour State One-Call System to report spills
- A State Hazardous Materials Preparedness Coordination Committee
- State Chemical Emergency Response Teams
- Chemical Assessment Teams.

Figure 17 – Wellhead Protection Areas

Emergency Response Teams and Assessment Teams are on-call 24-hours a day and are located statewide to provide immediate response as directed by the state duty officer. Mn/DOT will follow the coordinated statewide system for emergency response to accidental spills if a spill occurs.

The abandonment of any wells will be conducted in accordance with MDH requirements and in coordination with MDH staff. Storm water conveyances and treatment system locations will be evaluated to determine if special precautions are needed to prevent storm water from entering the groundwater system in potential wellhead protection areas and near wells classified by MDH as vulnerable.

## **Wetlands**

### **Affected Environment**

Wetland regulations in effect for the project area are as follows.

- The Federal Clean Water Act (CWA) Section 404 administered by the USACE
- The CWA Section 401 Water Quality Certification administered by the MPCA for Waters of the state
- The Minnesota WCA administered by the Board of Water and Soil Resources through Local Government Units (LGU) at the Soil Water Conservation District level for each county in the project area. Mn/DOT will act as its own LGU for activities on Mn/DOT right-of-way.
- The MNDNR Protected Waters and Wetlands Program for Circular 39 Type 3-8 wetlands classes.

Existing wetlands were identified by reviewing aerial photography, USGS 7.5-minute quadrangle maps, National Wetlands Inventory maps, soil survey maps, and field investigations. Protected waters were identified using the MNDNR Protected Waters Inventory maps. Wetlands were identified using Wetlands of the United States (United States Fish and Wildlife Service Circular No. 39) as required by state law. The identified basins were then referenced into the Cowardin system, using Classification of Wetlands and Deepwater Habitats of the United States, Cowardin, et al, 1979 edition. Jurisdictional field delineations will be performed prior to acquiring permits and in compliance with the United States Army Corps of Engineers Wetland Delineation Manual (January 1987). Figures A1 through A21 located in Appendix A illustrate the wetland basins identified in the project area.

### Project Setting – Wetlands

The wetland base is essentially intact in Crow Wing and Cass Counties, with 85 to 95 percent of the pre-settlement wetlands still remaining. Wetlands in this corridor include floodplain or fringe wetlands associated with several streams and lakes, isolated depression basins ranging from semi-permanently flooded to saturated, and a few wooded and open bogs. The wetland

resources in this area are in relatively good condition, with little drainage or development pressure except surrounding the recreational lakes.

### Wetland Functions and Values

Functions and Values: The Minnesota Routine Assessment Method for Evaluating Wetland Functions, Version 2.0, was used to quantify functions and values of representative existing wetlands and then applied to similar basins within the corridor. Appendix D contains additional wetland functions and values information for the wetland basins located throughout the corridor.

Several lakes and streams in this area harbor substantial fish populations. Cullen Brook, Pine River, West Twin Lake, and Edna Lake have been identified by the MNDNR Area Fisheries manager to be the most sensitive to potential effects of this project. Other fisheries resources could be identified as the project progresses.

Floral diversity is generally high within the corridor, except for a few basins that have been impacted by development or invasive species, such as *Phalaris arundinacea* (reed canary grass) or *Typha* spp. (cattails).

Wildlife habitat ranks medium to high for the larger basins or in floodplain areas that can serve as corridors for movement. It has been suggested that Blanding's turtles may utilize some wetlands in the area for breeding and or over wintering, although this has not been corroborated.

Since this area is not flood prone, wetlands here offer little value for flood attenuation. Water quality functions rate medium to high for many wetlands in the corridor. The adjacent lakes receive extensive recreational use, which contributes to the need to expand Highway 371.

There are no unique or locally scarce wetland types or functions that will be adversely affected by the proposed project.

### **Environmental Consequences**

#### Alternative 1 – No-Build Alternative

Under the No-Build Alternative, Highway 371 improvements would be limited to normal pavement maintenance and minor improvements, including shoulder widening, turn lanes, shoulder bypass lanes, access consolidation, and minor geometric changes. This is the only alternative that can avoid all wetland impacts.

This option may, however, impact wetlands and lakes that are adjacent to the existing roadway incrementally. The existing roadway was constructed before water quality BMPs were required. Consequently, storm water runoff is only filtered by vegetated ditch conveyances or in-slope vegetation prior to discharge to adjacent wetlands, lakes, or streams.

While the No-Build Alternative would have the least direct effect on wetlands, the indirect effect would be to leave an antiquated storm water handling system in place while increased traffic places additional pressures on the water quality function of the adjacent resources. The No-Build Alternative would have minimal effect on other wetland functions.

#### Alternative 2 – Existing Alternative

Wetland impacts cannot be avoided if Alternative 2 is chosen; however, minimization measures would be implemented to limit the effects of the expanded highway.

Currently, it is anticipated that Alternative 2 will necessitate the filling of approximately 22.28 acres of wetland. Since this build alternative is essentially an expansion of an already developed corridor, most of the wetland effects consist of incremental or peripheral impacts to adjacent basins (see Figures A1 through A5, A15, and A16). Estimated impacts to wetland types and acres for Alternative 2 are shown in Table 17.

#### Alternative 3 – Existing Alignment with Pequot Lakes Bypass

Alternative 3 would avoid impacts to two wetland basins that are tributary, adjacent to Sibley Lake, and MNDNR protected waters wetlands. In addition, the eastern side of Pequot Lakes has fewer wetlands compared to locations further to the west near existing Highway 371. Alternative 3 would require the filling of approximately 26.87 acres of wetland (see Figures A1, A2, A6 through A8, A15, and A16). Estimated impacts to wetland types and acres for Alternative 3 are shown in Table 17.

#### Alternative 4 – Existing Alignment with Bypasses of Pequot Lakes and Jenkins

Alternative 4 avoids expanding the highway on its current alignment through Pequot Lakes and Jenkins. Alternative 4 creates peripheral impacts to several wetlands and would require the filling of approximately 27.87 acres of wetlands. Furthermore, Alternative 4 would create a new corridor through a few wetland basins that are not currently affected by a roadway (see Figures A1, A2, A9 through A11, A15, and A16). The estimated impacts to wetland types and acres for Alternative 4 are shown in Table 17.

#### Alternative 5 – Existing Alignment with Jenkins Bypass

Alternative 5 avoids expanding the highway on its current alignment through Jenkins. Alternative 5 creates peripheral impacts to several wetlands and would require the filling of approximately 29.07 acres of wetlands. Furthermore, Alternative 5 would create a new corridor through a few wetland basins that are not currently affected by a roadway (see Figures A1, A2, A12 through A16). The estimated wetland types and acres for Alternative 5 are shown in Table 17.

