

Benchmarking Minnesota's Environmental Review and Permitting Processes for Forestry and Mining Industries: A Comparative Assessment

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EXECUTIVE SUMMARY

This report was prepared in response to 2005 Minnesota Session Laws, Chapter 1, Section 2, Subsection 7, requiring the commissioner of the Minnesota Pollution Control Agency to submit a report to the Minnesota House and Senate Environment and Natural Resources Policy and Finance Committees benchmarking Environmental Review and permitting laws and procedures in Minnesota with states containing comparable forestry and mining development projects. The report consists of a review of state environmental review programs, case studies of four forestry and four mining development projects, and results of a focus group meeting with state environmental review and permitting project managers.

Data collected for this study was obtained from multiple sources. Background information on state industry trends was compiled through a review of the literature and agency technical reports. Case studies were developed by reviewing environmental impact statements, permit applications, public involvement notices, and supplemental reports. Relevant timeframes and case specifics were verified through informal interviews with agency administrators and project managers familiar with state procedures and the selected projects. Additional project information was obtained through on-site meetings and follow-up correspondence with project managers. The legal, administrative, and procedural aspects of each state's environmental review and/or permitting program were examined by reviewing applicable state statutes, administrative rules, agency reports, and policy guidelines. Perceptions of program effectiveness were obtained through a focus group with state environmental review and permitting project managers.

State Environmental Review and Permitting Programs

Thirty-seven states have adopted an environmental review framework for evaluating nonfederal actions. These states can be grouped into three distinct categories delineated by the scope of development projects subject to environmental review as well as the intensity by which project-specific environmental impacts are assessed. There are 16 states in the first category, defined as having comprehensive environmental review policies, standards, and procedures. These states require preparation of detailed reports equivalent to an environmental impact statement in situations where state authorities believe proposed actions may have significant environmental impacts. The second category of states, of which there are 21, require environmental review only under specific circumstances and where review procedures are only applicable to certain types of economic development activities (e.g., water development, timber harvesting, housing development) or within certain geographic areas (e.g., natural reserves, coastal areas, river banks). The remaining 13 states have no formal environmental review requirement. Although several of these states

request that agencies consider environmental factors when issuing permits, but no guidelines have been adopted that direct how environmental impacts are to be evaluated.

Forestry and Mining Case Studies

Detailed descriptions of environmental review and permitting processes are provided for specific forestry projects in Minnesota, New York, Maine, and Georgia. Similarly, detailed descriptions of environmental review and permitting processes are provided for mining projects in Minnesota, West Virginia, Montana, and Michigan. The selection of states for which the non-Minnesota case studies were developed was based on the following criteria:

- States that compete with Minnesota in either the forest products processing or mining sectors.
- States that employ similar manufacturing processes or mining techniques to those used in Minnesota.
- To the extent they are identifiable, states that have comparable forest products manufacturing or mining projects that have been subject to state environmental review and/or permitting processes within the past 10 years.

Each case study includes (1) an examination of the forestry or mining sector's economic importance in the state. Historical information and trends in that sector's production, economic impact, and employment are discussed; (2) a characterization of the state's environmental review and permitting requirements; (3) a detailed description of the environmental review and/or permitting activities associated with a specific facility development or expansion proposal. This includes a description of the proposed project, planned manufacturing and processing technologies, format and content of the environmental review completed, issues examined, type and extent of public involvement, required permits, records of decision, and current disposition of the project; and (4) a discussion of factors affecting the environmental review and permitting timelines for proposed projects.

Focus Group: State Environmental Review and Permitting Project Managers

A focus group meeting was conducted in Minneapolis, MN, on January 23, 2008, to examine perceived barriers and opportunities for effective implementation of state-level environmental review and permitting. Participants were selected based on their level of knowledge about state environmental review and permitting, familiarity with state processes as applied to forest products or mining operations, and position within their respective agency. Twelve representatives from seven state agencies participated.

The focus group discussion revealed opportunities for improving the delivery and effectiveness of environmental review and associated permitting activities, and it highlighted the challenges states face in

meeting economic development and environmental quality objectives. States have adopted appreciably different governance models and the level of rigor associated with review of proposed mining and forest projects varies considerably from state-to-state, even where states have formal environmental policy acts. Differences in the economic climate, cultural context, natural resource setting, and subsequent organization of state agencies influence the structure and implementation of environmental review and permitting. The focus group discussion also revealed that despite differences, states experience many common successes and challenges. Moreover, in light of the challenges identified, program administrators felt they have been able to successfully adapt their programs to reflect their state's unique economic, social, and institutional environment.

In developing an in-depth understanding of environmental review and permitting for each state, the following thematic areas of discussion emerged from the focus group: (1) linkages and integration between environmental review and permitting; (2) incorporating cumulative environmental impact analysis in project-specific environmental review; (3) coordinating environmental review and permitting activities within and outside state government; (4) linkages between environmental review and economic development; and (5) opportunities for improving state-level environmental review and permitting.

Conclusions

An analysis of the case studies and focus group discussion lead to the following conclusions:

Scope of Environmental Review

- *State environmental review varies greatly with respect to the scope of potential impacts measured.* Some states consider indirect or off-site impacts while others only measure direct or site-specific impacts. Even states having environmental policy acts (i.e., Georgia, Minnesota, Montana, and New York) were markedly different. For instance, an environmental impact statement was prepared for the UPM-Kymmene/Blandin Paper Company project in Minnesota in which substantial consideration was given to off-site impacts associated with increased timber harvesting. In contrast, the environmental review documents prepared for projects in Georgia and New York contained no such analysis, consistent with their state policies.
- *Uncertainty exists across states on how to incorporate cumulative impact assessments into environmental review and permitting procedures.* The requirements and methods for assessing cumulative impacts are often considered by state environmental review program managers to be inadequate. There was disagreement about the appropriate scale of analysis, the role of state agencies in conducting generic assessments of cumulative impacts, thresholds of significance, and whether project proponents are responsible for mitigating for cumulative impacts where their

individual contribution is negligible but surpasses aggregate thresholds. Expanded use of generic assessments at the regional scale may reduce burdens placed on project managers and companies while increasing environmental safeguards for water and air quality and wildlife habitat.

Coordination

- *States differ in their approach to coordination of environmental review and permitting.* Some states conduct environmental review and permitting simultaneously with information generated from the review simultaneously integrated into the permitting process. The same staff may be responsible for administering both processes to aid in information exchange and efficient completion of tasks. Other states keep the processes separate with different staff and the results of the review informing subsequent permitting. Regardless of the approach, most state representatives feel confident their process is effective both in terms of the time required and for the adequacy of the review. They also report extensive coordination and planning among staff throughout both processes.
- *Centrally located and administered environmental review and permitting responsibilities are preferred.* Focus group participants expressed support for consolidating review and permitting functions under one agency to eliminate inefficiencies, even if permitting and environmental review are separated by programmatic boundaries. However, although efficiencies may be gained through the consolidation of state environmental review and permitting processes where they are currently divided among multiple units of government, it is important to note that state law typically precludes the possibility of making such sweeping changes without legislative approval. Because state legislatures may be reluctant to authorize large-scale bureaucratic restructuring it is not necessary reasonable to conclude that such change is possible as long as sufficient support exists among agency officials.
- *Coordination between state departments of economic development and environmental review and permitting authorities is important.* State agencies responsible for environmental review are better able to anticipate information needs and planning horizons if they are kept apprised of state economic development plans. The lead agency can identify relevant obstacles to planning in a timely manner prior to obligation of state funds.
- *Some states administer environmental review and permitting at a sub-regional level.* In the cases of West Virginia and New York, permitting is coordinated at a multicounty level with little to no oversight by the central state office of the administering agency. No attempt was made to evaluate the effectiveness of these models but it is important to note differences when comparing projects across multiple states.

- *Pre-application meetings contribute to information exchange among project proposers and the administering agency.* Information sharing and discussions about project scope prior to submission of formal environmental review or permitting documents reduces confusion about needed information, alerts staff to upcoming projects, and allows applicants an opportunity to modify plans based on agency feedback before significant investment is made.

Public Involvement

- *Public involvement and outreach strategies can greatly affect environmental review and permitting.* Administrators in several states believe that the public is ill-informed about environmental review policies and procedures, how it works in conjunction with permitting, and the role of the public in providing information. As a result, public comments often lack substantive information that can be used in the process and requires considerable staff time and resources for the small number of people who choose to participate.
- *Educating the public about the role and process of environmental review enhances the quality of comments received.* Providing public education about the underlying purpose and processes of environmental review is a valuable tool for improving the quality of public comments and the overall public involvement processes.
- *The use of information technologies such as “e-permitting” is important for increasing communication.* Web-based technologies such as e-permitting may facilitate the transparency of the review process, speed reviews, and reduce confusion about outstanding information needs and requests. Information can be shared efficiently and in a consistent manner.

Project Timelines and Delays

- *Delays are a result of several factors often outside the control of the administering agency.* Project delays often happen as a result of: (1) inadequate information provided by consultants hired to work on a project, (2) failure of firms to provide requested information in a timely fashion or providing incomplete or incorrect information, (3) failure of sister agencies to provide necessary information in a timely manner, (4) inability of a firm to secure the appropriate level of financing needed for a project, and (5) lack of preplanning by the firm or pursuing an preliminary level of analysis when an environmental impact statement is necessary.
- *Environmental review and permitting took longer in situations where extensive public involvement was required.* An active citizenry requires a greater number of public meetings and may also result in more comments provided in which agencies must respond. State administrators agreed that

public involvement is a fundamental part of the review process and that efforts to accelerate timelines should not be at the expense of opportunities for public involvement.

- *Environmental review and permitting took longer in situations where cumulative impact assessment was required.* The emphasis on cumulative impact assessment in states like Minnesota may have increased the time necessary to complete environmental review. The forestry and mining projects reviewed are not representative of all possible cases, but they do illustrate the expanded scope necessary to adequately assess off-site environmental impacts.
- *Efforts to reduce overall project review time could potentially have negative consequences.* Consideration must be given to the negative consequences (e.g., reduced opportunity for public involvement, failure to adequately address particular environmental impacts) that could result from an accelerated environmental review or permitting process. Although certain stages of project review could perhaps be shortened without undermining environmental quality objectives, agencies must weigh the benefits of reducing total project review time against the associated costs.
- *Environmental review and permitting processes should be as predictable as possible.* Consistency in carrying out environmental review and permitting requirements helps project sponsors anticipate the types of information required of them and how long the review process will likely take, which can aid in securing financing. Unpredictable or inconsistent requirements may result in the loss of economic development opportunities to states with more predictable processes. However, an appropriate balance must be achieved between the need for thorough environmental review and efforts to create a predictable process. Similarly, while much discretion is given to agency staff in terms of timelines and protocol, explicit guidelines may not reflect the diversity of project circumstances, particularly in cases where delays are outside the responsibility of the lead agency.

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1.0 INTRODUCTION

1.1 Study Background

Chapter 1, Section 2, Subsection 7, of the 2005 Minnesota Session Laws required the commissioner of the Minnesota Pollution Control Agency (MPCA) to submit a report to the Minnesota House and Senate Environment and Natural Resources Policy and Finance Committees that benchmarks environmental review and permitting laws and procedures applied to forest products processing facilities and mining operations in the state of Minnesota. The Minnesota Legislature specified this benchmarking study provide a comparison of state-level environmental review and associated permitting processes for a select number of states having recently approved comparable forest products and mining projects. This report is prepared in response to this legislative mandate.

Eight case studies were conducted for comparable forest products manufacturing and mining projects—four cases for each industry sector. Seven states, including Minnesota, were included in the analysis. Within each manufacturing sector, a Minnesota case study and case studies from other states are presented. The selection of states for which the non-Minnesota case studies were developed was based on the following criteria:

- States that compete with Minnesota in either the forest products processing or mining sectors.
- States that employ similar manufacturing processes or mining techniques to those used in Minnesota.
- To the extent they are identifiable, states that have comparable forest products manufacturing or mining projects that have been subject to state environmental review and/or permitting processes within the past 10 years.

The study is organized into three sections. The first section describes the forest products manufacturing cases in Georgia, Maine, Minnesota, and New York, and mining cases in Michigan, Minnesota, Montana, and West Virginia. Each case study includes: (1) an examination of the industry trends within the state to provide a broader context in which to examine state environmental review and permitting processes and policies; (2) information on specific development proposals that were subject to state environmental review and/or permitting within the past 10 years; and (3) information on each state's policies, procedural requirements, and implementation of their environmental review and permitting programs. Section two of the report describes findings from a focus group meeting with environmental review project administrators from selected states examined in the case studies. Information contained in this section summarizes the focus group discussion regarding the key attributes of state programs with respect to the linkages and integration of environmental review and permitting processes, cumulative impact analysis, coordination among responsible government units, project timing, and economic development

considerations. In the context of forestry and mining industries, this section of the report provides information on aspects of environmental review and permitting that are perceived by state environmental review project administrators as being barriers to effective implementation. It also identifies opportunities for improving the implementation of environmental review processes, as well as ways of doing so in a timely manner. The final section of the report provides a synthesis of the similarities and differences among state environmental review and permitting programs as well as opportunities to increase the effectiveness by which they are implemented.

1.2 Methodology

Data collected for this study was obtained from multiple sources. The background information on state industry trends was compiled through a review of the literature that included agency technical reports such as the US Geological Service mining analyses and reports from the USDA-Forest Service on forest products industry manufacturing. Environmental impact statements, permit applications, public involvement notices, and supplemental reports were reviewed for each project to identify relevant timeframes and case specifics. This information was verified through informal interviews with agency administrators and project managers familiar with state procedures and the selected projects. Additional project information was obtained through on-site meetings and follow-up correspondence with project managers. The legal, administrative, and procedural aspects of each state program were further examined by reviewing applicable state statutes, administrative rules, agency reports, and policy guidelines. A common format was used to develop and organize the content contained in each case study.

A focus group meeting was conducted in Minneapolis, MN, on January 23, 2008, to examine perceived barriers and opportunities for effective implementation of state-level environmental review and permitting. Project managers from each state provided in-depth information on key attributes of their programs including: linkages and integration of environmental review and permitting processes, cumulative impact analysis, coordination among responsible government units, and economic development considerations. Participants were selected based on their level of knowledge about state environmental review and permitting, level of familiarity with state processes as applied to forest products or mining operations, and their position within their respective agency's administrative hierarchy. Twelve representatives from seven state agencies participated in the focus group meeting.

1.3 Overview of State-level Environmental Review

Put simply, environmental review is carried out when a review agency considers the impacts that a proposed project or action will have on the human environment. More specifically, environmental review is the process by which information regarding a proposed project's environmental impacts are disclosed, alternative actions are formulated and evaluated, and mitigation measures by which such impacts can be minimized prior to undertaking the project are considered (Ma, 2008). The federal National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321-4347) provides a comprehensive framework for federal agencies to assess environmental impacts associated with their proposed activities and legislative proposals prior to these actions being undertaken (Caldwell, 1998a). Any federal agency responsible for a proposed action having the potential to cause significant environmental impacts is required to prepare a formal environmental review document following established procedures (CEQ, 1978; Wood, 2003). Federal rules mandate that all environmental review documents include the following: the environmental impacts of the proposed activity, identification of any adverse effects that cannot be avoided should the activity be undertaken, alternatives to the proposed activity, relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources that would be involved in the proposed (Caldwell, 1998b).

In contrast to NEPA, which specifies procedures for federal agencies to follow, many state governments have adopted their own environmental review framework for evaluating nonfederal actions. State environmental review originated in the wake of NEPA's passage and many states, including Minnesota, passed legislation in the 1970s that created state-level environmental review requirements similar to the NEPA framework. Numerous studies have examined existing federal procedures and appraised their value in promoting sound environmental planning and management, but few have examined state environmental review policies and procedures (Ma et al., 2008). Yet, the vast majority of economic development projects throughout the country fall within the scope and jurisdiction of state-level environmental review.

At present, 37 states have adopted some form of environmental review policies and procedures that generally require the preparation of an environmental review document in which environmental impacts are projected and evaluated against a set of criteria (Ma et al., 2008). Additionally, such procedures typically require consideration of mitigation measures that could be employed to minimize potential environmental effects associated with a proposed action. Although most states with formal environmental review requirements have these common requirements, a considerable amount of variation exists among

states with respect to the scope of development projects subject to environmental review as well as the intensity by which project-specific environmental impacts are assessed. For example, some states require an evaluation of applicable nonfederal activities and legislative proposals as long as they are not exempt by state laws or rules, whereas others only require evaluation of impacts applicable to certain types of projects, natural resources impacted, or geographic-specific areas such as lake shores or coastal zones. Additional variation exists among states with regard to whether environmental review is administered at the state or local level, as well as the specific procedures (e.g., opportunities for public review and input) employed (Ma et al., 2008).

Of the 37 states with formal environmental review policies and procedures, three distinct categories of states can be delineated. The first, which can be referred to as Tier-one states, includes 16 states that have adopted all-encompassing environmental review requirements that are applicable to a wide range of economic development activities. These state environmental policy acts (SEPAs) require agencies to review actions to determine whether they will have any significant impact on the environment (LEPO, 2000). All SEPAs mandate the preparation of detailed reports equivalent to an environmental impact statement (EIS) when an agency knows or believes a proposed action may have significant environmental impacts. Most SEPA-directed environmental review involves the following three steps. First, an agency determines whether the proposed action "triggers" the mandatory preparation of an environmental review document. If so, the agency determines if the action will result in significant impacts. If the agency does not anticipate significant impacts to the environment will result, it issues a finding of "no significant impact." If significant impacts are expected, a more in-depth environmental review is undertaken that includes a detailed discussion of anticipated impacts, mitigation measures, and alternatives to the proposed action (LEPO, 2000). SEPAs allow the environmental assessment (EA) process, a cursory evaluation of a proposed project, to be eliminated entirely if the project necessitates an EIS or other more comprehensive environmental review document (LEPO, 2000; Ma et al., 2008). Additionally, the project proposer can bypass the EA process altogether if the significance of the anticipated impacts is such that an EIS will almost certainly be required. Tier-one states include: California, Connecticut, Georgia, Hawaii, Indiana, Maryland, Massachusetts, Minnesota, Montana, New Jersey,¹ New York, North Carolina, South Dakota, Virginia, Washington, and Wisconsin (Ma et al., 2008).

In contrast, there are 21 Tier-two states, defined as having environmental review requirements but only for select natural resources (e.g., wetlands), activities (e.g., construction of a power plant or housing

¹ New Jersey adopted NEPA-like procedures mandating environmental review for state actions through an executive order issued by the governor in 1989.

development), or within certain geographic areas (e.g., designated natural reserves) (Ma et al., 2008). For instance, only development projects in Maine affecting coastal or freshwater wetlands are subject to formal environmental review. In Nevada, environmental review procedures have been adopted but only for the Lake Tahoe region. The majority of these states require an environmental analysis of proposed projects but without specifying the content or format of the analysis. Tier-two states include: Alaska, Arkansas, Delaware, Florida, Illinois, Kansas, Kentucky, Louisiana, Maine, Michigan, Mississippi, Missouri, Nebraska, Nevada, New Mexico, Oregon, Pennsylvania, Rhode Island, Texas, Utah, and Vermont (Ma et al., 2008).

The remaining 13 states are without formal environmental review requirements and are referred to as Tier-three states. Although several of these states request that their agencies consider environmental factors when issuing development or discharge permits, no guidelines have been adopted that direct how environmental impacts are to be evaluated. Tier-three states include: Alabama, Arizona, Colorado, Idaho, Iowa, New Hampshire, North Dakota, Ohio, Oklahoma, South Carolina, Tennessee, West Virginia, and Wyoming (Ma et al., 2008).

2.0 FOREST PRODUCTS PROCESSING FACILITY CASES

2.1 Georgia

2.1.1 Economic Importance

Pulpwood and saw logs are the principal roundwood products produced in Georgia. Combined output of these two products totaled more than 1 billion cubic feet in 2003 and amounted to 88% of the state's total industrial roundwood output that year. Total pulpwood production, including chipped roundwood, increased 14% to 569 million cubic feet between 2001 and 2003, and by 2003 was 50% of the state's total roundwood timber product output. Twelve pulpmill facilities were operating and receiving roundwood in Georgia in 2003, one less than in 2001. Saw logs made up 38% of Georgia's timber product output. Output of softwood saw logs declined 11% to 376 million cubic feet between 2001 and 2003, while output of hardwood saw logs increased 7% to 65 million cubic feet during the same time period. In 2003, Georgia had 122 sawmills, four mills more than in 2001 (Johnson and Wells, 2005).

Georgia's forest products industry is a large, complex, and multifaceted economic sector that consists of many components (Waters et al., 2003). A general definition of the wood-based industry includes all service and manufacturing activity related to the growth, harvesting, and use of forest materials that would not exist in Georgia without the presence of extensive forests or forest industries (Riall, 2002). Riall (2002) defined Georgia's forest products industry using the following sectors: forestry, logging, wood products (such as dimension lumber), paper products, manufactured housing, furniture, other miscellaneous wood products, and woodworking and papermaking machinery.

The largest employers in the forest products industry are the paperboard containers and boxes, sawmill, and wood preserving sectors, each contributing almost 8,000 jobs (Riall, 2002). Several other segments of this industry have employment exceeding 5,000, including in paper mills, mobile home construction, millwork, and logging. Sawmills, wood preservation plants, and converted paper and paper mills each generated in excess of \$2 billion in product value in 2002 (Table 2.1) (Waters et al., 2003). Structural and reconstituted wood products also constitute an important component of this industry (Riall, 2002).

The state's *Paper Mills, Non-Paper Building Industry Group* generated an output of more than \$2 billion in 2002, with a value-added benefit of nearly \$768 million. A total of 5,564 people were employed in this industry group with an annual payroll of more than \$413 million, and an average income of more than \$74,000 per employee. Activity in this industry group contributed nearly \$134 million in additional state sales and use taxes in 2002 (Waters et al., 2003). The state's *Other Converted Papers Industry Group*,

which produces sanitary paper goods, generated an output of nearly \$2.3 billion in 2002, with a value-added benefit of about \$939 million and employing 4,842 individuals. This industry group had an annual payroll of nearly \$286 million, averaging just over \$59,000 per employee, and contributed nearly \$134 million in additional state sales and use taxes in 2002 (Waters et al., 2003). Finally, the state's *Structural and Reconstituted Wood Products Industry Group*, which includes manufacturers of OSB and other panelized products, generated an output of more than \$723 million in 2002, with a value-added benefit of nearly \$216 million. A total of 3,540 people were employed in this industry group with an annual payroll of more than \$143 million, averaging just over \$40,000 per employee. Activity in this industry group contributed nearly \$43 million in additional state sales and use taxes in 2002 (Waters et al., 2003).

Table 2.1: Georgia forestry industry economic activity: 2001 (Source: Riall, 2002; Waters et al., 2003).

Sector	Output	Employment	Income
Forest Products (Greenhouses & Nurseries)	\$274,653,024	1,898	\$89,615,368
Logging Camps and Logging Contractors	\$950,030,080	5,258	\$157,755,760
Sawmills and Wood Preservation	\$2,348,375,296	7,689	\$313,189,888
Millwork	\$882,288,512	5,037	\$174,317,328
Veneer and Plywood	\$1,031,417,792	5,105	\$373,540,480
Engineered Wood	\$703,288,256	3,442	\$139,954,944
Containers	\$466,563,040	3,149	\$79,615,280
Mobile Homes	\$930,612,096	5,461	\$167,524,496
Prefabricated Wood Buildings	\$81,591,752	627	\$14,299,701
Pulp Mills	\$929,370,112	2,119	\$172,173,936
Paper Mills, Except Building Paper	\$2,056,720,768	5,465	\$405,871,104
Paperboard Mills	\$1,613,578,880	3,791	\$273,955,840
Paperboard Containers and Boxes	\$1,951,888,896	7,992	\$411,236,736
Bags	\$1,301,681,280	3,786	\$171,214,736
Stationery	\$431,200,928	1,735	\$74,938,984
Other Converted Paper	\$2,113,644,800	4,468	\$263,835,216
Wood Kitchen Cabinets	\$319,743,744	3,018	\$85,710,184
Woodworking Machinery	\$38,392,980	240	\$11,896,424
Paper Industries Machinery	\$15,454,385	108	\$7,079,120
Household Furniture	\$273,165,344	2,527	\$64,588,244
Mattresses and Bedsprings	\$336,644,192	1,563	\$71,981,440
Office Furniture	\$452,982,912	2,695	\$98,470,472
Burial Caskets and Vaults	\$18,736,500	93	\$2,813,828
Total	\$19,522,025,569	77,266	\$3,625,679,508

2.1.2 Project Overview

In November of 2004, Norbord Georgia, Inc. submitted a proposal to the Environmental Protection Division of Georgia's Department of Natural Resources that involved a new expansion to an existing oriented strandboard (OSB) manufacturing facility located near Cordele, Georgia. Norbord is an

international producer of wood-based panels with (at the present time) 15 plant locations in the United States, Europe and Canada. The company is one of the world's largest producers of OSB.

The proposed expansion of its existing OSB manufacturing facility would significantly increase its output capacity by establishing a second production line. More specifically, Norbord proposed to construct and operate three additional rotary dryers, a 285 MMBtu/hr wood-fired energy system (natural gas backup), an additional press, handling, blending, forming, and finishing processes. Furthermore, Norbord proposed to construct and operate baghouses and thermal oxidizers for air pollution control purposes. The application specified that these new sources would have a production capacity of 650 million square feet per year on a 3/8-inch basis. No changes were proposed to the existing equipment or operations. Norbord determined that best available control technology comprised a wet electrostatic precipitator followed by a thermal oxidizer to control emissions from the new energy system and dryers, a separate thermal oxidizer installed to control emissions from the new press, and baghouses to control emissions from forming, handling, and finishing operations.

OSB is manufactured at the Cordele facility by undergoing a multistep process. First, mixed southern hardwoods and pine are received by truck, debarked, cut-to-length, flaked, and conveyed to dryer metering bins. Upon dryer passage, the dry flakes are collected, screened for fines removal, and conveyed to blender metering bins. The flakes are then mixed with wax and resin and formed into a continuous mat. The mat is cut into sections and pressed at high temperature and pressure. Finally, the boards are sanded, trimmed to size, edge coated, and packaged for shipment. As part of the sawing and sanding finishing operations, a portion of the boards are passed through a tongue-and-groove process line.

Prior to proposed expansion, the major emission units at the facility consisted of four triple-pass rotary dryers, a 210 MMBtu/hr Wellons energy system, and a board press. The energy system combusts wood waste to generate the required process air to simultaneously dry and transport the wood flakes. The energy system also heats the press plate thermal oils. The plant uses an electrostatic precipitator to control particulate matter (PM) emissions from the dryers, and a thermal oxidizer is used to control PM and volatile organic compound (VOC) emissions from the board press.

The existing plant is located in an area designated as an attainment or unclassifiable area for all criteria pollutants with respect to the National Ambient Air Quality Standards (NAAQS).² As a result the plant is

² An attainment area is a zone within which the level of an EPA regulated pollutant is considered to meet United States National Ambient Air Quality Standards.

potentially subject to Prevention of Significant Deterioration (PSD)-permitting requirements for all applicable pollutants. Thus, the PSD “major” source threshold for this type of facility is 250 tpy for each criteria pollutant (i.e., NO_x, CO, PM, and VOC). Taking into account the emission control systems and permit limits, the maximum emissions of four pollutants at future plant capacity and 8,760 hours per year of operation were anticipated to be greater than the PSD major source thresholds. Specifically, emissions of NO_x, CO, PM₁₀, and VOC were expected to exceed the PSD major source threshold. Because of the magnitude of proposed air emissions, the project was subject to New Source Review for air quality impacts, specifically Best Available Control Technology and air quality analyses were required under the PSD permitting program as administered by the Environmental Protection Division and Georgia’s *Rules for Air Quality Control*.

It should be noted that the PSD permit application did not contain information about where the facility would obtain the wood fiber to meet its raw material demands. Norbord representatives verbally expressed to the Environmental Protection Division that this fiber would consist of southern hardwoods transported to the facility by truck. Although a PSD permit application requires an analysis of impairment to visibility, soils, and vegetation that will occur as a result of the facility, Georgia has interpreted this requirement to mean the impact the plant itself will have on the immediate area. As a result, Norbord’s PSD permit application was not required to consider environmental impacts associated with timber harvesting taking place off-site to meet the facility’s wood fiber demands. The Environmental Protection Division also did not require specifics regarding the general geographic area that would be used to supply the raw material (J. Yntema, personal communication, November 2007).

With respect to review and analysis of potential environmental impacts associated with the proposed expansion, no EIS or similar document was completed because Georgia does not require this level of analysis for *privately funded projects*. The Georgia Environmental Policy Act requires that all state agencies and associated activities prepare an EER as part of the decision-making process, but similar requirements do not exist for private sector activities in which a state agency does not directly assist with the planning, financing, or implementation.

Authority to commence construction and operation of Norbord’s proposed expansion to its Cordele OSB facility was obtained by meeting the requirements of three distinct but interrelated permitting programs: Georgia State Implementation Plan (SIP), Title V of the 1990 Clean Air Act Amendments, and a PSD permit application as part of the federal New Source Review program. The proposed expansion was ultimately processed by the Environmental Protection Division as a combined PSD/Title V Significant

Modification with Construction. Norbord filed for a construction permit to satisfy Georgia SIP regulations because the project proposal involved the construction or installation of a new or modified unit that would result in emissions to the atmosphere. The SIP incorporates a Title V operating permit, which is required by the EPA for all new and existing major sources of air emissions. Because the proposed project involved a substantial increase in facility size and production capacity, Norbord was required to submit a “major modification” under the facility’s existing Title V permit.

Review of the Norbord project also involved a Best Available Control Technology analysis that was completed by Norbord in a manner consistent with the EPA’s top down approach for determining best available control technology. In following the steps outlined in this process, Norbord identified viable options for controlling pollution emission, discarded options that lacked technical feasibility, evaluated each of the remaining alternatives based on their control effectiveness, and ultimately selected the technology that maximized the amount of emissions control that could be achieved at the facility following the proposed expansion.

Although Georgia Environmental Protection Division staff noted that the initial air emissions modeling data provided by Norbord as part of a PSD permit application were deemed insufficient, these inadequacies were ultimately eliminated upon submission of a revised PSD permit application (J. Yntema, personal communication). The revised PSD permit application provided comprehensive modeling data and analysis with respect to potential air emissions associated with the proposed expansion, which was detailed in an emissions inventory included in the PSD permit. The dispersion modeling analysis was completed in three principle steps: Significance Analysis, NAAQS Analysis, and PSD Increment Analysis. All emissions sources, including existing sources of emissions at the Norbord facility were included in a PSD Increment Analysis as part of the permit. The significance analysis was used to determine whether the net emissions change associated with the Cordele OSB Mill Expansion Project, when processed in a dispersion model, would lead to a significant impact upon the area surrounding a facility. “Significant” impacts were defined by ambient concentration thresholds commonly referred to as the Significant Impact Levels. The significance analysis with respect to how NO₂, PM₁₀, and CO emissions would increase was conducted to determine the maximum off-site impact due to the new project for each of five years of meteorological data evaluated. Regulations require that a PSD permit action include the following three additional impact analyses as part of a PSD permit action: growth analysis, a soil and vegetation analysis, and a visibility analysis. The major findings from the PSD Increment analysis can be summarized as follows:

- Ambient impacts of NO₂ due to PSD Increment-consuming emissions from the Cordele OSB

Mill and significant regional sources were predicted to be below PSD Increment thresholds.

- Ambient impacts of NO₂ due to all emissions from the Cordele OSB Mill and significant regional sources were predicted to be in compliance with NAAQS.
- Ambient impacts of PM₁₀ due to PSD Increment-consuming emissions from the Cordele OSB Mill and significant regional sources were predicted to be below PSD Increment thresholds.
- Ambient impacts of PM₁₀ due to all emissions from the Cordele OSB Mill and significant regional sources were predicted to be in compliance with NAAQS.
- No significant ambient impacts of CO were presumed.
- Additional impacts to the soils, vegetation, and visibility were not expected to be adverse.
- Predicted ambient impacts of toxic air pollutants were below allowable ambient concentrations as defined by Georgia's Environmental Protection Division guidelines.

In sum, the air quality modeling analyses included with the PSD permit application indicated construction of the Cordele OSB Mill expansion project and continued operation of the Cordele OSB Mill would be in compliance with applicable ambient standards for criteria and toxic air pollutants under normal operating conditions. It is also worth noting that although the Norbord PSD permit application did conduct growth, soil and vegetation, and visibility analyses, the analysis was not intensive.

In accordance with state and federal regulations promulgated in response to the 1977 Clean Air Act Amendments, Norbord also included a Class I Increment analysis in its PSD application. Federal Class I areas are of special national or regional value from a natural, scenic, recreational, or historic perspective. The nearest Class I area to the Cordele OSB Mill is the Okefenokee National Wildlife Refuge, which is located approximately 106 miles southeast of the Cordele OSB Mill and is managed by the US Fish and Wildlife Service. The Georgia Environmental Protection Division typically defers a review of impacts to the discretion of the US Fish and Wildlife Service in these cases because the proposed facility is located more than 100 km (62 miles) from the nearest Class I area. Accordingly, Norbord prepared and submitted a Class I area modeling analysis to the US Fish and Wildlife Service demonstrating that the proposed construction and operation of the Cordele OSB Mill would not cause significant impact to Okefenokee National Wildlife Refuge as a result of regional haze or deposition.

As part of the PSD permit application, Norbord also submitted an evaluation of ambient impacts of toxic pollutant emissions in accordance with the *Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions*. Predicted ambient concentrations were below applicable ambient air concentrations

for all pollutants and averaging periods modeled. The results of this analysis showed that emissions of toxic air pollutants were not anticipated to cause adverse impacts on the ambient environment. Although the Environmental Protection Division expects to have at least one pre-PSD application meeting with an applicant, no pre-application meetings appeared to have taken place between the agency and Norbord regarding the Cordele OSB expansion. Pre-application meetings are typically used by the agency to lay out issues that would be controversial, which would normally include whether the agency will approve a particular piece of control equipment proposed and the type of computer modeling the applicant will have to conduct. Unlike almost all PSD applications that the Environmental Protection Division receives, Norbord's initial PSD was submitted to the agency without having completed the requisite modeling. Consequently, the permit-writing process was more difficult for the agency because the applicant was essentially asking them to make a decision on the PSD application without documentation that facility emissions would meet state standards. The applicant also provided limited information regarding the specific types of equipment they intended to install in the new portions of the plant. The Environmental Protection Division staff felt that Norbord was not used to submitting permit applications in the United States or Georgia and was also in a hurry to expand their facility.

After receiving an air quality application on November 9, 2004, to amend the permit for the existing OSB plant and essentially double the output capacity of the plant, standard procedures called for the Environmental Protection Division to issue a 30-day public advisory. However, agency staff were unable to verify that such a public advisory was issued. In the past, these advisories have occasionally been forgotten or intentionally not released when the Environmental Protection Division planned to later issue a Public Notice. However, no public comments were received during the 30-day period following Norbord's initial submittal of its air quality application. Receiving few or no comments on a proposed forest products processing facility is not uncommon, and the Environmental Protection Division rarely receives comments regarding proposed projects in southwestern Georgia. The Environmental Protection Division does not pay to have public advisories published in newspapers and neither agency rules nor state statutes require them to produce an announcement alerting the public that such an advisory exists. The agency typically sends the printed advisory to a list of county officials and newspapers, as well as citizens and companies that have previously notified the agency that they wish to receive such advisories (J. Yntema, personal communication, November 2007).

Upon issuance of the draft Norbord air quality permit and Preliminary Determination, a public notice was published in the local Cordele Dispatch for Crisp County on April 21, 2005. The public notice indicated there were 30 days to comment or to request a hearing on the draft permit and Preliminary Determination.

This notice was also sent to Crisp County Commissioners, the Cordele mayor, the regional planning commission, Norbord, and to the EPA Region 4 Headquarters. The notice and related documents were also placed on the Environmental Protection Division's website. Comments were received from Norbord and the EPA (J. Yntema, personal communication, November 2007). A final permit was issued along with the final determination on June 3, 2005. The Environmental Protection Division included in the Final Determination document responses to the comments from Norbord and the EPA.

2.1.3 Environmental Review Policies and Procedures

The central piece of legislation guiding how review of proposed projects is conducted is the *Georgia Environmental Policy Act of 1991* (OCGA 12-16-1), which requires that all state agencies and activities prepare an EER as part of the decision-making process for determining when a government action may have a significantly adverse impact on the environment. Georgia is considered a Tier-one state with regards to their SEPA with the EER equivalent to what most entities refer to as an EIS. However, because the state has not promulgated rules associated with the Act and rarely mandates the preparation of environmental review documents, the state actually behaves more like states not requiring formal environmental. Furthermore, while guidelines have been promulgated no rules or regulations have been adopted to facilitate implementation of the Act.

The Act applies only to state actions, which are defined as land-disturbing activities conducted by a state agency or funded 50% or more by a state grant. It also applies to the proposed sale or exchange of five or more acres of state land, and the proposed harvesting of more than five acres of trees from state land. If, by taking an agency action it is "probable to expect a significant adverse impact on the natural environment," then the statutory threshold for conducting a review of is triggered. More specifically, the Act states that any proposed state action that may "significantly adversely affect the quality of the environment" including the state's air, water, land, plants, and animals, requires an EER. Alternatives to the proposed project or activity must be considered as part of the EER, and mitigation measures must also be incorporated. An EER is required unless a finding of no significant impact can be prepared, which in the case of Georgia is equivalent to a Negative Declaration for an Environmental Assessment Worksheet in Minnesota. The Act implies the law is procedural only and declares that the final decision to proceed with an agency action "shall not create a cause of action" by any person provided that the procedural notice and hearings provisions have been followed.

As outlined in the Act, an environmental effect report describes the environmental impact and adverse environmental effects of the action, alternative actions, mitigation measures proposed to avoid or

minimize impact, and other effects. The responsible state agency authors the report and provides it to the director of the Georgia Environmental Protection Division, which is made available to the public so that hearings regarding the action can be convened as needed. Although no administrative rules have been adopted, the Act requires the director of the Environmental Protection Division to issue guidelines to assist agencies in the preparation of EERs. To date, the guidelines include criteria for evaluating whether a proposed action may impose significant adverse effects on environmental quality, protocols for soliciting comments from public and private organizations and individuals, and the possibility of preparing a single EER in situations where a series of state actions individually pose minimal adverse impacts but pose significant adverse cumulative effects or if a series of proposed actions are related either geographically or as part of a chain of contemplated actions that would subsequently impose significant environmental impacts when considered together.

With respect to review and analysis of potential environmental impacts, Georgia does not require that an EIS or similar document be completed for *privately funded projects*. That is, while the Act requires state agencies and associated activities to prepare an EER, similar requirements do not exist for private sector activities where a state agency does not directly assist with the planning, financing, or implementation of proposed actions.

2.1.4 Factors Affecting Review/Permitting Timelines

The review process for Norbord's proposed expansion to an existing OSB manufacturing facility was completed in slightly less than seven months in total. Although a lack of public objection certainly helped the project to undergo a fairly efficient review process, it appears the fact that no environmental review documents (i.e., EER, EIS, or other comparable environmental review document) were prepared for the project was also an important factor affecting review time.

Environmental Protection Division staff expressed the sentiment that the absence of pre-application meetings between Norbord and the Environmental Protection Division represented an important factor that increased project review time. In the absence of pre-application meetings, which are commonly used by the Environmental Protection Division to lay out any issues that would be controversial, Norbord's initial PSD was submitted to the agency without having completed the requisite modeling. The ultimate result was that the permit-writing process became more difficult for the Environmental Protection Division because the applicant was essentially asking the Environmental Protection Division to make a decision on their PSD application without providing adequate evidence that facility emissions would meet state standards. The applicant also provided insufficient information regarding the specific types of

equipment they intended to install in the new portions of the plant. One possible explanation that Environmental Protection Division staff offered for the initial problems with Norbord was that the company was not used to submitting permit applications in the United States and it was also in a hurry to expand the facility. Additionally, although assistance provided to project applicants by the Georgia Department of Economic Development (GDEcD) also helps to facilitate a faster the review process (because GDEcD is familiar with the operating permit application requirements imposed by the Environmental Protection Division), it appears that in this case the GDEcD either did not offer effective guidance to the applicant or merely was not involved in the project to the extent that is typical of most projects (J. Yntema, personal communication).

In summary, projects of a similar scale proposed in states with comprehensive environmental review are rarely approved in less than one year from the date an application is formally submitted. The Georgia Environmental Protection Division was able to review and approve Norbord’s proposed expansion in much shorter period of time largely because of the following two factors: (1) environmental review documents were neither required nor prepared for the project, and (2) no public comments or other objections were received during the public comment period. Additionally, project review ultimately took longer as a result of minimal assistance provided to Norbord by the GDEcD, and the absence of pre-application consultation between the applicant, the GDEcD , and the Environmental Protection Division.

Table 2.2: Summary of Norbord forest products industry case study, Georgia.

Project Name/ Company	Norbord Project / Norbord Georgia, Inc.
Location	Cordele (Crisp County), Georgia
Type of Project	Expansion to existing oriented strandboard (OSB) engineered wood products processing facility located in southern Georgia. Facility was permitted for initial construction in 2002.
Scope	Annual OSB production would increase by 650 MMsf, or about 100%. Facility produces OSB on a 3/8-inch basis. Norbord sought approval from the Environmental Protection Division to install three rotary dryers, wood fired energy system, blending and forming machines, press, and additional finishing capacity.
Year Project Proposed	November, 2004
Year Project Permitted	June, 2005
ER Completed	N/A
Permits Completed	<ul style="list-style-type: none"> Georgia State Implementation Plan—construction permit, Title V operating permit (date unknown in 2005)

	<ul style="list-style-type: none"> PSD (as part of the federal New Source Review program)—represented the most substantive document with respect to providing a comprehensive analysis and overview of the proposed project (permit obtained June 3, 2005)
Public Involvement	<p>Standard procedures called for Environmental Protection Division to issue a 30-day public advisory, though it could not be verified a public advisory was released. No public comments were received during the 30-day period following Norbord’s initial submittal of its air quality application, which is not uncommon for projects in southwestern Georgia. Neither agency rules nor state statutes require the agency to notify the public of proposed actions.</p> <p>Upon issuance of the draft air quality permit and Preliminary Determination, a public notice was issued by the Environmental Protection Division and published in a local newspaper. The public was given 30 days to comment or request a hearing. The notice was also sent to the Crisp County Commissioners, Cordele mayor, regional planning commission, Norbord, and to the EPA Region 4 Headquarters. Comments were received from only Norbord and the EPA.</p>
Issues and Impacts Analyzed	<p>The project considered environmental impacts that would <i>directly</i> result from expansion to the existing OSB facility. Analyses were conducted for air emissions, but the permit application and supplemental reports did not address impacts to forest resources that would result from the additional timber harvesting needed to meet raw material demands. Potential emissions were detailed in an emissions inventory included in the PSD permit. The dispersion modeling analysis included a Significance Analysis, NAAQS Analysis, and PSD Increment Analysis. All emissions sources that would be generated at the Norbord facility were included in the PSD permit. The significance analysis was used to determine whether the net emissions change would lead to a significant impact upon the area surrounding a facility. The significance analysis for NO₂, PM₁₀, and CO emissions was conducted to determine the maximum off-site impact due to the new project for each of five years of meteorological data evaluated. The PSD Increment Analysis revealed that none of the criteria pollutants would “consume” the increment and subsequently exceed permissible concentration thresholds. Regulations require that a PSD permit action include analysis on growth, soil and vegetation, and visibility. Although the PSD permit application addresses these areas, the level of analysis was nonspecific.</p>
Final Outcome	<p>The proposed facility expansion was permitted in approximately seven months, not including time during the pre-application stage, although it does not appear that pre-application meetings took place. Neither an EER nor other environmental review document was prepared. Approval of the facility was not contested during public review and comment periods. The Environmental Protection Division was notified by Norbord that facility expansion would be completed and the plant operational at its new capacity by December 2006.</p>
State ER Policy Framework	<p>The Georgia Environmental Policy Act requires preparation of an EER for major facilities, but state officials indicate this report has not been prepared. Guidelines have been promulgated pursuant to the Act but there are no agency rules or regulations that have been developed or adopted to facilitate implementation of the Act.</p>
State Permitting Framework	<p>The Stationary Source Permitting Program within the Environmental Protection Division is the primary unit responsible for reviewing applications and issuing permits. The permitting process consists of a detailed technical review of submitted applications that culminates in the issuance of a Construction and/or Operating Permit. Under the Georgia State Implementation Plan a construction permit must be obtained for new or modified units that may result in emissions to the atmosphere. After a construction permit is obtained, the Title V program requires all new and existing major sources of air emissions obtain federally approved operating permits. Large manufacturing facilities with the potential to emit more than 250 tons of PSD regulated pollutants annually are subject to permitting.</p>

2.2 Maine

2.2.1 Economic Importance

Forest-based manufacturing is the largest manufacturing industry in Maine, contributing \$5.31 billion to the economy in 2005 or 36% of Maine's total manufacturing sales. The forest-based manufacturing industry provides employment for nearly 20,000 people and generates a payroll of more than \$0.75 billion, the largest payroll in Maine's manufacturing sector. In 2005, forest-based manufacturing contributed \$2.47 billion in gross state product to the state economy (31%). Wood also provides the energy for approximately 20% of electrical use in Maine, and each 1,000 acres of forest land supports 1.2 forest-based manufacturing, forestry and logging jobs (NEFA, 2007).

Despite its importance to the state economy, and despite increasing levels of forest products production and productivity in the last several decades, all sectors of Maine's forest products industry have experienced challenges in recent times in the form of global competition, high energy costs, high insurance costs, and related factors (MFS, 2005; Rice, 2003). Still, the forest products industry continues to produce at near record high levels (NEFA, 2007). Industry experts and economists believe that investment in the latest technology in existing forest products manufacturing sectors as well as exploring new products such as biofuels, are key avenues to a successful future for this industry (MFS, 2005). While Maine's forest products industry has been able to maintain high levels of production, employment has decreased over the past decade. Between 1997 and 2005 employment declined from 23,430 to 19,614, which represents a more than 17% decrease in the industry's labor force (MFS, 2005; NEFA, 2007).

Maine's forest-based manufacturing consists of timber harvesting and associated trucking, and primary and secondary manufacturing (NEFA, 2007). Primary forest products manufacturing is the most prominent segment of the state's forest products industry. Pulp and paper products production is the largest single sector of the Maine's manufacturing economy (MFS, 2005; NEFA, 2007; Rice, 2003). There are currently nine companies operating more than 30 pulp and paper mills in the state (NEFA, 2007; Rice, 2003). Maine is also the second-largest paper producer in the nation by volume, manufacturing about 9% of all paper in the United States (MFS, 2005; Rice, 2003). It also makes up more than 30% of Maine's manufacturing revenue (Rice, 2003). Principal paper grades tend to be high quality white paper used for printing and writing. While employment in Maine's pulp and paper products sector was more than 17,000 in 1990, employment in the industry has fallen to approximately 10,000 jobs (MFS, 2005; <http://www.pulpandpaper.org/>). Pulp and paper wages totaled more than \$650 million annually in 2002, and workers within the sector continue to enjoy higher salaries than in many other segments of the forest products industry and other sectors of the state's economy (MFS, 2005; Rice,

2003). Additionally, it is common for pulp and paper mills to comprise 60%-80% of the property tax base in the mill towns where they are located (<http://www.pulpandpaper.org/>).

The overall outlook for Maine's pulp and paper industry is mixed. Existing mills must make significant capital investments if they are to sustain and improve their competitiveness in the global marketplace. Investment may increase total production capacity, but the more likely outcome is that Maine paper mills will seek to increase efficiency by reducing input costs and maintaining current production volumes. A downside is that employment will likely continue to decline as capital investments and manufacturing technology improvements eliminate the need for certain workers. However, without new investments, Maine could very well lose paper mills and machines in coming years (MFS, 2005).

Engineered forest products manufacturing, especially OSB, is also an important component of Maine's forest products industry. There are currently five facilities manufacturing engineered wood products in Maine, three of which manufacture OSB. In total, these facilities employ approximately 1,100 individuals (MFS, 2005). Many of these OSB facilities were built in the 1980s, which represented an earlier generation OSB manufacturing technology in North America. They typically have lower annual production capacities, which are somewhere between 200 and 265 million square feet, whereas newer OSB facilities generally have annual production capacities of up to 850 million square feet. Also, Maine wages tend to be significantly lower than wages in the pulp and paper sector and have remained stagnant over the past several years (MFS, 2005).

Maine also has more than a hundred medium to large-sized sawmills and specialty wood products mills. The wood energy sector has seen a renewed resurgence as idled wood energy plants built in the 1980s have restarted due to the increased cost of energy fuels such as natural gas and domestic concern for over-reliance on foreign energy sources. Wood-fired energy production has recently become economically feasible and its popularity has increased given its renewable nature. The wood energy industry takes slash (limbs and tops), whole tree wood chips and sawmill residues and burns the material in a boiler to produce steam and electricity.

2.2.2 Project Overview

In the summer of 1997, Great Northern Paper, Inc., a wholly-owned subsidiary of Bowater Inc., informed the Maine Department of Environmental Protection of its intent to construct a new Thermomechanical Pulp Mill at the company's existing East Millinocket Mill in East Millinocket, Maine. After nearly one year of consultation and pre-application meetings, in July of 1998 Great Northern Paper submitted a Site

Location of Development Law permit application to the Department of Environmental Protection to obtain permits to undergo the proposed expansion. The Town of East Millinocket is located in Piscataquis County, in an area of northern Maine commonly referred to as the Katahdin-Moosehead Region. The project was described as the cornerstone of Great Northern Paper’s long-term strategic plan to become a low-cost producer of high-quality newsprint and directory. More specifically, the company’s plan involved simplifying its pulping operations to lower costs, improve pulp strength, reduce chemical fiber requirements, and reduce pulp quality variation. The East Millinocket Mill sits within an industrial site that has been active since the early 1900s, and is not located within or near an EPA Class I Area. At the time that the project was proposed, Bowater was one of the largest producers of newsprint in the United States and had operated two pulp and paper mills in Millinocket and East Millinocket for nearly a century.

The new mill would be used for mechanical pulping, but involve the use of wood chips rather than logs. Thermochemical technology was proposed because pulp fibers generated are more intact and longer, which, in turn, provides superior strength properties for finished paper products. The proposed mill at the East Millinocket Paper Mill was to produce 745 bone dry short tons per day of pulp from two refining lines. No information was available on the East Millinocket Paper Mill’s production capacity prior to proposed construction of the new mill. Additionally, information was not provided to the Department of Environmental Protection that pertained to the amount of additional timber that would be used to meet the facility’s increased demand for raw material, or the location from which additional raw material would be harvested. The estimated total cost of the project was about \$106.2 million (Table 2.3).

Table 2.3: Estimated East Millinocket Paper Mill project cost.

Activity	Project Cost
Site Preparation	\$2,000,000
Structures and Buildings	\$20,400,000
Equipment and Processes	\$76,000,000
Engineering	\$8,000,000
Total	\$106,200,000

The proposed project included rail and truck unloading of wood chips, chip storage and screening, chip refining, pulp screening, and a stock and water distribution system. Major new facility construction included a: 57,000 ft² process building, 30,000 ft² electrical substation expansion, 5,600 ft² chip silo, 1,500 ft² truck and rail chip unloading station, rail sliding, and a 1,000 ft² chip conveying system. About 2.75 acres of new paved areas were proposed for parking and loading purposes. The new mill was to occupy a five acre. The site is bounded by an existing wood yard, recycle fiber plant, and park prep area.

The Site Law permit application that Great Northern Paper submitted stated that the Thermochemical Pulp Mill would reduce air emission rates for VOCs from 233 to 102 tons annually by eliminating the mill's existing woodroom, groundwood, and screening operations. It would also reduce water emissions and solid waste generated from the East Millinocket Mill.