**Table 17**  
**Wetland Impact Acres by Type\* and Project Alternatives**

<b>Wetland Type</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>
Type 1	0.1 acres	0	0	0.1 acres
Type 2	1.66 acres	2.17 acres	1.79 acres	1.73 acres
Type 3	1.49 acres	1.66 acres	7.56 acres	7.91 acres
Type 4	1.21 acres	1.21 acres	1.21 acres	1.21 acres
Type 5	0	0	0	0
Type 6	17.31 acres	21.32 acre	16.78 acres	17.59 acres
Type 7	0.24 acres	0.24 acres	0.24 acres	0.24 acres
Type 8	0	0	0.02 acres	0.02 acres
Lake	0.27 acres	0.27 acres	0.27 acres	0.27 acres
<b>TOTAL</b>	<b>22.28 acres</b>	<b>26.87 acres</b>	<b>27.87 acres</b>	<b>29.07 acres</b>

\*Based on Wetlands of the United States, FWS Circular 39

### **Mitigation**

The above alternatives have been evaluated in accordance with Executive Order 11990.

### Sequencing

**Avoidance:** The No-Build Alternative is the only alternative that can avoid all wetland effects, however, it would not solve the purpose and need of this project. Some sensitive basins have been avoided through the conceptual design process of the build alternatives.

**Minimization:** Several minimization measures are incorporated into the early designs of the build alternatives, including adjusting the centerline spacing and shifting alignments of bypasses. Additional minimization measures may be considered following the selection of the preferred alternative.

Impacts to water quality will be minimized by effective erosion and sediment control during construction and installation of permanent water quality appurtenances. Additional wetland avoidance and minimization measures will be made as the design progresses for the preferred alternative.

**Compensation:** Replacement of lost wetlands will be in accordance with current Minnesota WCA criteria, CWA Section 404 and MNDNR protected waters requirements. Replacement will occur prior to or concurrent with the impacts, and every effort will be made to replace all lost functions and values with special emphasis on protecting recreational uses of lakes, fishery viability, and water quality.

Wetland mitigation is an ongoing and continuous component of project development and, therefore, is subject to change. Replacement sites are sought first within the area of effect (project specific), next within the same watershed, and finally within the same county. This concentric circle approach assures that lost wetland acreage, functions, and values are replaced as prudently as possible. Detailed mitigation site construction plans

are developed along with the highway construction plans unless a site is large enough to warrant a standalone plan, such as for large bank sites. All replacement sites are monitored for a minimum of five years and are protected by restrictive covenants as required by the Minnesota WCA.

Every effort will be made to mitigate the wetland losses within the project area. However, if Mn/DOT is unable to locate suitable on-site mitigation, the wetland replacement will be taken from the Mn/DOT District 3 account in the Statewide Wetland Bank. The Rice Lake (Staples Wildlife Management Area (WMAs)) site in Todd County has received prior approval for use as mitigation from both the state resource agencies and the USACE. It is a flow through basin with Types 3 and 4 wetlands that was deposited in the Statewide Wetland Bank in 1995. Currently, there are over 150 acres available for use at this site. Further coordination regarding potential wetland replacement sites will occur with the MNDNR and USACE once the preferred alternative has been identified and the potential for wetland impacts has been further defined.

## **Vegetation**

### **Affected Environment**

Vegetation is addressed in accordance with Minnesota Environmental Policy Act (MEPA), NEPA, and FHWA policy and guidance. In addition, the vegetation section addresses managed vegetative communities, such as state forests, tree farms, and remnant prairies, and other important vegetative features or communities in a project area. Potential vegetative community impacts were determined through the use of the MNDNR Gap Analysis Program (GAP) database to determine vegetative cover types.

### **Environmental Consequences**

#### Alternative 1 – No-Build Alternative

No effects on vegetation will occur.

#### Alternatives 2, 3, 4, and 5

The project setting of Alternatives 2, 3, 4, and 5 is predominantly rural with lesser amounts of urban areas within the municipalities. Rural areas include hardwood forest, mixed hardwood/conifer forest, and conifer forest in the uplands. Wetlands include herbaceous and forested wetland types (note: the GAP analysis does not differentiate between forested and herbaceous wetlands). Table 19 includes a summary of herbaceous and shrubby wetlands only. Please refer to the Wetlands section of this Draft EIS for a summary of potential effects on forested wetland types. Cultivated land, pastureland, and old fields (grassland) are also present. Urban areas are densely developed with landscaped settings, and small stands of forest cover and old fields. Estimated effects on GAP determined vegetative communities for all the alternatives are shown in Table 18.

**Table 18**  
**GAP Analysis Results, Acres of Potential Impacts to Vegetation by Alternative**

<b>Vegetative Cover Type</b>	<b>Alternative 1 No-Build</b>	<b>Alternative 2 (acres)<sup>1</sup></b>	<b>Alternative 3 (acres)<sup>1</sup></b>	<b>Alternative 4 (acres)<sup>1</sup></b>	<b>Alternative 5 (acres)<sup>1</sup></b>
Deciduous Forest	0	76	103	111	95
Coniferous Forest	0	72	68	108	103
Mixed Forest	0	104	112	111	111
Cultivated Land	0	3	6	26	23
Grassland	0	156	257	217	147
Wetlands: Herbaceous Marshes or Shrub Carr	0	7	8	8	8
Farmsteads and Rural Residences	0	9	11	13	10
Other Rural Developments	0	51	51	47	47
Urban/Industrial	0	67	52	46	60
Gravel Pits/Open Mines	0	0	1	1	0
Open Water	0	2	2	2	2

<sup>1</sup> Acres are estimates of impact area based on construction limits for the conceptual alignments of the build alternatives.

The MNDNR conducted a plant community survey on the Paul Bunyan Trail (MNDNR, 2001). Several segments of the trail in the vicinity of the build alternatives are populated with native prairie species. Some of these species may have been planted, whereas others may have persisted along the now abandoned railroad grade that comprises the trail. The majority of the native prairie species are located between Jenkins and Pine River where the build alternatives share a common alignment.

There are no state or national forests, large tree farms, or other unique vegetative features that are potentially affected by Alternatives 2, 3, 4, or 5. An old growth stand of conifers referenced in the MNDNR Natural Heritage Information System database located on the southwest side of the City of Pine River is not affected by Alternatives 2, 3, 4, or 5.

### **Mitigation**

Following the selection of the preferred alternative, Mn/DOT and the MNDNR regional forestry staff will coordinate to determine the locations and the scope of project effects on any state-owned timber parcels. If necessary, Mn/DOT and MNDNR staff will also consider and coordinate plant salvage of important or rare native vegetation that could be affected by a selected preferred alternative. Private timber resources will be addressed in accordance with Mn/DOT policy on tree salvage, valuation, and compensation after selection of a preferred alternative. Aesthetic treatments to minimize impacts to or enhance vegetation quality may also be considered and applied when appropriate during the final design of the preferred alternative.

## **Fish & Wildlife**

### **Affected Environment**

Several state and federal regulations on fish and wildlife coordination for environmental review have implications for this project. At the federal level, NEPA and the FHWA provide transportation project guidance and direction for coordination under the policies of the federal Fish and Wildlife Coordination Act (1958) and the federal Migratory Bird Treaty Act. Actions under both acts involve U.S. Fish & Wildlife Service (USFWS) review. Furthermore, NEPA and FHWA provide guidance for addressing project effects on fish and wildlife resources. At the state level, the Minnesota Environmental Quality Board and MEPA rules have established policy and guidance for coordination on fish and wildlife resources. The MNDNR administers these actions through environmental review and public waters permitting. Mitigation for fisheries impacts may be required under public waters permitting conditions. State and federal threatened and endangered (T & E) species project coordination and potential effects are addressed separately in the T & E Species section of this document.

Adequate and effective fish passage is provided through the existing bridges at Cullen Brook and the two Pine River crossings. Fish nursery habitat is also found near the Cullen Brook crossing. The Hay Creek crossing referenced in the floodplain section has little to no fish habitat, as this is a small wooded drainage more than a waterbody or flowing stream. Additional in-lake fish habitats, including spawning habitats are found in several lakes that are in close proximity to existing Highway 371 including Fawn Lake, Lower Cullen Lake, and East and West Twin Lakes. There are no existing crossings or close proximity locations of MNDNR designated trout streams by the existing Highway 371 alignment in the study area.

Wildlife habitats that are common to North Central Minnesota occur in the vicinity of Highway 371. A mosaic of second growth hardwoods, conifers, and mixed forest are interspersed with farmland, herbaceous and woody dominated wetlands, old fields and vacant land, and developed land. No designated state WMAs, Scientific and Natural Areas, or MNDNR designated shallow game lakes are within the vicinity of or potentially affected by the build alternatives. No federal national wildlife refuges or waterfowl production areas are within the vicinity of or potentially affected by the build alternatives. Nesting swallow concentrations are found on the bridge structures over the Pine River. Approximately 6 to 10 active nests were observed on both bridges in June of 2003.

## **Environmental Consequences**

### Fisheries

#### *Alternative 1 – No-Build Alternative*

If the No-Build Alternative was selected, there would be no benefits gained to fish habitats by water quality treatment applications that currently do not exist, but would be implemented with construction of a new facility.

#### *Alternatives 2, 3, 4, and 5*

The existing effective fish passage in Cullen Brook and Pine River will be maintained through the installation of bridge structures at the elevations that maintain the effective fish passage currently provided. No in-lake fish habitat impacts are expected due to dredge and fill activities from this alternative. There are no MNDNR designated trout streams crossed or within close proximity to this alternative.

### Wildlife

#### *Alternative 1 – No-Build Alternative*

No impacts to wildlife or their habitats are anticipated.

#### *Alternatives 2, 3, 4, and 5*

There are no known wildlife concentrations (i.e., wintering deer yards), colonial nesting bird colonies or rookeries, or other unique wildlife resources within the vicinity of or potentially affected by Alternatives 2, 3, 4, or 5. This includes privately owned wildlife resources, such as Nature Conservancy owned parcels and private hunting preserves. No other nesting concentrations of federally recognized migratory birds are potentially affected by Alternatives 2, 3, 4, or 5.

## **Mitigation**

As referenced above, the existing effective fish passage in Cullen Brook and Pine River will be maintained through the installation of bridge structures at the elevations that maintain the effective fish passage currently provided. Mn/DOT district staff will work cooperatively with the MNDNR Area Fisheries staff to assure that fish passage objectives are met at each crossing and the fish nursery habitat in the area of Cullen Brook is protected. All build alternatives will provide indirect benefits to adjacent in-lake habitats through the implementation of water quality treatments both during and after construction, which are currently lacking on the existing Highway 371 facility in this area.

Under the provisions of the Migratory Bird Treaty Act, Mn/DOT has established a policy and process for mitigating impacts to nesting swallow concentrations on bridges. If the nest concentrations exceed a designated threshold, several measures to minimize impacts to swallow nesting could be implemented including the installation of pre-nesting exclusion devices and

staging bridge removal/construction to periods outside of the nesting season. This Mn/DOT policy was established through cooperation and concurrence with the USFWS and has been successfully implemented throughout Minnesota for approximately 15 years.

## **State/Federal Threatened & Endangered Species**

### **Affected Environment**

T & E species review and coordination occurs under the provisions of the State of Minnesota Endangered Species Statute (Minnesota Statutes, Section 84.0895) and associated Rules (Minnesota Rules, Chapter 6134), and the federal Endangered Species Act of 1973, as amended (16 USC 1531 1544).

#### *State Listed T & E Species*

The MNDNR coordinates and enforces the Minnesota Endangered Species Statute through the provisions of MEPA and/or a MNDNR Commissioner's Letter of Decision. Furthermore, MEPA requires that all state agency projects review and coordinate for state T & E species. Typically, the initial project determination is accomplished through the MNDNR Natural Heritage Information Program database and may proceed to additional study and coordination with the MNDNR and other interested agencies if the potential for effects is imminent.

The MNDNR Natural Heritage Information Program database shows 28 T & E species occurrences within a 1-mile radius of the project area. This includes Blanding's turtles and a bald eagle nesting area that is discussed below under federal T & E species. Correspondences from the MNDNR regarding the Natural Resources and Recreational Resources Questionnaire and the Natural Heritage Database review are included in Appendix E.

#### *Federal Listed T & E Species*

The USFWS is responsible for review of actions related to federally listed T & E species. The FHWA, through the NEPA process, requires USFWS federal T & E species review and concurrence on federally funded transportation projects. In addition, if a potential effect on a federal T & E species is identified, federal Endangered Species Act Section 7 consultation guidance will be followed. The USFWS may require preparation of a biological assessment to determine the project's scope of effect on any T & E species impact, and the subsequent mitigation solutions. Lastly, the USFWS issues guidance and thresholds for determining avoidance or mitigation strategies for particular federal T & E species (e.g., bald eagle nest protection zones).

The project counties are within the breeding range of the bald eagle (*Haliaeetus leucocephalus* – federal status, Threatened), the range of the gray wolf (*Canis lupis* – federal status, Threatened), and the Canada lynx (*Lynx canadensis* – federal status, Threatened). The distribution of the gray wolf and Canada lynx in the project area and the nature of the project, are such that no effects to these species are anticipated. Gray wolves are known

to disperse through the project area, but there are no established packs in the vicinity of the project and its alternatives. No Canada lynx observations have been recorded in the area of the project.

A bald eagle nesting area with an active nest is located in a large white pine 107 feet to the west of the existing Highway 371 alignment near the southern project terminus. This nesting area has been present for approximately 25 years with numerous successful nesting/fledgling events, despite the traffic and noise on nearby Highway 371 and the dense recreational related development in the surrounding area. The USFWS and/or MNDNR nongame biologist has monitored nesting success and kept records on the nesting area since its establishment.