Prior to submitting a permit application, Great Northern Paper provided information regarding mill expansion to all individuals owning property abutting the project site which, under Maine law, includes all individuals owning property within one mile of the project boundary. In accordance with the Site Law and the Code of Maine Regulation 06-096 (Chapter 2, Section 8), on June 23, 1998, Great Northern Paper released a public notice announcing a public informational meeting prior to officially submitting their permit applications. The notice was published in *The Katahdin Times* and the *Bangor Daily News*, two newspapers of general circulation in the area, and emphasized that individuals owning abutting property were especially encouraged to attend. Great Northern Paper also released public notices in both papers announcing intent to file a permit application under the Site Law, which provided guidance for requesting a public hearing. The notice stated requests for a hearing would be received for no more than 20 days from the date the notice was published, but that public comments would be received throughout the review process. No additional public hearings were requested. While information contained in the administrative record is incomplete, it appears that the Department of Environmental Protection received less than five public comments on the project, none in opposition to the proposed expansion.

The Great Northern Paper submitted a Site Law permit application to the Maine Department of Environmental Protection in early July 1998. After conducting its review, including an assessment of the company's technical and fiscal capacity, the agency determined that the expansion did not violate impact criteria related to air emissions, noise, fish and wildlife. The Maine Department of Environmental Protection ultimately approved the project and issued the requisite development permits on December 22, 1998. Although consultation between the agency and applicant had been taking place before the application was filed, the application was received, processed, and approved (including final permit issuance) in less than six months. This conformed to the stated commitment of the Department of Environmental Protection to complete its review of projects entailing construction or expansion of paper mills in no more than 185 days from when permit applications are formally submitted.

2.2.3 Environmental Review Policies and Procedures

The State of Maine is classified as a Tier-two state because it has not enacted a SEPA or other statute requiring an environmental review for all proposed projects that could impose potentially significant

adverse impacts on the human environment. The only projects requiring environmental review are those that may alter freshwater wetlands. The Maine Department of Environmental Protection has adopted rules addressing the need for evaluating impacts associated with projects that will alter wetlands. However, while Maine does not require an EIS-equivalent document, the state has enacted the statutes jointly administered by the Department of Environmental Protection and the Bureau of Land and Water Quality: *Site Location of Development Law*, and the *Natural Resources Protection Act*.

The Site Location of Development Law (Site Law), which was passed in 1970, requires the Department of Environmental Protection to review proposed developments that could impose potentially significant effects on the human environment. The primary interest is to protect groundwater and the geological formations (i.e., sand and gravel deposits) that contain water. More broadly, the Act is intended to “provide a flexible and practical means by which [the Department of Environmental Protection]... may exercise... police power... to control the location of those developments substantially affecting local environment in order to... [minimize] adverse impact on the natural environment within the development sites and their surroundings” (Maine DEP, 2007). The Site Law applies to all types of development within incorporated areas, and for oil terminal facilities and metallic mineral mining and advanced exploration in unincorporated areas in northern Maine that are under the planning and permitting authority of Maine’s Land Use Regulation Commission. New construction at an existing permitted facility is exempt from review provided that the additional disturbed area does not exceed 30,000 square feet ground area in any calendar year and does not exceed 60,000 square feet ground area in total (Maine DEP, 2007). Yet, any facility initially permitted under the Site Law will generally have to undergo an additional review and file for new permit applications if the applicant intends to modify a facility (J. Cassida, personal communication, December 2007). In reviewing applications for approval of proposed developments under the Site Law, the Department of Environmental Protection attempts to assess the size, location, and nature of proposed developments with respect to the potential primary, secondary, and cumulative impacts of the development on the character, quality, and uses of the land, air, and water on the development site and on the area likely to be affected by the proposed development. They also attempt to assess the potential effects that the development may have on the protection and preservation of the public’s health, safety, and general welfare (Maine DEP, 2006).

The state legislature identified the types of development that must be reviewed under the Site Law, and these include developments such as projects occupying more than 20 acres, metallic mineral and advanced exploration projects, large structures and subdivisions, and oil terminal facilities (Maine DEP, 2002B; 2007A). A permit is issued if the project meets applicable standards addressing potential impacts

on the natural environment. More specifically, the *No Adverse Environmental Effect Standard* (Chapter 375 of the Department of Environmental Protection rules) of the Site Law requires applicants to thoroughly document the potential impacts their proposed project could have on the environment based on criteria that must be addressed in order for the project to gain agency approval and be permitted.

Furthermore, the Natural Resource Protection Act was enacted in 1988 to address human uses of the landscape causing the rapid degradation and destruction of critical natural resources, producing significant adverse economic and environmental impacts and threatening the health, safety, and general welfare of Maine residents (Maine DEP, 2002). Broadly speaking, this Act is intended to prevent unreasonable impacts that result in the degradation or destruction of natural resources that are significant environmentally, historically, or of recreational value. The Act was also enacted to help address cumulative impacts resulting from frequent minor alterations and occasional major alterations of the state's critical and rare natural resources (Maine DEP, 1988). Protected natural resources include coastal wetlands and sand dunes, freshwater wetlands, great ponds, rivers and streams, fragile mountain areas, and significant wildlife habitat (Maine DEP, 1988; 2002).

2.2.4 Factors Affecting Review/Permitting Timelines

A number of factors appear to have facilitated a short review time for the proposed project. These include the agency's commitment to complete its review in no more than 185 days, an analysis indicating the mill's total air and water emission would decrease as a result of the expansion, only one public meeting was held, and few public comments were received. Also contributing to the short review process was the fact that neither the applicant nor the Department of Environmental Protection was required to prepare in-depth environmental review documents. Pre-application consultation that took place between the applicant and agency over the course of the year preceding the Site Law permit application also aided processing by reducing the need for Great Northern Paper to resubmit revised permit applications (J. Cassida, personal communication, December 2007). Additionally, the project was located in an industrial park, which reduced concern for impacts to wildlife habitat or other protected natural resources.

Projects of a similar scale proposed in Tier I states generally are not approved in less than one year from date of submission. The Maine Department of Environmental Protection was able to complete its review and approve Great Northern Paper's proposed paper mill expansion in less than six months. A timely review was conducted in part because: (1) an environmental review document was not required, (2) pre-application consultation between the applicant and the agency in the preceding year facilitated data sharing and communication, (3) the expansion was expected to improve air and water quality by reducing

emissions, (4) there was limited public input and objection, and (5) the expansion did not trigger additional permitting and review requirements under the state’s Natural Resource Protection Act.

Table 2.4: Summary of Great Northern Paper forest products industry case study, Maine.

Project Name / Company	Thermochemical Pulp Mill Plant Project / Great Northern Paper (Bowater, Inc.)
Location	East Millinocket, Maine
Type of Project	Expansion of existing paper mill located in northern Maine on an existing mill site used for industrial activity since the early 1900s. The project involved construction of a new Thermomechanical Pulp Mill, which was anticipated to reduce air emission rates for VOCs from 233 tons to 102 tons annually. It would also reduce water emissions and solid waste.
Scope	The primary purpose of the project was to contribute to the company’s long-term strategic plan to become a low-cost producer of high quality newsprint and other paper products. The new mill would produce 745 bond dry short tons of pulp from two refining lines at an estimated cost of \$106 million. The project included construction of a 57,000 ft ² processing building, 30,000 ft ² electrical substation expansion, 5,600 ft ² chip silo, chip conveying system, and out-buildings.
Year Project Proposed	Summer 1997 marked the start of pre-application meetings between Great Northern Paper and the Department of Environmental Protection; public notice of proposed expansion released June 1998; July 1998 the permit application was received by the Department of Environmental Protection
Year Project Permitted	December, 1998
ER Completed	N/A. Although the Site Law permit application evaluated the effects the project would impose with respect to 15 categories of environmental impacts, no ER documents were prepared for this project as the state only requires the preparation of ER documents for those projects that will impact wetland environments.
Permits Completed	Site Location of Development permit—Great Northern Paper submitted a Site Law permit application to the Department of Environmental Protection in early July 1998. After the agency conducted its review and determining that the proposed expansion did not violate any of the environmental impact criteria, the agency approved the project and issued the requisite development permits on December 22, 1998. Not including pre-application consultation, the application was ultimately received, processed, and approved in less than six months.
Public Involvement	Prior to submitting permit application, Great Northern Paper sent information regarding its plan to expand the existing East Millinocket paper mill to all individuals owning property that abutted the project site, including those who owned property within one mile of the project boundary. In accordance with state law, on June 23, 1998, Great Northern Paper released a public notice announcing that a public informational meeting would be held on July 1, 1998, in which interested citizens provided public comments. Great Northern Paper also released notices in local papers announcing a notice of intent to file a permit application under the Site Law along with guidance for requesting public hearings. No public hearings were requested and records indicate that fewer than five public comments were received and none of those were in opposition.
Issues and	The project considered environmental impacts that would <i>directly</i> result from expansion to the

Impacts Analyzed	<p>existing paper mill. Analysis was performed on a number of factors listed below, but neither the permit application nor supplemental reports addressed impacts to forest resources that would result from additional timber harvesting needed to meet raw material demands. The following criteria were considered, but significant variation exists among the level of analysis conducted:</p> <ul style="list-style-type: none"> • No unreasonable adverse effect on air quality • No unreasonable alteration of climate • No unreasonable alteration of natural drainage ways • No unreasonable effect on runoff/infiltration relationships • Erosion and sedimentation control • No unreasonable adverse effect on surface water quality • Protection of wildlife and fisheries • No unreasonable adverse effect on ground water quality • No unreasonable adverse effect on ground water • Buffer strips • Control of noise • Preservation of historic sites • Preservation of unusual natural areas • Accessing to direct sunlight • No unreasonable effect on scenery
Final Outcome	<p>The Department of Environmental Protection completed its review of the Site Law permit application in less than six months. Great Northern Paper began to expand its East Millinocket mill within months of completing permitting and the facility has been operating at its new capacity since 1998.</p>
State ER Policy Framework	<p>Environmental review documents are not required under Maine law for proposed forest products processing facilities</p>
State Permitting Framework	<p>Proposed forest products processing facilities are required by law and administrative rules to file a permit application under the Site Location of Development Law. Applicable developments identified by the Legislature include projects occupying more than 20 acres, metallic mineral and advanced exploration projects, large structures and subdivisions, and oil terminal facilities. A permit is issued if the project meets applicable standards addressing areas such as stormwater management, groundwater protection, infrastructure, wildlife and fisheries, noise, and unusual natural areas. Additional permits must be obtained under the state’s Natural Resource Protection Act in situations where a proposed project could potentially impact protected natural resources, which may include freshwater wetlands, wildlife habitat contained within forested wetlands, and great ponds. Proposed forestry and timber harvest operations are exempt from Act because two-thirds of the state is classified as forested wetland and the absence of such an exemption would preclude almost all forest harvesting.</p>

2.3 Minnesota

2.3.1 Economic Importance

The primary forest products industry employs more than 22,000 people in Minnesota (Governor’s Task Force Report, 2007). The state’s primary forest products industry is composed of three sectors: paper and pulp mills, engineered wood products, and lumber. The paper sector also includes pulp, which is produced using hardwood species such as maple and aspen. OSB is commonly produced although some plants specialize in medium-density fiberboard. The lumber sector includes facilities that process sawlogs

from hardwoods (e.g., oak, birch) and softwoods (e.g., white and red pine). The location of Minnesota's forest products facilities as of 2003 is shown in Figure 2.1 (Governor's Task Force Report, 2003).

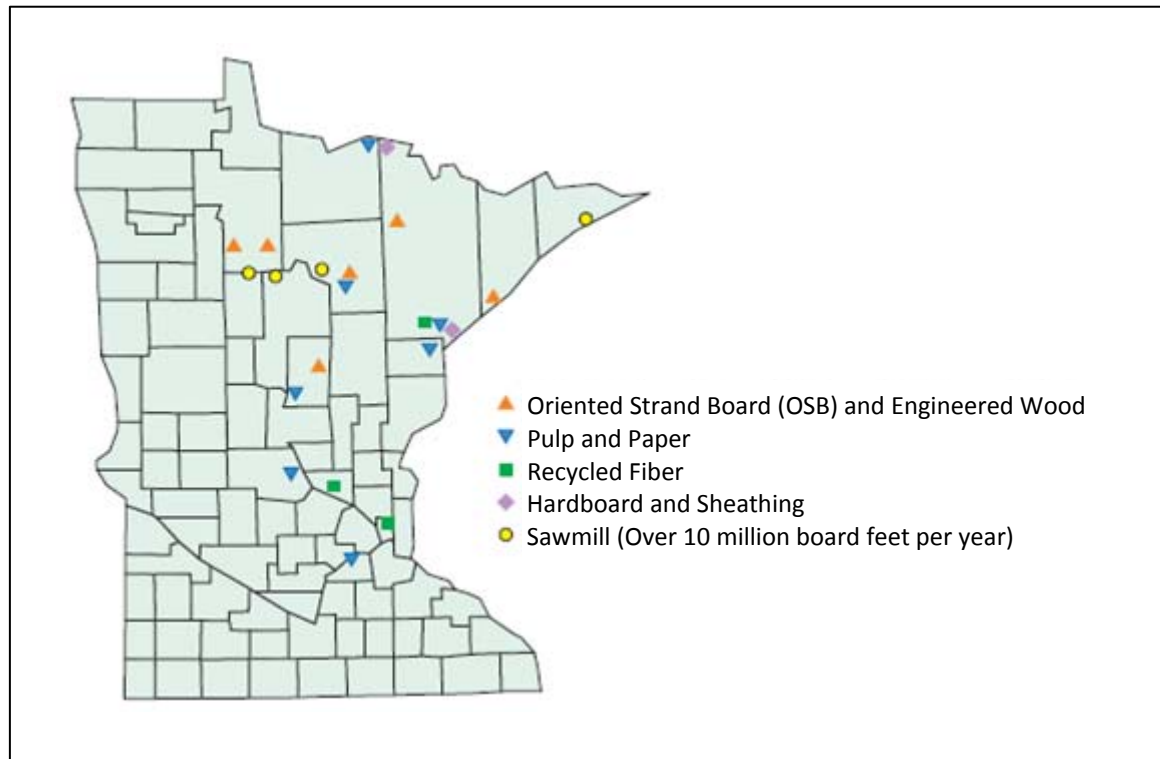


Figure 2.1: Location of primary forest products facilities in Minnesota (Source: Governor's Committee Report, 2003)

Although no new paper mills have been constructed in Minnesota for several years, the Minnesota Pollution Control Agency has received permit applications to expand or modernize facilities. In 1999, Boise, Inc. (formally Boise Cascade, LLC) proposed new construction that constituted efficiency improvements at its International Falls paper mill that would subsequently increase wood use by up to 90,000 cords per year. In 1995 Potlatch Corp. proposed an expansion of its Cook OSB mill, which would increase annual wood use by 100,000 cords. Both projects were controversial and generated substantial public opposition. In both cases, the MPCA required the preparation of only an Environmental Assessment Worksheet (EAW), which comprises a far less comprehensive review of potential impacts than an EIS. A third project, a proposed expansion to the Blandin Paper Mill owned by UPM-Kymmene (the Thunderhawk Project) is discussed below.

Minnesota's primary forest products industry has experienced hardship in recent times. Whereas the state's primary forest products industry witnessed job creation and a more than 100% increase in the

value of product output between the 1970s and 1990s, the industry is experiencing job losses from machine shutdowns and mill closings and disinvestments as industry investments move to other states and countries. In addition to global economic factors, high stumpage costs, rising energy and transportation costs, increasing logging costs, and decreased demand for wood as a result of slumping housing markets contribute to recent declines. Table 2.5 summarizes the results of a benchmarking study that was completed in 2003, which analyzed factors affecting the ability of Minnesota’s primary forest products industry to compete with other states and countries (Governor’s Task Force Report, 2003).

Table 2.5: Comparison of factors affecting the ability of Minnesota’s forest products industry to compete with competitor states and countries (Source: Governor’s Committee Report, 2003).

	Wood and Fiber Availability and Price	Permitting and Environmental Review	Transportation: Vehicle Weight Limits	Energy Costs	Wood and Fiber Quality	Taxation	Labor and Construction Costs	Education	Research	Forest Land Productivity	Technology Review
Wisconsin	B		B	W	B	B	B	W	W	B	W
Michigan	B		B	W	B	Mixed	Mixed	W	B	B	
Alabama	B	B	B	B	B	W	B	W	B	B	S
Georgia	B		B	B	B	B	B	W	B	B	
Maine	B		B	W	B	B	B	W	B	B	W
Texas	B		B	S	B	Mixed	B	W	B		
Oregon	S		S	W	B	B	B	W	B	B	
Washington				W	B	B	W	W	B	B	
United States								W		B	
Canada	B		B		B					S	W
Sweden		B		B	B	Tax Systems Differ				B	B
Finland		B		W	B					B	B
Brazil	B			W	B					B	
Chile				W	W					B	

B Better than Minnesota
 S About the Same as Minnesota
 W Worse than Minnesota

Despite the downturn in the primary forest products sector, there is reason to believe that the industry could increase investment in wood-based renewable energies. Rising energy costs and increased interest in alternative fuel sources have helped position the state to become a global leader in cellulosic energy. Although demand does not yet currently exist, should a market for wood-based ethanol develop in the near future the state could promote this sector by providing capital incentives and funding pilot-scale projects. Minnesota policies and incentives have enabled the forest products industry to attain aggressive renewable energy objectives by taking advantage of its existing infrastructure and raw material supply.

These same policies and incentives allow for a synergy between the forest products and renewable energy sectors to maximize forest values (Governor's Task Force Report, 2007).

2.3.2 Project Overview

Blandin Paper Company is a subsidiary of UPM, a global forest products group with core businesses in printing papers, specialty papers, label materials, and wood products. Blandin operates a groundwood pulp and paper mill in Grand Rapids, Minnesota. Blandin was initially built and began operation under the name Itasca Paper Company in 1902. In 1933 the company became Blandin Paper Company and in 1997 the plant was purchased by the UPM-Kymmene Group based in Finland and the plant name was changed to Blandin Paper Company a Member of the UPM-Kymmene Group. The Blandin mill produces groundwood pulp and combines it with purchased Kraft pulp to produce paper of advertising supplement, catalog, and magazine quality. Raw materials used to produce the paper include wood, clay, starch, and pigments. The mill produces lightweight, coated publication-grade paper through two paper machines designated respectively as paper machine No. 5 and paper machine No. 6. The mill's annual output was approximately 380,000 short tons as of 2006.

In January 2004, UPM-Kymmene/Blandin Paper Company (UPM/Blandin Paper) submitted an EAW to the MPCA proposing to expand and modify its paper mill in northern Minnesota. After UPM/Blandin Paper submitted the EAW this project became known as the Thunderhawk Project. The initial EAW was determined to be incomplete by the MPCA and a revised one resubmitted. During the time period that the applicant was modifying its worksheet, the Environmental Quality Board (EQB) took action to shift the Responsible Government Unit role from the MPCA to the Department of Natural Resources. The Department of Natural Resources accepted the resubmitted EAW on September 17, 2004. After completing the environmental review and concurrent permitting process, the Final EIS was found to be adequate after the Commissioner of the Department of Natural Resources signed the Record of Decision in May 2006. The MPCA's Air Modifications Permit and other permits, which were prepared in conjunction with the environmental review work, were officially issued to UPM/Blandin Paper after the Record of Decision was signed.

The main feature of the project was the addition of a complete paper manufacturing line designated as paper machine No. 7. The Thunderhawk Project also involved an increase in pulp production capacity, installation of a new Thermomechanical Pulp Mill, optimization of the paper machine No. 6 paper line, addition of a precipitated calcium carbonate facility, addition of a wastewater treatment facility, and construction of new warehouse facilities. If the project occurred, the existing paper machine No. 5 line

would be permanently shut down. Like the existing Pressurized Groundwood Mill, the thermochemical mill will be used for mechanical pulping, but will involve the use of wood chips rather than logs. A Thermochemical Pulp Mill was proposed because pulp fibers generated are more intact and longer, and in turn provides superior strength properties for the finished paper product. Both hardwood and softwood chips would be processed. Major components included chip handling, refining, thickening, storage, and bleaching. The project called for bleached pulp to be pumped to both the proposed new paper machine No. 7 and the existing paper machine No. 6. Because the project was to be financed through private funds, and as long as the EIS assessed costs were fully covered, the state did not require the proposer to provide information pertaining to its financial capacity nor the estimated costs of construction and operation.

The existing paper mill's baseline production capacity averaged approximately 447,000 short tons per year over the period 1993-2002. The proposed expansion would increase the mill's production capacity to 761,000 short tons per year, which would constitute an approximately 100% increase in total production output. The facility's wood use would increase approximately 197,000 cords (or nearly 100%) annually, to a total estimated wood consumption at the mill of 400,000 cords per year. The proposed project would use wood as the primary raw material to produce publication-grade rolled paper. Both hardwood and softwood species supply the mill, and it is estimated that approximately 56% of the increase in wood use would come from aspen. For the purpose of the state's impact assessment, it was assumed that the increase in wood usage would only come from timber harvesting activities in Minnesota.

Although state rules (4410.4300, Subpart 13) require that the MPCA act as the responsible government unit for review of projects proposing to construct or expand pulp and paper mills, Minnesota Rules (4410.0500, Subpart 6) allow the EQB to designate, within five days of receipt of the completed data portions of the EAW, a different responsible government unit for a given project if it is determined that the designee has greater expertise in analyzing the potential impacts of that project. The EQB agreed to re-designate the responsible government unit to the Minnesota Department of Natural Resources in September 2004 because the primary issues of concern with the Thunderhawk Project centered on environmental impacts associated with increased forest harvesting, for which the Department of Natural Resources had greater expertise (B. Johnson, personal communication, December 2007).

In mid-December 2004, the Department of Natural Resources notified Blandin that the EAW was complete for scoping purposes, and that the Department of Natural Resources was prepared to move forward with the preparation of a Scoping EAW. In accordance with the EQB rules (4410.2100), the Department of Natural Resources' scoping document disclosed information about the project and those

issues that were identified as potentially significant. These issues were later incorporated into the EIS.³ The issues that were identified as needing to be more thoroughly analyzed with respect to how construction and operation of the Thunderhawk Project would impact the human environment were noise, traffic, rail access, socioeconomics, and cumulative timber harvest. In addition, the EIS also formally addressed in a less comprehensive manner a number of other issues believed to not be significantly impacted: land use and zoning, land cover, wildlife and fisheries, water resources, solid wastes, hazardous wastes, storage tanks, stationary source air emissions, designated parks and recreation areas/trails, visual resources, and geologic hazards and soils.

Regarding the issue of cumulative timber harvest impacts, the draft EIS compared the findings of the Thunderhawk Project's timber harvest analysis with the findings of the Final Generic EIS on Timber Harvesting and Forest Management (GEIS). The GEIS, which was initiated in 1989, was prepared in response to concerns about the potential impacts of increasing timber harvest levels. Completed and released in 1994, the GEIS provided an evaluation of the environmental and related impacts of three hypothetical levels of statewide timber harvesting intensity. In addition to the assessment, recommendations were developed to mitigate the adverse impacts identified in the assessment, which included site-level responses, landscape-level responses, and forest resources research (Kilgore et. al, 2005). To date, Minnesota is the only state to have prepared a GEIS or comparable analysis of the environmental impacts of timber harvesting and forest management on a statewide level.

The Thunderhawk EIS assessed project-specific cumulative timber harvest effects in relation to activities examined in the GEIS. The Department of Natural Resources did this because responsible government units are required to consider information from an available GEIS by tiering according to Minnesota Rules (4410.3800, Subpart 8). The EQB determined that *the GEIS did not remain adequate for use in project-specific review* of the Thunderhawk Project in accordance with these state rules. While a project-specific EIS typically examines environmental impacts within a limited geographic area, a GEIS analyzes the cumulative impacts associated with a number of separate, yet related, activities. In the case of the GEIS on timber harvesting and forest management, cumulative impacts are those resulting from the hundreds of individual logging activities occurring in the state each year—in effect, the collective impacts of these individual operations on the state's overall environmental quality.

³ The EIS also provides a description of mitigation measures (e.g., use of best available technologies, restrictions on truck traffic) that will be undertaken to reduce potentially adverse environmental impacts to identified topics (e.g., traffic and transportation, fisheries and wildlife).

The Scoping EAW and Draft Scoping Decision Document were completed in late December 2004. In accordance with state rules, the Department of Natural Resources subsequently invited comments on the proposed EIS scope during a 30-day period that concluded in late-January 2005. Pursuant to Minnesota Rules (4410.2100, Subpart 3), the Notice of Availability of the Scoping EAW and Draft Scoping Decision Document were published in the *Monitor*. In accordance with Minnesota Rules (4410.2100, subpart 3), the Department of Natural Resources also supplied a press release to at least one newspaper of general circulation in the vicinity of the proposed project announcing the availability of the scoping documents, the opportunity for public comment, and the location of review copies. The Department of Natural Resources held a public scoping meeting on January 12, 2005, in Grand Rapids, Minnesota. Substantive revisions to the Draft Scoping Decision were made by the Department of Natural Resources prior to issuing the Final Scoping Decision Document on February 9, 2005. This document included discussion of the proposed alternative, no build alternative, site alternative, technology alternative, scale alternative, configuration alternatives, and alternatives incorporating reasonable mitigation measures. Justification for dismissal of certain alternatives from further analysis was addressed in the EIS.

Once scoped, a *voluntary* EIS was prepared for the project pursuant to Minn. Rules part 4410.2000, subpart 3B, which directs the preparation of an EIS when a Project Proposer and Responsible Government Unit agree that an EIS be prepared. Conversation with agency staff assigned to the project revealed that a voluntary EIS was chosen due to the following:

- **Forest Resources Context**—if implemented, the project would increase statewide timber harvest by at least 5%. In the wake of the timber harvesting GEIS, it became a requirement that every proposed forest products project consider the project's statewide implications to 17 impact areas. Given the size of the proposed project, preparation of an EIS was deemed to be more effective than an EAW as means of addressing potential environmental impacts.
- **Controversy**—since the late 1980s, all proposed industrial expansions in the state have received high levels of public scrutiny. The potential for controversy was perceived to be high for the Thunderhawk Project, and it was believed that an EIS was better suited for reviewing the project based on likelihood of public opposition.
- **Litigation**—in the years leading up to the Thunderhawk Project, lawsuits had challenged the "no-EIS decisions" for Potlatch's Cook OSB Mill and Boise Cascade's International Falls projects. The proposer and the review agency agreed preparing an EIS substantially reduced the potential for future litigation as "no-EIS decisions" are vulnerable to judicial review.
- **Age of GEIS**—by the time the Thunderhawk Project was proposed, the GEIS was perceived to be somewhat dated. The Boise Cascade process all but established that once the complete new USDA-

Forest Service Forest Inventory Analysis dataset became available, it would not be possible for the EQB to determine that the GEIS remained adequate for project specific review. Because the new dataset was available by the time Thunderhawk was proposed and because an EIS constituted a free-standing, detailed analysis, the issue of GEIS inadequacy was resolved by incorporating timber harvesting concerns into EIS scoping and analysis. Avoiding an in-depth analysis of timber harvesting impacts posed a greater risk of future public controversy.

- **Politics of Good Will**—from the applicant’s perspective, there was a certain level of “political good will” that came with a voluntary EIS. That is, the company’s willingness to submit to a voluntary EIS built rapport with area communities and interested stakeholders. Furthermore, preparing an EIS provided the opportunity to evaluate socioeconomics, which gave the applicant another venue to emphasize the economic benefits that the project would bring to the area.
- **Permitting**—although permitting considerations did not play a dominant role in the decision, the applicant felt that the permitting process would be more predictable if an EIS was prepared.
- **Time**—by electing to submit to a voluntary EIS, it was agreed that the total review time could be reduced by avoiding the need to conduct a mandatory EIS after completing an EAW, and the process would be more predictable.

Taken together, these factors contributed heavily to the applicant’s decision to pursue a voluntary EIS rather than merely an EAW and taking the chance that an EIS would not ultimately be mandated later in the process. Given the size of the project, the applicant was certainly not guaranteed that an EIS would not be required later, and in fact there was reason to believe (given the status of the GEIS) that an EIS would in fact ultimately be required. By electing to submit to a voluntary EIS the applicant was able to reduce total review time and also make the review process more predictable.

Although EQB rules require an EIS to be completed within 280 days of issuance of the EIS Preparation Notice, the review timeframe was ultimately extended after UPM/Blandin Paper gave its consent. A Draft EIS was completed for the Thunderhawk Project in January 2006. Pursuant to Minnesota Rules (4410.2600, Subpart 3), in late January 2006 the Department of Natural Resources distributed the Draft EIS to all applicable government units, the project proposer, parties on the Draft EIS distribution list, all parties who submitted substantive comments during EIS scoping, and all parties who requested a copy. A Notice of Availability of the Draft EIS was published in the *Monitor* on January 30, 2006. The notice included the date, time, and place of the informational meeting, locations of public review copies of the Draft EIS, and indicated the comment period would close March 7, 2006. A press release announcing the availability of the Draft EIS, the public review locations, and information concerning the public

information meeting and the review and comment period was issued to at least one newspaper of general circulation in the vicinity of the proposed project. Distribution of the press release occurred on January 30, 2006. A public information meeting was subsequently held on February 21, 2006, in Grand Rapids, Minnesota, in which 85 people attended and 11 formal comments were submitted (10 in support and 1 neutral). The public comment period for the Draft EIS concluded on March 7, 2006, during which time hundreds of public comments were received with 36 supporting the proposed expansion, three opposing, and the remaining comments classified as neutral (e.g., requests for additional information). In general, the public comments in support of the project emphasized the importance of the project as a means of fostering vital economic development and employment opportunities in the community.

The Final EIS was distributed on April 24, 2006, and a Notice of Availability was published in the *Monitor* that same day. A press release announcing the availability of the Final EIS was issued and the opportunity for additional public comment on the adequacy of the EIS was issued to at least one newspaper of general circulation in the project vicinity. The Department of Natural Resources accepted written comments on the adequacy of the EIS through May 8, 2006, during which time three letters were received indicating support for the Final EIS and two that offered no challenge. In accordance with Minnesota State Rules (4410.2800, Subpart 4), the Department of Natural Resources found the EIS to be adequate and approved the Thunderhawk Project as they believed it: (1) addressed the issues raised in the scoping process, (2) provided responses to the substantive comments received during the Draft EIS review concerning issues raised in the scoping process, and (3) was prepared in compliance with the procedures of the Minnesota Environmental Policy Act (Minnesota Statutes Chapter 116D.04) and the Environmental Review Program rules (Minnesota Rules parts 4410.0200 to 4410.6500). A Record of Decision was signed by the Department of Natural Resources Commissioner in May 2006.

At the completion of the EIS, permit applications were filed. In accordance with state and federal air quality rules, Blandin was required to modify its existing air emission permit. The Blandin Paper Mill already possessed a Total Facility Permit (Title V Operating Permit) under the Clean Air Act and Minnesota Rule 7007, but the scope of the proposed expansion required that Blandin submit an amendment to its existing permit. To do this, Blandin calculated the proposed modification's potential to emit, review applicable state and federal rules and regulations and determined the applicable amendment type. In addition to making the requisite modifications to its existing air emissions permit, the Thunderhawk Project obtained the following permits:

- **Water Appropriations Permit**—a water appropriation permit was obtained from the Department of Natural Resources, which is required for projects that withdraw more than 10,000 gallons of

water per day or one million gallons per year. The Thunderhawk Project filed an amendment to its existing water appropriation permit.

- **Public Waters Work Permit**—this permit is required for projects constructed below the ordinary high water mark that alters the course, current, or cross section of public waters or wetlands. The permit applies to those lakes, wetlands, and streams identified on Department of Natural Resources Public Water Inventory maps, and the Paper Mill Reservoir is identified on one such map. This permit is needed for installation of the Thunderhawk Project’s proposed new water intake structure.
- **Section 401 Water Quality Certification**—the MPCA is responsible for Section 401 water quality certification required for Section 404 permits issued by the US Army Corps of Engineers. Section 401 of the Clean Water Act requires that activities that may result in discharges to navigable waters and that requires a federal permit to construct, modify, or operate, must be conducted in compliance with Sections 301, 302, 303, 306, and 307. The Thunderhawk Project obtained certification because construction of the new intake would subsequently lead to the discharge of dredged or fill material.
- **National Pollutant Discharge Elimination System/State Disposal System Discharge Permits**—permitting authority delegated to the MPCA to regulate waste and stormwater discharges to lakes, streams, wetlands, and other surface waters. State Disposal System (Minnesota Statute § 115) permits regulate construction and operation of wastewater disposal systems, including land treatment systems. A General Stormwater Permit for Construction Activities required the applicant to prepare a Stormwater Pollution Prevention Plan, incorporate best management practices applicable to the site, and attempt to eliminate or minimize stormwater contact with potential pollutants. Permits are required for construction projects greater than one acre in size. The Thunderhawk Project was also required to obtain a General Stormwater Permit for Industrial Activities required of municipal and private operators of industrial facilities.

2.3.3 Environmental Review Policies and Procedures

Minnesota is considered a Tier-one state per requirements for state-level environmental review of proposed projects were codified in state law upon passage of the Minnesota Environmental Policy Act (Minnesota Statutes, Chapter 116D). With respect to environmental review responsibilities, it is the EQB Environmental Review Program that is authorized to write state rules for conducting environmental reviews. Broadly speaking, the function of the Environmental Review Program is to avoid and minimize damage to Minnesota’s environmental resources caused by public and private actions. The program accomplishes this by requiring certain proposed projects that constitute a *government action* to undergo special review procedures prior to obtaining approvals and permits otherwise needed (EQB, 1996).

Minnesota defines a governmental action as an activity or project that is wholly or partially conducted,

permitted, assisted, financed, regulated, or approved by governmental units, including the federal government. However, while the EQB promulgates rules, the reviews are typically conducted by governing bodies such as a county board, city council or a state agency to which the project has been assigned (EQB, 1996). The agency or entity with primary responsibility for conducting the review of a proposed project is the responsible government unit. Under Minnesota state law, environmental review can apply to any action or project that meets the following conditions (EQB, 1996; Minnesota Administrative Rules, Chapter 4410):

- Action or project must involve physical manipulation of the environment, directly or indirectly.
- Action or project must involve at least one governmental approval or one form of state financial assistance, or be conducted by a state unit.
- Action or project approval and construction must take place in the future. That is, projects constructed or those with all required governmental approvals are not subject to further review, unless an expansion is proposed.

Two different review documents are used, an EIS and an EAW. The EIS involves a thorough assessment of the project's environmental impacts and a comparative analysis of its economic and sociological effects. The Act and its associated rules require an EIS to consider reasonable alternatives. An EIS is intended to be analytical rather than an encyclopedic document, and should also assume an interdisciplinary approach that integrates data and information from both natural and social science fields. The EIS is reserved for projects with the potential for significant environmental effects, and relatively few EISs are prepared in a given year. It is recommended that any responsible government unit considering collaborating with a federal agency to complete environmental review under federal law consult with EQB staff. This consultation is recommended so that duplication and delays can be minimized. Although it is common for federal and state review documents to be prepared jointly, the EQB does not advise responsible government units to do so in situations where it is more expeditious to complete a state review and use the completed documents in a subsequent review under the federal process (EQB, 1996).

An EIS is required to consider environmental, economic, employment, and sociological impacts associated with a proposed project. Additionally, each major alternative considered in the analysis must include a succinct discussion of potentially significant direct or indirect, adverse, or beneficial effects generated by implementing the specific alternative. This evaluation must include consideration of cumulative impacts, which is defined as "...the impact on the environment that results from incremental effects of the project in addition to other past, present, and reasonably foreseeable future projects regardless of what person undertakes the other projects" (Minnesota Administrative Rules, 4410.0200,

Subpart 11). Minnesota administrative code (4410.2000) also specifies the types of projects that will trigger a *mandatory* EIS, which includes metallic and nonmetallic mineral mining and processing operations as well as new pulp and paper mills. However, other forest products processing facilities for OSB or other engineered wood products are not subject to a mandatory EIS, nor are expansions to existing pulp and paper mills (EQB, 1996).⁴

2.3.4 Factors Affecting Review/Permitting Timelines

The review process for UPM/Blandin's proposed expansion to the existing groundwood pulp and paper mill was completed in approximately 20 months (September 2004-May 2006). Although the MPCA received an EAW in January 2004, it was not possible to begin review because submitted documents were incomplete. If the project review process is expanded to include permitting, the Thunderhawk Project took approximately 23 months from the time an adequate EAW was submitted to the Department of Natural Resources until the air quality permit was issued to UPM/Blandin in August 2006.

The primary factors extending the amount of time required to complete the environmental review for the Thunderhawk Project was the time required to resubmit documentation for the EAW, information requirements as stipulated in agency rules, and the comprehensive nature of the environmental review process as required under the Minnesota Environmental Protection Act. Whereas the Georgia and Maine projects essentially only had to satisfy the requirements of state permitting processes, the Thunderhawk Project incorporated an EIS with an intensive scoping and public involvement process. The components of the *voluntary* EIS were the same as the substantive requirements of a *mandatory* EIS. Although minimal public objection facilitated review of the Thunderhawk Project and pre-application consultation took place between Blandin and both the Department of Natural Resources and MPCA, the review process took longer than for Georgia and Maine forest products projects considered in this report.

As noted previously, while the EQB rules require an EIS to be completed within 280 days of issuance of the EIS Preparation Notice, the review timeframe for the Thunderhawk Project was ultimately extended after the applicant gave its consent. Given that UPM/Blandin agreed to allow the agency to exceed the standard review time, it is not appropriate to conclude that the Department of Natural Resources exceeded the time permissible by state law. It is worth noting that in the 2007 reports prepared by the Governor's Task Force on the Competitiveness of Minnesota's Primary Forest Products Industry, a recommendation was included that an agency liaison be assigned to individual forest products facility expansions or new

⁴ Expansion of an existing paper or pulp processing facility that will increase its production capacity by 50% or more is only subject to a mandatory EAW (Guide to Environmental Review Rules).

constructions before an EAW is submitted. The reasoning was that a liaison would facilitate increased efficiency of environmental review and permitting and reduce the amount of time to make a final determination on a proposed project. This may improve communication, but given the statutory requirements for public and agency review, it is not obvious that further communication would have decreased the amount of time required to complete the Thunderhawk Project.

Table 2.6: Summary of UPM/Blandin forest products industry case study, Minnesota.

Project Name /Company	Thunderhawk Project / UPM-Kymmene/Blandin Paper Company (UPM/Blandin Paper)
Location	Grand Rapids, Minnesota
Type of Project	Expansion and modification to an existing groundwood pulp and paper mill located in northern Minnesota, which involved the creation of a new paper production line.
Scope	The existing mill produces lightweight, coated publication-grade paper with an annual output of 380,000 short tons. The main feature was the addition of a new paper manufacturing line. Wood use would increase about 197,000 cords annually (100% increase) to a total about 400,000 cords/year and total production capacity up to 761,000 short tons per year.
Year Project Proposed	September 2004 (project was first proposed in January 2004 but the initial EAW was incomplete and required resubmission).
Year of Final Decision	May 2006 (date that Record of Decision was released); August 31, 2006 (Air Modification Permit issued by MPCA)
ER Completed	Draft and Final Scoping Environmental Assessment Worksheet, Draft and Final Scoping Decision Document, Voluntary EIS, Record of Decision
Permits Completed	Air Modification Permit (issued by MPCA on August 31, 2006), Water Appropriations Permit (unknown date), Public Waters Work Permit (unknown date), NPDES/SDS Discharge Permits (unknown date), NPDES stormwater permits have yet to be applied for by the proposer.
Public Notification & Involvement	The Department of Natural Resources published a Notice of Availability for review of the scoping EAW and Draft Scoping Decision Document on December 20, 2004, which initiated a 30-day public comment period. A press release announcing the availability of the scoping documents issued to at least one newspaper of general circulation in the vicinity of the project. The Department of Natural Resources conducted a public scoping meeting January 12, 2005. A final Scoping Decision Document was issued February 9, 2005. The Department of Natural Resources then opened a 30-day public comment period after notification of the draft EIS released January 30, 2006. An additional public meeting was held February 21, 2006. A press release announcing the availability of the Final EIS, and further opportunities for public involvement was issued to at least one newspaper of general circulation in the vicinity on April 24, 2006. A 15-day public comment period was then opened after notification of the release of the final EIS. A total of 11 public comments were received and about 85 people participated in the final public meeting. Ten comments supported the project, and one comment was neutral. The Department of Natural Resources received hundreds of additional public comments on the draft EIS of which 36 acknowledged support for the proposed expansion with three in opposition
Issues and Impacts	In addition to impacts resulting from expansion of the paper mill, the EIS addressed impacts to forest resources resulting from additional timber harvesting to meet raw material demands. The

Analyzed	<p>EIS attempted to incorporate by reference the analysis conducted in the GEIS but it was determined the project-specific EIS needed more information regarding off-site impacts from timber harvesting. The following categories were addressed (significant impacts are italicized):</p> <ul style="list-style-type: none"> • <i>Traffic and transportation</i> • <i>Rail impacts</i> • <i>Noise</i> • <i>Socioeconomic effects</i> • Land use and zoning • Land cover • Wildlife and fisheries resources • Water resources • Solid wastes, hazardous wastes, storage tanks • Stationary source air emissions • Designated parks, recreation areas, trails • Visual resources • Geologic hazards and soil conditions
Final Outcome	<p>The review process for UPM/Blandin’s proposed expansion was completed in about 20 months, September 2004 to May 2006. Project review was completed in a time period consistent with that codified in law. Although a significant number of public comments were received, they tended to support the project. UPM/Blandin has not yet begun construction on its proposed expansion.</p>
State ER Policy Framework	<p>The Minnesota Environmental Policy Act of 1973 requires that environmental review documents be prepared for both state and local government actions, including permit issuance and approval of privately funded projects. Depending on the anticipated adverse impacts associated with a proposed project, either an EAW or an EIS may be required. There are 36 categories of projects for which an EAW is required and 24 categories for which an EIS is mandated. Metallic mineral mining and processing facilities and new pulp and paper mills are included on the list requiring an EIS. Criteria for determining whether a project triggers an EIS include the following:</p> <ul style="list-style-type: none"> • Type, extent, and reversibility of environmental effects. • Potential cumulative effects of related existing or anticipated future projects. • The extent to which controls and mitigation measures can be employed to alleviate anticipated adverse environmental effects. <p>EQB rules require an EIS to include at least one alternative of each of the following types, or provide an explanation of why no alternative is included: alternative sites, alternative technologies, modified designs or layouts, modified scale or magnitude, and alternatives incorporating reasonable mitigation measures identified through comments received during the EIS scoping and Draft EIS comment periods. An alternative may be excluded from analysis in the EIS if “<i>it would not meet the underlying need for or purpose of the project, it would likely not have any significant environmental benefit compared to the project as proposed, or another alternative, of any type, that will be analyzed in the EIS would likely have similar environmental benefits but substantially less adverse economic, employment, or sociological impacts.</i>”</p> <p>The state’s environmental review process provides numerous opportunities for public notification and involvement including the following:</p> <ul style="list-style-type: none"> • Initial issue scoping process. • Public notices following completion of each stage of the review process. • Comment periods of variable lengths depending on stage of review. • Responsible Government Unit responses to comments after public comment period close. • Public informational meetings during all stages of the review process except following the release of the Final EIS. • Public notice of final determination.
State Permitting Framework	<p>Numerous state permits are relevant to proposed large-scale industrial development project in Minnesota. Relevant permits may include: mining, air emissions, water discharge and stormwater, wetlands, and threatened and endangered species. Permitting and environmental review processes take place concurrently, but are not completed by the same personnel. State permitting will straddle multiple agencies with the Department of Natural Resources and the MPCA being the most prominent.</p>

2.4 New York

2.4.1 Economic Importance

Approximately two-thirds of New York's landscape is forested (19 million acres) making it the largest landholder in the northeast (Alerich and Drake, 1995). As marginal agricultural lands were removed from production over the past century the amount of forest land has increased, the majority of which is privately owned (14.2 million acres or 77%). Although assessments of the economic importance of timber harvesting and allied manufacturing have been completed in previous years, the most recent analysis is several years old. For the purpose of this report it was assumed that economic contributions from this industry have remained consistent in subsequent years (NEFA, 2004).

The annual contribution of forest-based manufacturing and forest-related recreation and tourism is more than \$9 billion. Forest-based manufacturing provided \$7.4 billion to New York's economy in 2001, which is 5.2% of the statewide manufacturing value. The forest-based manufacturing economy provides employment for more than 49,000 people and generates payrolls of more than \$1.5 billion. Forest-related recreation and tourism provides employment for 14,500 and generates payrolls of \$260 million. New York landowners received estimated stumpage revenue of \$250 million in 2002 with revenues from biomass chips totaling \$6.7 million. Cordwood sales were valued at \$100 million (NEFA, 2004).

The forest-based industry consists of timber harvesting, primary and secondary manufacturing. Primary manufacturers convert raw material into lumber, veneer, pulp and paper, and various other products, of which some is shipped out-of-state for further processing. Secondary wood-based manufacturing firms convert primary products into semi-finished or finished products, but may purchase their material from a broker who supplies wood from outside the state. New York is a net exporter of timber products with Canada as the primary outlet, importing mostly sawlogs, veneer logs, pulpwood, and pulp chips. Lumber and related solid wood products and pulp and paper are the major primary processing activities. New York's pulpwood and chip product harvest was 578,000 cords annually or 1.33 million green tons. Fifty-four percent of the pulpwood/chip harvest (312,100 cords), was harvested as roundwood. The remaining volume, 265,900 cords, was harvested as whole tree chips for paper, industrial fuel, and panel board. Figure 2.2 provides a breakdown of the 2002 wood harvest by timber use type (NEFA, 2004).

Estimates of the economic contribution of forest products industry in 2001 are shown in Figure 2.3. New York has two pulp and paper mills in northern part of the state providing for local markets and to a much lesser extent, Vermont. Non-pulp producing paper and paperboard subsector use wood pulp produced mostly outside the state or purchased from other paper mills and packaged for direct consumer use

(NEFA, 2004). In 2001 nearly 21,000 people were employed in this sector with a payroll of \$807 million. The total value added was \$2.1 billion with the value of shipments of \$4.3 billion (NEFA, 2004). About 220 fixed location, traditional sawmills were known to operate in New York in 2005. About half of those had an annual capacity of at least 1 million board feet. These mills consumed nearly 500 million board feet of logs, of which roughly 90% was harvested from New York forests (NYDEC, 2005).

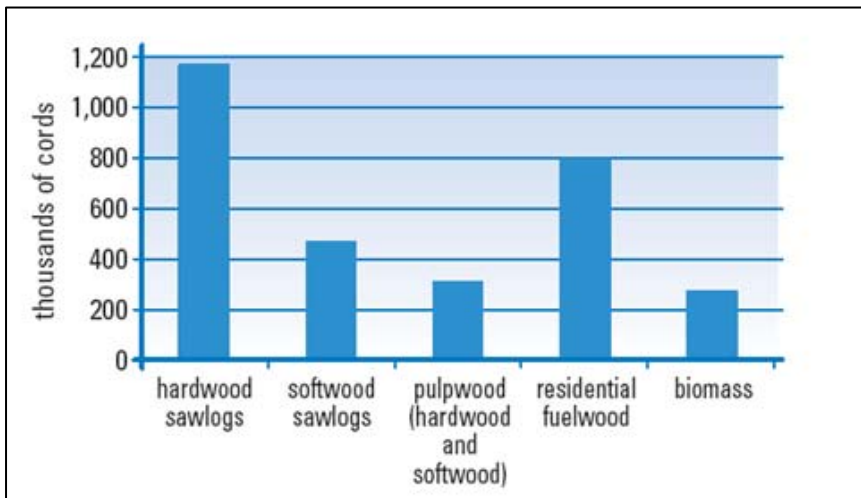


Figure 2.2: Wood harvest in New York, 2002 (Source: NEFA, 2004)

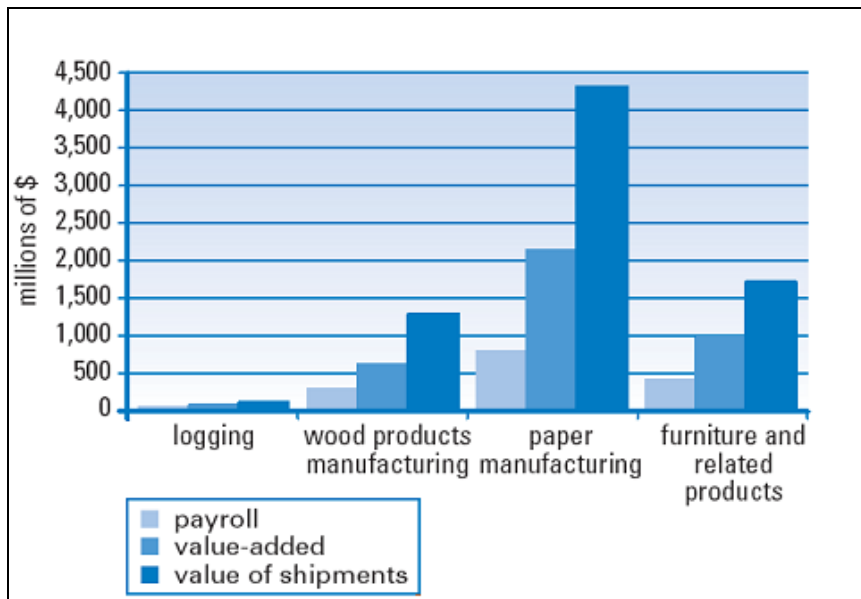


Figure 2.3: Payroll, value-added, and value of shipments for forest-based manufacturing industries, New York, 2001 (Source: NEFA, 2004)

New York has several programs that provide economic incentives for commercial and industrial development projects. Two of the more noteworthy programs are the *Build Now-NY* and *Empire Zone*

programs. The Build Now-NY program uses the concept of “pre-permitting” to help New York's local governments, public authorities, and economic developers attract companies to the sites they are promoting. This means the local developer has done the advance work necessary to know that construction can begin shortly after landing a prospective business. By reducing the time it takes to begin construction, this program is able to leverage state funds and financial assistance from local partners to provide valuable savings to the business and jobs for residents of New York communities. The Build Now-NY program provides resources to assist local governments and economic developers in undertaking the necessary steps to pre-permit their sites. Build Now-NY also offers matching grants or no interest loans to help defray expenses associated with completing state environmental quality review, ensuring proper zoning, undertaking historic and archaeological surveys, completing engineering studies and related development plans, and performing soil sampling and test borings. The program provides the site developer with technical expertise and assistance regarding permitting issues. Program participants also receive marketing assistance from the Department of Economic Development, which serves members of the industry to encourage economic investment and growth.

Alternatively, New York State’s Empire Zone program was created to stimulate economic growth through a variety of tax incentives designed to attract new businesses to the state and to enable existing businesses to expand and create more jobs. State rules require that in order to be eligible for designation as an empire zone an area or each constituent part thereof must be characterized by pervasive poverty or high unemployment, correspond to traditional neighborhood or community boundaries, and bound by major natural or manmade physical boundaries (e.g., bodies of water, railroad lines, or limited access highways). At present, there are about 10,000 certified businesses employing nearly 400,000 people in 82 Empire Zones distributed throughout the state. Recently passed legislation authorized the designation of an empire zone in every county, which establishes 85 zones statewide. To qualify for certification, a business must be able to demonstrate that it will create new jobs and/or make investments in the empire zone and be consistent with the local zone’s development plan, including a benefit-cost analysis.

2.4.2 Project Overview

In October 1999, Chatham Forest Products submitted a completed *full* environmental assessment form to the Ogdensburg Bridge and Port Authority proposing to construct a new OSB plant in northern New York. The plant would require approximately 9.4 acres of an approximately 70-acre site surrounded by a mix of industrial, commercial, agricultural, and residential land uses, and a small amount of open space. Approximately 15% of the site (10.75 acres) consisted of wetlands, but the proposed project did not require filling or alteration of the wetlands. The proposed facility was designed as a state-of-the-art OSB

manufacturing plant, incorporating the latest manufacturing and air quality control systems and technologies. The proposed project site was owned by the Ogdensburg Bridge and Port Authority and qualified as eligible under the Build Now-NY development program. The project site was also situated within Empire Zone 14 (North Country Empire Development Region of northern New York) and the Ozone Transport Region, the latter being an 11-state region considered to be marginally nonattainment for ozone. Because the project was located in the Ozone Transport Region, NO_x and VOC had to be considered nonattainment pollutants during the permitting process. The proposed project was not located within or near an EPA Class I area, and there are no EPA Class I areas in New York.