## **Environmental Consequences**

### Alternative 1 – No-Build Alternative

No effects on state/federal T & E species will occur.

### Alternatives 2, 3, 4, and 5

No adverse effects to the gray wolf, Canada lynx, or Blanding's turtle are anticipated. Furthermore, direct impacts to the bald eagle nesting site noted above are not anticipated.

The remaining 27 occurrences sited in the MNDNR Natural Heritage Information Program database are not within the scope of effect of Alternatives 2, 3, 4, and 5, or are motile species that were observed along or in close proximity to existing Highway 371.

## **Mitigation**

### State Listed T & E Species

As requested by the MNDNR, the Environmental Review Fact Sheet Series on Blanding's turtles will be provided to the selected construction contractor for the protection and reporting of Blanding's turtles encountered in the immediate area during construction. This document includes techniques for the exclusion of turtles from entering construction area near their wetland and upland nesting habitats (i.e., silt fencing), which will be implemented when appropriate. If state listed T & E plants are encountered within construction limits or staging areas, the MNDNR will be consulted with for plant salvage possibilities. A mussel survey was conducted on the two proposed crossings on the Pine River. At both crossings, moderate density populations of *Lampsilis siliquodea* (fatmucket) and *Lampsilis cardium* (plain pocketbook) mussels were observed. Both live adults and shells were collected and identified. Neither of these species is classified as rare mussel species by the state of Minnesota. A third species, *Ligumia recta* (black sandshell), was observed as two empty shells at the south crossing. *Ligumia recta* is a State Special Concern species; however, the shells collected were very old, worn, and in poor shape. No recent shells or live adults were observed.

## Federal T & E Species

Effects on the bald eagle nesting area on the west side of existing Highway 371 will be minimized by locating all construction/expansion activities to the east side. No construction will extend beyond the existing west right-of-way edge. Traffic will continue to utilize the existing lanes, bypassing the construction activities to the east. Through correspondence with USFWS, it was decided that if the nest is still in place and active at the time of construction an exclusion zone will be established around the nest tree to prevent incidental intrusion near the nest during construction. Furthermore, a 1/8-mile buffer zone around the nest will prohibit construction until after July 15<sup>th</sup> of the construction year. Coordination between the USFWS, MNDNR, and Mn/DOT will continue through the project development process, which may result in additional measures (e.g. construction staging) to minimize effects on the bald eagle nest. Furthermore, the MNDNR nongame biologist and the Mn/DOT District biologist will monitor the nesting area through construction of the preferred alternative.

## **Prime and Statewide Important Farmland**

### **Affected Environment**

The Federal Farmland Protection and Policy Act of 1981 and the Minnesota Agricultural Land Preservation and Conservation Policy Act (M.S. 17.80 – 17.84) have been enacted to ensure that impacts to agricultural lands and operations are integrated into the decision making process under NEPA and MEPA. The project and its alternatives were evaluated to identify farmland classified as prime, unique, or of statewide importance under the above-referenced acts and related policies.

The Crow Wing County Soil Survey (United States Department of Agriculture (USDA), 1965) and the Soil Survey of Cass County (USDA, 1997) were consulted in conjunction with Natural Resources Conservation Service references to determine any areas of prime or unique farmlands, or soils of statewide importance potentially affected by the project and its alternatives. A Farmland Conversion Impact Rating Form (AD-1006) has been completed and is included in Appendix F along with correspondence letters to the County Natural Resource Conservation Service offices.

### **Environmental Consequences**

#### Alternative 1 – No-Build Alternative

The No-Build Alternative would have no effects on prime, unique, or statewide important farmland and would not require further analysis.

#### Alternatives 2, 3, 4, and 5

Statewide important soils were encountered in two locations common to Alternatives 2, 3, 4, and 5. Both occurrences are found within Cass County where the four build alternatives share a common alignment. Therefore, the amount of potential impact is the same for all the build alternatives. No Prime

or Unique farmland was identified along the build alternative alignments. Prime and statewide important farmlands encountered on Alternatives 2, 3, 4, and 5 are shown in Table 19.

**Table 19**  
**Alternatives 2, 3, 4, and 5 Prime and Statewide Important Farmlands Encountered**

Soil Map Unit	Soil Name	Prime Farmland	Statewide Important Farmland	Occurrences of Soil Map Unit on Alternatives 2, 3, 4, and 5	Acres of Farmland Impact
731A	Sanborn loamy sand, 0-3% slopes	No	Yes	2	7.3 acres

### **Mitigation**

All practical measures will be taken to minimize harm to prime and important statewide farmlands. Special consideration will be given to avoid potential triangulation and severance of these agricultural lands. Furthermore, safe and convenient access to farmland will be considered as part of the final design for the preferred alternative.

### **Visual Quality**

A visual inventory of the natural and human resources is the first step to understanding the potential visual impacts and mitigation possibilities associated with a proposed project. The process developed by Mn/DOT, Visual Impact Assessment (VIA): A Six-step Process for Evaluating Transportation Projects, was used in identifying the visual effects of the proposed project.

### **Affected Environment**

#### Visual Resources

##### *Natural Environment*

The existing Highway 371 alignment travels through a varied and rich environment, and the landscape is a strong and dominant feature. At the south end of the project is the City of Nisswa, where there is higher density development in the downtown district. The highway crosses Cullen Creek as one travels north towards Pequot Lakes, and the landscape is gently rolling with lakes, wetlands, and stands of coniferous trees located adjacent to the highway. In downtown Pequot Lakes, the highway is a three-lane section with development located close to the highway. North of downtown Pequot Lakes, the highway crosses under the Paul Bunyan Trail before reaching the City of Jenkins. The landscape becomes more agricultural in nature north of downtown Jenkins. However, wetlands, grasslands, and smaller stands of trees can still be seen adjacent to the highway. Higher density development begins in Wilson Township and continues through downtown Pine River to the northern limits of the project corridor.

### *Cultural Environment*

Cultural resources (i.e., historic residential/commercial buildings) are limited in the project study area and are further discussed in the Architectural and Archaeological section of this Draft EIS.

### *Highway Environment*

Road width and the width of the cleared area adjacent to the road affect the visual quality of the traveler's experience. Since the existing road is a two-lane highway, with the exception of the three-lane section in downtown Pequot Lakes, the clear zone is narrow, and the vegetation is relatively close to the road.

### Viewers

#### *Travelers*

Travelers are people who currently use or will use the highway. Most travelers in the corridor are commuters who regularly use the road to get to home, work, or market; commercial haulers who use the road to move goods and services; or tourists who use the highway as a route to recreational destinations. Different types of travelers focus their attention on different types of visual resources. Commuters and haulers are interested in maintaining existing landmarks that guide them to their destination while tourists are concerned with views of scenic beauty and entertainment venues.

#### *Neighbors*

Neighbors are people who use property adjacent to the existing or proposed highway. In this corridor, neighbors are residential, business, or recreational neighbors. All neighbors in this corridor are generally concerned with maintaining or enhancing the status quo of visual resources.

## **Environmental Consequences**

### No-Build Alternative

The adverse and beneficial visual impacts resulting from the No-Build Alternative are anticipated to be minimal because only minor improvements to Highway 371 would occur.

### Alternatives 2, 3, 4, and 5

#### *Visual Quality*

All of the proposed build alternatives will have an effect on the existing visual scene and resources for both travelers and neighbors. The proposed highway improvements will require additional pavement and clearing of some natural areas. Improvements along the corridor could also adversely and beneficially affect views of lakes, wetlands, and woods for the traveler, as well as neighbors residing in the project area. The clear zones adjacent to the highway will be wider and some of the existing vegetation will need to be

removed to ensure safe conditions for highway users. In various locations, existing vertical and horizontal curves may need to be minimized to improve safety conditions. Some of the area's built environment will also be impacted. Buildings and structures that are close to the existing road or that may be affected by the proposed alignments may need to be relocated. These effects could be viewed as both an adverse and beneficial visual impact. The removal and/or relocation of old deteriorated structures could be viewed as a beneficial impact, while the relocation of other buildings may be considered adverse by the travelers and neighbors. Alternatives 3 and 4 travel through areas that are more rural in nature because they bypass the downtown districts of Pequot Lakes and Jenkins which might be a benefit for the traveler and result in fewer impacts on buildings and structures. However, they may also have greater adverse visual impacts on vegetation. Overall, the type of traveler or neighbor will determine if the visual impact is perceived as being either adverse or beneficial.

### **Mitigation**

No mitigation is required for visual impacts. However, during the final design phase, efforts will be made to avoid potential impacts to visual resources. Changes to the vertical and horizontal curves will be reviewed to determine if there is the potential for adverse effects to visual resources. However, due to safety design standards, it is anticipated that some changes will be necessary.

The clearing of trees and other vegetation will occur with the development of any build alternative. Visual impacts created from the removal of vegetation can be minimized by widening of the road on the side where there are fewer trees, by widening the road on the side where there is an existing recreational trail or power lines, and by creating irregular edges in the tree line.

## **4.3 CONSTRUCTION IMPACTS**

All applicable precautions will be taken to limit impacts connected with highway and bridge construction activities. Potential environmental effects associated with construction can include traffic congestion, traffic detours, economic (business access), noise, water quality and soil erosion, borrow and excess materials, utility disruption, and earth borne vibrations. The potential impacts along with applicable mitigation measures for each of these areas are discussed below.

### **Traffic Congestion**

It is expected that construction of the project will take two to four years to complete. Construction of the proposed action is likely to cause traffic delays and make it more difficult to get to development adjacent to the highway during construction. This may result in added congestion within the project area while construction is being completed. A construction staging plan has not yet been developed, but will be completed during the final design phase

of the project. The plan will further assess potential traffic congestion and safety problems that may arise due to construction. The staging plan will attempt to balance the need for property access while also minimizing the total length of construction time.

### **Traffic Detours**

The construction staging plan will also identify potential detours and anticipated timeframes for detour routes. The staging plan will attempt to minimize disruptions to traffic patterns while also maximizing directness of detoured routes, which will minimize short-term impacts on emergency services (police, fire, rescue, and hospital access), business access, and transit services throughout the project area.

### **Economic (Business Access)**

The proposed project is expected to generate both direct construction jobs and indirect jobs to support construction related activities. In addition, existing businesses within the project area may experience adverse short-term impacts during construction. As part of the staging plan discussed above, efforts will be made including temporary signing to ensure that traffic movements and access to businesses will be maintained throughout construction.

### **Noise**

Noise is generated by construction equipment used in the construction of highway improvements. Noise levels due to construction activities in the project area would vary depending on the types of equipment used, the location of the equipment, and the operating mode. During a typical work cycle, construction equipment may be idling, preparing to perform tasks, or operating under a full load. Equipment may be congregated in a specific location or spread out over a larger area. Some construction could potentially occur in close proximity to existing noise-sensitive land uses. Adverse impacts resulting from construction noise are expected to be localized and temporary. All construction equipment will be properly equipped to minimize potential construction noise impacts.

### **Water Quality and Soil Erosion**

The potential for soil erosion and impacts on water quality are greatest at the time a project requires the removal of vegetation and topsoil for initial clearing, grubbing, and grading activities. Areas adjacent to lakes, streams, and wetlands have the highest potential for adverse impacts. Erosion control measures as suggested by the MPCA's Protecting Water Quality in Urban Areas, Best Management Practices for Dealing with Storm Water Runoff from Urban, Suburban, and Developing Areas of Minnesota (March 2000) will be installed to minimize potential soil erosion impacts from construction activities. These practices may include, but are not limited to, the following, sedimentation basins, silt control devices (silt fences, hay bails), slope drains,

and rapid revegetation of exposed construction areas. An erosion control plan will be developed as part of the final design for the preferred alternative.

### **Borrow or Excess Material**

The selection of borrow material that may be required for the construction of the proposed improvements will be the responsibility of the construction contractor and existing gravel/borrow sites will be identified in the contract special provisions. However, due to the cost of hauling aggregate resources, it is assumed that the potential area of effect would be within approximately 3 to 5 miles of the preferred alternative. The haul distance could be shorter or longer because it is highly dependent upon the number of trucks being used by the contractor.

Mn/DOT has no authority over land use outside the state's right-of-way. Such matters, including gravel mining, generally fall under the jurisdiction of local units of government as part of zoning ordinances, other ordinance, or conditional use permits. The State of Minnesota has designated local units of government as the RGU for environmental review and analysis of gravel mining operations. Any new sites would be subject to environmental reviews under Minnesota Rule Chapter 4410.4300, Subp. 12 and will require an archaeological survey of the site. Mn/DOT will be notifying the Planning and Zoning Department of both Cass County and Crow Wing County informing them of the potential gravel needs for the proposed action, which could affect sensitive environmental resources in the area, and that they need to ensure that appropriate environmental review occurs for any gravel mining requests.

The disposal of excess material will be conducted in accordance with Mn/DOT specifications, environmental regulations, and according to a project disposal plan that will be prepared by the Contractor and approved by Mn/DOT.

### **Utility Disruption**

Construction activities may result in temporary impacts to local utilities. Potential impacts cannot be evaluated until a preferred alternative is selected. Efforts will be made during the final design phase to minimize potential impacts to utilities. Coordination and cooperation with the local service providers has been and will continue to be maintained throughout the project development process.