The facility would be capable of annually producing nearly 500 million square feet of OSB on a 3/8-inch basis. It would receive precut logs, 8-foot lengths, via truck from upstate New York and Canadian timber operations. The Environmental Assessment Form stated feedstock for OSB production would be consist of aspen (50%) and other northern hardwood species that are generally regarded as being of low or no value to the logging and forest products industries. No estimates were provided with respect to the volume of wood harvested and processed annually at full-production capacity. The Environmental Assessment Form stated that the primary structure would be 600 feet wide by 962 feet long (nearly 580,000 square feet in total) with a height of approximately 70 feet. The project also involved the construction of an access road, water main, and sanitary sewage collection system. It was estimated that the project would result in a direct gain of 93 new permanent jobs after the plant became operational. No cost estimates for facility construction or operation were provided. The New York Department of Environmental Conservation did not request information from the applicant that would have indicated the company's financial capacity to take on the proposed project, though this information may have been requested by the Ogdensburg Bridge and Port Authority since it was the lead agency.

Because the proposed project site was owned by the Ogdensburg Bridge and Port Authority, this agency acted as the responsible government unit for environmental review purposes. The Department of Environmental Conservation was responsible for reviewing all relevant permit applications. Unlike many states that conduct all environmental permitting (or environmental review) from the relevant agency's central office, New York delegates the majority of permitting authority to one of nine regional offices. In the case of Chatham Forest Products proposed OSB facility, the Division of Environmental Permits with Region 6 office was responsible for reviewing and issuing the majority of the permits required. Because initial review of the proposal suggested the project would impose minimal adverse impacts on the environment, the Ogdensburg Bridge and Port Authority, in consultation with Department of Environmental Conservation, concluded that the Environmental Assessment Form would suffice and an

EIS would not be prepared. In accordance with regulations promulgated in association with the State Environmental Quality Review Act (New York's "SEPA"), the Ogdensburg Bridge and Port Authority prepared and distributed a Negative Declaration on February 4, 2000, stating the design and mitigation measures proposed by Chatham Forest Products would be adequate to avoid significant effects on the environment. In accordance with state law and associated administrative rules, the Ogdensburg Bridge and Port Authority exercised its right to make a determination of significance. That is, the agency determined that an EIS would not be necessary and issued its Negative Declaration without conducting public hearings or otherwise requesting public comment.

While the Environmental Assessment Form analyzed the impacts that construction would have on a number of environmental impact categories (listed below), the impacts to forest and wildlife resources in northern New York and Ontario as a result of additional timber harvesting were not assessed. In accordance with state law, the Environmental Assessment Form assessed the impacts on the immediate area with respect to the following (potentially large impacts found are italicized):

- *Impact on surface and ground water*
- *Impact on air quality*
- *Impact on agricultural land resources*
- *Impact on energy use*
- *Impact on public health (explosion)*
- *Impact on growth and character of community or neighborhood*
- Impact on soil, bedrock, and water table
- Impact on plants and animals including threatened and endangered species
- Impact on aesthetic resources
- Impact on historic and archaeological resources
- Impact on open space and recreation
- Impact on critical environmental areas
- Impact on changes in traffic patterns and congestion
- Noise and odor impacts

In addition to preparing and submitting an Environmental Assessment Form for construction of the OSB facility, Chatham Forest Products also submitted a separate *full* Environmental Assessment Form for construction of the access road (4,300 lineal feet) and utility extension for water main and sanitary sewage collection system. In accordance with State Environmental Quality Review, the Ogdensburg Bridge and Port Authority prepared and distributed a Negative Declaration on March 3, 2000, stating that the proposed action would have no significant adverse impact on land, water pollution, air quality, plants and animals, archaeological resources, open space, or noise and odors. The Negative Declaration also stated that construction of the access road would improve traffic patterns and subsequently improve mobility and public safety by directing truck traffic to appropriate access roads and away from commuter roadways. Based on the administrative record and communications with Department of Environmental Conservation staff, it is unclear whether the Ogdensburg Bridge and Port Authority convened any public

meetings regarding Chatham Forest Product's proposed OSB facility once a completed the Environmental Assessment Form and relevant permit applications, although it appears one meeting was likely held.

Although it is not clear based on the administrative record and communications with agency staff precisely what issues and aspects of the project were discussed, the Department of Environmental Conservation convened pre-application meetings with Chatham Forest Products on March 18 and June 25, 1999. Permit staff also met with staff of the Ogdensburg Bridge and Port Authority on April 9, 1999, to discuss a client potentially interested in building a facility in the Authority's Commerce Park, which is located within an Empire Zone. During this meeting, Department of Environmental Conservation and Ogdensburg Bridge and Port Authority staff discussed potential permits and wetland issues that would be encountered if further construction took place in the industrial park. On December 22, 1999, approximately two months after submitting the full Environmental Assessment Form, Chatham Forest Products submitted a Synthetic *Minor* Air State Facility Permit to the Division of Environmental Permits. In order to meet the conditions for a synthetic minor emissions permit, the applicant had to ensure that VOC, NO_x, particular matter, CO, and hazardous air pollutants would fall below the thresholds set for major sources under Title V (6 NYCRR Part 201-6), New Source Review in Non-Attainment Areas and Ozone Transport Regions (6 NYCRR Part 231-2), and Prevention of Significant Deterioration (40 CFR Part 52.21). Staff with the Department of Environmental Conservation attended an informational meeting at the Town Hall in the Town of Lisbon on January 19, 2000, arranged by Ogdensburg Bridge and Port Authority and the St. Lawrence County Jobs Development Corporation to discuss the proposed OSB facility. Approximately 60 people were in attendance and the plans proposed by Chatham Forest Products representatives were generally well received. The Department of Environmental Conservation also briefly publicly addressed permitting issues at this meeting.

After reviewing the permit application, the Department of Environmental Conservation concluded the OSB plant would not exceed the thresholds necessary to qualify as a synthetic minor and issued the permit on June 29, 2000. However, the Synthetic Minor Air State Facility Permit was ultimately legally contested and vacated in the State Supreme Court on June 1, 2001, as a result of the court finding the application was incomplete for failing to include required information regarding monitoring and reporting protocol. On June 12, 2001, Chatham Forest Products resubmitted an Air State Facility Permit application to the Department of Environmental Conservation with the required information. On June 18, 2001, the Department of Environmental Conservation completed a Draft Air State Facility Permit and subsequently prepared and issued a Notice of Complete Application to the applicant. The Notice informed the applicant the application had been deemed complete for review by the Department of Environmental Conservation

and the general public. The Notice was subsequently published in a local newspaper after which a 30-day public comment period followed and resulted in a considerable number of public comments opposing the project. In addition, more than 20 formal requests were made for additional public hearings. On August 14, 2001, the Department of Environmental Conservation advised Chatham Forest Products to withdraw its permit application as a result of the public outcry and the subsequent discovery of deficiencies during its review and consultation with the applicant (M. Wiggins, personal communication). Chatham Forest Products submitted a revised air permit application on August 31, 2001, and the Department of Environmental Conservation completed a draft air permit on September 24, 2001. A Notice of Complete Application was again issued and a notice was published in a local newspaper with circulation in the vicinity of the proposed project site, which announced a 30-day public comment period. Based on the contents of the administrative record it does not appear that there were additional requests for public hearings, although a considerable number of opposing public comments were again received. The Department of Environmental Conservation ultimately concluded that “no substantive issues remained unresolved” and subsequently approved the State Air Facility Permit on November 20, 2001.

In addition to the air permit, in accordance with state law (6 NYCRR 662, 663) Chatham Forest Products also prepared and submitted an application for a freshwater wetlands permit, which was submitted on April 20, 2000. The applicant was required to apply for this permit because (1) the proposed project could potentially impact approximately 0.8 acres of wetland habitat on the site, and (2) construction of the facility necessitated installing an access road that would cross a creek. The applicant also submitted a comprehensive wetland impact assessment that considered the effects the proposed road crossing would have on wetlands located within the Ogdensburg Bridge and Port Authority site. This report described the proposed development, addressed potential impacts, analyzed alternative road construction options, and discussed potential mitigation measures. It is not clear whether this assessment was prepared voluntarily or required of the freshwater wetlands permit application. A freshwater wetlands permit was ultimately issued, but the review process is not clear, nor what the opportunities were for public comment.

Department of Environmental Conservation staff also confirmed that Chatham Forest Products would have been required to submit applications for State Pollution Discharge Elimination System permits had the project moved forward, though there was dispute over precisely which entity was responsible for completing those permits. In the end Chatham Forest Products ultimately concluded that preparation of State Pollution Discharge Elimination System permit applications was the responsibility of the construction company contracted to build the OSB facility. Department of Environmental Conservation staff emphasized that the confusion surrounding State Pollution Discharge Elimination System permits is

the sort of issue that can be resolved when the project proposer participates in pre-application meetings or otherwise openly engages in communication about a project with staff prior to the review process. Under most circumstances an applicant would have submitted State Pollution Discharge Elimination System permit applications during the project review process, but the Department of Environmental Conservation allowed the applicant to wait to apply for these permits until after the company provided assurances it would submit the requisite permit applications at the time when it was ready to begin construction.

2.4.3 Environmental Review Policies and Procedures

New York is a Tier-one state. Environmental review is implemented in accordance with statutory authority provided under the State Environmental Quality Review Act and associated state rules. The Act establishes a process to systematically consider environmental factors early in the planning stages of actions that are directly undertaken, funded or approved by local, regional and state agencies. When the Act was passed, the state legislature stated that its intent was (Laws of New York, 2007):

"...to declare a state policy which will encourage... harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and enhance human and community resources; and to enrich the understanding of the ecological systems, natural, human and community resources important to the people of the state."

The basic purpose of the State Environmental Quality Review Act is to incorporate the consideration of environmental factors into the existing planning, review, and decision-making processes of state, regional, and local government agencies at the earliest possible time. The Act requires that all agencies determine whether their actions may have a significant impact on the environment, and, if so, prepare or request an EIS. The State Environmental Quality Review Act was established to ensure that environment quality and human and community resources were granted appropriate consideration when weighing the benefits associated with these factors against social and economic considerations of various public policy options. The Act also intended for environmental and community resources be considered together in reaching decisions on specific projects proposed by private industry. The Act defines the “environment” as the physical conditions that will be affected by a proposed action. These “physical conditions” include land, air, water, minerals, flora, fauna, noise, resources of agricultural, archeological, historic or aesthetic significance, existing patterns of population concentration, distribution or growth, existing community or neighborhood character, and human health (Laws of New York, 2007).

An action is subject to review if any state or local agency has the authority to issue a discretionary permit (i.e., air emissions or water discharge permit), license or other type of approval for a proposed private action. This also applies if an agency funds or directly undertakes a project, or adopts a resource

management plan, rule or policy that affects the environment. Actions that ultimately do not require further review are classified as Type II actions, which include proposed agricultural operations, repaving of existing highways not involving the addition of new travel lanes, maintenance or repair to public or private property involving no substantial changes in an existing structure or facility, and construction or expansion of a primary or accessory/appurtenant, nonresidential structure or facility involving less than 4,000 square feet of gross floor area. Type II actions have been determined not to have a significant impact or are otherwise precluded from environmental and thus do not require preparation of a determination of significance or draft EIS.

Alternatively, actions that require further review are Type I actions and Unlisted actions. Type I actions are more likely to have a significant adverse impact on the environment than Unlisted actions and may require the preparation of a draft EIS. Type I actions include construction of 50 or more residential units that are not to be connected to existing community or public water and sewerage systems including sewage treatment works, a project or action that involves the physical alteration of 10 or more acres, project or action that would use ground or surface water in excess of 2,000,000 gallons per day, or a facility with more than 100,000 square feet of gross floor area. Agencies may adopt their own lists of Type I actions or adjust thresholds to make existing one more inclusive. Unlisted actions are those actions that do not meet or exceed the thresholds contained on the Type I list and are not contained on the Type II list. An Unlisted action requires a determination of significance and may require the preparation of a draft EIS (NYDEC, 2004; Laws of New York, 2007).

A *full* Environmental Assessment Form must be prepared for all proposed projects that are classified as Type I actions. The applicant is responsible for providing objective data and information about a given project including a list of all involved agencies. The lead agency focuses on identifying the range of possible impacts that may occur from a project or action, and if necessary will provide an assessment of any impacts identified as significant. A *short* Environmental Assessment Form must be completed for all proposed projects that constitute Unlisted actions. An agency may require this if there is insufficient information or may waive the requirement if a draft EIS is prepared (NYDEC, 2004; Laws of New York, 2007). The State Environmental Quality Review Act gives lead agencies the authority to make a determination of significance on a proposed project. A Positive Declaration of significance indicates that the lead agency believes a proposed project could potentially have significant environmental impacts, and if this determination is made then an EIS will be required. Additionally, the agency has authority to issue a Negative Declaration without conducting public hearings or otherwise requesting public comment.

2.4.4 Factors Affecting Review/Permitting Timelines

Although it took more than two years for the Department of Environmental Conservation to approve Chatham Forest Products' proposed OSB facility, it originally took approximately eight months (November 9, 1999, to June 29, 2000) for the Department of Environmental Conservation to complete its review of the Environmental Assessment Form and air and freshwater wetland permit applications. However, because a series of legal challenges were initiated following the issuance of the Air State Facility Permit, the amount of time consumed in review of the project was extended by more than one year. It is also important to note that initial review of the project was completed in less than eight months, largely because the applicant was not required to prepare an EIS. Had the full Environmental Assessment Form been insufficient, and thresholds surpassed triggering an EIS, it is likely that total review time would have been substantially extended based on the generic environmental review process outlined in the State Environmental Quality Review Act. Additionally, the fact that the project site was located in an industrial park helped ensure review would be completed in a relatively short time period, given additional consideration did not have to be given to potential impacts to significant wildlife habitat, open space and recreation, aesthetic resources or other environmental impact categories.

Another factor that appears to have reduced overall project review time was the determination that the applicant would only have to a Synthetic *Minor* (rather than Major) Air State Facility Permit from the Department of Conservation. That is, although synthetic minor emissions permits are only issued to applicants proposing projects that will emit VOC, NO_x, particular matter, CO, and hazardous air pollutants at levels that below the thresholds set for major sources under Title V (6 NYCRR Part 201-6), New Source Review in Non-Attainment Areas and Ozone Transport Regions (6 NYCRR Part 231-2), and Prevention of Significant Deterioration (40 CFR Part 52.21), review would presumably be more rigorous (e.g., comprehensive emissions modeling and more in-depth analysis of environmental impacts) for projects that are anticipated to impose more negative effects.

Similar to Maine and Georgia, review of the proposed OSB manufacturing facility was also made faster because impact assessment was limited to those effects directly resulting from construction of the facility. While the impacts of construction and operation would have been analyzed, neither the Environmental Assessment Form nor permit applications formally addressed impacts to forest resources as a result of additional timber harvesting to meet the raw material demands of the facility.

It is also important to note key differences between the public involvement requirements in New York and Minnesota. Minnesota requires a public notification to take place immediately after an EAW is

completed, and proceeds to a formal scoping process and eventually to additional public comment periods following the completion of both a draft and final EIS. New York requires fewer opportunities for public notification and participation—the state does not require the lead agency to solicit public input on a proposed project before determining the need for an EIS. Even if there is a positive declaration and the lead agency ultimately moves forward with an EIS, state law makes public scoping optional. It is not until a draft EIS is prepared that the public is guaranteed an opportunity to offer comments.

Despite differences, similarities exist between the environmental review and permitting frameworks of Minnesota and New York. Both require that an EIS be prepared in situations where a proposed project must be approved by a state *or* local agency (LEPO, 2000A). Another important similarity is that both require an EIS be prepared for any project that *may* significantly impact the environment (LEPO, 2000A). That is, whereas many other Tier I states (e.g., Massachusetts, Montana, and North Carolina) only require the preparation of an EIS in instances where significant impacts are a certainty, Minnesota and New York do not require there be concrete evidence that a proposed project *will* impose significant environmental impacts. Both states have also promulgated a list of activity categories (i.e., construction of a new pulp or paper mill) that automatically trigger a mandatory EIS and eliminate the need to consider the significance of a project on a case-by-case basis (LEPO, 2000A). It is important to note that, while the states differ with regard to whether the agency or the applicant is responsible for EIS preparation, both mandate the applicant bear the full cost of EIS preparation.

Table 2.7: Summary of Chatham forest products industry case study, New York.

Project Name / Company	Chatham Project / Chatham Forest Products, Inc.
Location	Lisbon, NY
Type of Project	Construction of a new OSB manufacturing plant in northern New York. The proposed project site is owned by the Ogdensburg Bridge and Port Authority and qualified as eligible under the “Build Now-NY” development program.
Scope	The facility would be capable producing nearly 500 million square feet of OSB on a 3/8-inch basis annually and receive precut 8-foot logs via truck from upstate New York and Canadian timber operations. No estimates provided as to the volume of wood to be harvested to meet demand. The environmental assessment form states that the primary structure will be 600 feet wide by 962 feet long (nearly 580,000 square feet in total) with a height of approximately 70 feet. The project also involved the construction of an access road, water main, and sanitary sewage collection system. The project would result in a direct gain of approximately 93 new permanent jobs.
Year Project Proposed	November 1999 (Environmental Assessment Form submitted to Ogdensburg Bridge and Port Authority) / December 1999 (Air State Facility Permit application submitted to Department of Environmental Conservation)

Year Project Permitted	November 2001 (project was initially permitted in June 2000, but state supreme court ruling required Department of Environmental Conservation to modify the air state facility permit that had previously been issued)
ER Completed	Environmental Assessment Form, no public scoping documents appear to have been prepared for the proposed project. Scoping is only mandated under the State Environmental Review Act for projects requiring preparation of an EIS. Ogdensburg Bridge and Port Authority prepared and distributed a Negative Declaration stating the proposed action would have no significant adverse impact on land, water pollution, air quality, plants and animals, archaeological resources, open space, or noise and odors. The Negative Declaration also stated construction of the access road would improve traffic patterns by directing truck traffic to appropriate access roads and away from commuter roadways.
Permits Completed	Synthetic <i>Minor</i> Air State Facility Permit (initially issued by Department of Environmental Conservation on June 29, 2000, modified and reissued on November 20, 2001), Freshwater Wetland Permit (date unknown)
Issues and Impacts Analyzed	<p>While an Environmental Assessment Form was prepared that analyzed the impacts the construction of the proposed facility would have on a number of different environmental impact categories, neither the form, permit applications nor supplemental reports formally addressed impacts to forest resources in northern New York and Ontario as a result of additional timber harvesting necessary to meet the raw material demands of the facility. In accordance with state law, the Environmental Assessment Form assessed impacts that the proposed project would have with respect to the following impact categories (potentially large impacts found are italicized):</p> <ul style="list-style-type: none"> • <i>Impact on surface and groundwater</i> • <i>Impact on air quality</i> • <i>Impact on agricultural land</i> • <i>Impact on changes in energy use</i> • <i>Impact on public health</i> • <i>Impact on growth and character of community or neighborhoods</i> • <i>Impact soil, bedrock, or water table</i> • Impact on plants and animals • Impact on aesthetic resources • Impact on historic and archaeological resources • Impact on open space, recreation • Impact critical environmental areas • Impact on transportation • Noise and odor impacts <p>A citizen's group later sued the Department of Environmental Conservation in state supreme court to rescind the air state facility permit. The court vacated the permit after finding the application was incomplete because it failed to include monitoring and reporting protocol as required. Chatham Forest Products modified and resubmitted the permit application after incorporating a description of proposed monitoring, record keeping and reporting protocol.</p>
Final Outcome	During the review process Chatham Forest Products transferred its interest in the property to Ainsworth Lumber Co., which was initially committed to completing the project. Although approved for construction, the OSB plant has not yet been built as a result of litigation and changing market conditions,
State ER Policy Framework	Within Department of Environmental Conservation, the Division of Environmental Permits assumes responsibility for oversight of environmental review. The division oversees the implementation of the State Environmental Quality Review, and subsequently helps other state agencies and local governments carry out their responsibilities under the Act (in accordance with statutory authority provided under Part 617 and New York Code of Rules and Regulations). State Environmental Quality Review establishes a process to consider environmental factors early in the planning stages that are directly undertaken, funded or approved by local, regional and state agencies. An action is subject to review if any state or local agency has the authority to issue a discretionary permit, license or other type of approval

	<p>for proposed private action. It also applies if an agency funds or directly undertakes a project, or adopts a resource management plan, rule or policy that affects the environment. There is no requirement for review if the action involves a discretionary decision.</p> <p>The state’s environmental review process provides several opportunities for public notification and involvement during review of projects that have been required to prepare an EIS. However, opportunities for public involvement are more limited with an Environmental Assessment Form. For projects involving the preparation of an EIS, these opportunities include:</p> <ul style="list-style-type: none"> • Initial issue scoping process (<i>optional</i>, and left to review agency discretion) • Public notices following completion of each stage of the review process. • Comment periods (variable length depending on stage of review). • Responsible government unit responses to public comments (after each public comment period comes to a close). • Public hearings (as appropriate) following completion of a draft EIS. • Public notice of final determination.
<p>State Permitting Framework</p>	<p>Within the Department of Environmental Conservation, the Division of Environmental Permits assumes primary responsibility for environmental permitting. This division manages a system of permits known as the Uniform Procedures Act permits, which establishes time frames and procedures for filing and reviewing applications, providing public notice, holding public hearings, and reaching final decisions. At a broader level, the Act is intended to ensure a timely and thorough review of a proposed project, eliminate inconsistent procedures, and encourage public participation. The specific permits administered under this Act are designed to help protect the state’s air, water, mineral, and biological resources. In accordance with state law, administering these permits requires the Department of Environmental Conservation to provide with timely information and updates with regards to the following:</p> <ul style="list-style-type: none"> • Permit applications that have recently been filed. • Opportunities to provide information concerning a particular application. • Opportunities to review and comment on any environmental impact statements and other documents that may become part of the application. • Opportunities to participate in hearings concerning applications currently under review. <p>All permits must be submitted concurrently. Numerous state permits are potentially relevant including: air emissions, water discharge and stormwater, freshwater wetlands, and water quality certification. The permitting and environmental review processes take place concurrently but are not completed by the same personnel. The Department of Environmental Conservation personnel are responsible for permit review and issuance but other state agencies and local units of government can act as the responsible entity during the review process. The Department of Environmental Conservation provides oversight, although Environmental Assessment Forms and EIS preparation are coordinated by a designated government unit. State permitting is always carried out by the Division of Environmental Permits.</p>

3.0 MINING OPERATIONS FACILITY CASES

3.1 Michigan

3.1.1 Economic Importance

In 2004, Michigan's nonfuel raw mineral production was valued at \$1.67 billion, based upon annual US Geological Survey (USGS) data. This was a 5.7% increase from that of 2003 and followed a 6.8% increase in 2003 from 2002. The state ranked ninth among the 50 states in total nonfuel mineral production value, of which Michigan contributed nearly 3.7% of the United States total (USGS, 2004). In 2004, Michigan was the nation's second leading iron ore-producing state, and based upon value iron ore was Michigan's leading nonfuel mineral commodity followed by Portland cement. Portland cement led the state in total nonfuel mineral value from 1999-2003 followed by construction sand and gravel, salt, crushed stone, magnesium compounds, and masonry cement. Michigan's combined nonfuel minerals made up approximately 95% of the state's nonfuel raw mineral production value (USGS, 2004).

In 2004, iron ore and Portland cement led Michigan's increase in mining value, up by nearly \$60 million and \$45 million from 2003, respectively. Significant increases from 2003 to 2004 also took place in crushed stone, up \$17 million; in salt, up about \$12 million; and in masonry cement and potash, up about \$3 million each. The most substantial decreases in value from 2003 to 2004 were those of magnesium compounds, down more than \$40 million, and industrial sand and gravel, down by about \$6 million. All other changes were about \$1 million or less, having comparatively minimal effect on the state's overall change in total value (USGS, 2004). In 2003, the production and values of salt and magnesium compounds increased, the values of which were up more than \$12 million each. The production and value of common clays were also up, with the value up more than \$2 million. But these were outweighed by production and value decreases from 2003 to 2004 that took place in crushed stone, value down \$48 million; construction sand and gravel, down \$14 million; Portland cement, down about \$12 million; and lime, down about \$9 million. Also down from 2003 to 2004 were the production and values of masonry cement and gypsum, values of which decreased by about \$6 million and \$5 million, respectively. Iron ore production had a small increase from 2003 to 2004, but the nonfuel mineral's value was down by about \$2 million (USGS, 2004).

In 2004, Michigan continued to be highest producer of magnesium compounds and second in iron ore production, bromine (of two bromine-producing states), peat, and second of four states that produce iron

oxide pigments (mineral commodities listed in descending order of value). The state remained third of three states that produce potash, fourth in Portland cement, and seventh in salt. From 2003 to 2004 Michigan rose to tenth from twelfth in gypsum but decreased to fourth from third in construction sand and gravel, to ninth from eighth in masonry cement, and to sixth from second in the production of industrial sand and gravel. Additionally, the state was a significant producer of common clays and crushed stone in 2004. In 2004, Michigan continued to be fourth in the nation in the manufacture of raw steel with an output of about 5.84 million metric tons (American Iron and Steel Institute, 2005; USGS, 2004).

3.1.2 Project Overview

In February 2006, the Kennecott Minerals Company submitted a *Nonferrous Mineral Mining Permit Application* to the Michigan Department of Environmental Quality in accordance with Part 632 of the Michigan Natural Resource and Environmental Protection Act. Kennecott Minerals Company is a United States-based corporation with gold, silver, and base metal operations in the United States, Canada, and Mexico (KEMC, 2006). The mining permit proposed to develop an underground nickel and copper mine known as the Eagle Project in Michigamme Township, Marquette County, in the Upper Peninsula of Michigan. The site of the proposed project is currently zoned for mineral resource production by the Michigamme Township.

Kennecott Minerals Company owns 100% interest in the Eagle Project site (including title to the surface rights over the mineral deposit) through a mixture of private mineral titles and state mineral leases and surface ownership. The Eagle deposit is a high-grade magmatic sulfide deposit containing nickel, copper, and traces of cobalt and gold. The deposit averages approximately 3.6% nickel and 3.0% copper with minor amounts of gold and other precious metals. Regional exploration continues to identify additional resources in the area (KEMC, 2006). The Eagle deposit was discovered in 2002 by drilling areas known to contain sulfide-bearing peridotite intrusions. The economic minerals are predominately pentlandite and chalcopyrite. Kennecott Minerals Company has proposed to mine the Eagle deposit using underground mining methods. The Eagle Project development will include surface and underground ore mining facilities. Extracted ore will be brought to the surface where it will be crushed and trucked off-site along an approved trucking route to a railhead. The ore will then be transferred to rail cars for shipment to an off-site processor. Kennecott Minerals Company does not intend to conduct milling or chemical processing of ore at the Eagle Project site. Surface facilities for the operation will be limited to those necessary for storing and crushing ore, managing development rock, storing, treating and discharging water, backfilling and ventilating the mine, and other ancillary operations. The Kennecott Minerals Company estimates that the Eagle Project will generate a nominal production rate of 2,000 tonnes per day

and nearly 3.5 million tonnes annually (Table 3.1). Surface construction and underground development were projected to take approximately two years. This schedule brings the mine on line in year two with full mine production occurring in the third year. The major construction activities are listed in Table 3.2.

The projected personnel requirements during operations are based on an operating schedule of 11 hours per shift, two shifts per day. It is estimated that the mine will operate about 250 days per year. On-site personnel requirements during operations are expected to begin at about 87 employees during the initial year of production and increase to 110 employees at full production. Table 3.3 shows the maximum expected number of employees for the Eagle Project for various professional classifications.

Table 3.1: Annual ore production schedule for Kennecott Eagle Project.

Facility Development	Operating Days	Annual t/yr	Daily t/d
Year 2	63	66,024	1,048
Year 3	251	457,271	1,822
Year 4	250	499,982	2,000
Year 5	250	500,000	2,000
Year 6	250	503,862	2,015
Year 7	251	502,000	2,000
Year 8	250	501,287	2,005
Year 9	250	389,027	1,556
Totals	1,815	3,419,455	1,884¹

g/t = grams per tonne, t/yr = tonnes per year, t/d = tonnes per day

¹ 3,419,455 t/yr/1,815 days = 1,884 t/d

Table 3.2: Surface facility construction activities.

Phase 1 Surface Facilities Construction	Phase 2 Surface Facilities Construction
<ul style="list-style-type: none"> • Construction of perimeter fence • Preparing the construction staging area and soil stockpile area • Clearing, grubbing, stripping, and stockpiling topsoil • Construction of the mine site access road • Construct Temporary Development Rock Storage • Construction of Wastewater Treatment Plant • Construction of Contact Water Basins • Construction of Treated Water Infiltration System • Construct Non-Contact Water Infiltration Basins 	<ul style="list-style-type: none"> • Construct generator plant and install generators • Construct compressor plant and install compressors • Construct maintenance shop, warehouse and offices • Construction of Coarse Ore Storage Area • Improvements to Triple A Rd, County Rd 510 • Construction of the surface crusher, ramp and dump, conveyor and crushed ore storage bins • Construction of surface backfill system and power line to the generator plant #1 and #2 • Construct truck wash, scales, and fuel storage area

Table 3.3: Kennecott Eagle Project projected employment.

	Mining	Clerical/ Accounting	Human Resources	Health Safety Officer	General Management	Total
Salary	24	7	2	10	2	45
Hourly	65	--	--	--	--	65
Totals	89	7	2	10	2	110

The environmental analyses that were completed for the environmental impact assessment had to comply with the requirements of R 425.202 of Michigan's Nonferrous Metallic Mining Regulations. For instance, the existing conditions of resource topics, which are broad categories of environmental components, were described in order to comply with 425.202(1)(a)(i). The following resource topics were evaluated in the Eagle Project environmental impact assessment:

- Topography
- Soil
- Geology of the bedrock and unconsolidated materials overlying the bedrock
- Groundwater and aquifers
- Surface water systems
- Regional hydrology
- Groundwater and surface water quality
- Private and public water supplies including irrigation wells
- Designated wellhead protection areas
- Wetlands and flood plains
- Natural rivers
- Wild and scenic rivers
- Residential dwellings, schools, and other public and private structures
- Existing and proposed infrastructure
- Natural areas
- State wilderness areas
- Federal wilderness areas
- Wild areas
- Research natural areas
- Land use
- Aquatic and terrestrial flora and fauna
- Fish and wildlife habitat and ecological systems
- Threatened and endangered species and species of special concern
- Non-native and invasive species
- Archaeological resources
- Air quality and meteorology
- Visual resources
- Noise, light and seismicity

The EIA also considered the environmental impacts associated with implementing alternative mining methods, ore processing technologies and procedures, transportation infrastructure, power supplies, surface facility locations, water discharge processes, and end uses. In addition to the *Nonferrous Metallic Mining Permit*, Kennecott Minerals Company was also responsible for concurrently applying for the following state permits in order for the Eagle Project to be fully approved for operation:

- *Michigan Air Quality Permit—Permit to Install Application*: This was submitted to the Department of Environmental Quality for air emissions related to the proposed mine operation.
- *Groundwater Discharge Permit Application*: This was submitted to the Department of Environmental Quality for the treatment and discharge to the subsurface of treated water.
- *Notice of Coverage* for storm water management during construction activities and a *Notice of Intent* for storm water management during operations were submitted to the Department of Environmental Quality for the potential release of noncontact storm water runoff. These were submitted in order to be in compliance with the requirements of the National Pollution Discharge Elimination System Permit.
- *Pollution Incident Prevention Plan* prepared for the Department of Environmental Quality.

Water use issues relating to the Kennecott Eagle Project were addressed within the Nonferrous Metallic Mining Permit issued under Part 632 of the Nonferrous Metallic Mineral Mining of Natural Resources and Environmental Protection Act (Act 451 of public Acts of 1994), as amended, and the Groundwater Discharge Permit issued in compliance with the provisions of Part 31, Water Resources Protection, and Part 41, Sewerage Systems. Because the mine would be extracting copper and nickel, the applicant was not required to obtain a *Permit for Use of Water in Low-Grade Iron Ore*. The purpose of this permit is to protect the public interest, prevent damage to riparian lands or water, and prevent danger to public health and safety, which is required of any project intending to divert and control water for mining iron ore. Although one was not required, the level of detail of review helped to ensure that the standards an applicant is expected to meet for a Permit for Use of Water in Low-Grade Iron Ore were exceeded for the Kennecott Minerals Company Project (S. Wilson, personal communication, October 2007).

The Department of Environmental Quality and the Department of Natural Resources conducted several pre-application meetings with Kennecott, which occurred at different managerial levels and locations. However, no information is available regarding the topics discussed at these meetings because meeting records were not maintained. Department of Environmental Quality staff recalls that pre-application meetings were held as early as 2004, which about two years before the company submitted permit applications to the state (S. Wilson, personal communication, October 2007).

After Kennecott Minerals Company submitted relevant permit applications in February 2006, a public comment period opened on April 18, 2006 and closed May 16, 2006. A public information meeting was held in Marquette on April 18, 2006. After completing an extensive review and evaluation of the plans and information submitted as well as public comments received throughout the application review process, the Department of Environmental Quality issued a proposed decision granting the mining permit on January 9, 2007. After drafting the General and Special Permit Conditions for the mine the Department of Environmental Quality announced the proposed decision would be available for public comment beginning on February 23, 2007 even though it was not legally required. The comment period was subsequently postponed for approximately five months when the Department of Environmental Quality suspended its permit review to investigate occurrences relating to the nondisclosure of reports concerning the structural integrity of the mine. In July 2007, a Nonferrous Metallic Mining Permit for the Eagle Project was granted after a comprehensive review of the permit application, supplemental information submitted by Kennecott Minerals Company, and public comments. In accordance with Part 632 of the *Nonferrous Metallic Mining Regulations*, the Department of Environmental Quality held a series of public hearings starting in early September 2007, although only one was required by state law. Two

hearings were held in the Upper Peninsula near the proposed mine site, and a third in Lansing, with the purpose of giving interested parties an opportunity to present new information or additional concerns about the Quality Air Use Permit, draft Groundwater Discharge Permit, proposed decision to grant the Mining Permit, draft Surface Lease, and draft Reclamation Plan.

The public participation process provided information via fact sheets and obtained public comments on proposed permit terms and conditions, the analysis conducted by Department of Environmental Quality staff, the proposed lease, and the proposed reclamation plan. In addition to the public hearing, Department of Environmental Quality announced that written comments would be accepted for 28 days after the hearing, which opened on September 19, 2007, and closed on October 17, 2007. Approximately 3,500 written comments were received, of which 287 were received at the public hearing held in September 2007 (Table 3.4). Department of Environmental Quality staff estimated that between 250 to 300 people attended. Although a substantial number of comments submitted in support of the application, project proponents constituted a small minority. However, Department of Environmental Quality staff felt that the amount of opposition received might not have been representative of actual public opinion. That is, agency staff felt that opposition could have been over-represented given that anti-mining groups mounted aggressive letter writing campaigns and invoked the use of preprinted postcards and websites sending multiple emails in opposition to the project (S. Wilson, personal communication, October 2007).

In December 2007, the Department of Environmental Quality announced its decision to approve all permits for the proposed Eagle Project Mine, the first in 50 years. The project was the first to be subjected to Michigan's Nonferrous Metallic Mineral Mining Regulations enacted in 2004, which was in response to concerns over future development of metallic sulfide ores in the Upper Peninsula of Michigan. Conservation groups and residents of the Upper Peninsula were especially concerned with acid mine drainage contaminating ground or sensitive surface waters (USGS, 2004). In response, the Department of Environmental Quality established a work group to evaluate hard-rock mining that included business organizations, citizens, environmental groups, legislators, local governmental units, mining companies, Native American tribes, universities, EPA, and other state agencies. The new law and associated rules regulate for the first time the underground mining of sulfide ores for nonferrous metals and requires a permit application to include (USGS, 2004): (1) a \$5,000 application fee, (2) an EIS, (3) a mining, reclamation, and environmental protection plan that minimizes adverse impacts of mining on natural resources, the environment, and public health, (4) a contingency plan that includes an assessment of the environmental, public health, and safety risks from failures of the mining operation, and the operator's notification and response plans, and (5) financial assurances.

Table 3.4: Public comments received on the Kennecott Eagle Project during the September 2007 public hearings convened by the Michigan Department of Environmental Quality.

Date	Location	Early session	Later session	Estimated attendance	Recorded comments
09/10/2007	Northern Michigan University, Marquette, MI	1:00-4:30 pm	6:00-11:30 pm	700	150
09/11/2007	West Branch Community Center, Gwinn, MI	1:00-4:30 pm	6:00-9:30 pm	NA	
09/12/2007	West Branch Community Center, Gwinn, MI	1:00-4:30 pm	6:00-9:30 pm	NA	
09/13/2007	West Branch Community Center, Gwinn, MI	1:00-4:30 pm	no session	200	75
09/19/2007	Lansing Center, Lansing, MI	1:00-4:30 pm	6:00-9:30 pm	150	62

The mining legislation enacted in 2004, triggered by exploration activities of Bitterroot Resources, Ltd. and Kennecott (Eggert, 2004; Flesher, 2004; USGS, 2004), amended Michigan’s earlier mining reclamation law (1994 PA 451) applying to open pit mining. The Department of Environmental Quality is responsible for issuing permits associated with the regulations and requirement to hold public hearings. It is difficult to assess the effectiveness of the new legislation and associated rules because the Eagle Project represents the first mine subjected to the new standards, but staff expressed that the legislation has the potential to establish a successful monitoring program in which to safeguard environmental quality.

3.1.3 Environmental Review Policies and Procedures

Michigan is a Tier-two state. Although Michigan does not have a state environmental policy act in place, the state has enacted legislation and administrative rules that require detailed analysis of potential impacts associated with proposed ferrous and nonferrous metallic mining projects. The most recent of such legislation was passed in 2004 when potential development of new metallic mining operations in the state created significant controversy and prompted concerns over the adequacy of Michigan’s mining and reclamation laws and regulations. The ultimate result of such concerns was the enactment of a comprehensive, progressive mining law (later incorporated into Public Act No. 449 of 2004) that regulates for the first time the underground mining of sulfide ores for nonferrous metals (USGS, 2004). The 2004 amendment created a new Part 632 of the Natural Resources and Environmental Protection Act that prohibits a person from mining nonferrous metallic minerals except as authorized by a permit issued by the DEQ (House Fiscal Agency, 2004). The Act requires a permit application to include the following: (1) a \$5,000 application fee, (2) an environmental impact assessment (the components of this plan are described in more detail below), (3) a mining, reclamation, and environmental protection plan that seeks to minimize the adverse impacts of the mining operation on natural resources, the environment, and

public health, (4) a contingency plan that includes an assessment of the environmental, public health, and safety risks that may result from failures of the mining operation, and the operator's notification and response plans, and (5) financial assurances of the mining operation. The bill also provides the applicant would have the burden of establishing that the terms and conditions provided in the application, environmental protection plan, and environmental impact assessment results in a mining operation that reasonably minimizes the actual or potential adverse impacts on air, water, and other natural resources.

The new law was designed to protect the environment, while ensuring that mining companies could develop economically promising sulfide deposits in Michigan (USGS, 2004). The legislation also amended and updated Michigan's earlier mining reclamation law (1994 PA 451), which applies primarily to open pit mining of iron ore. The new mining law set up a permitting system to oversee underground sulfide mining. The Michigan Department of Environmental Quality is responsible for issuing the permits. The 2004 amendment requires that public hearings be held during the review of all permit applications. As part of the application process, mining companies must now submit plans to the Michigan Department of Environmental Quality that cover all aspects of development, operation, monitoring, and decommissioning.

3.1.4 Factors Affecting Review/Permitting Timelines

In February 2006, Kennecott Minerals Company submitted an approximately 8,000-page application to the Department of Environmental Quality proposing to develop an underground nickel and copper mine in the Upper Peninsula of Michigan. The Eagle Project, as it came to be known, represented the first proposed metallic mining operation in the state of Michigan in approximately 50 years. Because of the relative infrequency with which metallic mines have been proposed, review time was likely increased as a result of staff needing to learn the intricacies of the review process. Review of Eagle Project took nearly two years, but intervening circumstances may have extended review time. For instance, an administrative error after the second round of public hearings resulted in a delay in the process from March 1, 2007, to July 30, 2007. By the time the error was identified and the Department of Environmental Quality could reissue its proposed decision, public hearings could not be held until mid-September. The administrative error was in reference to discovery that two reports on the structural integrity of the mine, each of which was prepared by a Department of Environmental Quality subcontractor, were not properly made available for public review or given a thorough technical review by agency personnel. As a result of this error, the Department of Environmental Quality undertook an extensive procedural review to ensure no further mistakes had taken place and a complete public record was made available for review. Review of the Eagle Project was ultimately delayed seven months. Despite delays, it appears the majority of public

opinion, as determined through public comments, was in support of the mine, which may have facilitated agency review. However, decision to permit the mine is currently being challenged in court and it may be premature to conclude the permitting and review process is in fact complete.

The primary environmental review document prepared for the Eagle Project was an EIA, and submitted as a component of the mining permit application on February 20, 2006. One of the primary purposes of the EIA was to document existing conditions of resource topics so that baseline conditions could be established. It is important to note that, while such potential alternatives and associated impacts were addressed, the depth of information and analysis was less substantial than what would typically be expected in an EIS in states with formal EIS requirements. On December 14, 2007, after completing the application review process, the Department of Environmental Quality approved the proposed mine and issued the mining, air quality, and water discharge permits. The Department of Natural Resources issued a Surface Use Lease on February 7, 2007, granting use of a parcel of state land for surface facilities.

Table 3.5: Summary of Eagle Project mining case study, Michigan.

Project Name / Company	Eagle Project / Kennecott Minerals Company
Location	Michigamme Township, Michigan
Type of Project	The applicant proposed to develop an underground nickel and copper mine in the Upper Peninsula of Michigan on land currently zoned for mineral resource production by the Michigamme Township.
Scope	Kennecott Minerals Company owns a 100% interest in the Eagle Project site, including title to the surface rights through a mixture of private mineral titles and state mineral leases and surface ownership. The Eagle deposit is a high-grade magmatic sulfide deposit containing deposits of nickel (3.6%) and copper (3.0%) and trace amounts of cobalt and gold. The economic minerals are predominately pentlandite and chalcopyrite. The Eagle Project development will include surface and underground facilities required for the mining of the ore body. Extracted ore will be brought to the surface where it will be crushed and trucked off-site along an approved trucking route to a railhead. The ore will be transferred to rail cars for shipment to an off-site processor. Kennecott Minerals Company does not intend to conduct milling or chemical processing of ore at the Eagle Project site. Surface facilities for the operation will be limited to those necessary for storing and crushing ore, managing development rock storing, treating, and discharging water, backfilling and venting the mine, and other ancillary operations. The Kennecott Minerals Company estimates that the Eagle Project will generate 2,000 tonnes per day. It was estimated that the mine will operate about 250 days per year. On-site personnel during operations are expected to begin at about 87 employees with an anticipated increase to about 110 employees at full production.
Year Project Proposed	February 2006
Year Project Permitted	December 2007

<p>ER Completed</p>	<p>The primary document prepared for the Eagle project was an EIA, which was prepared in accordance with requirements of R 425.202 of Michigan’s Nonferrous Metallic Mining Regulations. One requirement was that existing conditions of resource topics had to be described. The EIA also considered what effects implementing alternative mining methods, ore processing technologies and procedures, transportation infrastructure, power supplies, surface facility locations, water discharge processes, and end uses would have on environmental quality. Although a considerable number of topics were described, the analysis was less comprehensive than what would typically be expected in an EIS prepared in a state with formal EIS requirements.</p>
<p>Permits Completed</p>	<p><i>Nonferrous Metallic Mining Permit</i> (issued on December 14, 2007), <i>Michigan Air Quality Permit</i> (issued December 14, 2007), <i>Groundwater Discharge Permit</i> (issued on December 14, 2007), <i>Notice of Coverage</i> (pertains to storm water management), <i>Pollution Incident Prevention Plan</i></p>
<p>Public Notification & Involvement</p>	<p>Public Meetings on the Kennecott Eagle Project Permit Application were held in Marquette, MI, April 18, 2006. Following the public meeting, written public comments were accepted until the close of business on May 16, 2006. After completing an extensive review and evaluation of the plans and information submitted by the Kennecott Eagle Project, as well as public comments received throughout the application review process, the Department of Environmental Quality issued a proposed decision to grant the mining permit on January 9, 2007. After drafting the General and Special Permit Conditions for the mine, public comments were made available on February 23, 2007.</p> <p>In accordance with Part 632 of the <i>Nonferrous Metallic Mining Regulations</i>, a public hearing had originally been scheduled for March 12, 2007, but this hearing was postponed until September 2007 after the Department of Environmental Quality suspended its permit review to investigate the facts and occurrences relating to the non-disclosure of reports concerning the structural integrity of the mine. Although state law requires only one public hearing be held, the Department of Environmental Quality ultimately conducted five hearings at three locations. Two hearings were in communities situated near the proposed mine site, and the third was in Lansing. The purpose of these public hearings was to give interested parties an opportunity to present new information or concerns about the Air Use Permit, draft Groundwater Discharge Permit, proposed decision to grant the Mining Permit, draft Surface Lease, and the draft Reclamation Plan.</p> <p>In addition to the public hearing, the Department of Environmental Quality announced that written public comments would be accepted for 28 days after the hearing. Interested persons were able to submit comments by mail or e-mail through October 17, 2007. It was noted in the press release announcing the permitting decision that information received during both the final and earlier public comment periods resulted in a number of changes to Kennecott Minerals Company’s permits to address public concerns.</p>
<p>Issues and Impacts Analyzed</p>	<p>The following resource topics were evaluated in the Eagle Project EIA in order to establish baseline conditions:</p> <ul style="list-style-type: none"> • Topography • Soil • Geology of the bedrock and unconsolidated materials • Groundwater and aquifers • Surface water systems • Regional hydrology • Groundwater/ surface water quality • Private and public water supplies • Residential dwellings, schools, and other public and private structures • Existing and proposed infrastructure • Natural and wild areas • State wilderness areas • Federal wilderness areas • Research natural areas • Land use • Aquatic/ terrestrial flora and fauna

	<p>including irrigation wells</p> <ul style="list-style-type: none"> • Designated wellhead protection • Wetlands and flood plains • Natural rivers • Wild and scenic rivers • Archaeological resources • Air quality and meteorology <ul style="list-style-type: none"> • Fish and wildlife habitat and ecological systems • Threatened and endangered species and species of special concern • Non-native and invasive species • Visual resources • Noise, light and seismicity
Final Outcome	<p>On December 14, 2007, the Department of Environmental Quality approved the proposed mine and issued the mining, air quality, and water discharge permits. The Department of Natural Resources issued a Surface Use Lease on February 7, 2007, granting use of state land for surface facilities. On December 21, 2007, the National Wildlife Federation, Huron Mountain Club, Keweenaw Bay Indian Community, and Yellow Dog Watershed Preserve filed administrative appeals contesting issuance of the Mining Permit and Groundwater Discharge Permit. Kennecott has been granted intervenor status in the contested case. The case was scheduled for hearing in April 2008. The four petitioners also filed a lawsuit in Ingham Circuit Court contesting issuance of the Air Use Permit.</p>
State ER Policy Framework	<p>Environmental Review and permitting are conducted by the same personnel within the Department of Environmental Quality. The EIA represents the primary environmental review document required under state law for projects that are expected to impose significant impacts on the environment. With respect to proposed mining operations, the state's <i>Nonferrous Metallic Mining Regulations</i> mandate that an EIA describe the natural and human-made features, including, but not limited to, flora, fauna, hydrology, geology, and geochemistry, and baseline conditions in the proposed mining area and the affected area that may be impacted by the mining, and the potential impacts on those features from the proposed mining operation. The EIA must also define the affected area and address feasible and prudent alternatives. However, the depth and level of analysis of the Eagle Project EIA was not consistent with the level of analysis typically contained within an EIS prepared for a large-scale project in Minnesota or other states with a State Environmental Policy Act.</p>
State Permitting Framework	<p>In accordance with Michigan's Nonferrous Metallic Mining Regulations (Part 632), the Michigan Department of Environmental Quality shall do the following:</p> <ul style="list-style-type: none"> • Process an application and determine if it is administratively complete. • Distribute paper copies to locations for public access. • Make files available as paper copies, on the internet and on CD. • Announce and hold an initial public meeting on the application. The Department of Environmental Quality has 42 days to provide a public hearing upon receiving a complete application. • Accept written comments for at least 28 days following the public meeting. • Make a preliminary decision to grant or deny the permit after the public comment period concludes. • Make additional materials available for access, review and comment by interested stakeholders and members of the public. • Announce and hold a second public hearing on the application. • Accept written comments for 28 days after the public hearing. • Make a final decision to grant or deny the permit after conclusion of the final public comment period. • Department of Environmental Quality is required approve proposed mining operations that meet the requirements of the <i>Nonferrous Metallic Mining Regulations</i> (e.g. the project will not pollute, impair, or destroy the air, water, or other natural resources or the public trust in those resources).

3.2 Minnesota

3.2.1 Economic Importance

The history of metal mining in Minnesota over the last century has been characterized by booms and busts. Between 1974 and 1977, metal production in the state decreased 10% but regained losses in 1978-1979 only to face a 25% decline in 1980 and declining 50% by 1982. Recently, metal production decreased by 27% from 2000-2003 (Power, 2007). Volatility is typical of mineral extraction activities, including iron ore mining in Minnesota. In fact, iron ore production has been particularly prone to vacillations, which is frequently a result of economic recessions and increasing global competition (Figure 3.1). Iron ore is particularly sensitive to economic downturns because its demand is tied to the steel industry which, like copper and other non-precious metals, is a basic input for manufacturing and construction. When the overall economy is expanding, the demand for such inputs rises (Power, 2007).

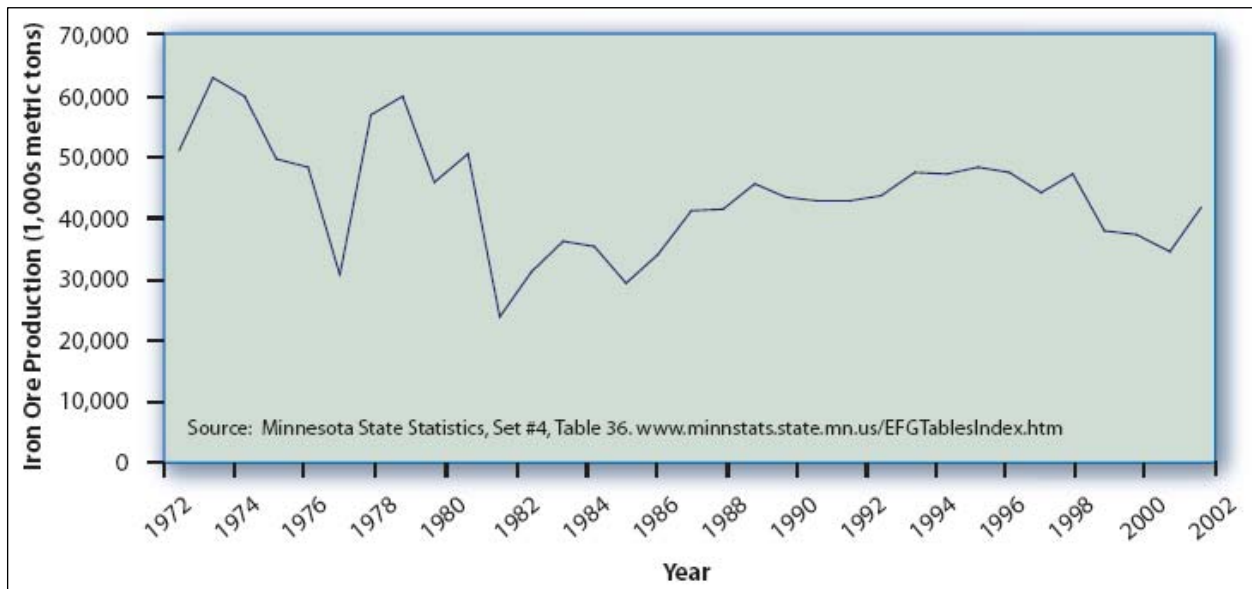


Figure 3.1. Minnesota iron ore production, 1972-2004 (Source: Power, 2007).

Technological change in the mining industries, including iron mining, has had a significant impact on communities adjacent to mines. Over time, technological change has substituted capital and mechanized equipment for labor and the result has been the displacement of increasing numbers of miners, even when overall production rises. For instance, labor productivity in Minnesota iron mines tripled from 1979 to 2005 while employment declined by about 73% during the same period (Figure 3.2). Levels of production also experienced modest declines (Power, 2007). In 2004, nonfuel raw mineral production was valued at \$1.89 billion, which was a 43% increase from 2003 and followed a 1.5% increase from 2002 to 2003. The state rose from tenth to seventh in rank among the 50 states of which Minnesota accounted for about 4.1%

of the United States total. Additionally, in 2004 Minnesota continued to be the leading producer of iron ore with about 75% of the iron ore shipments. Based upon value, iron ore continued to be Minnesota's leading nonfuel raw mineral followed by construction sand and gravel, crushed stone, industrial sand and gravel, dimension stone, and lime. The state's substantial increase in nonfuel raw mineral production largely resulted from iron ore's higher average price per metric ton in 2004 as compared with that of 2003. With a 22% increase in production shipments, the commodity's value rose by more than \$530 million from 2003 to 2004, which represents greater than a 50% increase in just one year (USGS, 2004B).

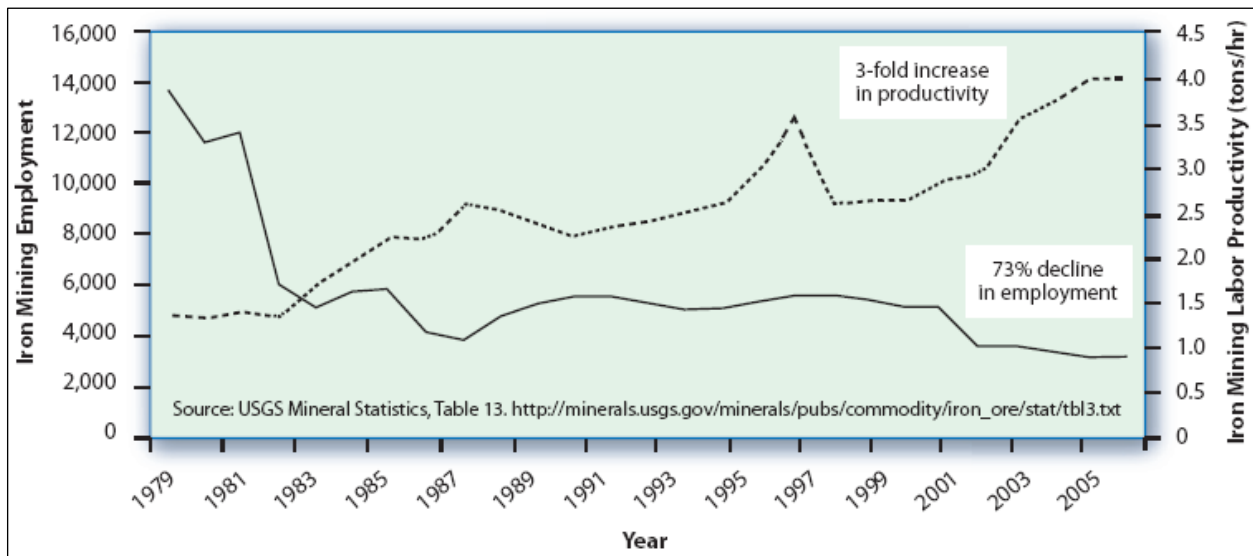


Figure 3.2: Minnesota iron mining employment and labor productivity, 1979-2005 (Source: Power, 2007).

Minnesota's iron ore facilities supply an integrated regional market that is cyclical in nature, but mature and slowly declining. A new blast furnace has not been built in the United States or Canada since the late 1970s. Minnesota's taconite companies compete directly with two iron ore pellet facilities in Michigan and three iron ore pellet facilities in Canada as well as a lesser amount of imported iron ore pellets predominantly from Brazil (Governor's Committee on Minnesota's Mining Future, 2004). However, because the iron ore industry has experienced booms and busts over the past several decades, dramatic restructuring of the steel industry coupled with rising metal prices have triggered a revitalization of Minnesota's taconite mining and processing industry (USGS, 2004B; Power, 2007). Only a few years ago the metallic mining industry was trending down as demand declined. But, the state's mining sector now appears to be in the midst of new mining expansion built around the development of copper ores in the northeast region, a resurgent interest in processing taconite iron ore, and additional energy infrastructure needed to support an expanding metal industry. Additionally, rising interest in metallic mining in the northeast region of the state can be attributed to exploding growth in the price of metal commodities; iron

products tripled in price between 2001 and 2007 and the price of copper quintupled between 2002 and 2006 while nickel increased nearly tenfold during this period (Power, 2007).

Although the economic landscape is changing, Minnesota’s taconite facilities are competitively disadvantaged due to current commercial direct reduction technology and dependence on natural gas (Governor’s Committee on Minnesota’s Mining Future, 2004). Additionally, the Fraser Institute’s benchmarking analysis of factors affecting Minnesota’s Competitiveness for Iron Mining Investment found that the state’s political environment and regulatory considerations further disadvantaged Minnesota in both the domestic and global market place (Table 3.6). Despite the existence of such geological, technological, and regulatory factors, increasing metal prices has resulted in several new metal mining and processing facilities proposed in northeast Minnesota and upgrades of existing mining and processing facilities, the most prominent of which are Minnesota Steel, NorthMet, and East Reserve. Upgrades to existing operations and proposed new mines are in especially high demand (Power, 2007).

Table 3.6: Perceived Competitiveness for Mineral Exploration Investment (Source: Governor’s Committee on Minnesota’s Mining Future).

	Environmental Regulations	Regulatory Duplication and Inconsistencies	Taxation Regime	Uncertainty Concerning Areas Protected as Wilderness or Parks	Infrastructure	Political Stability	Labor Regulation-Employment Agreements	Geological Database	Mineral Potential Assuming Current Regulation/Land Use Policies	Mineral Potential Assuming NO Restrictions and Best Practice Standards
USA										
Alaska	B	B	B	B	W	B	B	W	B	B
Arizona	B	B	B	B	B	B	B	B	B	B
California	W	W	W	W	B	W	W	W	W	W
Colorado	W	B	B	W	B	W	W	W	W	W
Idaho	W	B	B	B	B	B	B	B	W	B
Montana	W	W	B	W	B	W	B	W	W	W
Nevada	B	B	B	B	B	B	B	B	B	B
New Mexico	B	B	B	B	B	B	B	W	B	W
South Dakota	W	W	B	B	W	B	W	W	B	W
Utah	B	B	B	B	B	B	B	B	B	B
Washington	W	B	B	W	W	W	B	W	W	W
Wisconsin	W	W	W	W	W	W	W	W	W	W
Wyoming	B	B	B	B	B	B	B	B	B	B
Canada										
British Columbia	B	B	B	W	W	B	W	B	B	B
Ontario	B	B	B	B	B	B	W	B	B	B
Quebec	B	B	B	B	B	B	B	B	B	B
Others										
South Africa	B	B	B	B	W	W	W	W	B	B
Western Australia	B	B	B	B	B	B	B	B	B	B
<div style="display: flex; justify-content: center; gap: 20px;"> <div style="background-color: red; color: white; padding: 2px 5px;">B</div> = Better than Minnesota <div style="background-color: green; color: white; padding: 2px 5px;">W</div> = Worse than Minnesota </div>										
<small>Chart standing or ranking as reported by the Fraser Institute from a composite of 2003/2004 survey responses. The Fraser report is an annual survey by the Vancouver-based Fraser Institute of the management of selected members of the North American mineral exploration community (largely Canadian) of their perceptions of the business climate and mineral potential of Canadian provinces, selected US states and foreign jurisdictions. Many industry stakeholders in Minnesota do not necessarily agree with the Fraser Institute rankings for Minnesota; however, the report’s conclusions are quoted in the public media, such as the Wall Street Journal, and in the trade press and, therefore, impact Minnesota’s perceived competitiveness with potential investors.</small>										

Nonferrous metallic mining is also an important industry in Minnesota, and seven new copper-nickel deposits with varying amounts of gold and platinum group metals have been identified in the Duluth Complex. At least three deposits are believed to be of commercial size with the greatest near-term potential being PolyMet’s NorthMet Project, Teck Cominco’s Mesaba Project, and the Beaver Bay Joint Venture Franconia Minerals Birch Lake project (Governor’s Committee on Minnesota’s Mining Future, 2004). Polymet is currently undergoing environmental review by the Minnesota Department of Natural Resources and US Army Corps of Engineers. The other two are completing prefeasibility analyses in preparation for environmental review. The Minnesota Department of Natural Resources is working on an EAW for TeckCominco’s proposal to extract a bulk ore sample, but the project is not currently under environmental review (C. Nelson, personal communication). In 2004, the *Governor’s Committee on Minnesota’s Mining Future* concluded that to facilitate the development of known copper-nickel, PGM, and other nonferrous metallic mineral deposits, the state should assist mineral development efforts by financing geologic and geophysical mapping, providing better public access to information on land and mineral ownership in the state, opening more state lands to mineral leasing, and encouraging the federal government and private owners to do the same (Governor’s Committee on Minnesota’s Mining Future, 2004).

Proponents of growth in the state’s metallic mining industry assert that each new mine or processing facility would create hundreds of new direct jobs once operational and more than a thousand temporary construction jobs during construction. The multiplier effect of new mines would stimulate additional jobs with the cumulative effect of revitalizing the metal industry in Iron Range, which has economically depressed over the past 30 years (Figures 3.3 and 3.4) (Power, 2007).

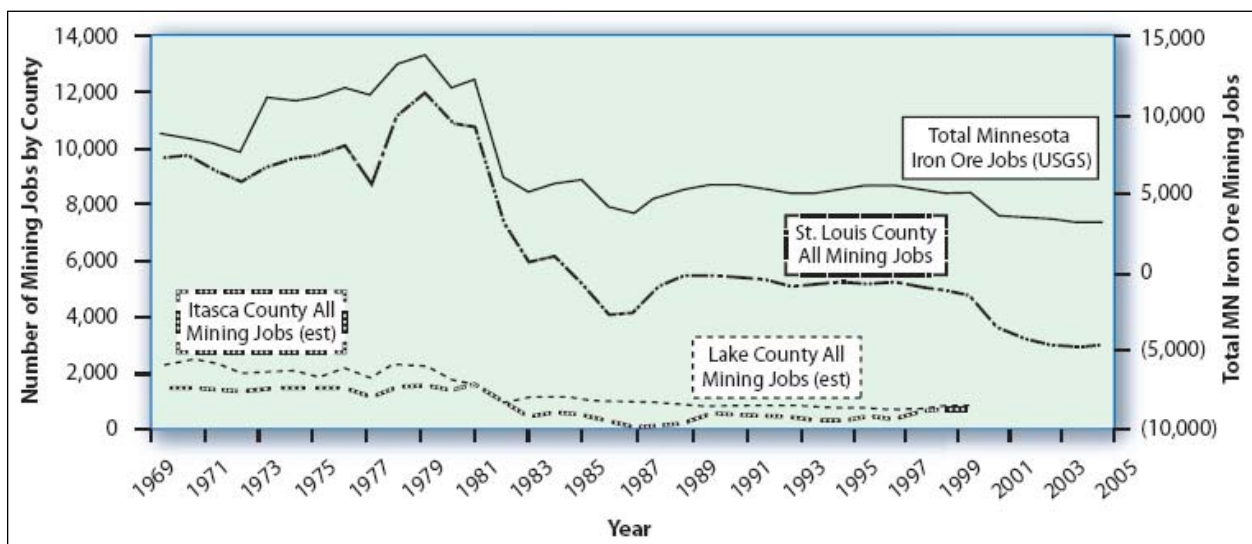


Figure 3.3: Changes in employment in Minnesota’s iron ore producing counties, 1969-2005. (Source: Power, 2007)

Despite the prominence of the industry, even during times of peak production in the last several decades, the metal mining industry in Minnesota has not constituted a considerable source of income generated within the state. For instance, whereas in 2005 the metal mining industry was the source of 0.2% of total state income, in 1979 when the industry's share of total income was at its highest, the industry's contribution was only 1.2%. The decline in the relative contribution is not just due to the decline in the iron industry, but is also tied to expansion in other sectors of the state's economy. However, metal mining is critical to many Iron Range communities. The industry's ability to bring in money from outside the region is one important reason that metal mining's contribution to state and regional economies may be more important than the direct employment and income numbers suggest. Metal mining, like timber, agricultural, and manufacturing activities, is referred to as a "basic" industry, which means that it brings income into the state from through its export of products. Because the industry "injects" income into the local economy from firms and households outside the region, it can be argued the industry acts as an engine that helps to fuel the rest of the economy (Power, 2007).

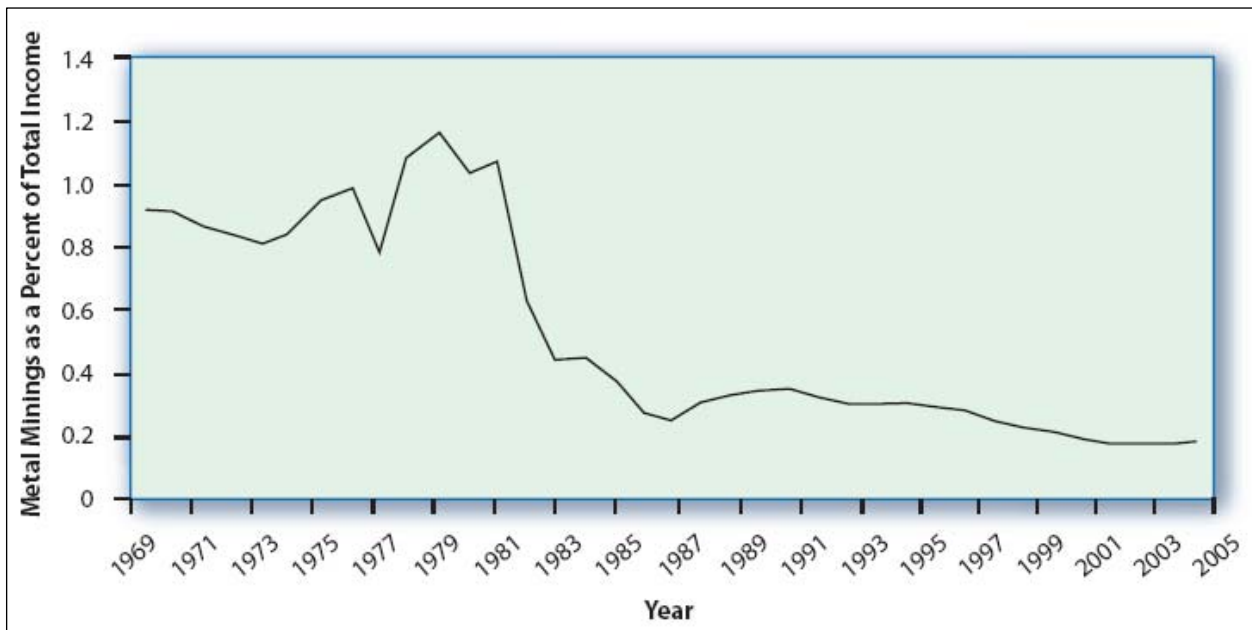


Figure 3.4: Metal mining as a source of personal income in Minnesota, 1969-2005 (Source: Power, 2007)

Power (2007) estimates that each of the larger metal mining projects that are currently being proposed or recently approved would directly add 500 to 800 jobs and a payroll of \$30 to \$50 million per year to counties in northeast Minnesota. Also, projected multiplier impacts could result in an additional 1,000-2,400 jobs and \$50 to \$115 million in additional wages (Power, 2007). Statewide, the direct impacts of

one of large facility would be an increase in employment and income of 0.5-0.7% and 1.5-2.0% in added jobs and income to existing local economies from multiplier effects (Power, 2007).

3.2.2 Project Overview

In February 2005, Minnesota Steel Industries, LLC submitted an Environmental Assessment Worksheet to the Minnesota Department of Natural Resources, the responsible government unit, that outlined a proposal to conduct open pit taconite mining by reactivating the former Butler Taconite mine and tailings basin area. Though the area was initially mined in 1903 and the former Butler Taconite facility was active from 1967 to 1985, viable ore still remains on-site. Minnesota Steel Industries' proposed project combines ore processing, direct reduced iron production, and steel-making into an integrated facility with the intention of providing steel for the domestic and world markets.

When the project was initially proposed in 2005, Minnesota Steel Industries was a wholly owned subsidiary of J.M. Longyear Heirs, LLC and R.M. Bennett Heirs, LLC with operating offices in Hibbing and St. Paul, MN. In August 2007, after the project was ultimately permitted, Minnesota Steel Industries finalized a purchase agreement with India-based Essar Steel Holdings Limited, a wholly owned subsidiary of Essar Global Limited. Essar, an emerging steel company, is an international conglomerate operating in six business areas—steel, oil and gas, power, communications shipping and logistics, and construction. Just prior to the purchase, Essar acquired Canadian-based Algoma Steel, and the two purchases combined to form the basis of the company's North American Strategy.

The proposed project area was located near Nashwauk, MN, on the Mesabi Iron Range. The Mesabi Iron Range is a major, well-known geologic feature oriented roughly northeast-southwest across more than 120 miles of northeastern Minnesota from near Babbitt to near Grand Rapids. The Mesabi has been the largest source of iron ore produced in Minnesota since the 19th century and this region of state has made, and continues to make, Minnesota the predominant source of iron ore in the United States.

Minnesota Steel Industries expected to employ up to 700 people for production, support, and administration of the mine and processing facility once the project was operational. According to the project EIS, the proposed project would integrate the steps necessary to make low-cost, high-quality steel at the former Butler Taconite site, which would also be cleaner and more efficient than traditional steel plants by using new process and control technologies. Minnesota Steel Industries planned to increase efficiency by having a continuous flow of materials, keeping the material at an elevated temperature throughout the process, and eliminating multiple transportation steps.

In addition to the reactivation of the existing mine and tailings basin, the proposed project included construction of new facilities that included construction of a crusher/concentrator, pellet plant, a direct reduced iron plant, and a steel mill consisting of two electric arc furnaces, two ladle furnaces, two thick slab casters, a tunnel furnace, a hot strip rolling mill, a sheet steel coiler, and construction of a new tailings basin on the site of the former Butler facility tailings basin. Key project features included:

- An open pit taconite mine capable of mining approximately 13,100,000 metric tons of ore/year.
- A crusher/concentrator plant with an associated tailings basin, producing approximately 3,800,000 metric tons of iron concentrate per year.
- A pelletizer that could produce approximately 3,800,000 metric tons of oxide pellets per year to be sold or used as a feedstock for DRI production.
- A direct reduced iron facility capable of producing approximately 2,800,000 metric tons per year of iron pellets for direct feed for steel production.
- A steel mill with two electric arc furnaces, two ladle metallurgy furnace, two thick slab casters, and a hot rolling mill, which would produce 2,500,000 metric tons of steel slabs per year.

It was estimated that roughly 3.4 tons of crude ore would be converted to 1.35 tons of iron oxide (taconite) pellets which, in turn, would be converted to 1.12 tons of direct reduced iron pellets and 1 ton of finished steel product. The primary raw material inputs were iron ore, natural gas, electricity and water. Mining operations would obtain magnetic taconite ore from a horizon within the Lower Cherty member of the Biwabik Iron Formation. The iron ore reserves at the proposed site are currently estimated at roughly 1.4 billion tons over about 100 years of reserves. The Permit to Mine Application stated that the Butler ore body is potentially the only iron ore available within the Mesabi Iron Range with the proper grinding characteristics to economically produce low silica pellets suitable for direct reduction iron and steelmaking. The project would use new haul roads and haul roads already present at the Butler facility to transport overburden, waste rock and lean ore to the stockpile areas and taconite ore from the mine to the crusher. Such a practice could reduce the overall stockpile area required. The company planned to use an existing mine pit and inter-pit haul roads as mine pits were expanded and if in-pit stockpiling was used. Stockpiling lean ore, waste rock, and possibly surface overburden in mined-out pits typically has favorable haul distances and minimizes impacts to undisturbed lands and wetlands. To reduce impacts to the environment, existing haul road alignments and disturbed areas would be used where possible.

For environmental review and permitting purposes, the anticipated mine production period was 20 years given that this was found to be a common production time window based on historical evidence. It was

estimated that roughly 76 million tons of taconite pellets or 55 million tons of steel would be produced during this 20-year period. In the event the mine had an operational life in excess of 20 years, state law requires the project to undergo additional environmental review and permitting. Expansion of the proposed project beyond the boundaries and production rates described in the EIS would necessitate supplemental environmental review and permit modifications.

After reviewing the EAW submitted in February 2005, the Department of Natural Resources determined additional data needed to be included in the EAW. Minnesota Steel Industries resubmitted the worksheet in June 2005 and in July 2005 the Department of Natural Resources prepared a Scoping EAW and a Draft Scoping Decision Document to provide information about the project, identify potentially significant environmental effects, and determine what issues and alternatives would be addressed in the EIS and the level of analysis required.

Minnesota Rules, part 4410.2000, subpart 2, mandated an EIS be prepared for the project. The Minnesota Rules direct the responsible government unit to prepare an EIS if the project meets or exceeds the thresholds of any of the EIS categories listed in part 4410.4400, of which metallic mineral mining and processing is one such category. More specifically, EIS preparation is mandatory for construction of a new facility for mining metallic minerals or for the disposal of tailings from a metallic mineral mine and construction of a new metallic mineral processing facility (Minnesota Administrative Rules, Chapter 4410). The EIS is required to meet the applicable requirements of Minnesota Rules, part 4410.0200 to 4410.7800 (Minnesota EQB Rules) that govern the Minnesota Environmental Review Program. Additionally, by rule, the Department of Natural Resources was the responsible unit for the project. Because the proposed project needed to obtain a Section 404 permit for wetland alteration from the US Army Corps of Engineers, it was also necessary that a federal EIS be prepared in accordance with NEPA.

Public notification and opportunities to receive information on the project began during the project scoping process. A notice of availability for review of the EAW and a Draft Scoping Decision Document was published in the *EQB Monitor* in July 2005. In accordance with Minnesota Rules, part 4410.2100, subpart 3, the notice of availability initiated a 30-day public comment period and the joint state-federal scoping process. The Department of Natural Resources accepted written and emailed comments on the draft EAW and a Draft Scoping Decision Document from July 18, 2005, to August 17, 2005. After considering public comments, the Department of Natural Resources made substantive revisions to the following sections of the document: Solid Waste; Modified Designs or Layouts; Infrastructure; Technology Alternatives; Identification of Phased or Connected Actions; Stationary Source Air

Emissions (Mercury Control Technologies, Sampling/Evaluation for Fine Mineral Fiber Bearing Material); Vehicle Related Air Emissions; Odor and Noise; Water Appropriation; Cumulative Effects; Archeological; Fish and Wildlife Resources; Threatened and Endangered Species; Land Use; Socioeconomics; Traffic; Visual Impacts; Physical Impacts on Water Resources; and Wastewater.

A public meeting was held during the comment period to provide additional information on the project. In August 2005, the US Army Corps of Engineers published a Notice of Intent to prepare a Draft EIS in the Federal Register. The comments received during the scoping period were considered in making revisions to the Draft Scoping Decision Document prior to the Final Scoping Decision Document, made in October 2005 to satisfy the scoping requirements of the Minnesota Environmental Policy Act and NEPA, and serve as the “blueprint” for preparing the EIS.

Environmental issues identified and described in the Scoping EAW were categorized in the Final Scoping Decision Document by significance and level of analysis required in the EIS. These three categories are briefly described below along with a list of topics that are included in each category. The water surface use and compatibility with plans and land use regulations reviewed by the Department of Natural Resources and the US Army Corps of Engineers in the Scoping EAW were found to either be irrelevant or not significant enough to warranted being addressed in the EIS. The Department of Natural Resources and US Army Corps of Engineers determined that the following topics would not impose significant impacts, but would be addressed in the EIS using limited information beyond that provided in the Scoping EAW. The level of information and analysis provided for each topic was commensurate with the anticipated impacts. These specific topics include:

- Land use
- Vegetative cover types
- Threatened and endangered species
- Water-related land use management districts
- Erosion and sedimentation
- Geologic hazards and soil conditions
- Traffic
- Vehicle related air emissions
- Archaeology
- Recreational trails
- Visual impacts
- Infrastructure
- Socioeconomics
- Reclamation of mine lands

The Department of Natural Resources and US Army Corps of Engineers also identified the following topics in the Final Scoping Decision Document that could result in potentially significant impacts and analyzed more thoroughly in the EIS:

- Physical impacts on water resources
- Water appropriations
- Surface water runoff
- Wastewater/water quality
- Solid waste
- Stationary source air emissions
- Fish and wildlife resources
- Noise

The Final Scoping Decision Document also determined the EIS would evaluate potential cumulative impacts associated with combined environmental effects of the proposed project and past, present and reasonably foreseeable future actions relative to air quality (Class I air quality; acid deposition and ecosystem acidification in Class I areas; mercury; and visibility impairment), threatened and endangered plant species, wetlands, wildlife habitat and animal travel corridor obstruction/landscape barriers. The cumulative impacts analysis was presented in the Final EIS.

The Department of Natural Resources considered the comments received during the EIS scoping comment period, made revisions to the draft Scoping Decision Document, and issued the final Scoping Decision Document on October 13, 2005. The 15-day issuance was extended by consent of the Proposer and responsible government unit. In addition to the project extension, the general timeframe for completing the EIS was extended. Department of Natural Resources staff recall the primary factors leading to extensions included: significant changes to the project by the proposer which required additional investigation; required reports of the proposer submitted late; lack of adequate communication and coordination among government staff, proposer representatives, and consultants; and general confusion over precisely how responsibility for managing the project would be divided among agency staff. There is no information in the administrative record that notes the precise length of each extension. Five days after releasing the Final Scoping Decision Document, the agency issued a summary of EIS scoping procedures and responses to public comments that were submitted on the Scoping EAW and a Draft Scoping Decision Document.

Minnesota law requires the responsible government unit (rather than the project proposer) prepare the EIS. However, given that state agencies do not have the personnel necessary to prepare an EIS, it is customary to contract the EIS preparation responsibilities to outside entities mutually agreed-to by the agency and project proposer. EIS consultants were selected by the Department of Natural Resources in December 2005, the same month in which an income agreement was sent to Minnesota Steel Industries, which was later signed after a two-month delay by the proposer. The EIS consultant contract was approved by the Department of Administration less than two weeks later, which marked the beginning of the state mandated 280-day EIS timeline and published in the *Monitor* (Vol. 30, No. 5). In March 2006, a memorandum of understanding was drafted that allowed for the preparation of a joint state/federal EIS with the US Army Corps of Engineers and the Department of Natural Resources.

Less than one year after the EIS notice was published, A Draft EIS was completed and an announcement was published in the *Monitor*, February 2007 (Vol. 31, No. 4). The US Army Corps of Engineers published a notice of the Draft EIS in the *Federal Register* (Vol. 72, No. 32) just a few days later. A press release was subsequently published in a local newspaper in the vicinity of the project announcing a public informational meeting in March. By law, at least 15 working days notice was required between the time the announcement was made in the *Monitor* and the date of the public meeting. The public comment period ultimately extended 12 days beyond the public informational meeting to satisfy the legal requirement of at least 10 working days between the public meeting and the conclusion of the comment period. The public comment period lasted a total of 44 days, concluding on March 28, 2007.

The Department of Natural Resource's analysis for the Draft EIS determined the primary air emission points would be at the mine, taconite indurating furnace, direct reduced iron modules, and the steel mill electric arc furnaces. Smaller emission points would include numerous individual material-handling operations, smaller combustion sources, and cooling towers. All emission points were included in the evaluation of Best Available Control Technology required under the Prevention of Significant Deterioration air permitting provisions of the EPA, and some emission points were subject to the Maximum Achievable Control Technology standards set by the national emission standards for hazardous air pollutants. The proposed facility was ultimately reviewed as a major source under the Prevention of Significant Deterioration program, and was also a major source under the National Emission Standards for Hazardous Air Pollutants (NESHAP) program. As required by Prevention of Significant Deterioration regulations, Best Available Control Technology emission limits and performance standards were established for the proposed project during environmental review.⁵ The following studies and analyses were completed to evaluate air quality issues:

- Emission inventory listing possible sources of air emissions from the plant (stack and fugitive).
- Best Available Control Technology analyses, which propose control technologies for the project to achieve lowest cost, effective emission levels.
- Compliance strategies for standards requiring Maximum Achievable Control Technology for control of hazardous air pollutants such as metals and volatile organic compounds.

⁵ The following control technologies were proposed as Best Available Control Technology:

- Clean Fuels (Natural Gas) for SO₂, NO_x, PM, and PM₁₀
- Good Combustion Practices for CO, VOC, PM, and PM₁₀
- Enclosures with Fabric Filter for PM, PM₁₀
- Enclosures with PM Wet Scrubbers for PM, PM₁₀
- Low NO_x, ultra low NO_x, and oxy fuel burners for NO_x
- Wet Scrubbers for PM, PM₁₀
- Absorber/Wet Scrubber for SO₂, fluorides (F), and sulfuric acid mist (SAM)
- Pb, F, and SAM Control Performance Monitored via SO₂ and PM emissions limits
- Best Practices for Fugitive Dust Control via a Fugitive Dust Control Plan

- A Class I Area Impacts Analysis using the California Puff model to simulate the long-range transport of project emissions and determine the impact of project-related air emissions on Class I increments, visibility and other air quality related values for Voyageurs National Park, the Boundary Waters Canoe Area Wilderness, Isle Royale, and Rainbow Lake Wilderness Area.
- A Class II Area Impacts Analysis to evaluate air quality effects of the project outside of the designated ambient air quality boundary and demonstrate compliance with National and Minnesota Ambient Air Quality Standards or the Prevention of Significant Deterioration increments.
- A review of potential mercury emissions from the project and an evaluation of mercury emission reduction alternatives.
- Human health and ecological risk assessments of potential impacts from the project.

More than 120 written comments were received on the Draft EIS during the public comment period that ran from February 12 to March 28, 2007. Although the vast majority were in support of the project, the Department of Natural Resources received a substantial number of comments expressing concern over specific aspects or that adamantly opposed the project. Comments were also submitted that opposed the project in general or regarding impacts to recreational access, water availability, and aesthetic or ecological values. During the public comment period the US Army Corps of Engineers submitted a letter rating the Draft EIS “Environmental Concerns–Insufficient Information (EC-2),” due to concerns about wetlands classification and mitigation, water quality impacts, tribal resource uses, evaluation of connected actions, and ground water evaluation. Additionally, the Minnesota Center for Environmental Advocacy emerged as a highly visible critic of the proposed project on the grounds that the EIS underestimated negative environmental effects related to excessive water withdrawals.

Approximately 150 individuals attended an informational meeting held by the Department of Natural Resources on the Draft EIS on March 12, 2007. Ten individuals voiced their opinion on the project. None were in opposition although some expressed concerns about impacts to water availability, use of inferior pollution control technologies, and general aesthetic and environmental concerns. The transcript for the meeting also noted routine applause from members of the audience following statements made by individuals that strongly supported the project suggesting that many individuals in the audience not providing oral comments may have shared similar sentiments, although it is not clear whether comments opposing the project were received after oral comments were presented.

In response to public comments, the Department of Natural Resource made substantive revisions to the EIS including: physical impacts on water resources—wetlands, water appropriation, physical impacts on water resources—non-wetlands, wastewater/water quality, solid waste, stationary source air emissions, noise, threatened and endangered species—animals, and ambient air quality boundary. Notice of the Final EIS availability was published in the *Monitor* in mid-May (Vol. 31, No. 13), approximately 50 days after the public comment period closed. The Department of Natural Resource supplied a local newspaper with a press release announcing the availability of the Final EIS on February 12, 2007. The US Army Corps of Engineers published a notice of the Draft EIS in the *Federal Register* four days later (Vol. 72, No. 32). Both the state and federal public comment periods came to a close on July 3, 2007. On August 10, 2007, the Department of Natural Resource Commissioner signed the Adequacy Decision declaring that the Final EIS sufficiently addressed the issues identified in the final Scoping Decision Document; described the proposed action; analyzed significant environmental impacts; adequately presented methods by which adverse environmental impacts can be mitigated; adequately presented the economic, employment, and sociological effects; provided responses to substantive comments received; and was prepared in compliance with the procedures of the Minnesota Environmental Policy Act and Minnesota Rules, part 4410.0200 to 4410.6500. Notice of the EIS Adequacy Decision was then published in the *Monitor* (Vol. 31, No. 18). The US Army Corps of Engineers issued its Record of Decision and 404 Permit three days after the Adequacy Decision notice was published in the *Monitor*.

In addition to completing the environmental review process, the Minnesota Steel Industries Project also filed necessary permit applications for review and issuance by relevant agencies, the most prominent of which was the *Permit to Mine*, required by Minnesota Rules (6130.4200) for all metallic mineral mining operations. The Permit to Mine application included organizational data, environmental setting maps, environmental setting analysis, mining and reclamation maps, mining and reclamation plan, and an operating plan. Although it was not a required, the proposer also included a financial assurance summary that itemized expected activities and subsequent costs associated with each year of the mine's initial construction sequence.

In accordance with state and federal air quality rules, the Minnesota Steel Industries Project was also required to obtain an *Air Emissions Permit* to construct and operate the proposed mine and processing facility. The Pollution Control Agency has delegated authority from the EPA for the implementation of the Prevention of Significant Deterioration regulations under Minnesota Rules, part 7007.3000 Based on the potential-to-emit for all pollutants, the Minnesota Steel Industries project was subject to Prevention of Significant Deterioration review and the Part 70 operating permit program. As a result, Minnesota Steel

Industries was required to obtain an air emissions permit to construct and operate the plant. Due to the types of emission sources and the quantity of emissions, the following programs were triggered:

- Prevention of Significant Deterioration
- New Source Performance Standards
- National Emission Standards for Hazardous Air Pollutants
- Part 70 Operating Permit Program
- Minnesota Air Quality Rules

According to MPCA staff, discussions related to Class I impacts required detailed discussions on control technology feasibility, coordination with federal agencies on technical data review, and a joint meeting with the proposer and state and federal agencies to discuss solutions for potential adverse impacts on visibility. The joint meeting also involved discussions regarding how to develop appropriate permit language to implement agreed-to solutions. This entire process took several months with outside parties threatening lawsuits and appeals to the EPA's Environmental Appeals Board. In addition, Minnesota Steel Industries ultimately obtained the following permits to become operational:

- ***Water Appropriations Permit***—Water appropriation permit from the Department of Natural Resource because the project involved withdrawing more than 10,000 gallons of water per day or one million gallons per year.
- ***Dam Safety Permit***—Dam safety permit from the Department of Natural Resource for construction and maintenance of starter dams and tailings dams in the proposed tailings basin.
- ***Public Waters Work Permit***—Required for projects constructed below the ordinary high water mark that alter the course, current, or cross section of public waters or wetlands. Existing mining pits affected by proposed mining activities are not considered “public waters” and therefore, proposed intake and discharge structures in the pits were not subject to a public waters permit.
- ***A Wetland Conservation Act***—A Wetland Permit Application and Replacement Plan were prepared by Minnesota Steel Industries and submitted to the Department of Natural Resource and coordinated with the U.S. Army Corps of Engineers, to address unavoidable wetland impacts.
- ***Endangered Species Permit (Takings Permit)***—Required for unavoidable impacts to threatened and endangered species pursuant to Minnesota Statutes § 84.09895. Application submitted to the Department of Natural Resource for three affected threatened and endangered plant species.
- ***Section 401 Water Quality Certification***—The MPCA is responsible for Section 401 water quality certification required for Section 404 permits issued by the US Army Corp of Engineers. Minnesota Steel Industries was required to obtain this certification because some of its proposed actions triggered Section 401 of the Clean Water Act (33 U.S.C. § 1341).

- **National Pollutant Discharge Elimination System/State Disposal System Discharge Permits**—Permitting authority is delegated to the MPCA by the EPA to regulate waste and stormwater discharges to lakes, streams, wetlands, and other surface waters in Minnesota. State Disposal System (Minnesota Statute § 115) permits regulate the construction and operation of wastewater disposal systems, including land treatment systems. State Disposal System permits for operation of the tailings basin was obtained because of seepage to groundwater. A National discharge permit was obtained for the discharge of maintenance dewatering water from the mine pits and storm water, collected from active mining and processing areas, into natural ore pits within the property boundary. Finally, a construction storm water permit was obtained to regulate storm water management during initial pit dewatering, pre-stripping, and construction.
- **Hazardous Waste Generator License**—Generation of hazardous waste requires an entity to obtain this license for individual generation site. The procedures for application and issuance of are described in the Minnesota Rules (Chapter 7045, “Hazardous Waste”). Minnesota Steel Industries was required to submit a permit application for a new treatment, storage, or disposal facility or activity before commencement of mine operation and facility construction.

3.2.3 Environmental Review Policies and Procedures

Minnesota is considered a Tier-one state per requirements for state-level environmental review of proposed projects were codified in state law upon passage of the Minnesota Environmental Policy Act (Minnesota Statutes, Chapter 116D). With respect to environmental review responsibilities, it is the EQB Environmental Review Program that is authorized to write state rules for conducting environmental reviews. Broadly speaking, the function of the Environmental Review Program is to avoid and minimize damage to Minnesota’s environmental resources caused by public and private actions. The program accomplishes this by requiring certain proposed projects that constitute a *government action* to undergo special review procedures prior to obtaining approvals and permits otherwise needed (EQB, 1996). Minnesota defines a governmental action as an activity or project that is wholly or partially conducted, permitted, assisted, financed, regulated, or approved by governmental units, including the federal government. However, while the EQB promulgates rules, the reviews are typically conducted by governing bodies such as a county board, city council or a state agency to which the project has been assigned (EQB, 1996). The agency or entity with primary responsibility for conducting the review of a proposed project is the responsible government unit. Under Minnesota state law, environmental review can apply to any action or project that meets the following conditions (EQB, 1996; Minnesota Administrative Rules, Chapter 4410):

- Action or project must involve physical manipulation of the environment, directly or indirectly.

- Action or project must involve at least one governmental approval or one form of state financial assistance, or be conducted by a state unit.
- Action or project approval and construction must take place in the future. That is, projects constructed or those with all required governmental approvals are not subject to further review, unless an expansion is proposed.

Two different review documents are used, an EIS and an EAW. The EIS involves a thorough assessment of the project's environmental impacts and a comparative analysis of its economic and sociological effects. The Act and its associated rules require an EIS to consider reasonable alternatives. An EIS is intended to be analytical rather than an encyclopedic document, and should also assume an interdisciplinary approach that integrates data and information from both natural and social science fields. The EIS is reserved for projects with the potential for significant environmental effects, and relatively few EISs are prepared in a given year. It is recommended that any responsible government unit considering collaborating with a federal agency to complete environmental review under federal law consult with EQB staff. This consultation is recommended so that duplication and delays can be minimized. Although it is common for federal and state review documents to be prepared jointly, the EQB does not advise responsible government units to do so in situations where it is more expeditious to complete a state review and use the completed documents in a subsequent review under the federal process (EQB, 1996).

An EIS is required to consider environmental, economic, employment, and sociological impacts associated with a proposed project. Additionally, each major alternative considered in the analysis must include a succinct discussion of potentially significant direct or indirect, adverse, or beneficial effects generated by implementing the specific alternative. This evaluation must include consideration of cumulative impacts, which is defined as "...the impact on the environment that results from incremental effects of the project in addition to other past, present, and reasonably foreseeable future projects regardless of what person undertakes the other projects" (Minnesota Administrative Rules, 4410.0200, Subpart 11). Minnesota administrative code (4410.2000) also specifies the types of projects that will trigger a *mandatory* EIS, which includes metallic and nonmetallic mineral mining.

3.2.4 Factors Affecting Review/Permitting Timelines

Total review time from the date the resubmitted Environmental Assessment Worksheet was received to the date the record of decision was issued was 26 months, which was four months longer than the 22 months that Michigan and West Virginia took in reviewing their respective proposed mines discussed in this report. It should be noted that total review time includes a period of roughly two months in which the

project proposer suspended review by not submitting a signed EIS income agreement to the Department of Natural Resource. The Eagle and Minnesota Steel Projects were reviewed at approximately the same time under comparable market conditions and involved the operation of significant metallic mining operations in regions of comparable geography and demographics.

Class I air impacts and water supply considerations were both identified by MPCA staff as areas of concern that ultimately extended project review time. According to staff, Class I impacts required detailed discussions on control technology feasibility, coordination with federal agencies on technical data review, and a joint meeting among the applicant and state and federal agencies to discuss solutions for potential adverse impacts on visibility. In the end, it took several additional months for the applicant and the relevant agencies to agree on control technology and air impact mitigation strategies. MPCA and Department of Natural Resource staff also spent several months working out water supply details during the EIS process. Initial water appropriations plans were not acceptable due to potential impacts on nearby streams and lakes. The MPCA and Department of Natural Resources subsequently worked with the applicant to identify alternative sources that satisfied all regulatory requirements.

Another factor that increased project review time was the need for the Department of Natural Resource and US Army Corps of Engineers to prepare a joint state and federal EIS to satisfy requirements of NEPA (42 U.S.C. §§ 4321-4347) and the Minnesota Environmental Protection Act (Minnesota Statute §116D). However, it does not appear that this was a significant time factor. As with the Thunderhawk Project, it seems the primary factor that lengthened project review was the additional rigor of the environmental review process. That is, somewhat shorter review times for the Michigan and West Virginia projects was made possible in part because neither required an EIS or other environmental review document as comprehensive and in-depth as that required of Minnesota projects expected to have significant environmental impacts. There was limited opportunity to accelerate the review given rigorous scoping, public involvement, and EIS preparation requirements. Furthermore, although pre-application consultation took place between Minnesota Steel Industries and the Department of Natural Resource, and while the vast majority of comments received during the Draft EIS public comment period supported the project, the review process was lengthened due to opposition from vocal stakeholder groups. The review and permitting process were ultimately allowed to proceed. However, a separate nonprofit organization has subsequently brought suit against the Department of Natural Resource over the failure of the EIS to adequately address effects on global climate change.

It has been suggested that environmental review and permitting could have been shortened if a full-time liaison was appointed to facilitate pre- and early-application communication between the Department of Natural Resource and applicants. As with the Maine and Georgia forestry cases, pre-application consultation between the applicant and the review agency appears to shorten review time by reducing the likelihood that the applicant will invest considerable time and resources into designing a project that could not be approved as conceived. However, statutory requirements of an EIS and mandatory public involvement dictate the time required to complete environmental review. It is not obvious that improved communication between the responsible government unit and the applicant in the early stages would appreciably shorten the time necessary to issue a final determination.

Table 3.7: Summary of Minnesota Steel Project mining case study, Minnesota.

Project Name / Company	Minnesota Steel Project / Minnesota Steel Industries
Location	Located near Nashwauk, Minnesota, on the Mesabi Iron Range, which is a major geologic feature oriented roughly northeast-southwest across more than 120 miles of Minnesota from near Babbitt to Grand Rapids.
Type of Project	Reactivation of the former Butler Taconite mine and tailings basin. The project would combine open pit taconite mineral extraction, ore processing, direct reduced iron production, and steel-making for domestic and world markets.
Scope	<p>The proposed mining operation and processing plant would employ about 700 people. The steel would be processed from taconite in a cleaner and more efficient manner than traditional steel plants by combining modern technologies. Key project features and nominal capacities are as follows:</p> <ul style="list-style-type: none"> • Open pit taconite mine capable of 13,100,000 metric tons of ore per year. • Crusher/concentrator plant with associated tailings basin, producing 3,800,000 metric tons concentrate per year. • Pelletizer capable of producing 3,800,000 metric tons per year of oxide pellets used as a feedstock for direct iron production, or sold. • Direct reduction iron facility producing 2,800,000 metric tons per year of iron pellets for direct feed for steel production. • Two electric arc furnaces, ladle metallurgy furnace, slag processing and a caster to produce 2,500,000 metric tons per year of steel slabs.
Year Project Proposed	June 2005 (resubmitted EAW received by the Department of Natural Resource)
Year ER Completed / Project Permitted	August 2007 (Record of Decision / EIS Adequacy Decision signed by Department of Natural Resource Commissioner); August 2007 (Permit to Mine, NPDES/SDS Permits, Water Appropriations Permit, T/E Species Takings Permit); October 2007 (Air Quality Permit).
ER Completed	EAW (initial, deemed inadequate, February 21, 2005), EAW (revised, June 21, 2005), Scoping EAW (July 11, 2005), Draft Scoping Decision Document (July 11, 2005), Final Scoping Decision Document (October 13, 2005), Draft EIS (February 12, 2007), Final EIS (June 18, 2007), Record of Decision / EIS Adequacy Decision (August 10, 2007).

<p>Permits Completed</p>	<p><i>Permit to Mine</i> (August 22, 2007), <i>Air Emissions Facility Permit</i> (issued by MPCA October 11, 2007), <i>Section 401 Water Quality Certification</i> (2007 date unknown), <i>Water Appropriations Permit</i> (issued by Department of Natural Resource August 22, 2007), <i>Takings Permit</i> (for Endangered or Threatened Species) (August 23, 2007), <i>Public Waters Permit</i> (issued date unknown), <i>SDS Permit</i> (Tailings Basin Operation) (issue date unknown), <i>NPDES/SDS Discharge Permits</i> (August 21, 2007), <i>NPDES stormwater permits</i> (August 21, 2007), <i>Hazardous Waste Generator License</i> (issue date unknown).</p>
<p>Public Notification & Involvement</p>	<ul style="list-style-type: none"> • After completing the scoping EAW and issuing the draft Scoping Decision Document, a notice of availability was published in the <i>Monitor</i> on July 18, 2005, initiating 30-day comment period. • The Department of Natural Resource supplied a press release to at least one newspaper in the vicinity of the proposed project. • Public scoping meeting was held on August 10, 2005, in Nashwauk, MN. • Notice of Intent to prepare Draft EIS published in the Federal Register (Vol. 70, No. 156) by the US Army Corps of Engineers on August 15, 2005. • Public comment period on scoping EAW and draft Scoping Decision Document ended on August 17, 2005. • The Department of Natural Resource issues a summary of EIS scoping procedures and responses to public comments on October 17, 2005. • EIS preparation notice published in the <i>Monitor</i> on February 27, 2006. 280-day EIS timeline officially begins. • The Department of Natural Resource provided a press release to at least one newspaper in the vicinity of the proposed project on March 7, 2006. • Draft EIS Notice of Availability published in the <i>Monitor</i> on February 12, 2007; 30-day public comment period begins. • On February 13, 2007, the Department of Natural Resource provided a press release in the vicinity of the proposed project announcing availability of the draft EIS and that a public meeting on the would be held on March 14, 2007. • A public informational meeting was held on March 14, 2007. • Comment period on draft EIS concluded on April 2, 2007. • Final EIS Notice of Availability published in the <i>Monitor</i> on June 18, 2007. 30-day public comment period begins as well. • The Department of Natural Resource provided a press release to at least one newspaper in the vicinity of the proposed project announcing availability of the final EIS on June 19, 2006. • US Army Corps of Engineers notice of the final EIS availability is published in the Federal Register (Vol. 72, No. 120) on June 22, 2007. • Comment period on the final EIS concluded on July 23, 2007. <p>About 120 written comments were received on the Draft EIS with the majority in support of the project. The Department of Natural Resources also received a substantial number of comments voicing concern over specific aspects of the project and some opposed to the project. During the public comment period the US Army Corps of Engineers submitted a letter rating the Draft EIS “Environmental Concerns–Insufficient Information (EC-2),” because of concerns about wetlands classification and mitigation, water quality impacts, tribal resource uses, evaluation of connected actions, and ground water evaluation. Additionally, the Minnesota Center for Environmental Advocacy opposed the project on the grounds that the negative environmental effects were significantly underestimated.</p> <p>About 150 people attended the public informational meeting March 12, 2007. Ten individuals spoke and all voiced their support for the project, though some expressed concerns for impacts to water availability, use of certain inferior pollution control technologies, and general aesthetic and environmental concerns.</p>

<p>Issues and Impacts Analyzed</p>	<p>The level of analysis was “commensurate with the anticipated impacts,” which were not expected to be significant. They included the following issues:</p> <ul style="list-style-type: none"> • Land use • Cover types • Threatened and endangered species • Water-related land use districts • Erosion and sedimentation • Geologic hazards, soil conditions • Traffic • Vehicle related air emissions • Archaeology • Recreational trails • Visual impacts • Infrastructure • Socioeconomics • Mine land reclamation <p>The Department of Natural Resources identified several topics that may result in potentially significant impacts. A substantial amount of information was gathered and analyzed beyond that which had been assembled during preparation of the Scoping EAW. These topics include:</p> <ul style="list-style-type: none"> • Physical impacts on water resources • Water appropriations • Surface water runoff • Wastewater/water quality • Solid waste • Stationary source air emissions • Fish and wildlife resources • Noise <p>The EIS also addressed the potential cumulative impacts associated with combined environmental effects of the proposed project and of past, present and reasonably foreseeable future actions relative to air quality, threatened and endangered plant species, wetlands, wildlife habitat and impediments/barriers to animal movement and dispersal.</p>
<p>Final Outcome</p>	<p>On August 10, 2007, after completing the EIS process, the Department of Natural Resources issued a determination finding the EIS for the Minnesota Steel Project to be adequate and approved the operation of the proposed mine once the necessary permits were issued. The permit to mine, air quality permit, water discharge permits, and other required permits have all been issued. It should be noted that threat of an EPA Environmental Appeals Board appeal led to major modifications to the air quality permit. Because the review and permitting process for the mine were allowed to proceed, a nonprofit organization has subsequently brought suit against the Department of Natural Resources over the failure to adequately address the effects that of the project on global climate change.</p>
<p>State ER Policy Framework</p>	<p>The Minnesota Environmental Policy Act of 1973 requires that environmental review documents be prepared for both state and local government actions, including permit issuance of privately funded projects. Depending on anticipated adverse impacts, either an EAW or an EIS may be required. There are 36 categories of projects for which a worksheet is mandated and 24 in which an EIS is mandated. Metallic mineral mining and processing facilities and <i>new</i> pulp and paper mills require an EIS. Even in situations where an EIS is mandatory, EAW are typically completed. Criteria for determining an EIS include:</p> <ul style="list-style-type: none"> • Type, extent, and reversibility of environmental effects • Potential cumulative effects of related existing or anticipated future projects • The extent to which controls and mitigation measures can be employed to alleviate anticipated adverse environmental effects <p>The EQB requires an EIS to include at least one alternative of each of the following types, or provide an explanation of why no alternative is included in the EIS: alternative sites, alternative technologies, modified designs or layouts, modified scale or magnitude, and alternatives incorporating reasonable mitigation measures identified through comments received during the EIS scoping and Draft EIS comment periods. The state’s Environmental Review process provides numerous opportunities for public involvement including:</p> <ul style="list-style-type: none"> • Initial issue scoping process. • Public notices following completion of each stage of the review process. • Comment periods of variable length depending on stage of review. • A responsible government unit response to public comments after each public comment

	<p>period comes to a close.</p> <ul style="list-style-type: none"> • Public information meetings during all stages of the review process except following the release of the FEIS. • Public notice of final determination.
State Permitting Framework	<p>Many state permits are relevant to large-scale industrial development projects in Minnesota. Although many will be required of most projects, a number only apply to certain types. Relevant permits include: mining permits, air emissions permits, water appropriation, water discharge and stormwater permits, wetland-related permits, hazardous waste disposal, state threatened and endangered species takings permits. The permitting and environmental review processes take place concurrently, but not completed by the same personnel. While the review is conducted by a designated agency, state permitting straddles multiple agencies such as the Department of Natural Resources and MPCA, as well as the Department of Health.</p>

3.3. Montana

3.3.1 Economic Importance

In 2006, Montana’s nonfuel raw mineral production was valued at \$1.04 billion—approximately 1.61% of the United States total. This represents a roughly 67% increase in value when compared to the \$624 million that the state’s production was valued at by the USGS in 2004. During this same period, the state rose in rank to 21 from its 2004 ranking of 26 among the 50 states in nonfuel raw mineral production. Additionally, Montana’s 2004 nonfuel raw mineral production had increased by more than 26% compared with that of 2003, which followed an increase of nearly 5% from 2002 to 2003. The state’s principal minerals in 2006 were: copper, molybdenum (concentrates), platinum metal, palladium metal, and sand and gravel (construction) (McCulloch, 2007; USGS, 2004C).