### **Earth Borne Vibrations**

Earth borne vibrations should be considered whenever a project involves issues, such as:

- Blasting
- Pile driving or heavy construction activities (e.g., pavement breaking, vibratory compacting) within 500 feet of buildings

- Structures (frail or historic) with high susceptibility to vibration damage
- Operations susceptible to vibrations (e.g., surgery in hospitals, lithography, computer use)

Potential for earth borne vibration impacts have been considered, but due to the nature of the planned work and affected environment, no substantial impacts are anticipated.

## **Relationship Between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity**

All highway projects require the investment or commitment of some portion of resources found in the existing environment. Short-term refers to the immediate consequences of the project whereas long-term relates to its direct or secondary effects on future generations.

### **No-Build Alternative**

The No-Build Alternative would avoid all of the short-term and localized construction impacts. However, projected traffic growth in the project area would further reduce the operations of the existing road, resulting in reduced traffic safety (higher number of crashes and fatalities), reduced mobility, and the possible loss of economic growth opportunities.

### **Build Alternatives Potential Adverse Use**

#### Temporary Reduction of Energy and Material Resources

The materials consumed in the construction of the proposed improvements will be unavailable for other uses. These include the construction of other non-highway related facilities. The energy consumed in the construction, maintenance, and operation of the facility is slightly higher than the energy consumed by the No-Build Alternative (in the short-term).

#### Temporary Loss of Vegetation

In addition to permanent vegetation loss as a result of an expanded highway, construction activities will result in additional short-term losses of vegetation adjacent to the roadway improvements. If necessary, Mn/DOT and MNDNR staff will consider and coordinate plant salvage of important or rare native vegetation that could be affected by a selected preferred alternative. Revegetation design will be coordinated with visual quality, erosion control, and shoreline and embankment stabilization components of the project to ensure minimal impacts as a result of temporary vegetation loss.

#### Temporary Loss of Wetlands

Alternatives 2, 3, 4, and 5 will directly impact varying amounts of existing wetlands. Only the No-Build Alternative will not directly affect wetlands within the project area. Due to the scattered distribution of wetlands, the impact on

wetlands cannot be completely avoided. However, avoidance, minimization, and mitigation measures will be incorporated in the design of the preferred alternative. Furthermore, the location of suitable compensatory mitigation areas will be discussed in the Final EIS for the preferred alternative. Compensatory mitigation will assist in minimizing the potential loss of wetland functions and values within the project area.

#### Temporary Loss of Parkland

Several public use lands found adjacent to the highway corridor may be impacted as a result of the proposed action. Portions of these public use lands may need to be converted from a public recreational use to a public transportation use. A Draft Section 4(f) Evaluation has been completed and is attached to this Draft EIS in Appendix A.

#### Temporary Impacts on Water Resources

Alternatives 2, 3, 4, and 5 have the potential to create temporary impacts on water resources due to the close proximity of lakes, streams, and wetlands. Every practical effort will be made to minimize the disruption and redistribution of sediments along lakes, streams, and wetlands.

#### Short-Term Economic Impacts

The construction of the expanded highway will require the acquisition of property and will remove this land from the tax rolls resulting in some short-term loss of property tax revenues. This short-term loss is anticipated to be offset due to the increased value of land served by the new highway. Also, the proposed improvements require a number of residential, farm, and business relocations. Depending on the availability and location of replacement housing, farms, and business sites, such acquisitions could affect the tax base for local units of government through a short-term loss in tax revenues. Short-term construction detours may require that typical business relationships be temporarily altered. This may include short-term changes in the conduct of business and trade activities until the highway improvements are fully integrated.

#### Inconveniences from Construction

Construction will cause minor traffic delays and short-term inconveniences for motorists in the area. Construction detours and higher levels of congestion may result due to construction activities.

#### Significant Capital Investment

Financial commitments to the project include acquisition, relocation, and construction costs. These public dollars will not be available for other uses. In addition, the land converted to highway use represents a reduction in tax base. These costs are to be recovered through more efficient travel and reduced user costs and an increase in the overall tax base due to the improved accessibility and mobility within the project area and region.

## **Build Alternatives Long-Term Gains in Productivity**

### Improved Mobility and Accessibility

Due to the expanded capacity of the highway, travel times within and through the project area will be improved. In addition, a four-lane facility will create more gaps in traffic making it easier and safer to access the highway from local streets and adjacent private land uses.

### Reduction in Travel Time and Cost of Travel

A four-lane highway has the ability to accommodate high volumes of traffic. The presence of free flowing traffic will reduce motorist travel times and fuel consumption, which will reduce the overall cost of travel.

### Economic Benefit

The economic advantage lies in the long-term efficiencies that an improved transportation system will provide. These efficiencies include travel time savings, increased safety, business expansion opportunities, and increased tourism. Alternatives 2, 3, 4, and 5 all have some degree of beneficial economic impacts. The travel time savings will be a benefit to trucking companies, shippers, salespeople, tourists, and to commuters going to and from work. The travel time saved by shippers and salespeople will result in reduced costs for businesses, making them more competitive in the marketplace.

### Reduction of Crashes

The construction of a four-lane divided highway will improve safety for motorists using the highway and will reduce the severity of crashes (i.e., head-on collisions). In addition, a four-lane facility will create more gaps in traffic making it safer to access the highway from local streets and adjacent private land uses.

### Replacement of Wetlands

Compensatory mitigation for the project will be determined based on the total wetland impacts associated with the final design of the preferred alternative. Compensatory mitigation will occur as specified by permit requirements at the time of construction. This will help ensure a minimal loss in wetland functions and values within the project area.

### Replacement of Parklands

If the highway improvements result in the acquisition and conversion of public parkland, funded through the Land and Water Conservation Program, to another use (i.e., transportation or related facilities), mitigation measures will include the replacement of parkland at an assessed value or recreational value that is equal to or greater than the land being acquired and/or converted. Mitigation measures for other Section 4(f) resources will be considered during the final design phase of the project and will be incorporated into the Final EIS. Detailed mitigation measures will be

coordinated with the administering government of any parkland that is to be impacted by the project and will be documented in a Final Section 4(f) Evaluation.

### Improvements in Surface Water Drainage

Within the project study area, there are currently very few storm water management techniques being practiced. The proposed highway improvements will incorporate storm water treatment facilities that will collect and treat highway runoff prior to discharging to receiving water bodies.

## **Irreversible and Irretrievable Commitment of Resources**

### **Land Consumption**

Alternatives 2, 3, 4, and 5 would require the acquisition of undeveloped and developed land for the purpose of roadway construction. There would be no direct acquisition of land required under the No-Build Alternative. However, the No-Build Alternative may result in future road improvements to the surrounding county roads and local streets that may require additional land for improvements that become necessary to accommodate increased traffic demands that spill over from Highway 371. The amount of land required for the proposed improvements will vary depending on the selection of the preferred alternative. Within the foreseeable future, this commitment of property to roadway use is considered irreversible and irretrievable as long as the facility continues to serve the public good. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land could be converted to another use. At present, there is no reason to believe such a conversion would ever be necessary or desirable.