Metallic minerals made up nearly 71% of Montana’s total nonfuel mineral production value in 2004. Platinum and palladium were, by value, the leading nonfuel minerals followed by copper, molybdenum concentrates, construction sand and gravel, and Portland cement, the combined total of which was nearly 80% of total nonfuel mineral value. In 2004, a significant majority of Montana’s nonfuel minerals increased in value. Copper and molybdenum concentrates were up by more than \$80 million each as a result of substantial production increases and significantly higher average copper prices and significantly higher average molybdenum concentrate prices. In 2003, the production and value of gold significantly increased with the commodity’s value up more than \$60 million from 2002. In 2004, Montana continued to be the only state to have primary palladium and platinum mine production (USGS, 2004C).

By 2006, Montana was listed in the bottom quarter of mining regions in terms of investment climates, according to an annual survey of mining executives by Canada’s Fraser Institute (SME, 2006). Mineral

potential of a state was assessed based on mineral potential, which under present policy discourages exploration. Less than 30% of respondents categorized the state's existing policies as either encouraging or neutral for investment. For comparison purposes, Montana was ranked above California, Colorado, Minnesota, Wisconsin, and Washington, and below Alaska, Arizona, Idaho, Nevada, Utah, and Wyoming. Nevada scored the highest in terms of mineral and policy potential (McColloch, 2006).

3.3.2 Project Overview

In May 1987, ASARCO Incorporated submitted an operating permit application to the Montana Department of Environmental Quality to construct, operate, and reclaim all facilities necessary to mine, remove, and transport economically mineable minerals from the Rock Creek deposit. The applicant proposed to construct a 10,000 ton-per-day (3.54 million tons per year) mine and mill complex to extract copper and silver ore from a mineral deposit underlying a portion of the Cabinet Mountains Wilderness, about 13 miles northeast of Noxon in Sanders County in northwestern Montana. The project is similar in scope and operation to Sterling's inactive Troy Mine in Lincoln County, Montana. After all deficiencies in the application were resolved in September 1989, the EIS process officially commenced. During that time, a Hard-Rock Mining Impact Plan was also developed. Although an EIS was prepared for the project and a record of decision authorizing the project was issued in 2001, the proposed project has yet to receive all the necessary permits to become operational.

In 1999, ASARCO sold the land and mineral rights associated with the Rock Creek Project to the Sterling Mining Company while the project was going through the environmental review process. Sterling obtained a 75% interest in each property upon sale, and the property was still subject to a lease agreement with the Kennecott Corporation. ASARCO is one of the world's leading integrated producers of copper, as well as a producer of specialty chemicals, aggregates, and other metals. Sterling has roots in northern Idaho's Silver Valley, and is one of the country's oldest mining companies founded more than a century ago. In addition to the interest it holds in the Rock Creek Project, the Sterling Mining Company operates the Sunshine Mine in Coeur d'Alene Mining District of Idaho.

The Rock Creek Project consisted of developing a proposed underground copper/silver mine and mill/concentrator complex in northwestern Montana with a mine life of 31 to 37 years. The project would include constructing a mill for ore processing and associated mine waste disposal facilities. Ore would be initially processed in an underground crusher. The above-ground ore processing complex would further grind the ore, using a semi-autogenous mill (wet process) to liberate metal-bearing sulfides. Sulfides would then be removed by flotation and the concentrate transported by slurry pipeline to the Miller Gulch

rail siding and ultimately shipped to an off-site smelter. A rail loadout for transportation of concentrate, and water treatment facilities would also be built. The Rock Creek ore deposit is located beneath and adjacent to the Cabinet Mountains Wilderness in the Kaniksu National Forest, which is administered by the Kootenai National Forest. The mill and other facilities would be located within the Kaniksu National Forest in Sanders County. The proposed action would develop the mineral interest lying within the Rock Creek ore deposit but not within an EPA nonattainment area. The closest nonattainment areas for particulate matter are situated in Libby, MT, to the north and Thompson Falls, MT, to the southeast (W. McCullough, personal communication, October 2007).

The project was proposed to be conducted in two stages. The first phase involves the construction and development of the evaluation adit in which an opening driven horizontally into the side of a mountain or hill to provide mineral deposit access. The second phase involves the development, construction, and operation of the mine and mill facilities. The evaluation adit would sample the ore body and ventilate exhaust during mining. The mineralized zone under the Cabinet Mountain Wilderness would be accessed through twin adits driven from outside the wilderness area. A fourth adit may be constructed for ventilation intake with a portal. The underground mining operation would use a room-and-pillar mining method where pillars of ore are left in place to support the rock above the room. The milling process would use a conventional froth flotation process, producing a copper/silver-based concentrate shipped by rail to a smelter. The tailings would be deposited in an impoundment behind an embankment.

Existing federal legislation allowed ASARCO to retain the rights to the Rock Creek deposit within the Cabinet Mountain Wilderness area because the company held property rights as an in-holder in the Kaniksu National Forest before it became a federally designated wilderness area.⁶ Sterling purchased all ASARCO mining claims and properties associated with the Rock Creek project and Troy mine on October 14, 1999. When Sterling Mining Company submitted its Rock Creek Project proposal, it asserted its rights to mine the deposit and use federal lands for milling and storage purposes through both patented and unpatented mining claims as well as Sterling Mining Company fee lands.

⁶ Copper/silver mineralization in the Rock Creek drainage within the Cabinet Mountains was discovered in 1963 by Bear Creek Mining Company during regional reconnaissance. In 1964, the Cabinet Mountains were made part of the national wilderness system. The Wilderness Act allowed mineral exploration through December 31, 1983. From 1966 to 1973, Bear Creek Mining Company drilled 10 holes to further verify the discovery. In 1973, ASARCO acquired the rights to the property as part of the lease agreement for the Troy Mine property. ASARCO received a patent only to the minerals within the wilderness with the federal government retaining the surface rights. For those claims outside the wilderness, ASARCO received fee title (surface and mineral rights). These patented mining claims contain the ore reserves Sterling proposed to mine in the Rock Creek project.

Prior to commencement of any formal environmental review or permitting process on the project, USDA-Forest Service staff recalled that as early as 1985 plans of operations were proposed by the company. Exploration drilling also took place on the site the late 1970s through 1986 (J. McKay, personal communication, October 2007). In May 1987, ASARCO submitted a Plan of Operations Application for a Hard Rock Operating Permit to the Kaniksu National Forest and the former Montana Department of State Lands. The permit application contained environmental baseline information and operation and reclamation plans. Descriptions of proposed mining and milling methods, engineering designs, surface facilities, waste disposal practices, erosion and pollution control systems, reclamation methods, and environmental monitoring procedures were included. The application was initially deemed complete by the Kaniksu National Forest and the Department of State Lands in November 1989, but further project review was delayed as a result of agency concerns and stakeholder opposition pertaining to threatened and endangered species such as grizzly bear and bull trout, the quality and character of the Cabinet Mountain Wilderness area, and water quality. The most significant issues involve impacts on water quantity and quality in the Cabinet Mountains Wilderness area, as well as concerns over impacts with the discharge of treated water into the Clark Fork River (W. McCullough, personal communication, October 2007). In July 1992, ASARCO submitted an application to the Kaniksu National Forest and Department of State Lands for an evaluation audit. The exploration license application was determined to be complete on July 26, 1993. The Department of Environmental Quality approved the mining permit after the EIS process was concluded and the project was ultimately approved in December 2001 pending issuance of needed permits. To date, the project has yet to be fully permitted as the Sterling Mining Company has not yet paid the reclamation bond for the exploration license, which is the first phase of the project.

The Rock Creek EIS was written to meet the requirements of both NEPA and the Montana Environmental Policy Act and the administrative rules and regulations implementing these laws adopted by participating state or federal agencies. Kaniksu National Forest was required to comply with NEPA regulations (40 CFR parts 1500 to 1508) to minimize adverse environmental impacts on National Forest surface resources through informed decision making. Although neither the Department of Environmental Quality nor the USDA-Forest Service were directly involved in planning or financing the proposed mining operation, the fact that the action would take place on federal land and require state approval necessitated an EIS. Two governmental agencies served as lead agencies for this EIS—the Kaniksu National Forest and the Montana Department of Environmental Quality. The EIS was prepared in response to applications to operate the Rock Creek Mine. Additionally, the US Army Corps of Engineers used the EIS to make a determination on permit application under Section 404 of the Federal Clean Water Act.

The scope of the Rock Creek EIS includes actions, alternatives, and analyses that would be considered in separate EIS documents required by each agency in order to fulfill its regulatory responsibilities. Preparation of a single EIS for the Rock Creek Project provided a coordinated and comprehensive analysis of potential environmental impacts, and the Department of Environmental Quality and other relevant agencies will make decisions regarding necessary permits or approvals for the Sterling Mining Company to operate the Rock Creek Project based on the analysis presented in the final EIS. Permitting decisions for the Rock Creek Project have been and will continue to be based on the predicted environmental effects and consequences relative to legal standards as documented in this EIS, along with other information presented during agency decision-making processes. The final EIS ultimately merged the contents of the draft and supplemental EISs issued in October 1995 and January 1998, respectively.

The Department of Environmental Quality and other agencies involved in the environmental review process used the issues identified from public, agency, and Tribal comments to develop and evaluate the effects of the alternatives identified in the EIS. Eight issues, defined as indicators of potentially significant effects, emerged from the scoping process and agency deliberations. They included:

- Effects on quantity and quality of Montana and Idaho surface and ground water resources.
- Effects on fish and wildlife and their habitats and current and proposed threatened and endangered species (e.g., grizzly bear, bull trout).
- Stability of the tailings impoundment/paste facility.
- Impacts to socioeconomics of surrounding communities.
- Effects on old growth forest ecosystems.
- Effects on wetlands and non-wetland waters.
- Effects on public and recreational access and traffic safety.
- Effects on aesthetic quality, including noise, scenic, and wilderness experiences.

There were four stages of public notification and participation undertaken during review of the project. The first was the initial scoping stage conducted to identify significant issues and develop key mitigation and monitoring measures. A second scoping period was held for the evaluation audit. Additional scoping was conducted for road closure issues. The second stage consisted of receiving and responding to public comments received during the official comment period on the draft and supplemental EISs. The third stage consisted of reviewing comments and input received from the public and other agencies and tribal representatives. The fourth stage was a period for review after release of the final EIS.

Public participation was a key element in preparing this EIS. The first opportunity for public involvement occurred in the beginning of the EIS process when scoping was conducted. Scoping was again conducted when preparation of the EIS was resumed after a four-year lapse in project review resulting from concern for threatened and endangered species, the Cabinet Mountain Wilderness Area, and water quality. Meetings and hearings were held for public participation on the draft EIS, supplemental EIS, and the draft permits, with a comment period following the release of each. Notification of comment periods, open houses, hearings, and meetings were published or broadcast in numerous papers and television/radio stations between Missoula, Spokane, and Kalispell. Notices of Availability and copies of the draft and supplement were also mailed to interested individuals and organizations. Because the EIS was undertaken in collaboration with the USDA-Forest Service, Notices of Availability were published in the Federal Register. The Department of Environmental Quality ultimately received more than 4,000 comments during the draft EIS period. Approximately 6,300 comments were received throughout the entire environmental review process from May 1993 to completion of the final EIS in September 2001. Although responses to each comment were not analyzed for this report, a review of a sample indicates that most were in opposition to the Rock Creek Project. In addition to holding public meetings, the agencies held meetings that convened all members of the interdisciplinary project review team, which were open to the public and included American Indian representatives and agencies with oversight responsibilities (Table 3.8). Individual meetings for information exchange were held with each tribe having traditional land use or treaty rights that could be impacted as a result of implementing the project. It should also be noted that opportunities for public participation do not end with the permitting of a mine. The public retains the right to review permit files and monitoring reports. If a person believes they are adversely affected by the mine or that there is an unreported violation, that person has the right to file a complaint and expect it to be investigated and addressed (K. Johnson, personal communication).

A Hard-Rock Mining Impact Plan was developed for the Rock Creek project during the same period that the EIS was being prepared. The plan was written in accordance with Montana Hard-Rock Mining Impact Act and was intended to identify and commit to a plan of action to compensate affected local governmental units for increased capital and net operating costs that result from construction and operation of the Rock Creek Project. The plan stated that because the development would employ more than 75 workers for more than six months, the project would have to be classified as a *large-scale mineral development*, making the project subject to the Hard-Rock Mining Act requirements. The plan also noted the Rock Creek Project, which has ore reserves of 144 million tons and an expected recovery of 75%, has a potential life of 30 years. Finally, the plan stated development would take five years and that operational employment would start in year six and total 340 workers.

Table 3.8: Public involvement for the Rock Creek Project.

Date	Location	Purpose
May 26, 1987	Noxon, MT	Public information meeting held on ASARCO's application
January 12, 1988		Notice of Intent of the Proposed Action and preparation of an EIS published in the Federal Register
January 27, 1988	Noxon, MT	Public scoping meeting on ASARCO's application
March 22, 1990	Noxon, MT	Public meeting on petition to amend ambient water quality
May 27, 1993		Revised Notice of Intent of the Proposed Action and inclusion of the evaluation addit in the EIS published in the Federal Register
June 16, 1993	Noxon, MT	Public scoping meeting
June 28, 1993	Sandpoint, ID	Public scoping meeting
October 5, 1995		Public comment period on the Draft EIS begins and goes through December 5, 1995
October 6, 1995		Notice of Availability of Draft EIS published in Federal Register
November 14, 1995	Noxon, MT	Open house and public hearing on draft EIS
November 15, 1995	Sandpoint, ID	Open house and public hearing on draft EIS
February 20, 1996		Public comment period on draft MPDES permit and water-quality portion of draft EIS begins, goes through April 22, 1996
April 8, 1996	Noxon, MT	Public meeting on draft MPDES permit
April 9, 1996	Noxon, MT	Public hearing on draft MPDES permit
April 10, 1996	Sandpoint, ID	Public meeting on draft MPDES permit
April 11, 1996	Sandpoint, ID	Public hearing on draft MPDES permit
April 22, 1997	Sandpoint, ID	Public meeting to discuss new alternatives in supplemental EIS
April 23, 1997	Noxon, MT	Public meeting to discuss new alternatives in supplemental EIS
August 15, 1997		Notice of Intent to Prepare Supplement to the Draft EIS published in Federal Register
January 9, 1998		Notice of Availability of Draft Supplemental EIS published in Federal Register
January 9, 1998		Public comment period begins on supplemental draft EIS and revised MPDES permit and goes through March 11, 1998
February 10, 1998	Missoula, MT	Open house and public hearing on supplemental draft EIS and revised MPDES permit
February 11, 1998	Sandpoint, ID	Open house and public hearing on supplemental draft EIS and revised MPDES permit
February 12, 1998	Noxon, MT	Open house and public hearing on supplemental draft EIS and revised MPDES permit
March 13, 1998		Notice of Availability to Extend the Comment Period to April 10, 1998, published in the Federal Register
September 11, 1998		Public input solicited on changes in proposed road closures, public comment period provided through September 28, 1998

Although the Record of Decision issued by the Department of Environmental Quality in 2001 found the EIS was adequate for the purpose of satisfying the Montana Environmental Policy Act requirements, the Rock Creek Project has not been fully permitted as Sterling Mining Company has not submitted the reclamation performance bond for the exploration license, which is the first phase of this project. According to Department of Environmental Quality staff, the applicant's delay in submitting the reclamation performance bond is due to litigation and reworking of the Biological Opinion with respect to the endangered species impacts (W. McCullough, personal communication, October 2007).

The Hard Rock Operating Permit is the central permit that the Rock Creek Project is required to obtain under the Metal Mine Reclamation Act. Approved operating permits must be obtained for all mining activities on non-Indian lands that disturb more than five acres, or mine more than 36,500 tons of ore annually. If the permit is approved, the Sterling Mining Company must then modify its operating plan to incorporate the approved permit requirements and stipulations. The Rock Creek Project was also required to obtain an air quality permit because the Department of Environmental Quality estimated the project would produce hazardous air pollutant emissions exceeding 25 tons per year. The Department of Environmental Quality issued an air quality permit to the Rocky Creek Project in February 2002 and announced that the agency's decision could be appealed to the Montana's Board of Environmental Review. The permit specified air emissions limitations and monitoring requirements and directed the applicant to apply Best Available Control Technology to each emissions source. The applicant was also required to demonstrate the project would not violate Montana or federal Ambient Air Quality Standards.

In addition to operating and air permits, the Rock Creek Project will also have to obtain multiple water quality permits to become operational. The Montana Water Quality Act provides a framework for the classification of surface and ground water uses. It also establishes water quality standards as well as permit programs to control the discharge of pollutants into state waters. The Department of Environmental Quality administers the Montana Pollution Discharge Elimination System including storm water permits. Mining operations must comply with Montana surface and ground water standards. The tailings facility, sewage treatment plant, and other facilities must be constructed and operated to prevent water discharge, seepage, drainage, infiltration, or flow that may degrade surface or ground waters outside of any approved mixing zones. Section 401 of the federal Clean Water Act (33 U.S.C. 1251) requires applicants for federal permits or licenses for activities that may result in a discharge to state waters to obtain certification from the state, which has been approved. The Department of Environmental Quality provides Section 401 certification pursuant to state rules (ARM 17.30.101) and may deny certification for a project if it violates Montana water quality standards.

3.3.3 Environmental Review Policies and Procedures

Montana is a Tier-one state, and state environmental review is conducted in accordance with the Montana Environmental Policy Act and associated administrative rules. The Act mandates that an EIS be prepared for any action taken by the State of Montana that may significantly affect the quality of the human environment. The Act's purpose is to declare the following:

“...a state policy that will encourage productive and enjoyable harmony between humans and their environment... to promote efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humans, to enrich the understanding of the ecological systems and natural resources important to the state...”

The Montana Environmental Policy Act is modeled after NEPA, and requires an environmental assessment for state actions and state-permitted actions only, and the Act does not apply to local government actions or privately funded projects that would not otherwise require state approval (LEPO, 2000). It requires state agencies to conduct thorough, honest, unbiased, and scientifically based full disclosure of all relevant facts concerning impacts on the human environment that may result from state actions, which are defined broadly. A project is subject to environmental review if a project activity is supported through contract, grant, subsidy, loan, or other form of funding assistance from the agency, either singly or in combination with one or more other state agencies; or a project or activity involving the issuance of a lease, permit, license, certificate, or other entitlement for use or permission to act by the agency, either singly or in combination with other state agencies (Mudinger and Everts 1998).

Environmental review is accomplished through a systematic and interdisciplinary analysis that ensures the integrated use of the natural and social sciences and the environmental design arts in planning and decision-making (Mudinger and Everts, 1998). This analysis usually takes the form of an EA or an EIS depending on the magnitude of a project's anticipated impacts. Like NEPA, three different levels of environmental review are required—categorical exclusions, environmental assessments, and EISs (LEPO, 2000). In situations where it is unclear if the proposed action will cause significant impacts, an agency may prepare an EA in order to determine the potential significance (Mudinger and Everts, 1998; MEPA Model Rules, 1988). If the EA determines that the proposed action will have significant impacts, then either an EIS must be prepared or the effects of the proposed action must be mitigated below the level of significance and documented in a *mitigated EA* (Mudinger and Everts, 1998; MEPA Model Rules, 1988).

Thresholds for the type of EA required depend on the significance criteria in the Model Rules, and the preparation of each document is based on the significance of the potential impacts of the proposal (MEPA Model Rules, 1988). The Model Rules allow for agencies to define, through rule or through the

preparation of a programmatic environmental review, those actions that could be categorically excluded (LEPO, 2000; MEPA Model Rules, 1988). Otherwise, the threshold for conducting a review is any major state action that significantly affects the quality of the human environment. Model Rule IV sets forth the criteria for subjectively determining significant impacts (LEPO, 2000; MEPA Model Rules, 1988). Similar to NEPA, which describes impacts as being direct, indirect, or cumulative, the Act uses the terms primary, secondary, and cumulative (MEPA Model Rules, 1988; ARM–Montana Environmental Policy Act). The determination of whether an impact will be considered significant is left to the Department of Environmental Quality, and the agency makes its determination through the review process, which usually involves obtaining information from other agencies and institutions (LEPO, 2000). Montana has not developed a specific list of *measurable* significance criteria by which to gauge the need to prepare an EIS (LEPO, 2000; Sigford, 1993). The Act require consideration of the following criteria in determining significance (Mudinger and Everts, 1998, MEPA Model Rules, 1988; ARM–Montana Environmental Policy Act):

- 1) Severity, duration, geographic extent, and frequency of occurrence of the impact.
- 2) Probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur.
- 3) Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts.
- 4) Quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources or values.
- 5) Importance of each environmental resource or value that would be affected.
- 6) Precedent that would be set as a result of an impact of the proposed action.
- 7) Potential conflict with local, state, or federal laws, requirements, or formal plans.

In considering impacts affecting the environment, Montana does not limit environmental review to a relatively restricted set of resources (i.e., air, water, land, plants, animal, historical sites or buildings, and cultural resources) the way that other states with SEPAs have done. For instance, whereas California restricts review to the physical environment but allows agencies to weigh the indirect social or economic effects when considering whether the effect on the physical environment is significant, Montana, Hawaii, Maryland, and Connecticut all require the evaluation of at least some economic and social effects when determining the potential impacts associated with a proposed project. The operable term is “human environment,” which includes but is not limited to “biological, physical, social, economic, cultural, and aesthetic factors that interrelate to form the environment” (LEPO, 2000; MEPA Model Rules, 1988). Economic and social impacts alone do not trigger an EIS, but if the Department of Environmental Quality

determines that an EIS is necessary then these factors must be addressed (LEPO, 1988). The Act and its associated rules also require the Department of Environmental Quality to consider the cumulative impacts of a proposed project, which are defined as those collective impacts on the human environment of the proposed action when considered in conjunction with other past, present, and future actions related to the proposed action by location or generic type. However, related future actions may only be considered in an assessment of cumulative impacts when these actions are under concurrent consideration by any agency through pre-impact statement studies, separate impact statement evaluations, or permit processing procedures (Mudinger and Everts, 1998; MEPA Model Rules, 1988; ARM–Environmental Policy Act).

3.3.4 Factors Affecting Review/Permitting Timelines

The Rock Creek Project review took more than 14 years to complete (May 1987 to December 2001) and the mine is currently not operational because the Sterling Mining Company has yet to pay the Exploration License fee to satisfy the first phase of the project. Nearly two and a half years separated the project's final public scoping meeting (June 1993) and completion of a draft EIS (October 1995). Six years passed between the time the draft (October 1995) and final (September 2001) EISs were completed. Yet, the amount of time for review and permitting is in no way representative of the length of time typically required for the Department of Environmental Quality to review proposed mining projects and issue final decisions (K. Johnson, personal communication, October 2007). It may be more appropriate to quantify total environmental review time from May 1993 (when the Revised Notice of Intent of the Proposed Action were published in the *Federal Register*) to December 2001. During this time, the environmental review process progressed uninterrupted. Still, eight and a half years was required to complete the review.

Examination of both the project and Montana's environmental review and permitting policies revealed considerable similarities with Minnesota. Both have a SEPA and associated administrative rules that specify procedures for preparing comprehensive EIS for proposed projects. State laws in both require analysis of cumulative environmental impacts. Some key differences are that the Montana Environmental Policy Act only requires preparation of an EIS for projects funded or approved by *state agencies*, whereas the Minnesota Environmental Policy Act requires that an EIS be prepared in situations where a proposed project must be approved by a *state or local agency* (LEPO, 2000). Another significant difference is that while the Montana Environmental Policy Act only requires an EIS be prepared if a proposed project *will* have a significant impact on the environment, the Minnesota Environmental Policy mandates an EIS be prepared for any project that has the *potential* to significantly impact the environment (LEPO, 2000). Additionally, whereas Minnesota has promulgated a list of activity categories (i.e., construction of a new pulp or paper mill) that automatically trigger a mandatory EIS, Montana has not established such

categories and the need for an EIS is determined on a case-by-case basis according to the significance of the potential impacts of a proposed project (LEPO, 2000). While both states (rather than the applicant) prepare EISs, Montana does not require the applicant to bear the full cost of an EIS. In Montana, the state (or its consultants) conducts the environmental review process. The applicant pays only the cost of gathering data and information up to a statutory limit for those projects requiring an EIS costing more than \$2,500 (LEPO, 2000). Although Minnesota and Montana examine socioeconomic effects of a proposed project in an EIS, Montana mandates applicants proposing new large-scale hard-rock mineral development to prepare a fiscal impact plan identifying (and agreeing to compensate for) any increased capital and net operating costs to local government units resulting from the mineral development. The impact plan must include the following elements (MCA, 2005B): timetable for development, including the opening date of development and the estimated closing date; estimated number of persons coming into the impacted area as a result of the development; increased capital and operating cost to local government units for providing services which can be expected as a result of the development; and financial or other assistance the developer will give to local government units to meet the increased need for services. Minnesota does not have any comparable fiscal impact analysis requirements.

Table 3.9: Summary of Sterling Mining Company Project mining case study, Montana.

Project Name / Company	Sterling Mining Company (purchased from ASARCO Incorporated) / Rock Creek Project
Location	Kaniksu National Forest, Saunders County, Montana
Type of Project	Underground copper/silver mine and associated processing facilities
Scope	The project involved the construction, operation, and reclamation of all facilities necessary to mine, remove, and transport economically mineable minerals from the Rock Creek deposit. The Rock Creek Project consists of developing a proposed underground copper/silver mine and mill/concentrator complex in northwestern Montana. The project is proposed to be conducted in two stages: (1) the construction and development of the evaluation adit and (2) the development, construction, and operation of the mine and mill facilities.
Year Project Proposed	May 1993 (project was originally proposed in May 1987, but after a four-year suspension the review process was re-started in the spring of 1993)
Year ER Completed / Year Permits Issued	December 2001 (Record of Decision issued) / February 2002 (Air Quality Permit issued)
ER Completed	Scoping Document (January 1988), Scoping Document (June 1993), Draft EIS (October 1995), Supplemental Draft EIS (January 1998). Final EIS (September 2001), Record of Decision (December 2001).
Permits	None. Although requisite permit applications have been filed, no permits have been issued as

Completed	<p>the applicant has yet to pay a reclamation performance bond necessary to obtain an exploration license. Sterling Mining Company will have to obtain the following state-level permits:</p> <ul style="list-style-type: none"> • Exploration license • State Hardrock Mine Operating permit • Air Quality permit • MPDES permit • Storm Water Discharge permit • Public Water Supply and Sewer permit • 401 Certification • Hazardous Waste and Solid Waste registration
Public Notification & Involvement	<p>A number of public information meetings and opportunities for public comment were held in conjunction with the ASARCO's application. Beginning in May 1987, a total of 16 informational, scoping meetings or hearings were held in locations throughout the state and in proximity to the proposed project. The Department of Environmental Quality ultimately received more than 4,000 public comments during the draft EIS public comment period with many in opposition to the Rock Creek Project.</p>
Issues and Impacts Analyzed	<p>The Department of Environmental Quality and other agencies identified from the public, agency, and Tribal comments the effects of the alternatives in the EIS. Eight key issues, defined as indicators of potentially significant effects, emerged:</p> <ul style="list-style-type: none"> • Effects on quantity (e.g., seepage and withdrawals) and quality (e.g., discharges) of Montana and Idaho surface and ground water resources. • Effects on species of fish and wildlife and their habitats, and current and proposed threatened and endangered species (e.g., grizzly bear, bull trout). • Stability of the tailings impoundment/paste facility. • Impacts to socioeconomics of surrounding communities. • Effects on old growth forest ecosystems. • Effects on wetlands and non-wetland waters. • Effects on public and recreational access and traffic safety • Effects on aesthetics, including noise, scenic, and wilderness experiences.
Final Outcome	<p>The Record of Decision, issued in December 2001, concluded that the EIS was adequate and the Plan of Operation was deemed to be the environmentally preferred action alternative. Although the No Action alternative was deemed the environmentally preferred alternative, the selected alternative met the purpose and need and included reasonable mitigations to protect resources. The Rock Creek Project has yet to be fully permitted as the Sterling Mining Company has not submitted the reclamation performance bond for the exploration license.</p>
State ER Policy Framework	<p>Procedures governing the EIS analysis in Montana are defined in administrative rules for the Montana Environmental Policy Act. These require an EIS to be prepared if any action taken may significantly affect the quality of the human environment. An EA is required for state and state-permitted actions only and does not apply to privately funded projects that would not otherwise require state approval. The policy and purpose of the Act is to promote: informed government decisions; accountable and open state government decisions; balanced state government decisions; and ultimately better state government decisions.</p> <p>The Act requires state agencies to conduct thorough, honest, unbiased, and scientifically based full disclosure of all relevant facts concerning impacts on the human environment that may result from state actions. Actions may include a project, program, or activity directly undertaken by an agency; a project or activity supported through contract, grant, subsidy, loan, or other form of funding assistance from the agency, either singly or in combination with one or more other state agencies; or a project or activity involving the issuance of a lease, permit, license, certificate, or other entitlement for use or permission to act by the agency, either singly</p>

	<p>or in combination with other state agencies.</p> <p>Environmental review is accomplished through an interdisciplinary analysis that includes the use of the natural and social sciences and the environmental design arts in planning and decision-making. This analysis usually takes the form of an EA or an EIS depending on the magnitude of a project’s anticipated impacts. Three levels of environmental review are provided—categorical exclusion, environmental assessment, and environmental impact statement. If an EA determines the proposed action will have significant impacts, then either an EIS must be prepared or the effects of the proposed action must be mitigated below the level of significance and documented in a <i>mitigated EA</i>.</p>
<p>State Permitting Framework</p>	<p>The following state-level permits and licenses are routinely required for mining operations:</p> <ul style="list-style-type: none"> • <i>Exploration License</i>: Required to commence exploratory activities including construction of an evaluation adit and testing of a bulk sample. For the Rock Creek Project, the Department of Environmental Quality was required to coordinate review with the national forest. • <i>State Hardrock Mine Operating Permit</i>: Required for the Department of Environmental Quality to allow mine development activities. In the case of the Rock Creek Project, the Department was required to coordinate review with the national forest • <i>Air Quality Permit</i>: Required to ensure monitoring and control of emissions and particulates of hazardous air pollutants in excess of 25 tons per year. • <i>MPDES Permit</i>: Required to establish effluent limits, treatment standards, and other requirements for the proposed project to be approved for point source discharges to state waters including ground water. Discharges to surface waters may not violate downstream states water quality standards. • <i>Storm Water Discharge Permit</i>: To control discharge of storm water from the mine site (may be merged with MPDES permit). • <i>Public Water Supply and Sewer Permit</i>: Required if the applicant wishes to construct a public water supply or sewer system. • <i>401 Certification</i>: Required to ensure that any activity requiring a federal license or permit (such as the 404(b)(1) permit from COE) complies with Montana water quality standards. • <i>Hazardous Waste and Solid Waste Registration</i>: Required to ensure safe transport of hazardous materials and proper disposal of solid wastes. <p>Under the Hard-Rock Mining Impact Act, each new large-scale hard-rock mineral development in Montana is also required to prepare a local government <i>Fiscal Impact Plan</i>. In the plan the developer must identify and commit to pay all increased capital and net operating costs to local government units that will result from the mineral development. The Impact Plan includes:</p> <ul style="list-style-type: none"> • Timetable for development, including opening and closing dates. • Estimated number of persons coming into the impacted area. • Increased capital and operating cost to local government units for providing services that can be expected as a result of the development. • Financial or other assistance the developer will give to local government units to meet the increased need for services. <p>The Impact Plan is a condition of the operating permit issued to the developer by the Department of Environmental Quality and is prepared by the applicant in cooperation with affected local governments. The developer submits the plan to local government units and to the Hard-Rock Mining Impact Board for review.</p>

3.4 West Virginia

3.4.1 Economic Importance

Coal mining is a vital part of the economy in many Appalachian states. Although its relative importance can be largely attributable to direct employment, many residents of the region are employed in other industries that depend upon coal mining. Because of this importance, the region's economy and its residents remain vulnerable to changes in the industry's fortunes. In some counties, coal mining represents such a significant part of the economy, small changes in demand and output can have a dramatic impact on the economic well-being of its residents. In recent years, improvements in mining productivity, competition from the western United States, coal imports from abroad, and environmental legislation have contributed to substantial job losses in southern West Virginia and eastern Kentucky most dependent on the coal mining industry. These factors have also indirectly negatively impacted local businesses and have generally undermined social well-being in the region (Thompson et al., 2001).

Coal-producing states in Appalachia generate considerable revenue for state and local governments through *coal severance taxes*. Severance taxes are a group of taxes that are specifically levied on natural resource extraction industries but generally not levied on non-resource industries.⁷ Although severance tax revenue is the most obvious tax revenue generated, tax revenue generated from coal mining operations is not limited to coal severance taxes. For example, the increase in worker earnings leads to additional income and payroll tax revenues, while the multiplier effect leading to sales at local retail outlets can yield sales tax revenues (Thompson et al., 2001).

West Virginia is the largest producer of coal in the Appalachian Region and the second largest producer in the United States. Coal production in West Virginia and other states in the Appalachian Region were stable from 2002 to 2006 (Freme, 2007). However, despite being a major producer, coal production in West Virginia decreased 1.2% in 2006 from 2005 while production in the Western and Interior Regions of the United States increased by 5.9% and 1.5%, respectively (Freme, 2007). The decline in coal production in West Virginia was, in part, a result of suspended production that occurred after accidents took place at two new mines. Although several new mines began operating in 2006, increases in coal production were more than offset by the decline in production at other West Virginia mines (Freme, 2007). Additionally, the following factors are believed to have influenced the decline in coal production

⁷ Individuals and businesses that “sever” natural resources from the land make a profit by using up the irreplaceable natural wealth of a state. A severance tax is intended to compensate present and future citizens for that loss. Taxes typically are assigned either on a per ton basis, or on a percentage of the value mined. Taxes are collected by state agencies, with most revenue remaining in the state and a portion returning to counties where the coal is mined.

in West Virginia: Clean Air Act of 1990, concern about mountaintop removal mining, resource depletion, permitting policies, demand for specialty coals, and pressure to reduce mining costs (Britton et al., 2007). Although coal production experienced a net loss in 2006, and was stagnant from 2002 to 2006, Britton et al. (2007) note that surface mining, which made up nearly 43% of the state’s total coal production, experienced a 5% increase from 2005 to 2006. Roughly 70% of surface coal mining was produced by mountaintop removal methods (Britton et al., 2007).

In 1997, employment in the West Virginia coal industry represented roughly 6% of the total employment in the state’s coal producing counties.⁸ While production was significantly higher than in Kentucky (Table 3.10), only 6% of the workforce was employed in the coal industry, suggesting the workforce was appreciably more diversified in West Virginia. Likewise, coal mining earnings in West Virginia comprised a significantly smaller portion of the total earnings indicating Kentucky Appalachian counties are more dependent on the coal mining industry for their livelihood than are similar counties in West Virginia (Roenker, 2001).

Table 3.10. Coal mining statistics in coal producing counties in selected states. (Source: Roenker, 2001)

	Kentucky	West Virginia	Pennsylvania
Total Coal Production	120.9 million	173.7 million	76.2 million
Coal Mining Employment	13,061	18,937	10,409
as percent of total employment	13.7%	6.10%	0.60%
Coal Mining Earnings	\$719.6 million	\$1,246.7 million	\$1,025.7 million
as percent of total employment	19.10%	9.8%	1.50%
Coal Output	\$2,979.5 million	\$4,530.0 million	\$2,033.1 million

While the gross county product and employment demonstrates the dependence of many West Virginia counties on the coal mining industry, the economic impact of the industry on those counties actually exceeds the direct financial contributions of the industry. That is, the coal mining industry often supports economic activity in the economies of West Virginia’s major coal-producing for activities such as manufacturing, machine shop, construction, and business service industry. The total economic impact of the coal mining industry on West Virginia coal-producing counties consists of direct and multiplier effects of the industry on local economies. The wages earned by the employees of the coal mining companies support their spending for a wide range of retail goods and services throughout the economy. This spending indicates a larger economic impact for the coal mining industry than purely the amount of direct financial contribution (i.e., as measured by gross revenue). Thus, the total economic impact on

⁸ Although the validity of such an assumption is admittedly questionable, because more recent estimates are not available, for the purpose of this report it will be assumed that the percentage of total workers employed in the coal mining industry in Appalachia has not changed significantly since 1997.

earnings, employment, and output, as seen in Table 3.11, is significantly greater than the direct impact. The coal industry plays a larger role with respect to local economic stimulus than is revealed by the direct impacts in Table 3.10. It also reveals the total economic impact of the coal mining industry on earnings in West Virginia coal producing counties represents slightly more than 15% of total earnings in those counties. The total employment impact of the industry represents nearly 15% of the total jobs in these same counties in West Virginia. However, the Kentucky the coal industry appears to have a significantly greater total economic impact on earnings and employment in coal producing counties (Roemaker, 2001).

Table 3.11. Economic impact of the coal mining industry in selected ARC states. (Source: Roemaker, 2001)

	Kentucky	West Virginia	Pennsylvania
Total Coal Production	120.9 million	173.7 million	76.2 million
Total Employment Impact (jobs)	30,300	43,600	27,100
share of total employment	31.90%	14.60%	1.60%
Total Earnings Impact	\$1,280.3 million	\$1,935.7 million	\$1,625.7 million
as percent of total earnings	34.00%	15.20%	2.30%
Coal Output	\$4.4 billion	\$6.9 billion	\$2.9 billion

Although coal is the state’s most important mined commodity, West Virginia also supports nonfuel mineral production. In 2005, West Virginia’s nonfuel raw mineral production was valued at \$200 million, based upon annual USGS data—an increase of more than 20% from the state’s total nonfuel mineral value of \$166 million in 2004, and up 1.2% from that of 2003. In 2005, crushed stone continued to be West Virginia’s leading nonfuel mineral by value, which was nearly 50% of the state’s total nonfuel mineral production value. In 2005, although crushed stone production decreased slightly, the commodity underwent the largest increase in value of any mineral commodity with a 37% (\$26.8 million) increase over 2004. Additionally, limestone quarries accounted for nearly 87% of the total non-coal production on a tonnage basis in 2005 (Blake et al., 2006).

West Virginia continues to be a significant producer of crushed stone, industrial sand and gravel, and lime. The state’s mines produce industrial minerals and coal. No metals are currently mined in West Virginia. Primary aluminum and raw steel are produced in the state, but both metals are processed from materials acquired from foreign and other domestic sources. In 2005, West Virginia ranked tenth in the nation in the production of primary aluminum among 12 producing states (Blake et al., 2006).

3.4.2 Project Overview

In March 1997, the Hobet Coal Company submitted a mining permit application to the West Virginia Department of Environmental Protection, Division of Mining and Reclamation for the purpose of receiving approval for a proposed 3,196 acre multi-seam mountaintop removal surface mine in the Spruce

Fork watershed, which lies in the Logan District of Logan County. The application was submitted in March 1997 to gain approval to open and operate the Spruce No. 1 Surface Mine in the No. 6 Block; No. 5 Block; Upper, Middle, and Lower Stockton; Upper, Middle, and Lower Coalburg; Buffalo A; Buffalo B; Winifrede; Chilton; and all splits of these coal seams. The Spruce Fork watershed was extensively surface and deep mined prior to 1977. Mining activity peaked in this region in the 1930s and 1940s. Valley fills and refuse piles from previous mining activity had already filled extensive amounts of the upper stream length of the Spruce Fork watershed. The proposed project is not located in an EPA non-attainment area for criteria pollutants and the project is not situated within an EPA Class 1 area.

Hobet Coal Company, formerly a subsidiary of Arch Coal and currently a subsidiary to Magnum Coal Company, mines coal on the surface and underground in Central Appalachia. The company operates the Hobet 21 mine in southern West Virginia. Magnum Coal Company is based in Charleston, West Virginia, and is one of the largest coal producers in the central Appalachian coal mining region, controlling over 629 million tons of high Btu, low sulfur coal and operating 17 mines and seven preparation plants, all of which are located in West Virginia.

The proposed project was to surface mine 3,196 acres in an area roughly two miles northeast of Blair, West Virginia, in Logan County. The surface coal mine was the largest ever proposed in the state. The operation was a mountaintop mining operation along with contour mining and augering or highwall mining. It involved discharging treated water into stretches of a number of neighboring rivers and streams (i.e., various branches of the Spruce Fork River). Given the extent of the proposed disturbance, the Spruce No. 1 Mine represented the largest single permit West Virginia DEP had received with respect to the amount of stream proposed to be filled (L. Alt, personal communication, December 2007). The Department of Environmental Protection conducted its review of the mining permit application and after needed revisions, the mining permit was issued in November 1998. Similarly, the Department of Environmental Protection also reviewed the NPDES Water Pollution Control permit application and subsequently issued the corresponding permit in January 1999.

As part of the permitting process, and in accordance with federal law pertaining to surface mining, the West Virginia Department of Environmental Protection completed a Cumulative Hydrologic Impact Assessment for the proposed mining operation as part of the Application Bluebook for the mining permit issued in November of 1998. The Cumulative Hydrologic Impact Assessment provided information on historical land use and mining activity (both surface and deep) for the affected area. It also provided a comprehensive overview of area geology, groundwater, and surface water resources. The Cumulative

Hydrologic Impact Assessment involved extensive water testing in at various points of the Spruce Fork and other fluvial systems downstream of the proposed project area. These measurements were taken to establish baseline water quality levels, which were recorded so comparisons could be made between pre-mining water quality and water quality after the mine became operational. The pre-mining analysis found that despite extensive mountain top surface mining and the existence of numerous deep mines in the area, in-stream water quality within the watershed fell within NPDES and Clean Water Act in-stream standards. Based on the proposed mining operation design and pre-mining site and water quality assessments, the Cumulative Hydrologic Impact Assessment ultimately concluded it was unlikely the proposed mine would significantly negatively impact the local hydrologic balance. The Department of Environmental Protection geologist recommended approval of the mining permit.

Although information in the administrative record is incomplete, it appears the Department of Environmental Protection received several hundred public comments in opposition to the proposed mine, possibly due to a letter-writing campaign against the permit and two informal conferences held concerning the application. In contrast, few comments supported the proposed mine. Comments were received from nonprofit organizations, community groups, and the general public. Precise estimates of the number of attendees at public hearings were not available, but records indicate a high number of participants. Most public concern related to water quality as a result of historic water quality issues associated with extensive coal mining in the state and because the project represented the largest single permit West Virginia Department of Environmental Protection had received with respect to the amount of the stream the applicant proposed to fill (L. Alt, personal communication, December 2007). Concerns were also voiced over dust, noise, and shock waves associated with the proposed blasting. The administrative record indicates the Department of Environmental Protection followed up with “pertinent” complaints by double-checking with the applicant for compliance.

Information about project review timelines and the specific public involvement process were not available for the Hobet project in West Virginia. An overview of the state’s general requirements for public involvement is provided in Appendix A2.

3.4.3 Environmental Review Policies and Procedures

West Virginia has no formal environmental review requirements nor are their state policies with respect to guidance for conducting an EIS-level assessments of potential environmental impacts associated with a particular proposed mining project. However, the Surface Coal Mining and Reclamation Act addresses

the need for permit applications to consider the cumulative impacts that a project could have on water quality and quantity and general hydrological processes in the vicinity of the site:

“A determination of the probable hydrologic consequences of the mining and reclamation operations, both on and off the mine site, with respect to the hydrologic regime, quantity and quality of water in surface and groundwater systems, including the dissolved and suspended solids under seasonal flow conditions and the collection of sufficient data for the mine site and surrounding areas so that an assessment can be made by the director of the probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area, and particularly upon water availability...the permit application shall not be approved until the information is available and is incorporated into the application.”

State law lays out extensive requirements for mine reclamation and general performance standards. For instance, companies are required to “restore the land affected to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses of which there is reasonable likelihood...” The West Virginia Surface Mining Reclamation Rule (38CSR2) also requires that each application include fish and wildlife resource information for the permit area and adjacent area. The scope and level of detail for such information shall be determined by the secretary of the Department of Environmental Protection in consultation with state and federal agencies with responsibilities for fish and wildlife resources and shall be sufficient to develop a *protection and enhancement plan*. Furthermore, state law requires that each application include a description of how the operator will minimize disturbances and adverse impacts on fish and wildlife and related environmental values, including compliance with the Endangered Species Act, during the surface mining and reclamation operations and how enhancement of these resources will be achieved. These plans must include both protective (i.e., prevention-oriented) and enhancement (i.e., restoration-oriented) measures. Additionally, where a proposed mining operation will affect threatened or endangered species of plants or animals and critical habitats, the applicant must describe control measures, management techniques, and monitoring methods employed to protect or enhance such species and habitats.

3.4.4 Factors Affecting Review/Permitting Timelines

The Spruce No. 1 Mine took approximately 22 months to approve (March 1997 to January 1999). As with the other cases reviewed in this report, it is not possible to generalize findings to other mining projects in the state. Nor is it obvious the permitting process for the mine was representative of the time and resources consumed by projects of similar size and scope in the state. Information specific to the proposed was difficult to obtain, and it was not possible to construct an accurate overview of the timeline and permitting process. Although a cumulative hydrologic impact assessment was completed for the proposed mine, this analysis only addressed hydrological effects and a comprehensive EIS was not completed as

state law and Department of Environmental Protection regulations did not require reporting by the applicant or the Department of Environmental Protection.

West Virginia and Minnesota have appreciably different policies and processes regarding the review of mining projects. While the Minnesota Environmental Policy Act mandates an EIS be prepared for any metallic mining operation or metallic mineral processing facility, West Virginia's coal mining laws and regulations do not carry similar requirements. Findings from our review of the administrative record for the Spruce No. 1 Mine suggest consideration of potential impacts incorporated into the mining permit application is considerably less rigorous than assessment of impacts, alternatives, and mitigation measures incorporated in EISs required under Minnesota Environmental Policy Act, the Montana Environmental Policy Act, or New York's State Environmental Quality Review Act.

The permitting of the Spruce No. 1 Mine ultimately contributed to growing concern and public dissent regarding the effects of mountain-top coal mining in southern Appalachia (L. Alt, personal communication, December 2007). A programmatic EIS was completed in 2005 by federal agencies (EPA, US Fish & Wildlife Service, US Army Corps of Engineers, and US Office of Surface Mining) and the Department of Environmental Protection in response to the *Bragg v. Robertson* Civ. No. 2:98-0636 Settlement Agreement (S.D. W.V.). This case involved the proposed issuance of permits by state and federal agencies required before a mining company may conduct surface mining operations colloquially known as "mountaintop removal mines." That Agreement provided for the preparation of the EIS, but the agencies did not concede an EIS was required by the National Environmental Policy Act. This Final EIS was programmatic in that it considered "developing agency policies, guidance, and coordinated agency decision-making processes to minimize, to the maximum extent practicable, the adverse environmental effects to waters of the United States and to fish and wildlife resources affected by mountaintop mining operations, and to environmental resources that could be affected by the size and location of excess spoil disposal sites in valley fills" within the Appalachian study area in West Virginia, Kentucky, Virginia, and Tennessee. The overarching objective of the programmatic EIS was to ensure the Clean Water Act and the Surface Mining Control and Reclamation Act were applied in a manner that improved the regulatory process and environmental protection in Appalachia.

Table 3.12. Summary of Hobet Coal Company Project mining case study, West Virginia.

Project Name / Company	Hobet Coal Company / Spruce No. 1 Mine
Location	Blair, West Virginia.
Type of Project	Multi-seam mountaintop removal surface coal mine. The proposed operation was a mountaintop coal mining operation along with contour mining and augering or highwall mining, and involved discharging treated water into stretches of a number of neighboring rivers and streams.
Scope	The project proposed to surface mine 3,196 acres in an area roughly two miles northeast of the Town of Blair in Logan County.
Year Project Proposed	March, 1997
Year Project Permitted	January, 1999
ER Documents Completed	N/A. Although a project-level EIS was not prepared for the Spruce No. 1 Mine, it should be noted that controversy over the mine resulted in a joint federal and state programmatic EIS being prepared for mountain top coal mining in southern Appalachia.
Permits Completed	<i>Mining Permit</i> (issued in November of 1998), <i>NPDES Water Pollution Control Permit</i> (issued in January of 1999). As part of the permitting process, and in accordance with federal law pertaining to surface mining, the West Virginia Department of Environmental Protection completed a Cumulative Hydrologic Impact Assessment for the proposed mining operation.
Public Notification & Involvement	<p>Specific public involvement timeline was not available for the Spruce No. 1 Mine. However, the following may serve as a general template:</p> <ul style="list-style-type: none"> • <i>Administrative review</i>: 5 working days, as set by law; <i>Technical review</i> – 2 to 12 calendar months (application review and deficiency notice with corrections must be sent to company within 30 calendar days of the time that the deficiency in the permit application is noticed and the process continues until application satisfies applicable laws, regulations, and policies). • <i>Public participation</i>: 2 to 4 calendar months, concurrent with technical review, depending on whether a public hearing is required. • <i>Total time required</i>: 2 to 12 calendar months, depending on complexity of the application. After receipt of the mining permit application is received by Department of Environmental Protection the agency completes a review of the application to see if it is administratively complete within 5 days, the applicant has an additional 30 days to make the required changes and resubmit the application to the Department of Environmental Protection. Similarly, after the Department of Environmental Protection completed its technical review the applicant has an additional 30 days to make corrections. <p>An advertisement for public notification of a mining permit application must be published in a qualified newspaper once a week for four consecutive weeks. There is a 30-day public comment period that begins on the date of the last publication. A public hearing on the permit will be scheduled if an individual requests such a hearing during the public comment permit.</p>
Issues and Impacts Analyzed	The Cumulative Hydrologic Impact Assessment provided information on historical land use and mining activity (both surface and deep) for the affected area, and also provided a fairly comprehensive overview of area geology, groundwater, and surface water resources. The

	<p>Cumulative Hydrologic Impact Assessment also involved extensive water testing at various points of the Spruce Fork and other fluvial systems downstream of the proposed project area. These measurements were taken to establish baseline water quality level, which were recorded so comparisons could be made between pre-mining water quality and water quality after the mine became operational. The pre-mining analysis found that, despite extensive mountain top surface mining and the existence of numerous deep mines, in-stream water quality within the watershed fell within NPDES and Clean Water Act in-stream standards.</p>
Final Outcome	<p>Based on the proposed mining operation design, pre-mining site, and water quality assessments, the Cumulative Hydrologic Impact Assessment concluded it was unlikely the mine would significantly negatively impact the local hydrologic balance. The Department of Environmental Protection geologist recommended approval of the mining permit.</p>
State ER Policy Framework	<p>West Virginia state law does not require, nor have in place, an environmental review process to take place in addition to environmental permitting.</p>
State Permitting Framework	<p>Anyone intending to disturb surface land must obtain a coal mining permit if they conduct underground or surface coal mining, construction of haul or access roads, construction of preparation plants for coal, tipples, and load outs, or establishment of coal refuse areas. A coal mining permit application generally includes:</p> <ul style="list-style-type: none"> • Ownership information of the applicant (including the source of legal right that permits conducting the proposed operations). • Names and addresses of all surface land owners within one hundred feet of the proposed operation (these owners must also be notified that a coal mining permit is being sought). • Insurance information; bond information; maps and location of operation. • Subsidence control plan and underground abandonment plan for underground mines and auguring. • Fish and wildlife resource information. • Parks and historic land information. • Hydrological data showing seasonal variations. • Geological information; blasting plan. • Drainage plan. <p>Proposers of both coal and non-coal mining operations must obtain an <i>NPDES permit</i>, the purpose of which is to ensure the integrity of the rivers, streams, and other surface water disturbed by discharges from coal, non-coal mining operations, and related activities. Proposers of both coal and non-coal mining operations must also obtain a state <i>401 Certification</i> to ensure that any proposed activity that will fill surface waters with dredge or fill material will comply with state water quality standards. The certification must be obtained whenever a federal permit or license is issued. State rules also require for preparation and submission of <i>Community Impact Statements</i> for new surface mining operations. These statements are submitted to the Office of Coalfield Community Development and runs concurrent with, but separate from, the surface mining permit application process administered by the Department of Environmental Protection. A Community Impact Statement is intended to summarize the impact (biophysical, economic, social) of surface mining operations on surrounding areas. Content is taken from the Department of Environmental Protection surface mining permit application. It describes the following:</p> <ul style="list-style-type: none"> • Location, extent and duration of mining operation • Property impacts • Proposed blasting and valley fills • Post-mining land uses • Impacts on infrastructure and area economy

4.0 FOCUS GROUP: STATE ENVIRONMENTAL REVIEW PROJECT MANAGERS

4.1 Introduction and Methods

A day-long focus group meeting was conducted in Minneapolis, MN, on January 23, 2008, to examine state-level environmental review and permitting policies and processes applied to the forestry and mining sectors (See Appendix C for agenda). Project managers from selected states who participated were invited to provide information and perspectives on key attributes of their state programs including: linkages and integration of environmental review and permitting processes, cumulative impact analysis, coordination among responsible government units, and economic development considerations. Participants were selected based on their (1) level of knowledge about state environmental review and/or permitting policies and procedures, (2) level of familiarity with how state processes are applied to proposed forest products processing facilities or mining operations, and (3) position within their respective agency. Twelve representatives from the following seven states participated in the focus group meeting (number of participants indicated in parentheses): Georgia (1), Maine (1), Minnesota (4), Michigan (1), Montana (1), New York (3), and West Virginia (1). Representatives from Montana, West Virginia, and two of the three from New York participated via webcasting. The report authors served as cofacilitators with two observers and note takers.

The focus group was designed and conducted using conventional focus group techniques (Krueger and Casey, 2000). All discussions were digitally recorded to capture information missed during initial transcription and verify the factual accuracy of hand-written notes. An attempt was made to capture descriptive phrases or words used by participants, emergent themes, illuminating quotes, subthemes, intensity of opinion, consistency of comments, and the mood and flow of the conversation. Consideration was given to the specificity of responses and whether positions were based on personal experiences. Subsequent analysis of participant responses included consideration of the following factors:

- *Words.* Actual word use and the intended meanings of were considered when interpreting responses. The authors did not conduct frequency counts to avoid applying more importance to an issue than warranted.
- *Context.* The context of words and statements was examined by considering the triggering stimulus, or the question posed and the response expressed by other participants.
- *Internal consistency.* This was considered during initial transcription of participant responses, and review of the audio recording allowed the authors to better note changes or reversals of positions.

- *Specificity and concreteness of responses.* Consideration was given to the specificity of responses and whether positions were based on personal experiences. This ensured responses supported by personal experiences were given more weight than vague or general responses.
- *Identification of emergent themes and “big ideas.”* Analysis attempted to isolate those themes and ideas that were expressed repeatedly by multiple participants and cut across the entire discussion.

The themes that emerged from the focus group meeting provide an improved understanding about each state’s environmental review and/or permitting program and associated policies and procedures. Within the context of environmental review and permitting of forestry and mining projects, these themes include: (1) linkages and integration between environmental review and permitting, (2) cumulative environmental impact analysis, (3) coordination within and outside state government, (4) linkages between environmental review and economic development, and (5) opportunities for improving state-level environmental review and permitting processes in the future.

4.2 Emergent Themes

4.2.1 Linkages and Integration between Environmental Review and Permitting

Participants representing those states having separate ER and permitting processes expressed a high level of coordination and integration between the two. Several participants stated coordination and integration between environmental review and permitting in their states could be assessed as a “9 out of 10.” However, participants also explained that integration between the two processes does not guarantee project review will be shortened. Legal timeframes for soliciting public comments and other procedural aspects, as established by statute and administrative rules, defines when all state processes must occur. In addition, multiple participants expressed that delays in project sponsors submitting information and legal challenges to permitting decisions also stall project implementation.

Multiple participants stated there had been internal agency debates about whether permitting should take place concurrently with environmental review or only after environmental review is completed. Arguments for completing the necessary documentation prior to permitting generally focused on the need for the analysis to inform permitting, and to not “restrict the range of impacts” considered in the event permits are not required for a particular type of impact. It was also felt that if separating environmental review and permitting would result in a more comprehensive and thoroughly researched EIS (or comparable document), the processes should be separated to better serve the public interest. However,

some participants also voiced concern that increased separation between environmental review and permitting could result in reduced efficiency and timeliness of project review. That is, if agency staff work concurrently it is possible to gain efficiencies because problems in permitting that could have presented themselves in the review process can be alleviated at an earlier stage.

All of the participating states conduct environmental review and permitting concurrently. The benefits of doing so weigh most notably on the desire to expedite the process. In several states, many of the same people involved in environmental review are also involved in reviewing permit applications. Such individuals are most familiar with the project details and often have working relationships with applicants and agency staff, facilitating information exchange. An additional benefit is that public involvement can be streamlined and made more useful to interested stakeholders. Project-specific public hearings can be held in conjunction with relevant topics necessary for permitting rather than separate and sometimes disjointed hearings for the different project aspects (e.g., water discharge, air emissions issues). Project managers have found the public to be less confused about which hearing to attend if hearings are not separated.

Multiple participants expressed that collaboration with sister state agencies can be slow and result in a drawn-out review process. As one participant stated, even if sister agencies are provided the same information as the responsible government unit, they may lag months behind because of other work priorities, operate on different time schedules, or have different statutory requirements than the lead agency. It was a general sentiment of the focus group participants that it is easier to coordinate activities among multiple units within a single agency than in situations where environmental review and permitting is done by different agencies.

Finally, participants from multiple states explained that statutes and administrative rules require them to conduct a joint state-federal EIS whenever possible to reduce duplication. The challenge, through, is staff may only communicate with federal agencies on an as-needed basis which can result in duplication of effort. Although this was not encountered with the Minnesota Steel Industries or other recent projects, it is important to note that participants felt joint state and federal reviews were often problematic and the level of coordination and communication depends on unique jurisdictional and project-specific circumstances. No uniform standard exists regarding coordination between state and federal agencies.

4.2.2 Cumulative Environmental Impact Assessment

Cumulative environmental impact assessment is an area where states struggle to define the scope of impacts to consider, measure those impacts over time, and include cumulative impacts in the environmental review and permitting processes. In terms of scope, participants generally agreed that it is hard to determine when impacts have been adequately considered or when each impact category has been sufficiently described. Participants felt additional impacts can always be found with increased time and resources (human and financial), but does not guarantee a comparable increase in the quality of an EIS. One participant questioned the value of such an assessment where each individual impact is indeed important, but when considered within a suite of impacts taking place on a site or indirectly on secondary sites, it is hard to conduct meaningful analysis and draw useful conclusions. The group as a whole expressed concern and uncertainty about how cumulative impacts are assessed in terms of geographic and temporal boundaries, as well as the measurement of “off-site” impacts.

Responses from focus group participants revealed that states differ widely in their consideration of off-site impacts. Georgia, for instance, does not have provisions to account for cumulative impacts. Thus, the agency does not consider such activities as they relate to a specific project. For example, impacts from timber harvest associated with meeting the input needs of a pulp and paper mill are not considered. Agency staff struggle with finding an appropriate mechanism for considering these downstream impacts that may be significant. In West Virginia, formal consideration of off-site impacts is only assessed within the scope of the effects on surface water and groundwater, which does not take into account cumulative effects on wildlife habitat, air quality or other impacts outside the bounds of the hydrologic assessment. In Minnesota, project managers noted that public comments are increasingly focused on these off-site impacts, which increases pressure to consider cumulative impacts. Project managers in Minnesota were given new direction for considering cumulative environmental effects in May 2006 when the state Supreme Court concluded (*Citizens Advocating Responsible Development v. Kandiyohi County Board of Commissioners*) the definition of “cumulative impact” given in Minn. R. 4410.0200, subp. 11, applies to the project-specific “cumulative potential effects” criterion in Minn. R. 4410.1700, subp. 7. The court found that “cumulative potential effects” under Minn. R. 4410.1700, subp. 7, requires a responsible government unit to inquire whether a proposed project, which may not individually have the potential to cause significant effects, could have a significant effect when considered along with other projects that: (1) are already in existence or planned, (2) are located in the surrounding area, and (3) might reasonably be expected to affect the same natural resources. Representatives from other states indicated cumulative impacts have not been formalized to the degree it has in Minnesota and consideration is not an issue

unless coordination is required with federal agencies. When coordination is required, it is usually limited to critical habitat for threatened and endangered species issues.

In terms of the mechanisms for assessing cumulative impacts, several participants expressed the need for explicit legal guidelines and mechanisms for determining how such impacts are to be considered. Agency rules may only vaguely state the requirement to document cumulative effects and provide little or no guidance as to what information to include. Participants also felt state laws generally require only those cumulative impacts within the “affected area” or “relevant environmental area” be assessed, but guidance in determining the range and size of areas is absent. But participants were less inclined to support codifying the types of impact categories to be considered as resource conditions vary by location and timing of proposed activities.

Several ideas were identified for considering cumulative impacts within the scope of each state’s environmental review process. One approach supported was to prepare a separate cumulative impact assessment report at the project level rather than at an unspecified landscape level, thus constraining the scope to the immediate area surrounding the project site. Another approach suggested was to incorporate regional planning into the environmental review process whereby cumulative impacts are considered and mitigation measures taken in a deliberate fashion rather than in reaction to proposed projects. A related idea was to implement the practice of conducting generic environmental impact statements in relation to particular resources like forestry, mining, and agriculture. In Minnesota, for instance, the forestry generic EIS has allowed for consideration of cumulative impacts across meaningful scales taking into consideration a range of industrial sectors and has reduced the burden to generate the type of information needed to make reasoned judgments about the significance of impacts of individual projects. However, participants felt a challenge is presented in considering cumulative impacts at a multijurisdictional level. In the northeast United States, for example, land use planning decisions are often handled at the municipal level of government and often lack the capacity to consider impacts outside their jurisdiction.

Focus group participants brainstormed several barriers to conducting effective cumulative impact assessment. Such barriers included:

- Determining an appropriate geographic scope and spatial dimension of the impacts considered.
- Identifying thresholds or “tipping points” for where and when impacts accumulate to a level constituting significant impacts.
- Insufficient understanding of the synergistic effects of how different types of impacts interact.

- The data necessary to make judgments of cumulative impacts are often unavailable; large amounts of information may be necessary to make judgments, which take time and money.
- Information generated for measuring cumulative impacts for one project may not be available or incorporated into future project reviews, which results in redundancy of effort.
- Apportioning causation when looking at cumulative impacts across multiple sources is difficult, making it challenging to assign individual responsibility for mitigation.
- Determining the extent to which project sponsors are responsible for gathering the information needed to assess cumulative impacts associated with projects.
- Granting or denying permits in cases where low-impact projects elevate cumulative impacts to a significant level and where the majority of such impacts were caused by previous projects.
- There exists uncertainty regarding “taking” on private property on the grounds of denying permits based on judgments of cumulative impacts.
- Insufficient political will for assessing cumulative impacts on a project-by-project basis when issues are collective in nature and denying applications on the grounds of cumulative impacts. As one participant expressed:

“In the end, environmental review and permitting is about projects... and even if you do a good cumulative effects analysis... [the question is] is there the political will to apply a condition on an individual project that is to deal with something that is a problem of the commons? At least the experience in [my state] is that the answer is no.”

4.2.3 Interagency Coordination

In terms of the time required to secure necessary permits, interagency coordination was cited by most as a key factor impeding progress. Participants reasoned that nonlead state agencies and local government units are typically not as responsive when communicating needed information. Coordinating information, arranging meeting times, and in some cases coordinating with federal agency requirements were perceived as actions that slowed the environmental review process. A majority of participants also identified litigation as an important factor that has enhanced coordination efforts. Past litigation and threats of litigation have caused agencies to invest considerable time and resources to ensure the procedural requirements and quality of analysis are not contested. In other cases, project sponsors have been slow or unwilling to submit the required documentation either because they were concerned about sharing sensitive or confidential information or the consultants failed to understand and/or follow all state requirements.

One solution cited was to designate a single project lead responsible for oversight and coordination during the entire environmental review and permitting process. Project leads provide continuity by facilitating communication and exchange of information among coordinating agencies and the applicant at each step, which could help reduce confusion about who makes decisions, what information is needed, and where information is to be sent. It would also increase understanding of the needs and concerns of the applicant, which can reduce conflict, especially if a project lead is established prior to applications being filed. Other identified benefits of having a designated project lead include assisting the process by clearly communicating expectations for the type of analysis required and the likelihood a project will be permitted and recommending discontinuance prior to design and expenditure of significant time and effort by both the applicant and agency.

4.2.4 Linkages between Environmental Review and Economic Development

Concern was expressed by focus group participants that economic development opportunities will be lost to other states due to intimidating and lengthy environmental review requirements. Applicants are concerned the time required to complete the necessary documentation could be cost-prohibitive or put them at a disadvantage to other businesses that can move more quickly. These and other issues were addressed in relation to the linkages between environmental review and economic development.

A high degree of coordination between state departments of economic development and permitting authorities was also cited by several participants as key to ensuring companies exploring local development options are successful. Project managers expressed frustration and embarrassment when their staff learned of planned projects only after approval of state funding. Environmental review requirements in such cases were seen as slowing the process and an unnecessarily burden, which makes conducting environmental review difficult.

States described the activities of their economic development agencies relative to permitting. Some indicated their agency attempts to locate prescreened sites for projects and provide funding to assist local governments and developers to pre-permit these sites. Additionally, states indicated development incentive zones provide substantial tax credits to applicants generating a threshold of jobs over a certain period of time. Such tax credits are awarded after the necessary permits are secured. In one state, a project that contributes to a master development plan was felt to have a greater chance of being permitting even if it has somewhat more significant environmental impacts. In some states, economic development programs offer matching grants or no/low-interest loans to help pay for professional services such zoning

applications, archaeological surveys, engineering studies, and soil sampling required for the environmental review process.

Who pays the cost of environmental review and permitting was an area where states differed in their delivery but were generally similar in their approach. One of the mining case study states represented in the focus group indicated the project sponsor is charged an application fee in addition to the cost of preparing the EIS and necessary permits. The application fee covers a portion of the cost the state assumes while carrying out the review, which includes application review and holding public hearings. Other mining states indicated similar approaches in that an application fee is charged and in addition, a severance tax is imposed on the gross value of the minerals extracted and sold. Some states may charge an annual fee for holding a permit to cover their administrative costs in lieu of application fees, or they may only levy fees on facilities that are major sources of air emissions. In the latter case, no charges are levied for review of minor source applications and application fees are also generally waived. Finally, in Minnesota the applicant bears the full cost of preparing an EIS, but in situations where an Environmental Assessment Worksheet suffices, the cost is largely borne by the state. In such cases, the applicant is responsible for submitting basic data to complete the analysis, but like other states the responsible agency bears the costs associated document review.

4.2.5 Best Practices and Opportunities for Improving Environmental Review and Permitting

Multiple participants emphasized the importance of *pre-application meetings* between the responsible agency and relevant parties as a mechanism to improve the effectiveness of environmental review and permitting processes. Familiarity with the various aspects of a proposed project and agency requirements before applications are filed allows the process to go faster by reducing the need to revise applications and helps applicants better understand the review process and information needs. As stated by one participant, “these meetings could be used to encourage applicants to ‘go beyond minimal compliance’ and to prepare well-developed plans contributing to reductions in potential environmental impacts.” Supporters of the pre-application meeting expressed the importance of having representatives present from the sponsor company, participating consulting firms, and the agency project manager and applicable staff. It was also suggested that regularly scheduled meetings be held to ensure that the impact analysis and document preparation progresses at an acceptable pace. Regularized communication also helps the applicant know who requested information about a project and their interest or concerns, which helps anticipate potential petitions during the review process or litigation.

Another good practice suggested by participants was hiring a *contracting consulting firm intimately familiar with the environmental review and permitting process*. Participants from multiple states emphasized that document preparation and review is accelerated in situations where the consulting firm contracted by the applicant is familiar with how the agency does business and is able to provide information and supporting documents in the format requested by the agency in a timely manner. The quality of the analysis and consideration of alternatives and mitigation measures also improves when applicants contract with firms having a history of working on similar types of projects in the state. Alternatively, agencies often hear complaints that independent third-parties should prepare the necessary documentation and not the company or their consultants so as maintain some level of objectivity. A challenge is that the time required to solicit bids to secure a suitable independent contractor could further delay the process while not necessarily improving the quality.

Providing ample opportunities for public involvement at key steps in the review process was identified by several participants as a way to improve the efficiency of the environmental review process. Specifically, participants emphasized that if the applicant actively engages the public, litigation or project delays are less likely to occur. Participants explained that providing substantial opportunity for public involvement not only ensures important issues are incorporated into environmental review, but also serves a valuable tool whereby the public can become more informed about the role of environmental review and its objectives. This in turn helps the public be better informed and able to provide substantive comments on the proposed project, which would subsequently help the agency more fully incorporate their comments into the decision making process. The amount of time staff currently spends educating the public on how to participate taxes agency resources. Participants expressed frustration about the fact that many public comments effectively object to a project without providing justification and essentially are of little use in assisting the agency in deciding the adequacy of environmental review of the issuance of permits.

With respect to how internal agency reviews could be modified to improve efficiency and effectiveness of the process, having *fewer project managers or points of contact* was suggested. Participants expressed that having multiple points of contact can create inefficiencies, duplication of effort, and result in miscommunication in terms of inconsistencies in information shared and requested. This has been an issue between the responsible agency and project sponsors, as well as among agency divisions, sister agencies, applicants and their consultants, and members of the public. One solution suggested is *having all relevant environmental review and permitting authorities located within the same agency*. Participants from states where environmental review and permitting authorities and functions are divided across multiple agencies thought consolidating their project review and permitting could accelerate review time.

Specifically, consolidation would allow review teams to be a “one-stop-shop” where the applicant and public can communicate directly with project managers who could then confer with members of the review team and pertinent staff in responding to inquiries. Other participants felt making the process as predictable as possible was the first thing they would change in their state’s environmental review and permitting processes. They explained much of the review process is left to agency discretion and internal guidelines as opposed to being codified in state law or administrative rules. A byproduct is a less predictable agency review process, making it difficult for consultants and applicants to form reasonable expectations. One participant put it this way:

“...if it could be codified in rule that if a certain type of project would be approved if a certain set of circumstances exist, then there would be less anxiety about agency decision-making among applicants and consultants and it would be possible to speed up the process by not having to routinely justify agency permitting decisions.”

Contributing to the problem of predictability, agency staff may deviate from legal requirements because certain aspects of mandatory review timelines or other procedural requirements, which may be well-intentioned, are nearly impossible to meet. Circumstances unique to each project also may slow the process, many of which are outside the scope and influence of the lead agency. As such, participants expressed that it was not the environmental review process that is necessarily flawed, but rather the way in which it is being implemented.

Participants felt it is equally important the lead agency assembles an *experienced project team* capable of assessing the quality of environmental review documents and being explicit about the types of information needed. Experienced teams reduce errors, increase efficiency, and lend credibility to the review process. The analysis may also be more complete when an interdisciplinary team is designated to work on a specific project and is composed of and works intimately with both lead and sister agencies.

Use of *information technologies* was identified as an important component of an efficient process. Website updates and email is commonly used to disseminate information and frees agency staff from responding to repeated requests for project information. Providing environmental review and permit information electronically to the public also increases transparency with the process. Some felt it is difficult to access electronic information in many states, even with access to agency websites and directories. *E-Permitting*, which is employed in West Virginia, is an example of using technology to make the process more efficient. E-Permitting is a web-based program that facilitates the process by allowing applicants to observe day-to-day progress and submit documentation and permit applications on-line. It tracks the submission of documents, which puts pressure both on the lead agency to conduct timely

reviews as well as on consultants and the applicant to submit requested information. Other states expressed that they were considering a similar system or were already moving in that direction.

Several participants suggested that *capitalized projects* are processed faster than projects with less secure financing. They indicated that proposers of better capitalized projects are generally more willing to accept the terms of project review and provide specific time-sensitive information about both the company and the proposed project design. Participants expressed that state law mandates an applicant provide the lead agency with this information, but resistance to doing so frequently lengthens the review process, sometimes substantially. It was also suggested better capitalized projects navigate the review process faster because proposers are more willing to consent to adjustments in project design recommended by the lead agency, which in turn reduces the number of modifications requested at a future date.

Finally, the use of a *citizen's board* was identified as a common practice to resolve disputes. In Minnesota, for instance, the MPCA has a Citizens Board with the authority to make final decisions regarding environmental review and permits. This Citizens Board typically hears cases involving contested permits or EAW. Environmental review documents or permits processed by other state agencies are not heard by the Citizens Board. In other states, citizen's boards hold sway over final decisions, but the process may allow for additional opportunities for public comment. In some situations, applicants are allowed to continue project development unless a court grants a stay on an issued permit. States without citizen's boards indicated an appeal can be made to a department of environmental quality for additional public hearings, or to a board of environmental review.

5.0 CONCLUSIONS

Although examination of the case studies revealed that project review tended to take longer in Minnesota than in other states, it would be premature to conclude that Minnesota is an outlier. While review consumed more time than comparable projects in Georgia (forestry), Maine (forestry), Michigan (mining), and West Virginia (mining), project review in Minnesota was completed in a shorter time period than projects of comparable size in Montana (mining) and New York (forestry). Because a number of variables outside the control of the review agency can influence the length of project review, it is not possible to point to specific stages of the process that need to be accelerated in order to improve Minnesota's competitiveness. Furthermore, time may not be the most important metric in consideration of environmental impacts and subsequent permitting decisions. Aspects of Minnesota's environmental review and permitting processes, like the public involvement process, may consume more time than in other states examined, but the stages also confer a considerable amount of other benefits (e.g., citizen engagement) that could be lost if efficiencies in review time was the ultimate end goal. For instance, depending on the magnitude of the proposed project, public scoping is optional in New York, whereas in Minnesota scoping is a mandatory of all projects for which an EIS will be prepared. Denying the public ample opportunities to express concerns over specific issues could come at a great cost to society and to Minnesota's natural resources.

The key themes that emerged from the focus group and case study analysis reveal opportunities for improving the delivery and effectiveness of environmental review and associated permitting activities in Minnesota. They also highlight the challenges states face in meeting economic development and environmental quality objectives. For example, states have adopted appreciably different governance models. The level of rigor associated with review of proposed mining and forest projects subsequently varies from state-to-state even where a state environmental policy act exists. While the selected cases are not representative of all forestry and mining projects, they reveal that state environmental review and permitting requirements are inconsistently followed and the scope of review and breadth of public involvement mandated by state policies often dictates the length of the review period. The findings also reveal that although considerable differences exist, states are experiencing many of the same successes and encountering common obstacles (Table 5.1, Table 5.2). The transferability of these themes is limited due to the unique social, political, economic, and ecological conditions within which each state's environmental review and permitting program operates. The themes do, however, illustrate unique

circumstances influencing the efficacy of program implementation and particular institutional frameworks adopted by states for conducting environmental review and permitting. They include:

Scope of Environmental Review

- *State environmental review varies greatly with respect to the scope of potential impacts measured.* Some states consider indirect or off-site impacts while others only measure direct or site-specific impacts. Even states having environmental policy acts (i.e., Georgia, Minnesota, Montana, and New York) were markedly different. For instance, an environmental impact statement was prepared for the UPM-Kymmene/Blandin Paper Company project in Minnesota in which substantial consideration was given to off-site impacts associated with increased timber harvesting. In contrast, the environmental review documents prepared for projects in Georgia and New York contained no such analysis, consistent with their state policies.
- *Uncertainty exists across states on how to incorporate cumulative impact assessments into environmental review and permitting procedures.* The requirements and methods for assessing cumulative impacts are often considered by state environmental review program managers to be inadequate. There was disagreement about the appropriate scale of analysis, the role of state agencies in conducting generic assessments of cumulative impacts, thresholds of noncompliance, and whether project proponents are responsible for mitigating for cumulative impacts where their individual contribution is negligible but surpasses aggregate thresholds. Expanded use of generic assessments at the regional scale may reduce burdens placed on project managers and companies while increasing environmental safeguards for water and air quality and wildlife habitat.

Coordination

- *States differ in their approach to coordination of environmental review and permitting.* Some states conduct environmental review and permitting simultaneously with information generated from an review simultaneously integrated into the permitting process. The same staff may be responsible for administering both processes to aid in information exchange and efficient completion of tasks. Other states keep the processes separate with different staff and the results of the review informing subsequent permitting. Regardless of the approach, most state representatives feel confident their process is effective both in terms of the time required and for the adequacy of the review. They also report extensive coordination and planning among staff throughout both processes.
- *Centrally located and administered environmental review and permitting responsibilities are preferred.* Focus group participants expressed support for consolidating review and permitting

functions under one agency to eliminate inefficiencies, even if permitting and environmental review are separated by programmatic boundaries.

- *Coordination between state departments of economic development and environmental review and permitting authorities is important.* State agencies responsible for environmental review are better able to anticipate information needs and planning horizons if they are kept apprised of state economic development plans. The lead agency can identify relevant obstacles to planning in a timely manner prior to obligation of state funds.
- *Some states administer environmental review and permitting at a sub-regional level.* In the cases of West Virginia and New York State, permitting is coordinated at a multicounty level with little to no oversight by the central state office of the administering agency. No attempt was made to evaluate the effectiveness of these models but it is important to note differences when comparing projects across multiple states.
- *Pre-application meetings contribute to information exchange among project proposers and the administering agency.* Information sharing and discussions about project scope prior to submission of formal environmental review or permitting documents reduces confusion about needed information, alerts staff to upcoming projects, and allows applicants an opportunity to modify plans based on agency feedback before significant investment is made.

Public Involvement

- *Public involvement and outreach strategies can greatly affect environmental review and permitting.* Administrators in several states believe that the public is ill-informed about environmental review policies and procedures, how it works in conjunction with permitting, and the role of the public in providing information. As a result, public comments often lack substantive information that can be used in the process and requires considerable staff time and resources for the small number of people who choose to participate.
- *Educating the public about the role and process of environmental review enhances the quality of comments received.* Providing public education about the underlying purpose and processes of environmental review is a valuable tool for improving the quality of public comments and the overall public involvement processes.
- *The use of information technologies such as “e-permitting” is important for increasing communication.* Web-based technologies such as e-permitting may facilitate the transparency of the review process, speed reviews, and reduce confusion about outstanding information needs and requests. Information can be shared efficiently and in a consistent manner.

Project Timelines and Delays

- *Delays are a result of several factors often outside the control of the administering agency.* Project delays often happen as a result of: (1) inadequate information provided by consultants hired to work on a project, (2) failure of firms to provide requested information in a timely fashion or providing incomplete or incorrect information, (3) failure of sister agencies to provide necessary information in a timely manner, (4) inability of a firm to secure the appropriate level of financing needed for a project, and (5) lack of preplanning by the firm or pursuing an preliminary level of analysis when an environmental impact statement is necessary.
- *Environmental review and permitting took longer in situations where extensive public involvement was required.* An active citizenry requires a greater number of public meetings and may also result in more comments provided in which agencies must respond. State administrators agreed that public involvement is a fundamental part of the review process and that efforts to accelerate timelines should not be at the expense of opportunities for public involvement.
- *Environmental review and permitting took longer in situations where cumulative impact assessment was required.* The emphasis on cumulative impact assessment in states like Minnesota may have increased the time necessary to complete environmental review. The forestry and mining projects reviewed are not representative of all possible cases, but they do illustrate the expanded scope necessary to adequately assess off-site environmental impacts.
- *Environmental review and permitting processes should be as predictable as possible.* Consistency in carrying out environmental review and permitting requirements helps project sponsors anticipate the types of information required of them and how long the review process will likely take, which can aid in securing financing. Unpredictable or inconsistent requirements may result in the loss of economic development opportunities to states with more predictable processes. However, an appropriate balance must be achieved between the need for thorough environmental review and efforts to create a predictable process. Similarly, while much discretion is given to agency staff in terms of timelines and protocol, explicit guidelines may not reflect the diversity of project circumstances, particularly in cases where delays are outside the responsibility of the lead agency.

Table 5.1. Summary of Forest Products Processing Facility Case Studies.

	Georgia	Maine	Minnesota	New York
Project Name / Company	Norbord Project / Norbord Georgia, Inc.	TMP Plant Project / Great Northern Paper (Bowater, Inc.)	Thunderhawk Project / UPM-Kymmene/Blandin Paper Company (UPM/Blandin Paper)	Chatham Project / Chatham Forest Products, Inc.
Location	Cordele (Crisp County), Georgia	East Millinocket, Maine	Grand Rapids, Minnesota	Lisbon, NY
Type of Project	Expansion to existing oriented strandboard (OSB) engineered wood products. Facility was permitted for initial construction in 2002.	Project involved construction of a new Thermomechanical Pulp Mill at an existing mill site. The existing paper mill was permitted for initial construction in 1990. The mill would reduce air and water emissions, and solid waste generated from the East Millinocket Mill. The project was to lower air emission rates for volatile organic compounds from 233 tons annually to 102 tons annually.	Expansion and modification to an existing groundwood pulp and paper mill. Creation of a new paper production line.	The project involved construction of a new oriented strandboard (OSB) manufacturing plant.
Scope	Annual OSB production capacity would increase by 650 MMsf (an approximately 100% increase). Facility produces OSB on a 3/8 inch basis. Norbord sought approval to install up to three rotary dryers, a wood fired energy system, blending and forming machines, a press, and additional finishing capacity.	The mill would produce 745 bone dry short tons per day of pulp from two refining lines at a cost of \$106 million. The proposed project also included construction of a 57,000 square foot processing building, 30,000 square foot electrical substation expansion, 5,600 square foot chip silo, a chip conveying system, and various other out-buildings and paved areas.	Increasing pulp producing capacity, optimization of a paper line, and the addition of warehouse facilities. Wood use would increase about 197,000 cords annually to a total of about 400,000 cords/yr. The expansion would increase capacity to 761,000 short tons per year, which would constitute a slightly more than 100% increase in total production output. It was estimated that >50% of the increase in wood use would come from aspen.	The facility would be capable of producing nearly 500 million square feet of OSB annually on a 3/8-inch basis. No estimates were provided for the volume of wood harvested and processed annually. The primary structure will be nearly 580,000 ft ² . The project involved construction of an access road, water main, and sanitary sewage collection system. It is estimated that the project would result in a direct gain of 93 new permanent jobs.
Year Project Proposed	November 2004 (PSD permit application received on this date, no pre-applications took place between the agency and the applicant)	Summer of 1997 (start of pre-application meeting between DEP and applicant); June 1998 (public notice of proposed expansion is released); July 1998 (permit application is received by DEP)	June 2005 (resubmitted EAW received by DNR)	November 1999 (EAF submitted to OBPA) / December 1999 (Air State Facility Permit application submitted to NYDEC)
Year ER Completed / Project Permitted	June 2005 (PSD permit)	December 1998 (Site Law permit)	May 2006 (Record of Decision); August 31, 2006 (Air Modification Permit issued by MPCA on)	November 2001 (initially permitted June 2000, but state court ruling required additional air permits)
ER Completed	N/A	N/A	EAW, Scoping EAW, Scoping Decision Document, voluntary EIS, Record of Decision	Environmental Assessment Form. No public scoping documents were prepared. Scoping is only mandated under the State Environmental Review Act for projects requiring preparation of an EIS.

	Georgia	Maine	Minnesota	New York
Permits Completed	<ul style="list-style-type: none"> Georgia State Implementation Plan (SIP) - construction permit, Title V operating permit Prevention of Significant Deterioration (PSD) (as part of the federal New Source Review program) 	Submitted a Site Law permit application to the Maine DEP in July 1998. DEP approved the project and issued permits on December 22, 1998. After pre-application consultation, the application was received, processed, and approved in less than six months.	Air Modification Permit, Water Appropriations Permit, Public Waters Work Permit, NPDES/SDS Discharge Permits, NPDES stormwater permits. The applicant would have been required to submit applications for SPDES permits had the project moved forward.	Synthetic <i>Minor</i> Air State Facility Permit (initially issued by NYDEC on June 29, 2000, modified and reissued on November 20, 2001), Freshwater Wetland Permit (date unknown)
Public Notification Involvement	After receiving an air quality application on November 9, 2004, to amend the permit for the existing OSB plant and double the output capacity, standard procedures called for Environmental Protection Division to issue a 30-day public advisory. Based on existing records, Environmental Protection Division personnel cannot currently verify an advisory was ever created. It is clear that no public comments were received during the 30-day period following Norbord's initial submittal of its air quality application to Environmental Protection Division. Receiving few or no comments on a proposed forest products processing facility is not uncommon, and Environmental Protection Division rarely receives comments regarding proposed projects in southwestern Georgia. Environmental Protection Division does not pay to have public advisories published in newspapers and neither agency rules nor state statutes require the Environmental Protection Division to produce any sort of posting that would alert members of the public that such an advisory exists. The Environmental Protection Division merely sends the printed advisory to a list of county officials and newspapers, as well as citizens and companies that have previously notified the agency they	Prior to submitting a completed permit application, Great Northern Paper sent to all individuals owning property adjacent to the proposed facility a <i>Notice of Intent to File</i> . In accordance with state law, on June 23, 1998, the company released a public notice announcing a public informational meeting on July 1, 1998. The notice was published in <i>The Katahdin Times</i> and the <i>Bangor Daily News</i> , two newspapers of general circulation in the area. Great Northern Paper also released notices announcing a notice of intent to file a permit application under the Site Law, which provided guidance for requesting a public hearing and that the Board of Environmental Protection had jurisdiction. The announcement stated that written requests for a hearing would be received for no more than 20 days from the date the notice was published, and stated that public comments would be received throughout the processing of the application. One public information meeting was held and no public hearings were ultimately requested. Records are inexact, but the agency received very few public comments (in support or opposition) regarding the proposed expansion.	There are numerous opportunities for public involvement during project review including initial issue scoping, comment periods following completion of each stage of review, RGU responses to public comments, information meetings at all stages, and public notice of final determination. For the Thunderhawk Project, the DNR announced the scoping EAW and Draft Scoping Decision Document in the EQB's <i>Monitor</i> on December 20, 2004 and initiated a 30-day comment period. A press release was issued to at least one newspaper of general circulation in the vicinity on December 20, 2004. The DNR also conducted a public scoping meeting on January 12, 2005. The DNR announced the Draft EIS in the EQB <i>Monitor</i> on January 30, 2006 with a press release announcing further opportunities for public input. A 30-day comment period was announced and a public information meeting was held February 21, 2006. A press release was issued April 24, 2006 announcing the Final EIS with 15-day public comment period. The DNR received 11 public comments at the public informational meeting. Approximately 85 people attended this meeting. Ten of the public comments received at this meeting were in support of the proposed	In accordance with state law and associated administrative rules, the OBPA exercised its right to unilaterally make a determination of significance. That is, the agency determined that an EIS would not be necessary and issued its Negative Declaration without conducting any public hearings or otherwise requesting public comment. In June 2001, the agency completed a Draft Air State Facility Permit and subsequently deemed it complete for public review; a Notice of Complete Application was published in a local newspaper with general circulation in the surrounding area. A 30-day public comment period followed during which about 20 written comments were received requesting a public hearing. Although no explanation is offered, it appears that the NYDEC never convened a public hearing. After receiving considerable number of opposing comments and discovering deficiencies during its review and consultation with the applicant, on August 14, 2001, NYDEC advised CFP to withdraw its permit application and resubmit after incorporating modifications that would address deficiencies noted by the agency and concerns expressed by members of the public. CFP submitted a revised air permit application on August 31, 2001, and

	Georgia	Maine	Minnesota	New York
	wish to receive such advisories. Upon issuance of the draft Norbord air quality permit and Preliminary Determination, a public notice was published in a local newspaper. The public notice indicated there were 30 days to comment (or request a hearing) on the draft permit and Preliminary Determination. This notice was also sent to the Crisp County Commissioners, the Mayor of Cordele, the regional planning commission, the company, and the EPA Region 4 Headquarters. The Environmental Protection Division only received comments from Norbord and the EPA.		project, and one comment was neutral. The DNR received hundreds of public comments on the DEIS during the public comment period (January 30-March 7, 2006). Of the comments received, 36 acknowledged support for the proposed expansion while only three opposed it. In general, the public comments supporting the project emphasized the importance of the expansion for local employment and economic opportunities.	NYDEC completed a draft air permit on September 24, 2001. A second Notice of Complete Application was published on September 28, 2001 in a local newspaper and a 30-day public comment period followed. Although a considerable number of opposing public comments were again received, NYDEC concluded that “no substantive issues remained unresolved” and subsequently approved the State Air Facility Permit on November 20, 2001.
Issues and Impacts Analyzed	Considered environmental impacts that would directly result from expansion to the existing OSB facility. That is, whereas a considerable amount of analysis was conducted for air emissions that would result from the expansion, neither the permit application nor supplemental reports addressed impacts to forest resources resulting from additional timber harvesting to meet raw material demands. Emissions associated with expansion were detailed in the PSD permit. The dispersion modeling analysis was completed in three principle steps: the Significance Analysis, the NAAQS Analysis, and the PSD Increment Analysis. All emissions sources that would be generated at the Norbord facility were included as part of the PSD permit. Significance analysis was used to determine whether the net emissions change associated with the Cordele OSB Mill Expansion Project, when processed in a dispersion model,	The project only considered environmental impacts that would directly result from expansion to the existing paper mill. That is, while a comprehensive analysis was performed with respect to what impact the proposed expansion would have on a number of criteria, neither the application nor supplemental reports addressed impacts to forest resources resulting from additional timber harvesting. The following were considered: <ul style="list-style-type: none"> • No unreasonable adverse effect on air quality, runoff/infiltration relationships, surface water quality, ground water quality, or scenic character • No unreasonable alteration of climate, or natural drainages • Buffer strips • Control of noise • Preservation of historic sites • Preservation of unusual natural areas • Accessing to direct sunlight 	In addition to environmental impacts that would directly result from expansion to the existing paper mill the EIS and other ER and permitting materials addressed impacts to forest resources that would result from the additional timber harvesting needed to meet the raw material demands of the facility. The EIS attempted to incorporate by reference the analysis conducted in the GEIS prepared for statewide forest management and timber harvesting, but it was determined that the project-specific EIS would additional information regarding off-site impacts resulting from increased timber harvesting. In addition to off-site impacts, the EIS formally addressed the following categories of impacts: <ul style="list-style-type: none"> • Traffic and transportation • Rail impacts • Noise • Socioeconomic effects • Land use and zoning • Land cover • Wildlife and fisheries resources 	The project review only considered environmental impacts that would directly result from expansion to the existing paper mill. That is, while an EA was prepared that analyzed the impacts that construction of the proposed facility would have on a number of different environmental impact categories, neither the EA nor permit applications formally addressed impacts to forest resources as a result of additional timber harvesting. In accordance with state law, the EAF assessed the impacts the project would have on: <ul style="list-style-type: none"> • Surface water and groundwater • Air quality • Agricultural land resources • Changes in energy use • Public health • Communities and neighborhoods • Soils, bedrock, and water table • Plants and animals • Aesthetic resources • Historic/ archaeological resources • Open space and recreation

	Georgia	Maine	Minnesota	New York
	<p>leads to a significant impact upon the area surrounding a facility. Significant impacts were defined by ambient concentration thresholds referred to as the Significant Impact Levels. The significance analysis with respect to how NO₂, PM₁₀, and CO emissions would increase as a result of mill expansion was conducted to determine maximum off-site impacts for each of five years of meteorological data evaluated. The PSD Increment analysis revealed that none of the criteria pollutants would “consume” the increment and subsequently exceed permissible concentration thresholds.</p>	<ul style="list-style-type: none"> • Protection of wildlife and fisheries <p>It is important to note that the depth of the DEP’s analysis varied greatly across each criterion. For instance, impacts to groundwater and air quality were assessed in far greater depth than were impacts to wildlife and fisheries.</p>	<ul style="list-style-type: none"> • Water resources • Solid wastes, hazardous wastes, storage tanks • Stationary source air emissions • Designated parks, recreation areas • Visual Resources • Geologic hazards and soil conditions 	<ul style="list-style-type: none"> • Critical environmental areas • Transportation • Noise and odor impacts <p>A citizen’s group sued the NYDEC to have the agency to rescind the air facility permit. The state supreme court vacated the permit finding it lacked monitoring protocol. The permit was modified to include tracking and reporting protocol.</p>
Final Outcome	<p>The proposed facility expansion was permitted. No EER or other comprehensive ER document was completed during the project review process. Approval of the facility was not contested in any noteworthy way by stakeholder groups during public review and comment periods. The Environmental Protection Division was notified by Norbord that facility expansion would be completed, and the plant would be operating at its new capacity, by the end of December 2006.</p>	<p>DEP was able to complete its review of the applicant’s Site Law permit application in less than six months. Great Northern Paper began to expand its East Millinocket mill within months of completing permitting and the facility has been operating at its new capacity since the summer of 1998. The proposed facility was not contested in any noteworthy way by stakeholder groups during public review and comment periods.</p>	<p>Review for UPM/Blandin’s proposed expansion to an existing groundwood pulp and paper mill was completed in 20 months (September 2004-May 2006). Project review was completed in a time period consistent with state law. Although a significant number of public comments were received, comments tended to be in support and as a result total review time was not impeded by public opposition that could have warranted significant revisions to project scope and design. Blandin has not begun construction on its proposed expansion.</p>	<p>During the review process Chatham Forest Products transferred interest to Ainsworth Lumber Co. Although the project was approved for construction, as a result of extensive litigation (plaintiffs sued the NYDEC in the state supreme court over its decision to permit the proposed facility) and changing market conditions, the OSB plant has not yet been built.</p>
State ER Policy Framework	<p>Georgia Environmental Policy Act is in place, but the environmental review requirements (i.e., preparation of EERs or “EER” for major facilities) of the statute are not being actively enforced. Although guidelines have been promulgated pursuant to the Act, no agency rules have or regulations been developed or adopted to facilitate implementation of the Act.</p>	<p>N/A. Although ER is required for projects that could potentially impact wetland habitats, ER documents are not required under Maine law for proposed forest products processing facilities.</p>	<p>The Minnesota Environmental Policy Act of 1973 requires that documents be prepared for state and local government actions. Depending on the anticipated adverse impacts, either an EAW or an EIS is required. EAW is mandated for 36 categories and 24 for an EIS, including metallic mineral mining and processing facilities and <i>new</i> pulp and paper mills. EAWs are typically completed even when an EIS is mandated. EQB</p>	<p>Within DEC, the Division of Environmental Permits assumes primary responsibility for oversight during the process. The division oversees the DEC’s implementation of the State Environmental Quality Review (SEQR), and subsequently helps other state agencies and local governments carry out their responsibilities. The SEQR is implemented in accordance with statutory authority provided under</p>

	Georgia	Maine	Minnesota	New York
			requires an EIS to include at least one alternative of each of the following types, or provide an explanation of why no alternative is included: alternative sites, alternative technologies, modified designs or layouts, modified scale or magnitude, and alternatives incorporating reasonable mitigation measures identified through comments received during the EIS scoping and Draft EIS comment periods.	Part 617 of the State Environmental Quality Review Act and New York Code of Rules and Regulations. The SEQR establishes a process to consider environmental factors in the planning stages of actions that are directly undertaken, funded or approved by local, regional and state agencies. If the proposed action does not require a discretionary agency decision, there is no requirement for review under SEQR.
State Permitting Framework	The Stationary Source Permitting Program within the Environmental Protection Division is the primary government unit responsible for reviewing applications and issuing permits for construction of and expansions to forest products processing facilities. The permitting process consists of a detailed technical review that culminates in the issuance of a Construction and/or Operating Permit. Under the Georgia State Implementation Plan (SIP) regulations, a construction permit must be obtained for any new or modified unit resulting in emissions to the atmosphere. The Environmental Protection Division's Title V program then requires new and existing major sources of emissions obtain federally approved operating permits. Large manufacturing facilities with the potential to emit more than 250 tons of PSD regulated pollutants annually are subject to PSD permitting requirements.	Proposals for products processing facilities are required to file a permit application under the Site Location of Development Law, which requires review of developments that may have substantial effects upon the environment. As identified by Legislature they may include projects occupying more than 20 acres, metallic mineral and advanced exploration projects, large structures and subdivisions, and oil terminal facilities. Additional permits must be obtained under the state's Natural Resource Protection Act (NRPA) in situations where a project could potentially impact protected natural resources, which includes certain freshwater wetlands, wildlife habitat contained within forested wetlands, and great ponds. Forestry and timber harvest operations are exempt from NRPA because approximately two-thirds of the state is classified as forested wetland and such exemption would preclude essentially forest resource harvesting operations.	Numerous state permits are potentially relevant to a proposed large-scale industrial development project in the State of Minnesota. Although many of these permits will be required of most projects, a number of them will also only apply to certain types of projects. Potentially relevant permits include the following: mining permits, air emissions permits, water discharge and stormwater permits, wetland-related permits, state threatened and endangered species takings permits. The permitting and environmental review processes take place concurrently, but are not completed by the same personnel. Additionally, while ER will be conducted by a designated RGU, state permitting will straddle multiple agencies (the DNR and MPCA are the most prominent permitting bodies).	Within DEC, the Division of Environmental Permits assumes responsibility for Uniform Procedures Act permits to establish timeframes and procedures for filing applications, providing public notice, holding hearings, and reaching final decisions. In accordance with state law, administering needed permits requires the DEC to provide timely information regarding applications, opportunities to provide information on an application, review and comment periods, and participation in hearings. All state permits must be submitted concurrently. Although a number of permits are required of most projects, a number also only apply to certain types of projects. Relevant permits include air emissions permits, water discharge and stormwater permits, freshwater wetland permits, 401 water quality certification. Permitting and review take place concurrently, but are not completed by the same personnel. Although EAF and EIS preparation are coordinated by a designated agency, state permitting is carried out by the Division of Environmental Permits within NYDEC.