### **Social and Cultural Resources**

The displacement and relocation of residences, businesses, and other resources of the built environment (public and private) are considered to be irreversible and irretrievable. The No-Build Alternative would not require the relocation of any structures as discussed in the Right-of-Way and Relocation section of this Draft EIS. The potential number of relocations for Alternatives 2, 3, 4, and 5 were based on structures that fall within the proposed right-of-way of the alignments. The number of potential acquisitions may either increase or decrease depending on design modifications of the preferred alternative. Avoidance measures could be considered during the final design phase of the preferred alternative that would further reduce the number of acquisitions. These avoidance measures may include the construction of urban four-lane sections and/or constructing the improvements on the opposite side of an existing roadway to avoid impacts to existing structures.

### **Construction Materials**

The project will result in the commitment of such materials as steel, cement, aggregate, and bituminous required by each alternative, including the

No-Build Alternative. These resources are largely irretrievable except for those items that have some salvage value and can be recycled. A cost/benefit analysis has been completed for each of the alternatives and is presented in the Benefit-Cost Analysis section of this document. Part of the analysis considers cost of construction materials as well as the value of material that could be salvaged some time in the future. Therefore, all construction materials needed for the proposed improvements are not considered to be fully irretrievable resources.

### **Energy Resources**

Several energy resources will be committed to plan, design, manufacture materials, and conduct improvements to the highway system. The use of fossil fuels (coal, natural gas, petroleum), water, and labor expenditures for both construction and maintenance of the facility are considered irreversible and irretrievable.

### **Financial Resources**

The proposed highway improvements will require a considerable amount of federal and state financial commitment. Preliminary estimates for the cost of right-of-way and construction range from approximately \$50 to \$70 million. While these public funds are not directly retrievable, the investment will enhance the safety of the users of Highway 371, the cost of travel along the roadway, and the economic vitality of the region.

### **Natural Resources**

The proposed improvements may require the commitment of natural resources including the loss of vegetation, wetland functions and values, and other wildlife habitat. The commitment of these resources may in part be irreversible and irretrievable. Avoidance and minimization measures will be incorporated into the final design of the preferred alternative. Mitigation measures will be employed in an attempt to counter all remaining impacts to natural resources.

## **5.0 PERMITS AND APPROVALS**

It is anticipated that federal, state, and other local permits and approvals will be required for the proposed action. The following permits and approvals may be required for construction of the proposed action.

- Section 404 Permit – USACE
- Section 401 Water Quality Certification – MPCA
- Public Waters Permit – MNDNR
- Approval for Section 4(f) property conversion – FHWA
- NPDES Permit – MPCA
- Section 106 Concurrence – SHPO
- WCA Approval and Permit – Mn/DOT
- Municipal Approval – Cities of Nisswa, Pequot Lakes, Jenkins, and Pine River
- Final EIS – FHWA and Mn/DOT
- Adequacy Determination – Mn/DOT
- Record of Decision – FHWA
- Section 7 Consultation/Concurrence - USFWS
- MOA for Mitigation Measures – as applicable

## 6.0 PREPARERS

Agency/Organization and Name	Draft Environmental Impact Statement Responsibility
<b>Federal Highway Administration</b>	
Cheryl Martin	Review of Draft EIS; assure compliance with Federal regulations
<b>Minnesota Department of Transportation – District 3</b>	
Tony Hughes	Mn/DOT District 3 Project Manager
Craig Robinson	Review of Draft EIS, special studies, and technical memoranda
John Mackner	Wetlands, Review water quality/natural resource sections
Dave Buss	Review of Project Purpose & Need, Traffic Analysis, and Forecasting
Gary Dirlam	Review of Project Purpose & Need, Traffic Analysis, and Forecasting
<b>Minnesota Department of Transportation – Central Office</b>	
Gerry Larson	Review of Draft EIS; assure compliance with Mn/DOT guidance and procedures
Craig Johnson	Archaeological Resources; assure compliance with Section 106 regulations
Jackie Sluss	Historical and Architectural Resources; assure compliance with Section 106 regulations
Greg Busacker	Review of water quality/natural resources sections
<b>Short Elliott Hendrickson Inc.</b>	
Chris Hiniker	Consultant Project Manager
Mark Benson	Principal-in-Charge/Quality Control
Bob Rogers	Coordination and preparation of Draft EIS
Peter Rafferty	Traffic Analysis and Forecasting
Heather Clausen	Conceptual Layouts
Nathan Blanchard	Conceptual Layouts
Brad Kovach	Vegetation, Fish & Wildlife, State/Federal Threatened & Endangered Species, Floodplains, Farmlands
Brad Digre	GIS: Alignment Impact Assessment, Graphics
Tammy Orf	Word Processing
Candis Nord-Sheptak	Graphics
<b>Subconsultants</b>	
AGC Developments Inc. Al Perez	Noise Monitoring and Modeling
George Orning	Land Use, Local Government Liaison

## **7.0 LIST OF AGENCIES AND ORGANIZATIONS TO WHOM COPIES OF THE DRAFT EIS ARE SENT**

### **7.1 FEDERAL AGENCIES**

- U.S. Environmental Protection Agency
- U.S. Fish & Wildlife Service
- U.S. Army Corps of Engineers
- Advisory Council on Historic Preservation

### **7.2 STATE AGENCIES/ORGANIZATIONS**

- Environmental Quality Board
- Board of Water & Soil Resources
- Minnesota Department of Commerce
- Minnesota State Historic Preservation Officer
- Minnesota Department of Natural Resources
- Legislative Reference Library
- Technology & Science – Minneapolis Public Library
- Minnesota Department of Health
- Minnesota Department of Agriculture
- Minnesota Pollution Control Agency

### **7.3 LOCAL AGENCIES/ORGANIZATIONS**

- City of Nisswa
- City of Pequot Lakes
- City of Jenkins
- City of Pine River
- Cass County
- Crow Wing County
- Wilson Township
- Pine River Township
- Region 5 Development Commission
- Brainerd Public Library
- Kitchigami Regional Library – Pine River
- Cass County Natural Resource Conservation Service
- Crow Wing County Natural Resource Conservation Service

## **8.0 COORDINATION AND PUBLIC INVOLVEMENT**

Mn/DOT is committed to public involvement/outreach at all levels in decision-making related to the Highway 371 North Improvement Project. Mn/DOT will continue to engage community organizations, area property owners, business owners, residents, and local, county, regional, and state agencies in the development of the project. The public involvement/outreach efforts have and will continue to include the following.

### **8.1 TECHNICAL ADVISORY COMMITTEE (TAC)**

The TAC was formed to establish a communication link with the affected communities, organizations, and agencies. The committee represents a wide range of interest groups and provides them an opportunity to communicate their concerns through their TAC representative to ensure that their community values/interests are expressed. The TAC comprises representatives from each of the following groups.