Table 5.2. Summary of Mining Facility Case Studies

	Michigan	Minnesota	Montana	West Virginia
Project Name / Company	Eagle Project / Kennecott Minerals Company (KEMC)	Minnesota Steel Project / Minnesota Steel Industries (MSI)	Sterling Mining Company (purchased from ASARCO Incorp.) / Rock Creek Project	Hobet Coal Company / Spruce No. 1 Mine
Location	Michigamme Township, Michigan	Near Nashwauk, Minnesota on the Mesabi Iron Range	Kaniksu National Forest, Saunders County, Montana	Blair, West Virginia
Type of Project	Proposed development of an underground nickel and copper mine in the Upper Peninsula of Michigan.	MSI proposed to reactivate the former open pit Butler Taconite mine and combine it with ore processing, production, and steel-making.	Underground copper/silver mine and associated processing facilities.	3,000+ acre multi-seam mountaintop removal surface coal mine.
Scope	The Eagle deposit is a high-grade magmatic sulfide deposit containing nickel and copper and trace amounts of cobalt and gold. The deposit averages 3.6% nickel and 3.0% copper and minor amounts of gold and other precious metals. The economic minerals are pentlandite and chalcopyrite. The Project includes surface and underground facilities for ore mining. There will be no milling or chemical processing of ore at the site. Surface facilities will be limited to those for storing and crushing ore, managing rock, water storage and treatment, backfilling, mine ventilation, and ancillary operations. About 2,000 tonnes per day will be generated 250 days/yr. On-site personnel will be about 87 employees growing to 110.	MSI plans to make steel from taconite ore in less than 48 hours by combining new technology. Key project features include: <ul style="list-style-type: none"> • Open pit taconite mine capable of 13,100,000 metric tons/yr. • Crusher/concentrator plant with tailings basin producing about 3,800,000 metric ton/yr. • Pelletizer capable of producing 3,800,000 metric tons/yr. • DRI facility producing about 2,800,000 metric tons/yr. • Two electric arc furnaces, ladle metallurgy furnace, slag processing and caster producing 2,500,000 metric tons/yr of steel slabs. 	The project involved the construction, operation, and reclamation of all facilities necessary to mine, remove, and transport economically mineable minerals from the Rock Creek deposit. The Rock Creek Project consists of developing a proposed underground copper/silver mine and mill/concentrator complex in northwestern Montana. The project is proposed to be conducted in two stages: (1) the construction and development of the evaluation adit and (2) the development, construction, and operation of the mine and mill facilities.	The project proposed to surface mine approximately 3,196 acres in an area roughly two miles northeast of the Town of Blair in Logan County. The proposed operation was a mountaintop coal mining operation along with contour mining and augering or highwall mining, and involved discharging treated water into stretches of a number of neighboring rivers and streams
Year Project Proposed	February 2006 (Nonferrous Mineral Mining Permit Application received by DEQ). Although information is limited, DEQ staff recall that pre-application meetings were held as early as 2004 (roughly two years before the company submitted any permit applications to the state)	June 2005 (an initial EAW was submitted to the DNR in February of 2005, but the applicant submitted a revised EAW after the first document was deemed inadequate by the DNR)	May 1993 (project was originally proposed in May 1987, but after a nearly four-year suspension of project review beginning in early 1990 the environmental review process was essentially re-started in the spring of 1993)	March 1997
Year ER Completed / Project Permitted	December 2007 (mining, air quality, and water discharge permits all received in this month)	August 2007 (ROD / EIS Adequacy Decision signed by DNR commissioner); August 2007 (Permit to Mine, NPDES/SDS Permits, Water Appropriations Permit, T/E	December, 2001 (ROD issued) / February 2002 (Air Quality Permit issued)	January 1999

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		Species Takings Permit); October 2007 (Air Quality Permit).		
ER Completed	An Environmental Impact Assessment was prepared in accordance to R 425.202 of Michigan's Nonferrous Metallic Mining Regulations. Although a number of topics were described during preparation of the Environmental Impact Assessment, the analysis of impacts was less comprehensive than in an EIS.	EAW (initial) (February 21, 2005), EAW (revised) (June 21, 2005), Scoping EAW (July 11, 2005), Draft Scoping Decision Document (July 11, 2005), Final Scoping Decision Document (October 13, 2005), Draft EIS (February 12, 2007), Final EIS (June 18, 2007), ROD/EIS Adequacy Decision (August 10, 2007)	Scoping Document (January 1988), Draft EIS (October 1995), Supplemental Draft EIS (January 1998). Final EIS (September 2001), Record of Decision (December 2001)	N/A. Although the Site Law permit application evaluated the effects the project would impose with respect to 15 categories of environmental impacts, no ER documents were prepared for this project as the state only requires the preparation of ER documents for those projects that will impact wetland environments.
Permits Completed	<i>Nonferrous Metallic Mining Permit</i> (issued by DEQ December 14, 2007), <i>Michigan Air Quality Permit</i> (issued by DEQ December 14, 2007), <i>Groundwater Discharge Permit</i> (issued by DEQ December 14, 2007), <i>Notice of Coverage</i> (pertains to storm water management and must be submitted in order to be in compliance with the requirements of the NPDES Permit), <i>Pollution Incident Prevention Plan (PIPP)</i> [note: in accordance with state law, all permits were submitted concurrently to DEQ]	<i>Permit to Mine, Air Emissions Facility Permit, Section 401 Water Quality Certification, Water Appropriations Permit, Takings Permit</i> (for Endangered or Threatened Species), <i>Public Waters Permit, SDS Permit</i> (Tailings Basin Operation), <i>NPDES/SDS Discharge Permits, NPDES stormwater permits, Hazardous Waste Generator License</i>	Permit applications have been filed but none will be issued until the applicant pay a reclamation performance bond to obtain an exploration license. The following permits are required: <ul style="list-style-type: none"> • <i>Exploration License</i> • <i>Hardrock Mine Operating Permit</i> • <i>Air Quality Permit</i> • <i>MPDES Permit</i> • <i>Storm Water Discharge Permit</i> • <i>Public Water Supply/Sewer Permit</i> • <i>401 Certification</i> • <i>Hazardous Waste/Solid Waste</i> 	<i>Mining Permit</i> (issued in November of 1998), <i>NPDES Water Pollution Control Permit</i> (issued in January of 1999). As part of the permitting process, and in accordance with federal law pertaining to surface mining, the West Virginia DEP completed a <i>Cumulative Hydrologic Impact Assessment</i> for the proposed mining operation.
Public Notification & Involvement	Public Meetings were held in Marquette on April 18, 2006, and written public comments were accepted until May 16, 2006. The DEQ issued a proposed decision to grant the permit on January 9, 2007. The DEQ then made applicable documents available for public comment on February 23, 2007. In accordance with Part 632 of the <i>Nonferrous Metallic Mining Regulations</i> , the DEQ held a series of public hearings on September 10, 11, and 19, 2007, even though only one was required by state law. Two were held in communities in the UP situated near the proposed mine, and	After completing the scoping EAW and issuing the draft Scoping Decision Document, a notice of availability was published in the <i>EQB Monitor</i> on July 18, 2005, and a 30-day public comment period begins. The DNR supplied a press release to at least one newspaper in the vicinity of the project. A public scoping meeting was held on August 10, 2005 in Nashwauk, MN with the comment period ending August 13, 2005. A notice of EIS preparation was published in the <i>Monitor</i> on February 27, 2006, beginning the mandated 280-day EIS timeline. A press release was issued announcing	The following meetings and public comment periods were provided to solicit comments on the ASARCO permit, each proceeded by a Notice of Intent at each stage. <ul style="list-style-type: none"> • May 26, 1987 - public meeting • January 27, 1988 - scoping meeting on the application • March 22, 1990 - meeting to review a petition to amend ambient water quality • Public scoping meetings June 16, 23, 1993 • Public comment period on draft EIS from October 5, 1995, to December 5, 1995 • Open house and public hearings on 	Public involvement timelines were not available for the Spruce No. 1 Mine. The generic timeline is: <ul style="list-style-type: none"> • <i>Administrative review</i> – 5 working days; <i>Technical review</i> – 2-12 months (application review and deficiency notice sent to company within 30 days); • <i>Public participation</i> – 2-4 months (concurrent with technical review) depending on whether a public hearing is required; • <i>Total time required</i> – 2-12 months, depending on complexity of the application. The DMR requires advertisement for

	Michigan	Minnesota	Montana	West Virginia
	<p>the third in Lansing. The purpose of these hearings was to give interested parties a chance to present new information or concerns about:</p> <ul style="list-style-type: none"> • DEQ Air Use Permit • DEQ Groundwater Discharge Permit • DEQ proposed decision to grant the Mining Permit • DNR draft Surface Lease • DNR draft Reclamation Plan <p>In addition to public hearings, DEQ announced that written comments would be accepted for 28 days after the hearings. Interested persons were able to submit comments by mail or e-mail until close of business on October 17, 2007.</p> <p>The DEQ received approximately 3,500 written comments on the KEMC Project during the public comment period and hearings. DEQ staff estimate that there might have been as many as 250 to 300 people in attendance at the public meeting on the Eagle Project in April of 2007. Although there were a substantial number of comments submitted in support of the application, project proponents constituted a relatively small minority.</p>	<p>preparation of the draft EIS on March 7, 2006 and a 30-day public comment period began on February 12, 2007. A public meeting was held on March 14, 2007. The comment period, which exceeded the required 30 days, concluded on March 28, 2007. The Final EIS Notice of Availability was published in the <i>Monitor</i> on June 18, 2007 with the 30-day comment period beginning. The public comment period for the final EIS concluded on July 23, 2007.</p> <p>More than 120 written comments were received on the DEIS with most comments in support of the project. However, a substantial number of comments were also received concerned about aspects of the project. The Minnesota Center for Environmental Advocacy opposed the project on the grounds that the EIS significantly underestimated the negative environmental effects that the MSI Project could impose. Approximately 150 individuals attended the public meeting held on the DEIS at a local high school on March 12, 2007. No public comments were expressed at this meeting in opposition to the project.</p>	<p>draft EIS November 14-15, 1995</p> <ul style="list-style-type: none"> • Public comment period on draft MPDES permit from February 20, 1996, to April 22, 1996 • Public meetings April 8-11, 2006 • Public meetings April 22-23, 2007 • Public comment period on supplemental draft EIS from January 9, 1998, to March 11, 1998 • Open house and public hearings February 10-12, 1998 • March 13, 1998 – Notice to extend the comment period to April 10 • Public comment period on changes in proposed road closures from September 11-28, 1998. <p>The DEQ ultimately received over 4,000 public comments during the draft EIS public comment period. Although the DEQ’s responses to each individual public comment were not analyzed in their entirety, a review of a large sample of these comments indicates that the vast majority of comments were in opposition to the Rock Creek Project.</p>	<p>public notification of mining permit applications in a qualified newspaper once a week for four consecutive weeks. There is a 30-day public comment period that begins on the date of the last publication. A public hearing may also be scheduled if an individual requests one during the public comment period.</p>
Issues and Impacts Analyzed	<p>The following topics were evaluated:</p> <ul style="list-style-type: none"> • Topography • Soils • Geology of the bedrock and unconsolidated overlying materials • Groundwater and aquifers • Surface water systems • Regional hydrology • Ground and surface water quality • Private and public water supplies including irrigation wells 	<p>The following topics were not expected to pose significant impacts but were addressed in the EIS:</p> <ul style="list-style-type: none"> • Land use • Cover types • Threatened, endangered species • Water-related land use districts • Erosion and sedimentation • Geologic hazards, soil conditions • Traffic • Vehicle related air emissions 	<p>The DEQ and other agencies involved used issues identified from public, agency, and Tribal comments to develop and evaluate the effects of the alternatives in the EIS. Eight issues, defined as indicators of potentially significant effects, emerged from the scoping process and agency deliberations including:</p> <ul style="list-style-type: none"> • Effects on quantity (e.g. seepage and withdrawals) and quality (e.g. 	<p>The CHIA provided information on historical land use and mining activity (both surface and deep) for the affected area, and also an overview of area geology, ground and surface water resources. The CHIA also involved extensive water testing in at various points of the Spruce Fork and other fluvial systems that exist downstream of the proposed project area. These</p>

	Michigan	Minnesota	Montana	West Virginia
	<ul style="list-style-type: none"> • Designated wellhead protection • Wetlands and flood plains • Natural, wild and scenic rivers • Residential dwellings, schools, and other public and private structures • Existing/ proposed infrastructure • State wilderness areas • Federal wilderness areas • Wild and research natural areas • Land use • Aquatic/ terrestrial flora and fauna • Fish and wildlife habitat and ecological systems • Threatened, endangered, and species of special concern • Non-native and invasive species • Archaeological resources • Air quality and meteorology • Visual resources • Noise, light and seismicity 	<ul style="list-style-type: none"> • Archaeology • Recreational trails • Visual impacts • Infrastructure • Socioeconomics • Mineland reclamation <p>The DNR also identified resources with potentially significant impacts:</p> <ul style="list-style-type: none"> • Physical impacts on water • Water appropriations • Surface water runoff • Wastewater/water quality • Solid waste • Stationary source air emissions • Fish and wildlife resources • Noise • Cumulative impacts to air quality, threatened and endangered plant species, wetlands, wildlife habitat and barriers to animal dispersal 	<p>discharges) of Montana and Idaho surface and ground water resources</p> <ul style="list-style-type: none"> • Effects on species of fish and wildlife and their habitats, and current and proposed threatened and endangered species (e.g. grizzly bear, bull trout) • Stability of the tailings impoundment • Impacts to socioeconomics of surrounding communities • Effects on old-growth ecosystems • Effects on wetlands and non-wetland waters • Effects on public access, recreation, and traffic safety • Effects on aesthetic quality including noise, scenic, and wilderness experiences 	<p>measurements were taken to establish baseline water quality levels, which were recorded so that comparisons could be made between pre- and mining water quality. The pre-mining analysis found that, despite extensive mountain top surface mining and the existence of numerous deep mines in the area, instream water quality within the watershed fell within NPDES and Clean Water Act instream standards.</p>
Final Outcome	<p>On December 14, 2007, the DEQ approved the proposed mine and issued the mining permit, air quality permit, and water discharge permit. The Department of Natural Resources issued a Surface Use Lease to Kennecott on February 7, 2007, granting use of a parcel of state land for surface facilities to be associated with the mine.</p> <p>On December 21, 2007, the National Wildlife Federation, Huron Mountain Club, Keweenaw Bay Indian Community, and Yellow Dog Watershed Preserve filed administrative appeals contesting the issuance of the Mining Permit and Groundwater Discharge Permit. Kennecott has been granted intervener status in the contested case. The case is scheduled to be</p>	<p>On August 10, 2007, after the EIS process was complete, the DNR issued a determination in which it found the EIS to be adequate and approved the operation of proposed mine pending issuance of the necessary permits. The permit to mine, air quality permit, water discharge permits, and other required permits have all since been issued. It should be noted that a potential EPA Environmental Appeals Board appeal on the draft air quality permit led to subsequent modifications to the air quality permit in its final form. The project garnered a considerable amount of public interest and comment but few comments were submitted in opposition to the mine. Despite little opposition during the review process, a subsequent suit has been</p>	<p>The ROD, issued in December 2001, approved Sterling’s Rock Creek Project. Although the “No Action” alternative was found to be the least environmentally damaging, the alternative ultimately selected met the purpose and need for reasonable mitigation and protection measures.</p> <p>Although the ROD issued by the DEQ in 2001 found that the EIS was adequate for the purpose of satisfying the requirements of the Montana Environmental Policy Act, the Rock Creek Project has not been fully permitted as Sterling has not submitted the reclamation performance bond (detailed in the following section) for the exploration license which is the first phase of this project.</p>	<p>Based on the proposed design and pre-mining site and water quality assessments, the CHIA concluded that it was unlikely that the proposed mine would significantly negatively impact the local hydrologic balance. The DEP geologist that conducted the CHIA recommended approval of the mining permit on the basis of minimal predicted hydrologic impacts.</p>

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	heard by an administrative law judge beginning on April 28, 2008. The four petitioners also filed a lawsuit in Ingham Circuit Court contesting issuance of the Air Use Permit.	brought against the DNR for failure to adequately address the effects that the project would have on global climate change.		
State ER Policy Framework	Environmental review is not required in the State of Michigan. Although the state does not have a SEPA in place, there is no legislation or administrative rules requiring detailed analysis of potential impacts associated with ferrous and nonferrous metallic mining projects. Review and permitting are conducted by the same personnel within DEQ. With respect to proposed mining operations, the state's <i>Nonferrous Metallic Mining Regulations</i> mandate that an EIA describe the natural and human-made features, including flora, fauna, hydrology, geology, and geochemistry, and baseline conditions in the proposed mining area as well as the affected area impacted by mining operations. The depth and level of analysis of the Eagle Project EIA was not consistent with the level of analysis typically contained within an EIS prepared for large-scale projects in Minnesota or states with a SEPA.	The Minnesota Environmental Policy Act of 1973 requires that ER documents be prepared for state and local government actions. Depending on the anticipated adverse impacts, either an EAW or an EIS is required. There are 36 categories for which an EAW is mandated. There are 24 categories for which an EIS is, including metallic mineral mining and processing facilities and <i>new</i> pulp and paper mills. EAWs are typically completed even when an EIS is mandated. Criteria for determining whether an EIS is required include: a) type, extent, and reversibility of impacts; b) potential cumulative effects; and c) extent that controls and mitigation measures can alleviate anticipated adverse environmental effects.	Procedures governing EIS process are defined in administrative rules for the Montana Environmental Policy Act. An EIS is required for any action taken by the State that may significantly affect the quality of the human environment. It does not apply to privately funded projects that would not otherwise require state approval. Included activities are: projects, programs, or activities directly undertaken by an agency; a project or activity supported through contract, grant, subsidy, loan, or other form of funding assistance from the agency; or a project or activity involving the issuance of a lease, permit, license, certificate, or other entitlement for use or permission to act. Three levels of ER are provided: a) categorical exclusions; b) EISs; and c) in situations where impacts are unclear an EA may be created.	West Virginia state law does not require, nor have in place, an environmental review process to take place in addition to environmental permitting.
State Permitting Framework	In accordance with the Nonferrous Metallic Mining Regulations (Part 632), during the project review process, the Michigan DEQ shall: <ul style="list-style-type: none"> • Process applications and determine if it is administratively complete within 14 days after receiving • Make files available in accordance with FOIA • Announce and hold an initial public meeting on the application; DEQ has 42 days to provide a public hearing on an application 	Numerous state permits are potentially relevant to a proposed large-scale industrial development project in the State of Minnesota. Although many of these permits will be required of most projects, a number of them will also only apply to certain types of projects. Potentially relevant permits include the following: mining permits, air emissions permits, water appropriation, water discharge and stormwater permits, wetland-related	The following state-level permits and licenses are routinely required of mining operations in Montana: <ul style="list-style-type: none"> • <i>Exploration License</i> to commence exploratory activities including construction of an evaluation adit and testing of bulk samples. Approval may include stipulations for final designs and a sufficient reclamation bond must be posted. • <i>State Hardrock Mine Operating Permit</i> for mine development activities. Approval may include 	Any entity intending to disturb surface land for underground or surface coal mining, construction of associated haul or access roads, or construction or preparation plants for coal, tipples, and load outs must apply for a coal mining permit. The permit shall include: <ul style="list-style-type: none"> • Ownership information • Names and addresses of all surface land owners within one hundred feet of the proposed operation • Insurance and bonding information

Michigan	Minnesota	Montana	West Virginia
<ul style="list-style-type: none"> • Accept written public comments on the application for at least 28 days following the public meeting • Make a preliminary decision to grant or deny the permit after the public comment period concludes • Make materials available for access, review and comment by interested stakeholders and members of the public • Announce and hold a second public hearing on the application • Accept written public comments on the application after public hearing for an additional 28 days • Make a final decision to grant or deny the permit after conclusion of the final public comment period • DEQ is required approve proposed mining operations that meet the requirements of the Nonferrous Metallic Mining Regulations 	<p>permits, hazardous waste disposal, state threatened and endangered species takings permits. The permitting and environmental review processes take place concurrently, but are not completed by the same personnel. Additionally, while ER will be conducted by a designated RGU, state permitting will straddle multiple agencies (the DNR and MPCA are the most prominent permitting bodies, although the Dept. of Health also issues relevant permits).</p>	<p>stipulations for final design of facilities and sufficient reclamation bond must be posted. The DEQ can make the decision to approve or deny an operating permit application no sooner than 15 days following publication of final EIS.</p> <ul style="list-style-type: none"> • <i>Air Quality Permit</i> ensuring monitoring and control of particulate emissions on more than 25 tons per year. • <i>MPDES Permit</i> establishing effluent limits and treatment standards. • <i>Storm Water Discharge Permit</i> to control discharge of storm water from the mine site. • <i>Public Water Supply and Sewer Permit</i> to construct a public water supply or sewer system. • <i>401 Certification</i> for any activity requiring federal licenses/ permit. • <i>Hazardous Waste and Solid Waste Registration</i> for transport of hazardous materials. <p>Each new hard-rock mineral development is also required to prepare a local government <i>Fiscal Impact Plan</i>, which includes a timetable for development, estimated number of persons coming into the impact area, increased capital and operating cost to local government units, and financial/ other assistance the developer will give to local governments to meet the increased need for services.</p>	<ul style="list-style-type: none"> • Subsidence control plan and underground abandonment plan • Fish/ wildlife resource information • Parks/ historic land information • Hydrological data by season • Geologic and blasting information • Drainage plan <p>Proposers must also obtain an <i>NPDES permit</i> to protect rivers, streams, and other surface waters disturbed by discharges from mining operations. They must obtain a state <i>401 Certification</i> for activities filling in surface waters with dredge or fill material. State rules also require submission of <i>Community Impact Statements</i> (CIS) for new surface mining operations, which are submitted to the WV Office of Coalfield Community Development and runs concurrent with, but separate from, the surface mining permit application process. A CIS should summarize the biophysical, economic, and social impacts of surface mining operations and describe the following:</p> <ul style="list-style-type: none"> • Location, extent and duration of mining operation • Property impacts • Proposed blasting and valley fills • Post-mining land uses • Impacts on infrastructure and area economy

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7.0 APPENDIX A – State Environmental Review and Permitting for Forest Products Projects

7.1 Georgia

The Environmental Protection Division of the Georgia Department of Natural Resources is a state agency within the executive branch and is responsible for administering laws, executive orders, and administrative rules that pertain to environmental review and related permitting procedures. The Environmental Protection Division is charged with protecting Georgia's air, land, and water resources through the authority of state and federal environmental statutes that regulate public and private facilities in the areas of air quality, water quality, hazardous waste, water supply, solid waste, surface mining, underground storage tanks, and others. The Environmental Protection Division issues and enforces all state permits in these areas and has full delegation for federal environmental permits except Section 404 (wetland) permits.

The Environmental Protection Division is composed of five branches: Air Protection, Hazardous Waste Management, Land Protection, Program Coordination, and Watershed Protection. The *Air Protection Branch* is responsible for protecting Georgia's air quality through the regulation of emissions from industrial and mobile sources. The Branch also monitors levels of air pollutants throughout the State. The *Hazardous Waste Management Branch* regulates facilities that treat, store or dispose of hazardous wastes. This branch also administers the State Superfund, which is used for hazardous site cleanup work. The *Land Protection Branch* regulates solid waste disposal and treatment, scrap tire cleanups, lead and asbestos abatement, underground storage tank registration and remediation, and surface mining permitting and reclamation. Functions of the *Program Coordination Branch* are Division-wide in scope and include the management of district office operations throughout the state, laboratory, emergency response, environmental toxicology, environmental radiation, radioactive materials, quality assurance, small business assistance and training. The *Watershed Protection Branch* manages water resources in Georgia through permits to local governments and industry to discharge treated wastewater and to local governments, industry, farmers and subdivisions for surface water and groundwater withdrawals. The Branch ensures that Georgia's public water systems are operating properly to supply safe drinking water to citizens, works to control nonpoint sources of pollution, including erosion and sedimentation, and manages storm water discharges. This Branch also conducts water quality monitoring and modeling of Georgia's waterways.

With respect to forest products processing facilities, the Air Protection Branch's Stationary Source Permitting Program is responsible for review and permitting of proposed new facilities and expansions of

existing facilities. Stationary Source Permitting Program implements all air quality related permitting requirements, including New Source Review, Prevention of Significant Deterioration and all Operating Permit Programs. The permitting process consists of a detailed technical review of facility submitted applications that ultimately culminates in the issuance of a Construction and/or Operating Permit. This review includes a rule applicability analysis (federal and state), a Toxic Impact Assessment (if necessary) and development of periodic monitoring, record keeping and reporting requirements to provide reasonable assurance of compliance with applicable regulations. The Stationary Source Permitting Program is divided into five industry-specific units: Chemicals, Combustion, Minerals, NOx and VOC.

A central piece of legislation to guide how environmental review of proposed projects is conducted in the State of Georgia is the *Georgia Environmental Policy Act of 1991* (OCGA 12-16-1), which requires that all state agencies and activities prepare an EER (this document is essentially equivalent to what most entities refer to as an EIS) as part of the decision-making process for determining when a government action may have a significantly adverse impact on the environment. Of the 15 states with similar laws in place, the Georgia Environmental Policy Act was the most recently passed state environmental policy act. Although the Act exists, the environmental review requirements (i.e., preparation of EERs for major facilities) of the act are not being implemented. Furthermore, while guidelines have been promulgated pursuant to the Act, no agency rules or regulations have been developed or adopted to facilitate implementation of the Act. The law applies only to state actions (defined as land-disturbing activities conducted by a state agency or funded 50% or more by a state grant), the proposed sale or exchange of five or more acres of state land, or the proposed harvesting of more than five acres of trees from state land. The law does not contain a policy statement; only findings of need for state stewardship of the physical and cultural environment. Guidelines (discussed in more detail below) to assist government agencies in the preparation of EERs were developed by the Georgia Department of Natural Resources for use by other state agencies. If, by taking an agency action it is “probable to expect a significant adverse impact on the natural environment,” then the statutory threshold for conducting a review of potential environmental impacts is triggered. More specifically, the Act states that any proposed governmental action that may “significantly adversely affect the quality of the environment,” including the state’s air, water, land, plants, and animals, requires an EER. However, although the Act defines a government action that could have a significant adverse effect on the environment as an action that creates a need for an EER, neither the Act nor subsequent administrative rules have explicitly laid out criteria for assessing whether a given predicted environmental impact would in fact be significant. Alternatives to the proposed project or activity must be considered as part of the EER, and mitigation measures must be incorporated as well. An EER is required unless a finding of no significant impact can be prepared, which in the case

of Georgia is roughly equivalent to a Negative Declaration for an Environmental Assessment Worksheet in the State of Minnesota. Following comment, the decision may be to proceed, to proceed with mitigation, or to not proceed. The Act implies the law is procedural only and declares that the final decision to proceed with an agency action "shall not create a cause of action" by any person provided the procedural notice and hearings provisions have been followed.

As outlined in the Act, an environmental effect report describes the environmental impact and any adverse environmental effects of the action, alternative actions (including a no action alternative), mitigation measures proposed to avoid or minimize impact, and other effects of the action. The government agency responsible for the action authors the report and provides it to the director of the Georgia Environmental Protection Division. A notice that the report has been prepared is to be made available to the public so that public hearings regarding the action can be convened as needed. Although no administrative rules have been adopted, the Act requires the director of the Environmental Protection Division to issue guidelines to assist government agencies in the preparation of EERs. The guidelines include provisions for the following: criteria for evaluating whether a proposed government action may impose significant adverse affects on environmental quality, protocols for soliciting comments from public and private organizations and individuals about the proposed government action, and the possibility of preparing a single EER in situations where a series of governmental actions individually pose minimal adverse significance on the environment but pose significant adverse cumulative effects on the environmental or if a series of proposed government actions are related either geographically or as part of a chain of contemplated actions that would subsequently impose significant environmental impacts when considered together.

With respect to review and analysis of potential environmental impacts associated with a proposed action (i.e., construction and expansion of a new industrial facility), Georgia does not have a law in place that requires an environmental impact statement (or other similar document) be completed for *privately funded projects*. That is, while the Act requires that all state agencies and associated activities prepare an EER as part of the decision-making process for when a government action may have an impact on the environment, similar requirements do not exist for private sector activities in which a government agency does not directly assist with the planning, financing, or implementation of a proposed action.

Under the Georgia regulations a construction permit must be obtained for any new or modified unit that may result in emissions to the atmosphere. After a construction permit is obtained, the Title V program requires that all new and existing major sources of air emissions obtain federally approved operating

permits (described in more detailed below). Best Available Control Technology (BACT) and air quality analyses, as required for major source projects under the PSD permitting program as administered by the Environmental Protection Division and Georgia's *Rules for Air Quality Control* (GRAQC), typically follows a top-down approach where progressively more stringent control technologies are analyzed until a level of control considered BACT is reached on the basis of environmental, energy, and economic impacts. The key steps followed in this process were to: identify viable options, eliminate technically infeasible options, rank remaining alternatives by control effectiveness, evaluate most effective controls, and select BACT.

In addition to federal air regulations, the major source thresholds with respect to the Georgia Title V regulations are 10 tpy of any single hazardous air pollutant (HAP), 25 tpy of any combination of HAP, and 100 tpy of other regulated pollutants. Emissions of NO_x, CO, PM₁₀, and VOC exceed the 100-tpy major source threshold along with emissions of HAP exceeding 10 tpy for a single pollutant and 25 tpy of total HAPs. Thus, a Title V Permit was required for the plant as it was constructed in 2002. Because the expansion would approximately double output capacity, an additional Title V permit was needed in order for the proposed expansion to take place.

With respect to visible emissions, Georgia Rule 391-3-1-.02(b) limits opacity to 40% except whenever a more stringent limit is given (e.g., Rule (d) for fuel burning). The proposed baghouses within the process are subject to this limit. With respect to fuel burning equipment, Georgia Rule 391-3-1-.02(d) limits emissions from fuel burning equipment based on heat input capacity. In addition, opacity is limited to 20% except for one six-minute period per hour, which may be up to 27%. The energy system included in Norbord's proposed OSB facility expansion was subject to this rule. With respect to particulate emissions from manufacturing processes, Georgia Rule 391-3-1-.02(e) regulates the manufacturing of materials that have the potential to emit particulate emissions. Equations are used to determine the allowable PM emissions from subject processes. The baghouses, dryers, and presses incorporated into the OSB facility expansion were subject to this rule. With respect to sulfur dioxide emissions, Georgia Rule 391-3-1-.02(2)(g) requires that the maximum sulfur content of any fuel combusted in a fuel-burning source with a heat input capacity less than 100 million Btu/hr not exceed 2.5% by weight and any combustion source with a heat input capacity greater than 100 million Btu/hr not exceed 3% by weight. The energy system (heat input capacity of 285 MMBtu/hr) included in the proposed expansion was subject to this rule. With respect to fugitive dust, Georgia Rule 391-3-1-.02(2)(n) requires that facilities that could potentially generate fugitive dust take all reasonable precautions to prevent such dust from becoming airborne. This rule limits opacity from any fugitive dust source to 20%. With respect to Atlanta ozone non-attainment

area combustion source rules, Georgia Environmental Protection Division has promulgated (e.g., February 16, 2000) restrictions on the NO_x emissions from combustion sources for facilities located in or near the Atlanta ozone non-attainment area. Specifically, these regulations limit NO_x emissions from fuel burning equipment, stationary gas turbines and reciprocating engines. The Cordele OSB facility is located in Crisp County, which is outside the designated counties. As such, any stationary emergency generators or fuel burning equipment included in the expansion were not subject to these rules.

Under the GRAQC each application for a permit to construct a new stationary source or modify an existing stationary source shall be subjected to a preconstruction or premodification review by the Director of the Environmental Protection Division. The Director shall determine prior to issuing any permit that the proposed construction or modification will not cause or contribute to a failure to attain (as expeditiously as practicable) or maintain any ambient air quality standard, a significant deterioration of air quality, or a violation of any applicable emission limitation or standard of performance or other requirement under the federal Clean air Act or the GRAQC. The GRAQC require that each person applying to the Director of the Environmental Protection Division for a permit to construct a new stationary source or modify an existing stationary source shall provide information required by the Director to make such determination (Environmental Protection Division, 2007).

In addition to any other requirement under the federal Clean Air Act, or Chapter 391-3-1, no permit to construct a new stationary source or modify an existing stationary source shall be issued unless such proposed source meets all the requirements for review and for obtaining a permit prescribed in Title I, Part C of the federal Clean Air Act, and Section 391-3-1-.02(7) of the Georgia Air Quality Rules.

GRAQC has established state regulations applicable at the emission unit level (source specific) and at the facility level that were relevant to the proposed Norbord OSB facility expansion. The rules also contain requirements related to the need for operating permits (including both a SIP Operating Permit and a Title V Operating Permit). These rules address the following: visible emissions; fuel burning equipment; particulate emission from manufacturing processes; sulfur dioxide; fugitive dust; and Atlanta ozone non-attainment area combustion source rules. Under GRAQC the following sources are required to obtain a Title V Operating Permit:

- Any major source (e.g., Kraft pulp mills, taconite ore or other metallic mineral processing plants) as defined in 40 CFR Part 70.2;⁹
- Any source, including an area source, subject to a standard, limitation, or other requirement under section 111 of the federal Clean Air Act;
- Any source, including an area source, subject to a standard or other requirement under section 112 of the federal Clean Air Act, except that a source is not required to obtain a permit solely because it is subject to regulations or requirements under section 112 (r) of the federal Clean Air Act;
- Any affected source as defined in 40 CFR Part 70.2; and
- Any source in a source category designated by the EPA pursuant to 40 CFR Part 70.3.

For each proposed project that is required to obtain a Title V Operating Permit under Part 70 of the GRAQC, state rules require that the owner or operator submit a complete application:

- Within 12 months after the US EPA grants approval of this section (10) or on or before such earlier date as the director may establish, for a source applying for the first time;
- Within 12 months after commencing operation, for a source required to meet the requirements under section 112(g) of the federal Clean Air Act or to have a permit under the preconstruction review program requirements of Rule 391-3-1-.03(8)(b) or Rule 391-3-1-.03(8)(c). Where an existing Part 70 permit would prohibit such construction or change in operation, the source must obtain a permit revision before commencing operation; or
- At least six months but not more than 18 months prior to the date of permit expiration, for a source subject to permit renewal.

The GRAQC has incorporated the Clean Air Act and associated 40 CFR Part 70.5 *information requirements*, and as a result an applicant proposing a project that must obtain a Title V Operating Permit has to include the following emission-related information in its permit application:

- All emissions of pollutants for which the source is major, and all emissions of regulated air pollutants. A permit application shall describe all emissions of regulated air pollutants emitted from any emissions unit, except where such units are exempted under 40 CFR Part 70.5(c).
- Identification and description of all points of emissions described in 40 CFR Part 70.5(c)(3)(i) in sufficient detail to establish the basis for fees and applicability of requirements of the federal Clean Air Act.
- Emissions rate in tons per year (tpy) and in such terms as are necessary to establish compliance consistent with the applicable standard reference test method.
- The following information to the extent it is needed to determine or regulate emissions: Fuels, fuel use, raw materials, production rates, and operating schedules.

⁹ 40 CFR Part 70.2 defines a “major source” as the following:

- Any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, in the aggregate, 10 tons per year (tpy) or more of any hazardous air pollutant which has been listed pursuant to section 112(b) of the Act, 25 tpy or more of any combination of such hazardous air pollutants, or such lesser quantity as the EPA Administrator may establish by rule.
- A major stationary source of air pollutants, as defined in section 302 of the Act, that directly emits or has the potential to emit, 100 tpy or more of any air pollutant (including any major source of fugitive emissions of any such pollutant), as determined by rule by the EPA Administrator.

- Identification and description of air pollution control equipment and compliance monitoring devices or activities.
- Limitations on source operation affecting emissions or any work practice standards, where applicable, for all regulated pollutants at the part 70 source (major sources).
- Other information required by any applicable requirement (including information related to stack height limitations developed pursuant to section 123 of the Clean Air Act).

The GRAQV have also adopted the standard *permit requirements* under 40 CFR Part 70.6 for all applicants for a Title V Operating Permit. As a result, each permit issued is required to include the following elements:

- Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of permit issuance.
- The origin of and authority for each term or condition, and identify any difference in form as compared to the applicable requirement upon which the term or condition is based.
- A statement that, where an applicable requirement of the federal Clean Air Act is more stringent than an applicable requirement of regulations promulgated under title IV of the Act, both provisions shall be incorporated into the permit and shall be enforceable by the EPA Administrator.
- If an applicable implementation plan allows a determination of an alternative emission limit at a Part 70 source, equivalent to that contained in the plan, to be made in the permit issuance, renewal, or significant modification process, and the state elects to use such process, any permit containing such equivalency determination is required to contain provisions to ensure that any resulting emissions limit has been demonstrated to be quantifiable, accountable, enforceable, and based on replicable procedures.

The GRAQV have also adopted the *public participation requirements* under 40 CFR Part 70.7 for all applicants for a Title V Operating Permit. As a result, with the exception of modifications qualifying for minor permit modification procedures, all permit proceedings, including initial permit issuance, significant modifications, and renewals, are required to provide public notice (including offering an opportunity for public comment and a hearing on the draft permit) by doing the following:

- Notice shall be given: by publication in a newspaper of general circulation in the area where the source is located or in a state publication designed to give general public notice; to persons on a mailing list developed by the permitting authority, including those who request in writing to be on the list; and by other means if necessary to assure adequate notice to the affected public.
- The notice shall identify the affected facility; the name and address of the permittee; the name and address of the permitting authority processing the permit; the activity or activities involved in the permit action; the emissions change involved in any permit modification; the name, address, and telephone number of a person from whom interested persons may obtain additional information, including copies of the permit draft, the application, all relevant supporting materials, including those set forth in 40 CFR 70.4(b)(3)(viii), and all other materials available to the permitting authority that are relevant to the permit decision; a brief description of the comment procedures required by this part; and the time and place of any hearing that may be held, including a statement of procedures to request a hearing (unless a hearing has already been scheduled).
- The permitting authority shall provide such notice and opportunity for participation by citizens of other states potentially affected by the proposed project as is provided for by 40 CFR 70.8.

It is also worth noting that in recent years the Environmental Protection Division has begun to regularly conduct pre-PSD application meetings with project proposers. The agency uses these pre-application meetings identify any issues that would be controversial, which would normally include whether the agency will accept a particular piece of control equipment that the applicant has proposed to use as BACT, and also the type of computer modeling (i.e., dispersion modeling) that the applicant will have to conduct. However, if the Environmental Protection Division receives a major source application without the pre-application meeting it will not outright reject the application. Finally, the level of pre-application communication is customarily depends on what other industrial sources are operating in proximity to the proposed project area and also whether there is an EPA Class I Area (i.e., national park or wilderness area) or an air port in close proximity.

7.2 Maine

The Maine Department of Environmental Protection (DEP) is the state agency responsible for reviewing the majority of environmental permit applications and evaluating the potential impacts that proposed projects could have on the environment. The purpose of the department is to

“...prevent, abate and control the pollution of the air, water and land and preserve, improve and prevent diminution of the natural environment of the State. The department shall protect and enhance the public’s right to use and enjoy the State’s natural resources and may educate the public on natural resource use, requirements and issues.”

Within the DEP, the Bureau of Land and Water Quality administers land and water quality protection programs and is the program with primary responsibility for reviewing the impacts proposed developments would have on the human environment. The Bureau is organized into the following four divisions (two are regulatory divisions, one is a science division, and one is a planning division):

- The Division of Environmental Assessment – this division is responsible for overall monitoring and evaluation of the quality of Maine's surface waters and groundwater
- The Division of Land Resources Regulation – this division is the unit with DEP that has primary responsibility for making environmental review and permitting decisions. The division is responsible for licensing, enforcement and/or oversight pursuant to the following laws:
 - Site Location of Development Law (“Site Law,” this act is described in more detail below)
 - Natural Resources Protection Act (NRPA, this act is described in more detail below)
 - Performance Standards for Excavations of Borrow, Clay, Topsoil or Silt (“Borrow Pit Law”)
 - Performance Standards for Quarries (“Quarry Law”)
 - Stormwater Management Law
 - Erosion and Sedimentation Control Law (“Erosion Law”)
 - Administering the Shoreland Zoning Program
- The Division of Water Quality Management – this division is responsible for the following:
 - Licensing and enforcement activities under Maine's Protection and Improvement of Waters statutes. These require:
 - Licensing publically and privately owned wastewater discharges in the State.

- Certification of compliance with Maine water quality requirements
 - Administration of the Maine Waterway Development and Conservation Act, which requires a permit for the construction or reconstruction of any hydropower project
 - Administration of the Maine Dam Registration, Abandonment, and Water Level Act
 - Administration of grant and loan programs, including:
 - Grant and loan programs for municipal wastewater abatement projects.
 - Small Community Grants Program to correct malfunctioning septic systems
 - Overboard Discharge Grants Program to eliminate board discharges
 - Technical assistance, grants, and guidance on CSO abatement projects
 - Boat pump-out program
 - Provision of technical assistance, including:
 - Technical assistance to industrial and municipal wastewater treatment facilities by working with them in developing pollution prevention alternatives
 - Inspection of and technical assistance to, residential, municipal and industrial wastewater treatment facilities
 - Review of engineering reports, construction plans and specifications for municipal and industrial pollution abatement projects
 - Administration of the Operator Certification Program for licensing of municipal and industrial wastewater facility operators
- The Division of Watershed Management – this division is responsible for administering several programs focusing on nonpermitting approaches to resource protection. Activities include the following:
 - Conducting watershed planning activities at local and regional levels
 - Developing, reviewing, and implementing Best Management Practices (BMPs)
 - Administering grants programs to provide funds for non-profit groups to carry out or implement watershed management plans, or to implement BMPs
 - Providing training for contractors, consultants, municipal officials and state agency staff through the Nonpoint Source Training & Resource Center
 - Conducting application reviews and providing technical assistance for the Bureau and local governments
 - Coordinating with federal and state agencies and local governments on wetland policy issues
 - Coordinating Coastal Zone Management activities (other than licensing and enforcement)

In addition to the Division of Land Resources Regulation within the DEP's Bureau of Land and Water Quality, the Board of Environmental Protection is also an important player in state-level environmental review and permitting activities of proposed projects. The Board is a citizen board consisting of 10 members nominated by the governor and confirmed by the state legislature whose purpose is "to provide informed, independent and timely decisions on the interpretation, administration, and enforcement of the laws relating to environmental protection and to provide for credible, fair, and responsible public participation in Department decisions. The Board fulfills its purpose through rulemaking decisions, decisions on selected permit applications, review of the commissioner's licensing and enforcement actions and recommending changes in the law to the Legislature" (Maine DEP, 2003).

Although the majority of license applications are processed at the staff level within DEP, the Board may assume jurisdiction over an application in response to a request from a member of the public or at its own

initiative if it finds that certain criteria justify it doing so. The Board may vote to assume jurisdiction of an application if it finds that one or more of the following criteria (as set forth in the Maine Code, Chapter 38, Section 341-D, Subsection 2) have been met:

- Involves a policy, rule or law that the Board has not previously interpreted
- Involves important policy questions that the Board has not resolved
- Involves important policy questions or interpretations of a rule or law that require re-examination
- Has generated substantial public interest.

The State of Maine has not enacted a State Environmental Policy Act (SEPA) or any other statute that requires an environmental review for proposed projects that could impose potentially significant adverse impacts on the human environment. The only exception to this is a subsection within Title 38, Chapter 3 of the Maine code that requires review of proposed projects that will alter freshwater wetlands. Similarly, DEP agency rules have been adopted that address this need for evaluating impacts associated with projects that will alter wetlands. However, while Maine does not have a SEPA or other statutes in place that formally requires an EIS or some other environmental review document for those projects that could have potentially significant environmental impacts, the state has enacted the following statutes (both of which are administered by DEP's Bureau of Land and Water Quality) that address the impacts that proposed projects can have on the state's natural resources and environmental quality: *Site Location of Development Law*, and the *Natural Resources Protection Act*.

Site Location of Development Law

The Site Location of Development Law (Site Law), which was passed by the state legislature in 1970, requires that the DEP review proposed developments that could impose potentially significant effects on the human environment. The primary interest of the Site Law is to protect high quality groundwater and the geological formations (i.e., sand and gravel deposits) that contain this water. More broadly, the Act is intended to “provide a flexible and practical means by which [the DEP]... may exercise... police power... to control the location of those developments substantially affecting local environment in order to... [minimize] adverse impact on the natural environment within the development sites and their surroundings” (Maine DEP, 2007). The Site Law applies in organized areas for purposes of all types of development, and in unorganized areas (i.e., those unincorporated townships in northern Maine that are under the planning and permitting authority of Maine's Land Use Regulation Commission) for purposes of oil terminal facilities, and metallic mineral mining and advanced exploration. New construction at an already permitted manufacturing facility is exempt from review under Article 7 of the Site Law provided that the additional disturbed area does not exceed 30,000 square feet ground area in any calendar and does not exceed 60,000 square feet ground area in total (Maine DEP, 2007). However, despite this and a few

other exceptions, any facility that was initially permitted under the Site Law will tend to have to undergo another review and file a new permit application (or submit supplemental materials to amend the original permit) if the applicant intends to modify a facility or other development as permitted (J. Cassida, personal communication, December 2007).

In reviewing applications for approval of proposed developments under the Site Law, the DEP attempts to assess the size, location, and nature of the proposed development with respect to the following (Maine DEP, 2006):

- The potential primary, secondary, and cumulative impacts of the development on the character, quality, and uses of the land, air, and water on the development site and on the area likely to be affected by the proposed development; and
- The potential effects that the development may have on the protection and preservation of the public's health, safety, and general welfare.

The state legislature has identified the types of development that must be review under the Site Law, and these include developments such as projects occupying more than 20 acres, metallic mineral and advanced exploration projects, large structures and subdivisions, and oil terminal facilities (Maine DEP, 2002B; 2007A). A permit is issued if the project meets applicable standards addressing potential impacts on the natural environment. More specifically, it is the *No Adverse Environmental Effect Standard* (Chapter 375 of the DEP rules) of the Site Law that requires applicants to most thoroughly document the potential impacts their proposed project could have on the environment. This standard lays out 15 criteria (i.e., resource topics, impact categories) that must be addressed by the applicant in order for the project to gain agency approval and ultimately be permitted for development. The criteria that the applicant must address are the following:

No Unreasonable Adverse Effect on Air Quality - In determining whether the proposed development will have an unreasonable adverse effect on ambient air quality the DEP considers all relevant evidence, including evidence that:

- The best practicable treatment of point sources of air pollution will be utilized and that point source emissions meet state ambient air quality standards and state emissions standards.
- The amount of air pollution produced from either point or nonpoint sources of air emissions will be consistent with the Board's "Policy on Air Quality Use," adopted March 28, 1979.
- Evidence that increased traffic generated by the development will not significantly affect the ambient air quality.

No Unreasonable Alteration of Climate - Applications for approval of large-scale, heavy industrial developments, such as power generating plants, shall include evidence that affirmatively demonstrates that there will be no unreasonable alteration of climate, including information such as the following, when appropriate:

- Evidence that the proposed development will not unreasonably alter the existing cloud cover, fog, or rainfall characteristics of the area.

No Unreasonable Alteration of Natural Drainage Ways - In determining whether the proposed development will cause an unreasonable alteration of natural drainage ways, the DEP considers all relevant evidence, including evidence that:

- Where a development site is traversed by a natural water course, drainage way, channel, or stream, a drainage right-of-way will be provided that substantially conforms with the lines of such natural water courses.
- Any grading or other construction activity on the site will cause no unreasonable alteration of natural drainage ways such that drainage will adversely affect adjacent parcels of land and that drainage ways flowing from adjacent parcels to the development site will be impeded.

No Unreasonable Effect on Runoff/Infiltration Relationships - In determining whether the proposed development will have an unreasonable effect on runoff/infiltration relationships, the DEP shall consider all relevant evidence to that effect, such as evidence that:

- A stormwater management system will infiltrate, detain, or retain water falling on the site during an intense storm such that the rate of flow of stormwater from the development does not exceed the rate of stormwater outflow from the site prior to the project being undertaken.
- The physical, biological, and chemical properties of the receiving waters will not be unreasonably degraded by the stormwater runoff from the development site.
- When the construction of a development is to occur in phases, the planning of the stormwater management system should encompass the entire site which may ultimately be developed, and not limited to particular phases of the development.

Erosion and Sedimentation Control - In determining whether the developer has adequately planned for controlling erosion and sedimentation, the DEP considers all relevant evidence, including evidence that:

- All earth changes will be designed, constructed, and completed in such a manner so that the exposed area of any disturbed land will be limited to the shortest period of time possible.
- Sediment caused by accelerated soil erosion will be removed from runoff water before it leaves the development site.
- Any facility designed and constructed for the conveyance of water around, through, or from the development site will be designed to limit the water flow to a non-erosive velocity.
- Permanent soil erosion control measures for all disturbed land areas will be completed within fifteen calendar days after final grading has been completed.
- Vegetative cover will be established as an erosion control measure where appropriate.

No Unreasonable Adverse Effect on Surface Water Quality - In determining whether the proposed development will have an unreasonable adverse effect on surface water quality, the DEP considers all relevant evidence, including evidence that:

- The development or reasonably foreseeable consequences of the development will not discharge any water pollutants which affect the state classification of a surface water body.
- The best practicable treatment of point sources of water pollutants will be utilized.
- The total phosphorous concentrations in all tributaries to great ponds will not exceed the standard established in Department Regulation 583.1 as the result of the development.
- Any effect on surface water temperature will be in compliance with all appropriate standards established in Department Regulations 582.1 - 582.8.

No Unreasonable Adverse Effect on Ground Water Quality - In determining whether the proposed development will have an unreasonable adverse effect on ground water quality, the DEP considers all relevant evidence, including evidence that:

- The development will not result in the existing ground water quality becoming inferior raw and untreated drinking water supply standards specified in the Maine State Drinking Water Regulations. If the existing ground water quality is inferior to these standards, the developer will not degrade the water quality any further.
- The applicant has developed a plan of action, and alternatives, to be followed in the event the proposed development results in ground water contamination.
- Methods for preventing ground water pollution as the result of the disposal and/or storage of wastes have been established for the proposed project.

No Unreasonable Adverse Effect on Ground Water - In determining whether the proposed development will have an unreasonable adverse effect on ground water quantity, the DEP considers all relevant evidence, including evidence that:

- The quantity of water to be taken from ground water sources will not substantially lower the found water table, cause salt water intrusion, cause undesirable changes in ground water flow patterns, or cause unacceptable ground subsidence.

Buffer Strips - In determining whether the developer has made adequate provision for buffer strips, when appropriate, the DEP considers all relevant evidence, including evidence that:

- Water bodies within or adjacent to the development will be adequately protected from sedimentation and surface runoff by buffer strips.
- Buffer strips provide adequate space for movement of wildlife between important habitats.
- Buffer strips will shield adjacent uses from unsightly developments and lighting.

Control of Noise - The DEP recognizes that the construction, operation and maintenance of developments may cause excessive noise that could degrade the health and welfare of residents living in close proximity to such developments. To address this problem, the DEP requires adequate provision for the control of excessive environmental noise from developments.

Preservation of Historic Sites - The DEP recognizes the value to society of preserving sites of historic significance. For the purposes of the Site Law, an “historic site” is defined as any site, structure, district or archaeological site which has been officially included on the National Register of Historic Places and/or on the Maine Historic Resource Inventory, or which is established by qualified testimony as being of historic significance. The DEP requires all applicants to submit evidence that historic sites will not be significantly adversely affected by a proposed project, and any mitigation measures an applicant is taking should also be revealed.

Preservation of Unusual Natural Areas - The DEQ recognizes the importance of preserving unusual natural areas for educational and scientific purposes. For the purposes of the Site Law, an “unusual natural area” means any land or water area, usually only a few acres in size, which is undeveloped and which contains natural features of unusual geological, botanical, zoological, ecological, hydrological, other scientific, educational, scenic, or recreational significance. The DEP requires all applicants to submit evidence that unique natural areas will not be significantly adversely affected by a proposed project, and any mitigation measures an applicant is taking should also be revealed.

Access to Direct Sunlight - In determining whether a proposed project will have an adverse effect on access to direct sunlight, the DEP considers all relevant evidence, including evidence that:

- Structures within the proposed development will not block access to direct sunlight to structures utilizing solar energy through active or passive systems.

No Unreasonable Effect on Scenic Character - In determining whether the proposed development will have an unreasonable adverse effect on the scenic character of the surrounding area, the DEP considers all relevant evidence, including evidence that:

- The design of proposed development takes into account the scenic character of surrounding area.
- A development that is not in keeping with the surrounding scenic character will be located, designed and landscaped to minimize its visual impact to the fullest extent possible.
- Structures will be designed and landscaped to minimize visual impact on the surrounding area.

Protection of Wildlife and Fisheries - In determining whether the developer has made adequate provision for the protection of wildlife and fisheries, the DEP considers all relevant evidence including:

- A buffer strip of sufficient area will be established to provide wildlife with travel lanes between areas of available habitat.
- Proposed alterations and activities will not adversely affect wildlife and fisheries lifecycles.
- There will be no unreasonable disturbance to:
 - (a) High and moderate value deer wintering areas.
 - (b) Habitat of any federally- or state-listed species.
 - (c) Seabird nesting islands.
 - (d) Significant vernal pools.
 - (e) High and moderate value waterfowl and wading bird habitat.
 - (f) Shorebird nesting, feeding, and staging areas.

It is important to note that neither the Site Law nor the associated rules the DEP has promulgated since its passage require that the applicant prepare a comprehensive environmental review document that addresses all of these criteria in a coordinated manner. Although the majority of applicants submit a written document that addresses the likely impacts a proposed project will have on each of the above described criteria, applicants also have the option of merely meeting with DEP staff and go over anticipated project impacts. In these situations DEP staff merely addresses each criterion in check list fashion and no formal report is submitted by the applicant (S. Goodwin, personal communication, December 2007). However, although the applicant is not required to submit a comprehensive document, most applicants elect to submit such a document given that the actual application must include exhibits that clearly outline how the project has been designed to meet each of the 15 criteria. That is, it is usually most efficient for the applicant to provide a comprehensive document rather than address each criterion in piecemeal fashion (especially given that the applicant must provide an exhibit that explains why certain criteria are not applicable to a proposed project, rather than merely dismissing the criterion).

For a new or expanded development requiring an annual supply of wood or wood-derived materials in excess of 150,000 tons green weight, the applicant shall submit a wood supply plan for informational purposes to the Maine Forest Service concurrent with the application required in Section 485-A, Subsection 1 (“Application”), of the Site Law. The wood supply plan must include, but is not limited to, the following information (Maine DEP, 2007A):

- The expected operational life of the development.

- The projected annual wood consumption of wood mill residue, wood fiber and recycled materials from forest products during the entire operational life of the development.
- The expected market area for wood supply necessary to supply the development.
- Other relevant wood supply information.

The DEP requires that an each application under the Site Law include present plans for all phases of a development to be undertaken on a parcel. In the absence of evidence sufficient to approve all phases of the proposed development, DEP may approve one or more phases of the development based on the evidence available at that time. Approval of phases, however, is based on compliance of the entire proposed development with the standards of the Site Law (Maine DEP, 2006A).

Finally, it is important to note that the Site Law also includes a *financial capacity standard* that permits DEP to evaluate the extent to which an applicant has the financial resources necessary to construct, operate, and maintain air and water pollution control devices and all other aspects of the proposed development. This provision is included in the Act to ensure that an applicant is fully capable of meeting the air and water pollution control standards of the State of Maine. This provision has proven important in that it has been the experience of DEP that many developers elect to purchase and install air and water pollution control devices after all other aspects of the development are completed, and as a result pollution control aspects of the project may be slighted in the event that the developers funds become depleted before the project is finished (Maine DEP, 2006A).

With respect to the application process itself, the applicant for a new Site Law development (except for a residential subdivision with 20 or fewer developable lots) is required to attend a *pre-application meeting*. This meeting is an opportunity for the applicant to determine the requirements that apply to the project. The meeting with DEP licensing staff is intended to help identify issues, processing times, fees, and the types of information and documentation necessary for the state to properly evaluate impacts associated with the proposed project. In situations where pre-application meetings are not required they are available upon request by the applicant. An applicant intending to file an application that requires a pre-application meeting must hold a *public informational meeting* prior to filing that application. A local public hearing process may not be substituted for the public informational meeting. At least 10 days prior to the public informational meeting, notice of the informational meeting must be sent by certified mail to abutters and to the municipal office of the municipality(ies) where the project is located. At least seven days prior to the informational meeting, notice must also be published once in a newspaper of general circulation in the area where the development is located. DEP rules also mandate that all applicants that had to engage in a pre-application meeting participate in a *pre-submission meeting* in order to allow agency officials to

follow up on issues raised at the pre-application meeting. This meeting is held when the application is ready for submission and allows the DEP and the applicant to follow up on issues raised during the pre-application meeting (Maine DEP, 2006B). Finally, the DEP guarantees that each Site Law permit for a proposed development, depending on its nature, will be processed within a specified period of time.¹⁰ For instance, DEP guarantees that paper mill developments will be processed within 185 days (J. Cassida, personal communication, December 2007; Maine DEP, n.d.). Actual review time varies somewhat from project to project and the agency has been making additional effort to reduce review times as much as possible. At present, review of Site Law permit applications is taking between 100 and 120 days, on average. The clock starts on review periods when the application is accepted as complete by the DEP. The agency has 15 working days from the receipt of an application to determine that it is complete or return it as deficient to the applicant. This determination occurs after the public information meeting process.

With regard to public involvement requirements, the Site Law and associated DEP rules provide standards for public notice prior to an applicant formally filing an application with DEP. Specifically, the law mandates that 30 days prior to an application being filed public notice be given in the following three ways: notice must be published once in a newspaper circulated in the area where the development is to be located; a copy of the notice must be provided to all property owners within one mile of the delineated project boundary (including owners of property directly across a public or private right-of-way); and a copy of the public notice and a duplicate of the entire application must be made available to the appropriate town clerk or city clerk (if the project is to be sited in an organized township) or to plantation or county clerk (if the project is to be sited in an unorganized area). Additionally, a request for a *public hearing* or a request that the DEP assume jurisdiction over a given application must be received by the DEP in writing, no later than 20 days after the application is found by the DEP to be complete and is accepted for processing. A public hearing may or may not be held at the discretion of the Commissioner of the DEP or Board of Environmental Protection. Public comment on the application will be accepted throughout the processing of an application (Maine DEP, 2006B). It is important to note that copies of the permit application and supporting documents are not made available for public consumption before or during DEP's project review process unless a member of the public requests that these documents be provided prior to the agency making its final determination (J. Cassida, personal communication, December 2007).

¹⁰ A given projects guaranteed processing time is measured from the date the DEP receives a completed permit application from the applicant to the date of DEP action on the application. This is the maximum period of time the agency has to process an application before the forfeiture provisions contained in the Maine Code, Title 38, Section 344-B ("Timetables for processing permit applications") apply.

Depending on the nature of the development, a final decision on the application may be made either by the Commissioner or the Board of Environmental Protection. A draft copy of the *Findings of Fact and Order* is made available, upon request, for review by all interested parties at least five working days prior to final action by the commissioner, or 15 working days prior to final action taken by DEP. Individuals who are aggrieved by a decision may appeal the decision within 30 days following final permitting action taken by DEP.