- Minnesota Pollution Control Agency
- Minnesota Department of Transportation
- U. S. Army Corp of Engineers
- Crow Wing County
- Cass County
- City of Nisswa
- City of Pequot Lakes
- City of Jenkins
- City of Pine River
- Region 5 Development Commission
- Minnesota Lakes Association
- Minnesota Department of Transportation District 3
- Short Elliott Hendrickson Inc.

To date, the TAC has met four times and is scheduled to continue to meet throughout the planning and preliminary design phase of the project. Although the TAC is more of an advisory committee, their input is an important influence on the direction of the project.

### **8.2 COMMUNITY MEETINGS**

Due to the anticipated complexity and range of issues associated with the proposed improvements, several meetings were held along the corridor aimed at gaining a better understanding of the perspectives and priorities of the residents, business owners, and local officials. To maximize the effectiveness of the outreach efforts, the study corridor was divided by the four community areas, and a series of meetings were held with each area as defined below. Notice for these meetings was provided through a combination of direct mailings and press releases.

All of the open houses and public meetings provided an opportunity for the public to participate in the project development process and to review project

information and comment on the project. Mn/DOT will further consider the use of community meetings such as those described below once a preferred alternative is selected.

#### Lakes Area/Nisswa Community Meetings

On March 11, 2003, a meeting was held at the Nisswa Community Center to discuss the section of Highway 371 from the intersection of County Road 18 in Nisswa to the intersection of County Road 107/168 in Pequot Lakes. The purpose of the meeting was to receive input from area residents on issues and concerns with the highway improvement project. Approximately 40 residents attended the Lakes Area meeting and raised the following issues/concerns: water quality impacts on surrounding lakes, potential realignment of the highway and/or Paul Bunyan Trail just north of Edna Lake and Lower Cullen Lake, future access conditions, use of frontage/backage roads, and concerns with turning on/off the highway.

A second Nisswa/Lakes Area Meeting was held on April 24, 2003. Mn/DOT and SEH used the information gathered at the first meeting to design options for reconstructing the highway from Nisswa to the CR 107/168 intersection. The conceptual layouts were presented at the meeting and attendees were encouraged to ask questions and state their concerns with regards to the conceptual layouts.

#### Pequot Lakes Community Meetings

On March 6, 2003, approximately 60 individuals attended the first Pequot Lakes Community meeting at the Pequot Lakes High School. The purpose of the meeting was to provide a brief project update as well as gain a better understanding of the community's future vision. Attendees were split into small work groups to discuss "what works well in the community", "what doesn't work well in the community", and "what is your long-term vision for the community". Items raised related to both quality of life issues as well as transportation related issues.

A second community meeting was held on March 18, 2003. Mn/DOT and SEH used the information gathered at the first meeting to create a set of draft community goals and objectives. These goals and objectives were presented at the March 18th meeting, revised slightly, and concurred on by the individuals in attendance. The rest of the second meeting was spent brainstorming design ideas for an in-town option and a bypass option that would help achieve the community goals and objectives.

A third Pequot Lakes community meeting was held on April 24, 2003. The meeting included a presentation of the alternative alignment options for reconstructing the highway through town or constructing a highway bypass east of the downtown. The meeting was intended to gather community input that would be used to modify the in-town and bypass options.

### Jenkins Community Meetings

On February 20, 2003, approximately 50 individuals from the Jenkins area attended a public informational meeting held provide a project update as well as gain a better understanding of the community issues and concerns. Several issues were raised including future access conditions, community impacts with a through town alignment, potential impacts to the local economy/business with a bypass alignment, pedestrian safety, and concerns with turning on/off the highway.

A second Jenkins Community Meeting was held on April 15, 2003. Mn/DOT and SEH used the information gathered at the first meeting to design alternative alignment options for reconstructing the highway through town or constructing a western bypass. These options were presented at the meeting. Attendees were encouraged to ask questions and state their concerns with regards to the design options.

A follow-up meeting was held on Monday, May 5, 2003, with the Jenkins Planning Commission to further discuss the western bypass alternative. Potentially affected property owners on the west side of Jenkins were invited to attend the planning commission meeting and ask questions and provide comments.

### Pine River Community Meetings

On February 25, 2003, approximately 75 area residents and businesses owners from the Pine River/Wilson Township area attended a public informational meeting at the Pine River High School. The purpose of the meeting was to provide a project update as well as gain a better understanding of the community and township issues and concerns by completing a community visioning survey. Attendees were asked a set of questions from the perspective of how Highway 371 relates to the quality of life in the Pine River/Wilson Township area. Issues raised at the meeting included: economic viability of highway businesses, potential realignment of the Paul Bunyan Trail, future access conditions, and concerns with turning on/off the highway.

A second Pine River/Wilson Township meeting was held on April 15, 2003. The meeting included a presentation of the alternative alignment options for reconstructing the highway through town or constructing a highway bypass west of the downtown. The meeting was not intended to select a preferred option, but rather to gather community input that will be used to modify the in-town and bypass options.

## **8.3 PUBLIC OPEN HOUSES**

In addition to the community open house meetings listed above, Mn/DOT has hosted three corridor-wide public open house meetings. On June 27, 2002, a kick-off open house meeting was held at the Pequot Lakes High School gymnasium. The purpose of the meeting was to inform individuals of the

upcoming EIS and design efforts and opportunities to get involved in an important transportation project in their area. A public scoping meeting/open house was held on December 5, 2002 to gather information from the public regarding the full range of alignment alternatives addressed in the Scoping Document. On August 6, 2003 an open house was held to provide an update on the Draft EIS and to share the results of the traffic analysis conducted for the areas of Pequot Lakes, Jenkins, and Pine River.

Future public meetings, including the Draft EIS Public Hearing, will provide up-to-date information on the project, receive verbal and written comments and suggestions, and answer questions from the public.

## **8.4 AGENCY COORDINATION**

Mn/DOT has regularly involved resource and regulatory agencies in the project development process. As mentioned above, the Highway 371 North TAC includes members from the MNDNR, MPCA, and USCOE. Additional coordination meetings with various resource agencies and departments have occurred and are anticipated throughout the planning and design phase of the proposed project.

## **8.5 PROJECT NEWSLETTERS & MAILINGS**

A series of informational newsletters and mailings have been and will continue to be prepared with the intent of providing project related information to the public. To date, three project newsletters and several mailings have been distributed to property owners and business owners in the project area.

## **8.6 PROJECT WEB PAGE**

An informational project web page has been established on the World Wide Web at (<http://www.projects.dot.state.mn.us/seh/371>). The site provides an additional means of distributing information and gathering input with an e-mail reply feature. The site is periodically updated to reflect project developments, planning/design changes, and to address new issues.