Natural Resource Protection Act

The Natural Resource Protection Act (NRPA) was enacted in 1988 in order to address human uses of the landscape causing the rapid degradation and destruction of critical natural resources, producing significant adverse economic and environmental impacts, and threatening the health, safety and general welfare of Maine residents (Maine DEP, 2002). Broadly speaking, this Act is intended to prevent any unreasonable impact to degradation of or destruction of natural resources that are particularly significant environmental, historical, or recreational value. This Act was also enacted in order to help address cumulative impacts that result from frequent minor alterations and occasional major alterations of the state's critical and rare natural resources (Maine DEP, 1988). Permits applied for under the NRPA and associated DEP rules do not take the place of those permit applications required under the Site Law, but instead must be submitted in addition to Site Law documents.

NRPA applies to the following protected natural resources: coastal wetlands and sand dunes; freshwater wetlands; great ponds; rivers, streams, and brooks; fragile mountain areas; and significant wildlife habitat. Permits are required for the following activities that take place in, on, or over any of the above mentioned protected natural resource areas (Maine DEP, 2002; 1988):

- Dredging, bulldozing, removing or displacing soil, sand, vegetation, or other materials
- Draining or otherwise dewatering
- Filling, including adding sand or other material to a beach or sand dune
- Constructing, repairing or altering any permanent structure (a permanent structure is one placed or constructed in a fixed location for a period exceeding seven months of the year)

In order to obtain an NRPA permit, the applicant must demonstrate that the proposed project will not impose any of the following impacts on the environment (Maine DEP, 2002; 1988):

- Unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses.
- Cause unreasonable erosion of soil or sediment, or prevent naturally occurring erosion.
- Unreasonably harm any significant wildlife, fisheries, or aquatic habitat.
- Unreasonable interfere with the natural flow of any surface or subsurface waters.
- Lower water quality.
- Cause or increase flooding.

- Unreasonably interfere with supply or movement of sand to sand dune areas.
- Cross a river segment identified in the NRPA as “outstanding” unless no other alternative having less adverse impact on the river exists.

A number of different activities are exempt from NRPA permit requirements. Two of the more activities for which a permit is not required are agriculture and forest management. With respect to agriculture, although other provisions in NRPA do apply, this activity is exempt from impacts to freshwater wetlands. That is, under NRPA it is acceptable for an agricultural operation to alter a freshwater wetland for the purpose of normal farming activities such as clearing of vegetation for agricultural purposes if the land topography is not altered, plowing, seeding, cultivating, minor drainage and harvesting, construction or maintenance of farm or livestock ponds or irrigation ditches, maintenance of drainage ditches and construction or maintenance of farm roads (Maine DEP, 1988). Because more than two-thirds of the State of Maine can be classified as “forested wetland” (a habitat type that is explicitly protected under NRPA), timber harvesting and other forest management activities are exempt from permit requirements under the NRPA (J. Cassida, personal communication, December 2007). Forest management activities, including associated road construction or maintenance, in or adjacent to an existing forested wetland or a harvested forested wetland or adjacent to a protected natural resource are exempt from NRPA permitting requirements so long as:

- The activity results in a forest stand that meets the minimum stocking requirements in rules adopted pursuant to Title 12, section 8869.
- The activity meets permit-by-rule standards in rules adopted for any road crossing of a river, stream or brook or for any soil disturbance adjacent to a protected natural resource, and the commissioner is notified before the forest management activity commences.
- The protected natural resource is not mapped as a significant wildlife habitat under section 480-I.
- Any road construction is not used to access development but is used primarily for forest management activities, unless the road is removed and the site restored to its prior natural condition. Roads must be the minimum feasible width and total length consistent with forest management activities.

With regard to the general permit application process and public involvement requirements, the NRPA and associated DEP rules generally do not require that *public notice* be given for a proposed project. However, this finding seems to be of limited importance given that any project applying for permits under NRPA will have to file public notice as a component of the Site Law permit that is concurrently being sought. Similar to the Site Law, NRPA also requires permit applicants to attend a *pre-application meeting* so the applicant can determine the requirements that apply to the project. The meeting with DEP licensing staff also helps identify issues, processing times, fees, and the types of information and documentation necessary for the state to properly evaluate impacts that a proposed project might have on critical natural resources (i.e., forested wetlands or significant wildlife habitat). As with the Site Law, pre-application

meetings are available upon request by the applicant in situations where they are not required given the magnitude of the project. Additionally, as with the Site Law, *public informational meetings* are required as part of the NRPA permit application process for projects that are significant enough to require a pre-application meeting. The NRPA and associated DEP rules also mandate that all applicants participate in a *pre-submission meeting* to allow agency officials to follow up on issues raised at the pre-application meeting. This meeting is held when the application is ready for submission. Finally, the NRPA requires that requests for a *public hearing* or a request that the DEP assume jurisdiction over a given application be received by the DEP within 20 days of the application found complete for processing. Processing of an NRPA application may take up to 120 days as the DEP may seek review comments from other agencies to determine if the proposed project will meet the standards of the law and associated rules. The applicant has up to 30 days to appeal DEP's permitting decision once it is formally released (Maine DEP, 2007B).

7.3 Minnesota

Environmental review of proposed projects in the State of Minnesota is coordinated and overseen by the Environmental Quality Board (EQB), which exists within the executive branch of government. The EQB was created in 1973 upon passage of the *Minnesota Environmental Coordination Procedures Act* (Minnesota Statutes, Chapter 116C). The mission of the EQB is to guide environmental policy in the State of Minnesota "...by responding to key issues, providing appropriate review and coordination, serving as a public forum and developing long-range strategies to enhance Minnesota's environmental quality." The EQB is composed of a governor's representative (state law mandates that this individual will act as chairperson of the Board), nine state agency heads,¹¹ and five citizen members. With regard to its responsibilities, state law (Minnesota Statutes, Chapters 103A, 103B, 116C, 116D and 116G) directs the EQB to do the following:

- Ensure compliance with state environmental policy
- Oversee the environmental review process
- Coordinate agencies and programs that affect the environment
- Study environmental issues
- Convene environmental congresses
- Coordinate biennial assessments of water resources
- Develop biennial water priorities and policy reports
- Develop the state water plan
- Administer critical areas designation and management
- Coordinate development of an integrated state energy and environmental strategy report
- Advise the Governor and the Legislature on environmental policy

¹¹ The following state agencies have agency heads that sit on the EQB: Department of Administration, Pollution Control Agency, Department of Natural Resources, Department of Employment and Economic Development, Department of Health, Department of Transportation, Department of Commerce, Board of Water and Soil Resources.

Furthermore, the EQB has the authority to determine which environmental problems of “interdepartmental concern to state government” it will consider, and the EQB is required to initiate interdepartmental investigations into those matters it determines are in need of study. Topics for investigation may include, but are not limited to, the following: future population and settlement patterns, air and water resources and quality, solid waste management, transportation and utility corridors, economically productive open space, energy policy, growth and development, and land use planning (Minnesota Statutes 2007, Chapter 116C).

The EQB is required to review programs of state agencies that may significantly affect the environment and coordinate those programs that it determines overlap multiple departments. The EQB also has an overarching responsibility to ensure agency compliance with state environmental laws and rules. The EQB has the authority to review environmental rules and criteria for granting and denying permit by state agencies and may resolve conflicts (in a manner consistent with state environmental policy) involving state agencies with regard to programs, rules, permits and procedures significantly affecting the environment. Additionally, Minnesota state law requires state agencies to submit to the EQB all proposed legislation of major significance relating to the environment and the EQB itself. The EQB in turn is required to submit a report to the governor and the legislature with comments on any major state agency environmental proposals (Minnesota Statutes 2007, Chapter 116C).

In addition to the EQB, which has primary responsibility for oversight of environmental review in the state, the Minnesota Pollution Control Agency (MPCA) is also an important actor in that it routinely acts as the Responsible Government Unit (RGU) (selection process and role of an RGU is described in more detail below) for many types of proposed projects and is responsible for issuing a number of environmental permits. The broad purpose of the MPCA is to protect the state’s environment by monitoring environmental quality and enforcing environmental regulations. With respect to state environmental review and parallel permitting processes, the MPCA acts as the RGU (lead agency) for several broad classes of projects, including the following (MPCA, 2007): wastewater treatment plants and major sewer extensions; industrial project like paper mills, printing plants, ethanol plants, oil refineries, and facilities for storage, and treatment or disposal of hazardous wastes; animal feedlots; and solid waste facilities like landfills, incinerators, compost plants and transfer stations.

The MPCA is also responsible for reviewing permit applications for a number of different permits (i.e., air emissions permit, air modification permit, State Disposal System (SDS)/National Pollutant Discharge Elimination System (NPDES) permits, hazardous waste permit) that a proposed project that is subject to

environmental review would be responsible for obtaining before operations can begin. With respect to air emissions permitting, two general types of permits come into play: construction and operating. Construction permits are necessary to build or modify a facility. Operating permits are required for facilities to operate so that the source does not contribute to violations of air quality standards. Proposed projects that will ultimately discharge to surface waters are typically required obtain permits jointly issued by the NPDES and SDS. Nonsurface-water dischargers operate under an SDS permit (MPCA, 2007).

The Minnesota DNR also routinely acts as the RGU for proposed projects requiring environmental review. The Environmental Review Program is the unit within the DNR that has primary responsibility for conducting environmental review for proposed projects the agency is assigned. Minnesota Environmental Review Program Rules (Chapter 4410) lays out those projects for which the DNR will act as the RGU. More specifically, the DNR has responsibility for reviewing the following types of projects (or projects that will impact that following types of resources) (EQB, 1996):

- Underground storage
- Metallic mineral mining and processing
- Nonmetallic mineral mining
- Water appropriation and impoundments
- Forestry
- Natural areas
- Recreational trails
- Nuclear fuel or waste processing facilities

As with the MPCA, the DNR is also responsible for reviewing several different permit applications that an applicant will submit during the environmental review process. Although only a subset of all permits that the agency issues will apply to a given project, the following represent permits that are routinely applied for during the project review process: Permit to Mine, Water Appropriations Permit, Dam Safety Permit, Protected Waters Permit, and a Takings Permit for Threatened and Endangered Species.

Requirements for state-level environmental review of proposed projects were codified in state law upon passage of the *Minnesota Environmental Policy Act* (Minnesota Statutes, Chapter 116D). With respect to environmental review responsibilities, it is the EQB's Environmental Review Program that is authorized to write state rules for conducting environmental reviews. Broadly speaking, the function of the EQB's Environmental Review Program is to avoid and minimize damage to Minnesota's environmental resources caused by public and private actions. The program accomplishes this by requiring certain proposed projects that constitute a *government action* to undergo special review procedures prior to obtaining approvals and permits otherwise needed (EQB, 1996). Minnesota's Environmental Review

Program Rules (Chapter 4410) define a governmental action as an activity or project that is wholly or partially conducted, permitted, assisted, financed, regulated, or approved by governmental units, including the federal government (Minnesota Administrative Rules, Chapter 4410). However, while the EQB promulgates environmental review rules, the actual reviews are typically conducted by governing bodies such as a county board, city council or a state agency to which the project has been assigned by the EQB (EQB, 1996). The agency or entity with primary responsibility for conducting the review of a proposed project is the RGU. The rules require that the following hierarchy of selection criteria be invoked if the RGU assignment is unclear or in dispute (part 4410.0500, subpart 5):

- If the project will be carried out by a single governmental unit, that unit is the RGU.
- If a single unit has approval authority over the project, it is the RGU.
- The government unit with the greatest authority over the project is the RGU.
- If it is unclear who has the greatest authority, the government units involved may mutually agree on which is to be the RGU. In controversial cases units are advised to prepare a written document describing how the decision was reached.
- If the units cannot reach agreement the EQB chair must determine the RGU

Under Minnesota state law, environmental review can apply to any action or project that meets three conditions (EQB, 1996; Minnesota Administrative Rules, Chapter 4410):

- The action or project must involve the physical manipulation of the environment, directly or indirectly.
- The action or project must involve at least one governmental approval or one form of governmental financial assistance, or be conducted by a government unit. For types of approvals and financial assistance that qualify, including those by federal agencies, see definition of permit at part 4410.0200, subpart 58 of Minnesota's Environmental Review Program Rules.
- Action or project approval and construction must take place in the future; that is, projects constructed or those with all required governmental approvals are not subject to further review, unless an expansion is proposed.

Two different review documents are used in this program: the EIS and the EAW. The EIS involves a thorough assessment of the project's environmental impacts and a comparative analysis of its economic and sociological effects. MEPA and its associated rules require an EIS to consider reasonable alternatives. An EIS is intended to be analytical rather than an encyclopedic document, and should also assume an interdisciplinary approach that integrates data and information from both natural and social science fields (Minnesota Administrative Rules, Chapter 4410). When completed, the review gives government units information to determine whether the project is environmentally acceptable given analysis of potential impacts and what mitigation measures are needed in order to reduce predicted environmental impacts to acceptable levels. The EIS is reserved for projects with "the potential for significant environmental effects," and relatively few EISs are prepared in a given year. It is recommended that any RGU considering collaborating with a federal agency to complete environmental review under federal law

consult with EQB staff. This consultation is recommended so duplication and delays can be minimized. Although it is common for federal and state review documents to be prepared jointly, the EQB does not advise RGUs to do so in situations where it is more expeditious to complete a state review and use the completed documents in a subsequent review under the federal process (EQB, 1996).

An EIS must address one or more alternatives of each of the following types of alternatives:¹² alternative sites, alternative technologies, modified designs or layouts, modified scale or magnitude, and alternatives incorporating reasonable mitigation measures identified through comments received during the comment periods for EIS scoping or for the draft EIS. An EIS is also required to consider the no action or “no-build” alternative. An alternative may be excluded from analysis in the EIS if one of the following conditions is met (Minnesota Administrative Rules, Chapter 4410):

- Underlying needs for or purpose of the project would not be met;
- Significant environmental benefits would not be generated in a manner comparable to the project as proposed; or
- Another alternative, of any type, that will be analyzed in the EIS would likely have similar environmental benefits but considerably less adverse economic, employment, or sociological impacts

An EIS is required to consider environmental, economic, employment, and sociological impacts associated with a proposed project. Additionally, each major alternative considered in the analysis must also include a thorough but succinct discussion of potentially significant direct or indirect, adverse, or beneficial effects generated by implementing the specific alternative. This evaluation of potential impacts must include consideration of *cumulative impacts*, which the state has defined as “...the impact on the environment that results from incremental effects of the project in addition to other past, present, and reasonably foreseeable future projects regardless of what person undertakes the other projects” (Minnesota Administrative Rules, 4410.0200, Subpart 11). Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. Many types of analyses commonly used in EIS preparation such as traffic, air quality or other simulation analyses can account for cumulative impacts. Provided they consider reasonably foreseeable future development, these analyses usually satisfy the requirement to consider cumulative impacts (EQB, 1996). Minnesota Rules (4410.2300) require that an EIS identify and briefly discuss any major differences of opinion concerning significant impacts of the proposed project on the environment. An EIS must also provide a section on mitigation measures that identifies those actions that could reasonably eliminate or minimize any adverse

¹² If an RGU elects to not include a type of alternative that falls into one of these categories it is required to provide a concise explanation of why no alternative of a particular type was incorporated into the EIS.

impacts to the environment, economics, employment, or social dynamics (Minnesota Administrative Rules, Chapter 4410).

Minnesota administrative code (4410.2000) also specifies the types of projects that will trigger a *mandatory* EIS, and this list includes metallic and nonmetallic mineral mining and processing operations as well as new pulp and paper mills. However, other forest products processing facilities (i.e., plants producing OSB or other engineered wood products) are not subject to a mandatory EIS, nor are expansions to existing pulp and paper mills (EQB, 1996).¹³ The administrative code (4410.4400) also states that *discretionary* EISs are to be prepared in situations where an EAW and/or additional comments and information provided about the project dictate that an EIS be prepared, or when the RGU and proposer of the project agree an EIS should be prepared (Minnesota Administrative Rules, Chapter 4410).

It is also important to note that state administrative code (4410.2000) also allows an RGU to prepare a *related actions EIS* or a *generic EIS* (GEIS) in certain situations. With respect to a related actions EIS, an RGU is permitted to draft a single EIS for independent projects with potential cumulative environmental impacts on the same geographic area if the RGU determines that review can be accomplished in a more effective or efficient manner through a related actions EIS. However, an RGU is prohibited from preparing a related actions EIS in situations where inclusion of a project in such a document would unreasonably delay review of the project compared to review of the project through an independent EIS (EQB, 1996; Minnesota Administrative Rules, Chapter 4410). A GEIS may be ordered by the EQB to study types of projects not adequately reviewed on a case-by-case basis (Minnesota Administrative Rules, Chapter 4410). GEISs have rarely been commissioned, and are intended to be used in situations where the cumulative impacts of a set of related actions (i.e., a particular industrial sector) are of regional or statewide importance (EQB, 1996). The first GEIS was prepared in 1994 to assess industry-wide environmental impacts associated with timber harvesting and forest management in Minnesota. This study was commissioned by the Minnesota EQB at the request of a citizen petition. Broadly, the GEIS assessed how three levels of statewide timber harvesting activity relate to Minnesota's environmental, economic and social resources. Figure 7.3.1 illustrates the general process followed during the *preparation and review stages* of an EIS (EQB, 1996):

¹³ Expansion of an existing paper or pulp processing facility that will increase its production capacity by 50% or more is only subject to a mandatory EAW (Guide to ER Rules).

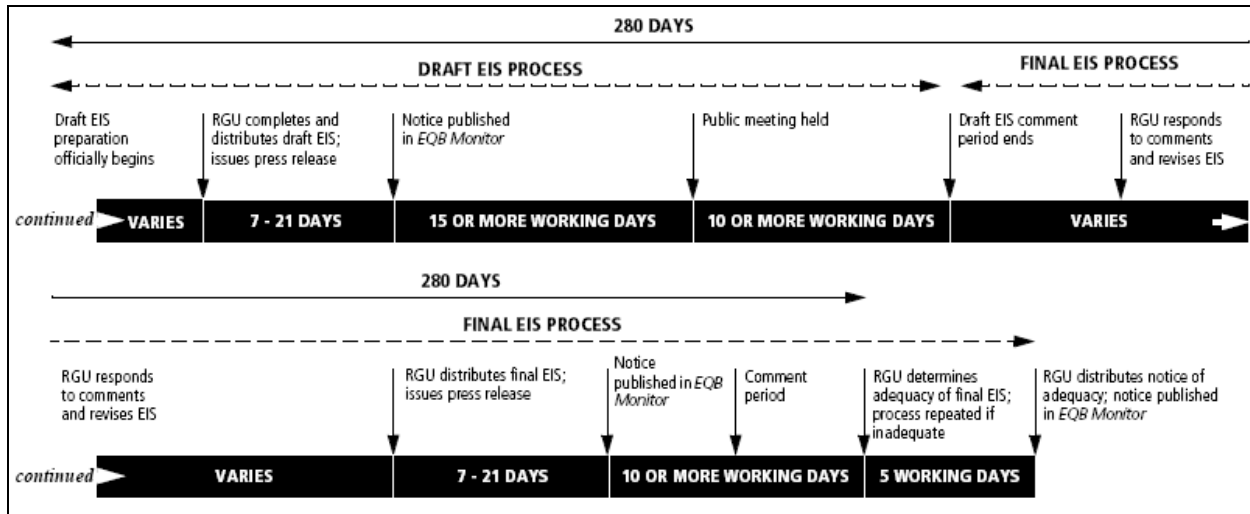


Figure 7.3.1. Minnesota Environmental Review Timeline for an EIS.

The other level of review is the EAW. This review procedure screens projects, which *may* have the potential for significant environmental effects using a worksheet with a standardized list of questions. An EAW is a brief document intended to establish the basic facts necessary to determine whether an EIS is required for a proposed project or to initiate the scoping process for an EIS. The EAW is subject to a 30-day public review period before the RGU makes a decision about whether an EIS needs to be prepared to more thoroughly analyze potential impacts to the environment (EQB, 1996). State administrative code allows the RGU to hold one or more public meetings to gather comments on the EAW if it determines a meeting is necessary or useful. Environmental review rules also mandate adequate public notice be given before such meetings are held, and that all meetings shall be open to the public. Minnesota administrative rules (4410.1200) require that an RGU address at least the following major categories in the EAW it prepares for a given proposed project (Minnesota Administrative Rules, Chapter 4410):

- Identification including project name, project proposer, and project location;
- Procedural details including identification of the RGU, EAW contact person, and instructions for interested persons wishing to submit comments;
- Description of the project, the purpose of the project, methods of construction, quantification of physical characteristics and impacts, project site description, and land use and physical features of the surrounding area;
- Resource protection measures that have been incorporated into the project design;
- Major issues sections identifying potential environmental impacts and issues that may require further investigation before the project is commenced;
- Known governmental approvals, reviews, or financing required, applied for, or anticipated and the status of any applications made, including permit conditions that may have been ordered or are being considered;
- Explanation of the need for any project that will be carried out by a governmental unit and an identification of those who will benefit from the project; and
- Assessment of the compatibility of the project with approved plans of local units of government.

Furthermore, after completing an EAW and submitting a copy to each member of EQB, an RGU must also supply a copy of the worksheet to the following entities: the proposer of the project, the US Army Corps of Engineers, the US Environmental Protection Agency, the US Fish and Wildlife Service, the State Historical Society, the state archaeologist, the Indian Affairs Council, the Environmental Conservation Library, the regional development commission and regional development library for the region of the project site, any local governmental unit within which the project will take place, the representative of any petitioners pursuant to part 4410.1100, and any other person upon written request (Minnesota Administrative Rules, Chapter 4410).

If a project is not required to go through the environmental review process, citizens can file a petition with the EQB to have an EAW prepared. Petitions must present a case for why a project should have an EAW prepared (i.e., by documenting unusual features pertaining to the project’s nature or location), even though the proposed project does not qualify for some level of mandatory environmental review. Any government unit with approval authority can order a discretionary EAW if it determines the project has the potential for significant environmental impacts. If a unit of government orders a discretionary EAW be prepared for a proposed project, then that unit of government must also serve as the RGU (MPCA, 2005). Figure 7.3.2 illustrates the general process followed during the EAW preparation process (EQB, 1996).

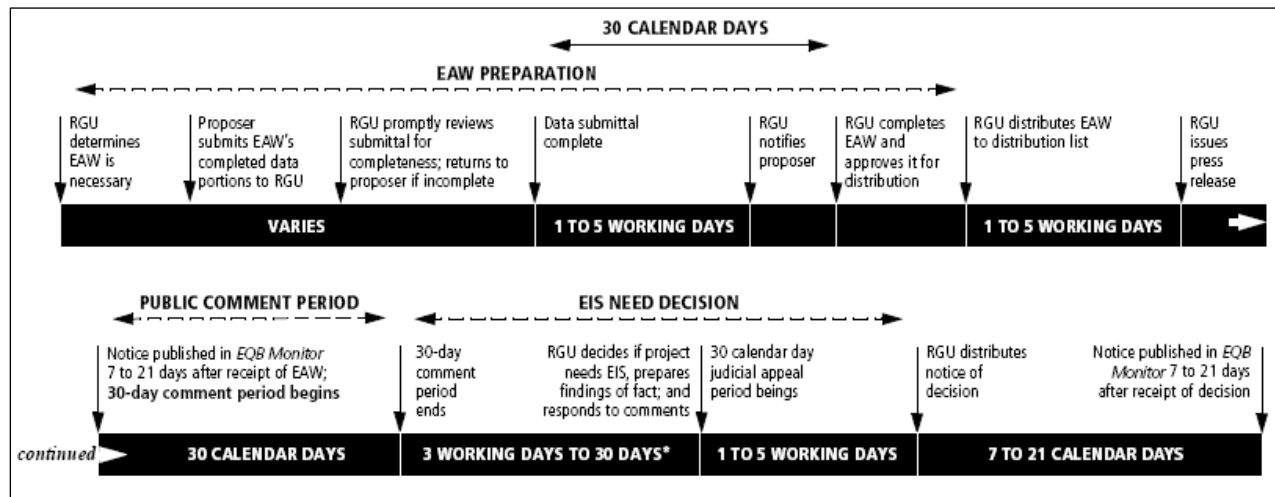


Figure 7.3.2. Minnesota Environmental Review Timeline for an EAW.

It is important to note that before an RGU begins actually drafting an EIS, state law requires a scoping process be conducted. This process is used to reduce the scope and bulk of an EIS, identify only those potentially significant issues relevant to the proposed project, define the form, level of detail, content,

alternatives, time table for preparation and preparers of the EIS, and to determine the permits for which information will be developed concurrently with the EIS. Because all projects requiring an EIS must have an EAW filed with the RGU, the EAW is intended to be used as the basis for the scoping process. More specifically, the RGU will use the information contained within the EAW to prepare a draft scoping decision document (this document is prepared before public input is solicited later in the scoping process) to facilitate the delineation of issues and analyses to be contained in the EIS (Minnesota Administrative Rules, Chapter 4410).

The RGU is required to prepare the following three documents during the scoping process: the scoping EAW, the draft scoping decision document (SDD), and the final SDD (EQB, 1996; Minnesota Administrative Rules, Chapter 4410). The SDD is a companion to the Scoping EAW prepared for the project. The purpose of the SDD is to identify those project alternatives and environmental impact issues that will be addressed in the EIS. The SDD also presents a tentative schedule of the environmental review process. The final SDD is adopted by the RGU governing body as the official “blueprint” for the EIS, and at a minimum (as required by Minnesota Administrative Code 4410.2100) must include the following elements (Minnesota Administrative Rules, Chapter 4410): issues to be addressed, time limits (if shorter than standard 280 day requirement), permits for which information will be gathering concurrently, permits which will require a record of decision, alternatives to be addressed, impacts to be addressed, and studies to be done to develop information. The RGU often also prepares proposer cost agreements and documents needed to hire consultants to work on the EIS, and at the end of the scoping process, issues an EIS preparation notice. Figure 7.3.3 illustrates the general process that is followed during the EIS *scoping process* for a mandatory or voluntary EIS (EQB, 1996).

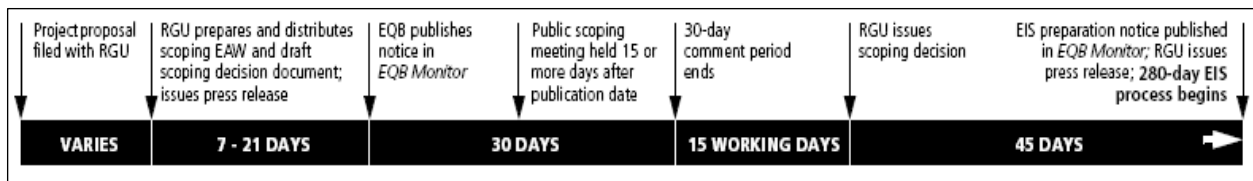


Figure 7.3.3. Minnesota Environmental Review Timeline for scoping within an EIS.

Although environmental review and permitting processes are not completed in unison and are handled by different programs within relevant agencies (i.e., a proposed mining project will need to obtain a Permit to Mine from the Minnesota DNR’s Division of Lands and Minerals, but the environmental review process is carried out by the DNR’s Environmental Policy and Review Program within the Division of Ecological Resources), entities involved in environmental review and permitting decisions do collaborate during the review process. One important aspect of the EIS and permit relationship is for the RGU to

convey to the applicant proposing the project that preparation of an EIS does not negate the need to file permit applications or supporting data requirements to permitting agencies. Additionally, a permit can relate to an EIS in three ways (EQB, 1996):

- All known governmental permits and approvals are required to be listed in the EIS (4410.2300). This information is not required to be included in the scoping decision, although it is usually included in a proposed EIS content list.
- Some permits and approvals can require a record of decision (ROD), which documents how EIS information was considered in making the decision. Permits included in this group (if any) are determined by the RGU in its scoping decision. The RGU can require other agencies to prepare a ROD. The ROD is only appropriate for major discretionary decisions on the whole project, such as plat approval or a conditional use permit, or a major element that directly impacts the environment, such as an air emissions permit or a storm water management system permit. Whether or not the EIS scoping decision imposes the ROD requirement, permitting agencies must consider EIS information in their decision-making, which should be reflected in the permitting record (4410.2900).
- The scoping decision may identify permits for which information will be gathered concurrently with the EIS. The permitting agency must issue such permits within 90 days of the EIS adequacy decision, unless in conflict with federal or state law or the proposer agrees to an extension (4410.2900). This provision in no way reduces the information needed for a permit. If permit-related information is missing, either the 90-day time limit for the permit will be extended or the EIS adequacy decision will be delayed.

Minnesota Administrative Rules (4410.2900) require that final decisions be made by the appropriate governmental units on all permits identified as required in the scoping process and for which information was developed concurrently with the preparation of the EIS within 90 days of the final EIS being deemed adequate. The 90-day period may be extended with the consent of the permit applicant or where a longer period is required by federal law or state statute. Furthermore, state rules necessitate that at the time of its permit decision, for those permits identified during the scoping process as requiring a record of decision, each permitting unit of government must prepare a concise public record of how the contents of the EIS were incorporated into the permitting decision. This record is then supplied to the EQB for the purpose of monitoring the effectiveness of the environmental review process. The record is also supplied to any other person who explicitly requests it.

With respect to the forest products processing facilities in Minnesota, state statutes and associated rules require proposers of new facility construction and existing facility expansion to file for several different permits. An applicant will have to submit a number of federal (e.g., Section 404 Permits for Wetland Impacts as administered by the US Army Corps of Engineers) and local permit applications as well, but these will not be detailed in this report. However, it is important to recognize that federal timelines for environmental review and permit processing may slow state actions due to coordination efforts.

Additionally, American Indian tribes may also join in coordination efforts, and a pragmatic byproduct of

state coordination with several other levels of government is that project review times take longer.

Relevant state-level permits include the following:

Minnesota DNR

- *Water Appropriations Permit*: A water appropriation permit must be obtained from the DNR for any project that will withdraw more than 10,000 gallons of water per day or one million gallons per year.
- *Public Waters Work Permit*: Required for proposed projects constructed below the ordinary high water (OHW) mark which alter the course, current, or cross section of public waters or public waters wetlands. The permit program applies to those lakes, wetlands, and streams identified on DNR Public Water Inventory maps.

Minnesota PCA

- *Minnesota Air Emission Permit*: The individual total facility permit at the state level is very similar to the federal-level individual permit. However, at the state level, there are more alternatives to the individual permit available. If it is determined that expansion or some form of facility modification will increase total facility emissions beyond the originally permitted threshold, then the applicant is required to amend the existing permit by submitted an air modification permit. Major amendments must be placed on public notice, can take as many as six months or more to issue, and generally involve the consideration of Federal programs and other changes that have the potential to significantly affect air quality.
- *Section 401 Water Quality Certification*: The MPCA is responsible for Section 401 water quality certification required for Section 404 permits issued by the USACE. Section 401 of the Clean Water Act expressly requires that activities that may result in discharges to navigable waters and require a federal license or permit to construct, modify, or operate, must be conducted in compliance with Sections 301, 302, 303, 306, and 307 of the CWA. These sections of the CWA provide directives for state water quality standards.
- *National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Discharge Permits*: The NPDES permitting authority, delegated to the MPCA by the USEPA, regulates wastewater and storm water discharges to lakes, streams, wetlands, and other surface waters in Minnesota. State Disposal System (Minnesota Statute § 115) permits regulate the construction and operation of wastewater disposal systems, including land treatment systems. The SDS permit requires the applicant to obtain prepare a Stormwater Pollution Prevention Plan (SWPPP) that incorporates specific BMPs applicable to the site and attempts to eliminate or minimize stormwater contact with potential pollutants. Proposed projects may also be required to obtain a General Stormwater Permit for Industrial Activities. All public (municipal) and private operators of industrial facilities included in one of the 11 categories of industrial activity (as defined by SIC codes) are required to apply for this permit.

The *Air Emissions Permit* issued by the MPCA is one of the more substantial permits with respect to its substantive requirements and the level of documentation involved that would be required of an applicant proposing to construct or expand a forest products processing facility. A proposed facility is required to file an air emissions permit application if it has the potential to emit pollutants into the air in excess of the state and federal thresholds shown in Table 7.3.1.

Table 7.3.1: State and federal permitting thresholds based on potential to emit. (Source: Facts about Air Quality Permit Rules)

Pollutant	State Permit Threshold	Federal Permit Threshold
Volatile organic compounds (VOC)	100 tons per year	100 tons per year
Carbon monoxide (CO)	100 tons per year	100 tons per year
Nitrogen Oxides (NO _x)	100 tons per year	100 tons per year
Sulfur dioxide (SO ₂)	50 tons per year	100 tons per year
Fine particulate matter (PMO ₁₀)	25 tons per year	100 tons per year
Combined HAPs	25 tons per year	25 tons per year
Single HAPs	10 tons per year (each)	10 tons per year (each)
Lead	0.5 tons per year	10 tons per year

In addition, there are categories of sources that require permits because new or modified facilities in the categories are subject to the EPA’s New Source “Performance Standards” that dictate the amount of pollution a new *stationary source* may produce. Facilities that fall within this category are considered to be “major stationary sources” of air pollution. These performance standards outline how a process can be operated to minimize emission of pollutants. Metallic mineral processing facilities are one of the categories of operations subject to these performance standards (MPCA, 2003). Applications for an Air Emissions Permit must include the following information regarding the proposed facilities operating processes, products produced, and potential emissions (Minnesota Administrative Rules, Chapters 7001 & 7007):

- Description of the stationary source's processes and products (by SIC Code) including any associated with each alternate scenario identified by the stationary source.
- Emissions-related information, including the following:
 - Information about fugitive emissions in the same manner as stack emissions, regardless of whether the stationary source category in question is included in the list of stationary sources contained in the definition of a ‘major source’ in part 7007.0200, subpart 2.
 - Identification and description of each emission point in sufficient detail to verify the applicability of all applicable requirements. This must include the location of all emission points, and the location of all emissions units and processes venting through each emission point. In addition, if the exhaust gas flow rate and temperature, and the stack height and diameter of an emission point are needed to determine applicability of or show compliance with any applicable requirement, this information must be provided.
 - Description of potential emissions, as defined in part 7005.0100, subpart 35a, in tons per year from the stationary source as a whole. These potential emissions must be specified for each regulated air pollutant and each hazardous air pollutant that is not yet a regulated air pollutant, as defined in part 7007.0100, subparts 12a and 19. In addition, for each emissions unit subject to an applicable requirement, the permit application must specify, in tons per year, the amount of these pollutants the proposed project will emit.
 - Emission limits that will be imposed on the stationary source by applicable requirements.
 - Fuels, fuel use, raw materials, production rates, and operating schedules (as they pertain to emissions)
 - Identification and description of all air pollution control equipment and compliance monitoring devices or activities. A permit application must also contain the design operating efficiency of the air pollution control equipment.

- Description of any work practice or physical limitation on stationary source operation that affects emissions of regulated air pollutants.
- Explanation of the means by which emissions information is gathered, and provide the calculations on which they are based.

A NPDES/SDS Permit is a document that establishes the terms and conditions that must be met when a facility discharges wastewater to surface or ground waters of the state. The permit is jointly issued under both the NPDES and SDS programs. At the federal level, the NPDES program, which aims to protect waterways from point and nonpoint sources, is administered by the EPA. At the state level, the NPDES program is administered by the MPCA under a delegation from the EPA. The SDS is a state program administered by the MPCA, and the SDS Permit alone regulates water discharges to the ground surface or subsurface. In Minnesota, when both permits are required they are combined into one NPDES/SDS Permit administered by the state. The permits are issued to applicants proposing projects that will ultimately result in the discharge of treated wastewater into surface or subsurface water within the state. A site evaluation is a required component of the permit application, and the purpose of this assessment is to ensure that the project's proposed location meets the site suitability requirements for a subsurface discharging system. Additionally, these permits require that a hydrogeologic study be conducted to evaluate the extent to which groundwater quality would be impacted by the project. Applications are generally submitted within 180 prior to the date in which the applicant plans to commencing construction. The MPCA considers the comments generated during the EAW scoping process, along with any information collected during the permit application process, as it moves forward in developing the draft permit. After the draft permit is completed, it is put on public notice for 30 days for review by any interested parties. Comments received during this period may result in revisions to the draft permit. When all concerns are adequately addressed, a final permit is issued and its conditions become effective upon issuance (MPCA, 2002A; 2002B).

7.4 New York

Environmental review and permitting for proposed forest products processing facilities, mining operations, and other large-scale commercial and industrial projects is overseen by the New York Department of Environmental Conservation (DEC), which is a blanket agency that exists within the state's executive branch of government. However, it is important to note that while DEC provides oversight in the environmental review process, it may not necessarily be the RGU charged with playing an active role in EIS preparation. In fact, it is not uncommon for local units of government to act as the RGU during the preparation of a project-specific EIS.

Within DEC, the Division of Environmental Permits assumes primary responsibility for environmental review and permitting. This division manages a system of permits known as the Uniform Procedures Act (UPA) permits. The UPA also establishes timeframes and procedures for filing and reviewing applications, providing public notice, holding public hearings, and reaching final decisions. At a broader level, the UPA is intended to ensure a timely and thorough review of a proposed project, eliminate inconsistent procedures, and encourage public participation. The specific permits administered under the UPA are designed to help protect the state's air, water, mineral, and biological resources. In accordance with state law, administering these permits requires DEC to provide with timely information and updates with regards to the following:

- Permit applications that have recently been filed.
- Opportunities to provide information concerning a particular application.
- Opportunities to review and comment on any environmental impact statements and other documents that may become part of the application.
- Opportunities to participate in any hearings concerning applications currently under review.

The mission of the Division of Environmental Permits is: "To manage the Department of Environmental Conservation's permit system, provide related public information, perform comprehensive environmental analyses to assure timely and consistent decisions so that protection of the environment is balanced with social and economic considerations." The division receives project applications for those environmental protection permits that are required under the Environmental Conservation Law (ECL) and which are processed according to the UPA.

In addition to the permitting responsibilities, the Division of Environmental Permits oversees the DEC's implementation of the State Environmental Quality Review (SEQR). The Division subsequently helps other state agencies and local governments carry out their responsibilities under SEQR. More specifically, the Division assists local governments prepare environmental assessments. SEQR is implemented in accordance with statutory authority provided under Part 617 of the State Environmental Quality Review Act (a component of the ECL) and New York Code of Rules and Regulations. SEQR establishes a process to systematically consider environmental factors early in the planning stages of actions that are directly undertaken, funded or approved by local, regional and state agencies. When SEQR was enacted, the state legislature stated that its intent was (Laws of New York, 2007):

"...to declare a state policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and enhance human and community resources; and to enrich the understanding of the ecological systems, natural, human and community resources important to the people of the state."

The basic purpose of SEQR is to incorporate the consideration of environmental factors into the existing planning, review, and decision-making processes of state, regional, and local government agencies at the earliest possible time. To accomplish this, SEQR requires that all agencies determine whether the actions they directly undertake, fund or approve may have a significant impact on the environment, and, if it is determined that the action may have a significant adverse impact, prepare or request an EIS. SEQR was established to ensure that environment quality and human and community resources were granted appropriate consideration when weighing the benefits associated with these factors against social and economic considerations of various public policy options. The Act also intended for environmental and community resources be considered together in reaching decisions on specific projects proposed by private industry. The Act defines the “environment” as the physical conditions affected by a proposed action. These “physical conditions” include land, air, water, minerals, flora, fauna, noise, resources of agricultural, archeological, historic or aesthetic significance, existing patterns of population concentration, distribution or growth, existing community or neighborhood character, and human health (Laws of New York, 2007).

An action is subject to review under SEQR if any state or local agency has the authority to issue a discretionary permit (i.e., air emissions or water discharge permit), license or other type of approval for a proposed private action. SEQR also applies if an agency funds or directly undertakes a project, or adopts a resource management plan, rule or policy that affects the environment. If the proposed action does not require a discretionary decision, there is no requirement for review under SEQR. One of the early steps in the SEQR process is agency classification of the proposed action. Specifically, proposed actions can fall under one of two broad categories: (1) actions requiring no further review under SEQR, and (2) actions requiring further review under SEQR. Actions that ultimately do NOT require further review under SEQR are classified as Type II action. Section 617.5 of the SEQR act provides a list of those actions that will be classified as Type II action for environmental review purposes. Additionally, state and local agencies have expanded this list by generating their own locally adopted Type II lists. Type II actions include proposed agricultural operations, repaving of existing highways not involving the addition of new travel lanes, maintenance or repair to public or private property involving no substantial changes in an existing structure or facility, and construction or expansion of a primary or accessory/appurtenant, nonresidential structure or facility involving less than 4,000 square feet of gross floor area. Type II actions have been determined not to have a significant impact or are otherwise precluded from environmental review under SEQR. Type II actions never require the preparation of a determination of significance or a draft EIS. Although not required, an agency may choose to provide documentation in the project file that the action has been classified as Type II. Actions that require further review under SEQR include Type I actions and

Unlisted actions. Type I actions are those actions that meet or exceed a threshold contained on the list provided in section 617.4 of the Act, or an action listed on an agency's locally adopted Type I list. Type I actions, by definition, are more likely to have a significant adverse impact on the environment than Unlisted actions and may require the preparation of a draft EIS. Type I actions include: construction of 50 or more residential units that are not to be connected (at the commencement of habitation) to existing community or public water and sewerage systems including sewage treatment works, a project or action that involves the physical alteration of 10 or more acres, a project or action that would use ground or surface water in excess of 2,000,000 gallons per day, a facility with more than 100,000 square feet of gross floor area. Agencies may adopt their own lists of additional Type I actions, may adjust the thresholds to make them more inclusive, and may continue to use previously adopted lists of Type I actions to complement those contained in this section. Designation of a Type I action by one involved agency requires coordinated review by all involved agencies. An agency may not designate as Type I any action identified as Type II in section 617.5 of the Act. Unlisted actions are actions that do not meet or exceed the thresholds contained on the Type I list and are not contained on the Type II list. An Unlisted action requires a determination of significance and may require the preparation of a draft EIS (NYDEC, 2004; Laws of New York, 2007).

A *full* Environmental Assessment Form (EAF) must be prepared for all proposed projects classified as Type I actions (see Figure 7.4.1 and 7.4.2 for ER processes and timeframes). The applicant is responsible for completing Part 1 (provides objective data and information about a given project and its site) of the full EAF, including a list of all other involved agencies the project sponsor has been able to identify. The lead agency completes Part 2 (identifying the range of possible impacts that may occur from a project or action) of the form, and Part 3 (assessment of any impacts identified as significant) if necessary. A *short* EAF must be completed for all proposed projects that constitute Unlisted actions. An agency may require a full EAF if the short EAF will not provide sufficient information, or it may waive the requirement for an EAF if a draft EIS is prepared and submitted with the application. An EAF is a form used by an agency to assist it in determining the environmental significance or nonsignificance of actions. A properly completed EAF must contain enough information to describe the proposed action, its location, its purpose and its potential impacts on the environment (NYDEC, 2004; Laws of New York, 2007). In accordance with SEQR regulation, the lead agency has the authority to unilaterally make a determination of significance on a proposed project. A Positive Declaration of significant indicates that the lead agency believes that a proposed project could potentially have significant environmental impacts, and if this determination is made then an EIS will be required. Additionally, the agency has the authority to issue a Negative Declaration without conducting any public hearings or otherwise requesting public comment.

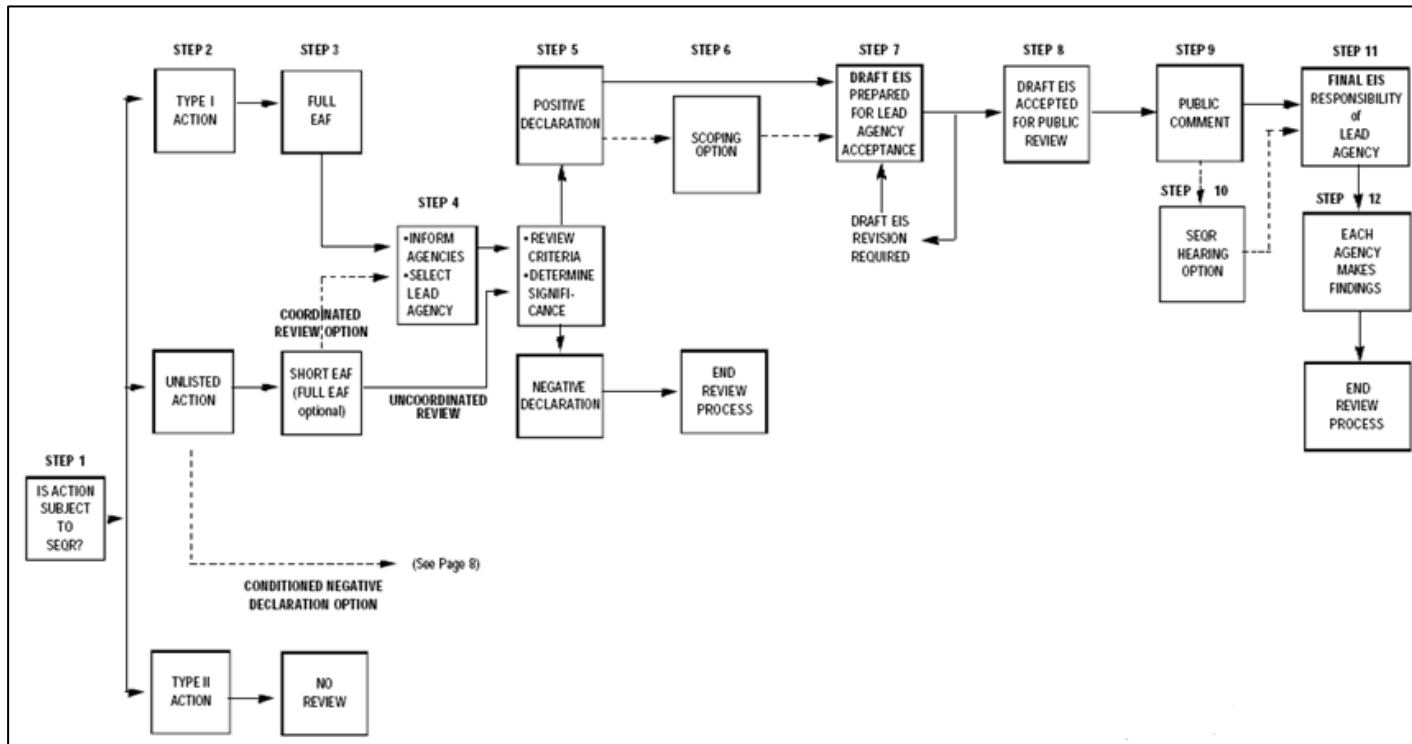


Figure 7.4.1. Generic Environmental Review Flowchart for projects proposed in New York State.

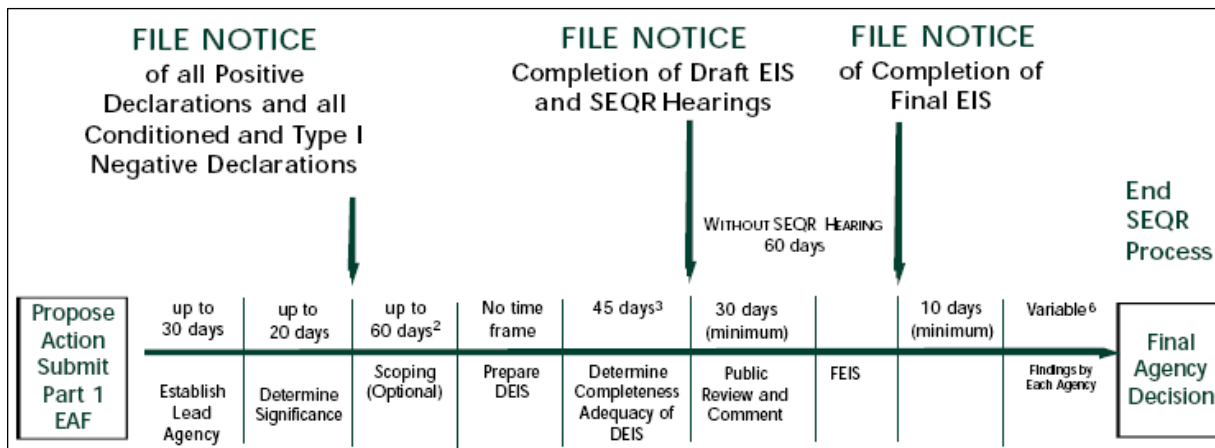


Figure 7.4.2. Generic Environmental Review Timeline for projects proposed in New York State.

Coordinated review is required for all Type I actions. The agency responsible for undertaking the action or the first agency to receive an application from the project sponsor for a Type I action must start the coordination process. Any agency that believes an unlisted action should be coordinated may start coordination. The agency that initially receives an application for approval circulates to the other involved agencies the completed Part 1 of the full EAF and any other information supplied by the applicant. The involved agencies should be identified by the applicant in the full EAF. If there is only one agency approving, funding or directly undertaking an action, that agency is automatically the lead agency. If there are two or more involved agencies, a lead agency must be established by agreement of the agencies within 30 calendar days. If any involved agency desires to be lead agency, it can indicate in the coordination request its willingness to act as lead agency and state that, if no response is received within 30 calendar days, it will assume the role of lead agency. If the lead agency cannot be agreed on within 30 calendar days, any of the involved agencies or the applicant can ask the Commissioner of the DEC to resolve the dispute and designate the lead agency (NYDEC, n.d.A; 2004; Laws of New York, 2007).

In accordance with the SEQR Act, determining whether a proposed Type I or Unlisted action may have a significant adverse impact on the environment involves comparing the impacts that may be reasonably expected to result from the proposed action against an established list of criteria. Criteria on this list include the following (the list is illustrative, not exhaustive):

- The extent to which a project will impose substantial adverse change in existing air quality, ground or surface water quality or quantity, traffic or noise levels, solid waste production, and potential for erosion, flooding, leaching or drainage problems.
- The extent to which a project will involve removal or destruction of large quantities of vegetation or fauna; substantial interference with the movement of any resident or migratory fish or wildlife species; impacts on a significant habitat area; substantial adverse impacts on a threatened or endangered species of animal or plant, or the habitat of such a species; or other significant adverse impacts to natural resources; the impairment of the environmental characteristics of a Critical Environmental Area (an area owned or under the regulatory authority of the state that has been deemed to have “exceptional or unique character”).
- The extent to which a project will involve the creation of a material conflicting with a community's current plans or goals as officially approved or adopted.
- The extent to which a project will impair the character or quality of important historical, archeological, architectural, or aesthetic resources or of existing community or neighborhood character.
- The extent to which a project will cause a major change in the use of either the quantity or type of energy.
- The extent to which a project will create hazards to human health.
- The extent to which a project will bring about a substantial change in the use, or intensity of use, of land including agricultural, open space or recreational resources, or in its capacity to support existing uses.
- The extent to which a project will create a material demand for other actions that would result in one of the above consequences.

- The extent to which a project will cause adverse changes in two or more elements of the environment, no one of which has a significant impact on the environment, but when considered together result in a substantial adverse impact on the environment.
- The extent to which a project will result in two or more related actions being undertaken, funded or approved by an agency, none of which has or would have a significant impact on the environment, but when considered *cumulatively* would meet one or more of the listed criteria.

For the purpose of determining whether an action may meet one of the above listed criteria, the Act requires that the lead agency consider reasonably related long-term, short-term, direct, indirect, and cumulative impacts, including other simultaneous or subsequent actions which are (1) included in any long-range plan of which the action under consideration is a part, (2) likely to be undertaken as a result thereof, or (3) dependent on the proposed action. Additionally, the Act requires that the significance of a likely consequence (whether it is material, substantial, large or important) be assessed in connection with:

- Setting (e.g., urban or rural).
- Probability of occurrence.
- Duration.
- Irreversibility.
- Geographic scope.
- Magnitude.
- Number of people affected.

The lead agency has 20 calendar days to make its determination of significance. If the lead agency finds that it does not have sufficient information to make this determination, it may request that the applicant provide it. The lead agency must make its determination within 20 days of receipt of all the information it reasonably needs. If the lead agency has determined the proposed action may result in a significant adverse impact and, therefore, will require the preparation of an EIS, it must prepare and file a notice of that determination known as a Positive Declaration. The Positive Declaration must be prepared, filed, distributed and published as prescribed in section 617.12 of the Act.

After it has been determined that an EIS must be prepared for a given project the lead agency will begin the scoping process. The Act acknowledges that the purpose of scoping is to narrow issues and ensure the draft EIS will be a concise, accurate, and complete document adequate for public review. More specifically, the scoping process is intended to accomplish the following (Laws of New York, 2007; NYDEC, n.d.B):

- Ensure public participation in the EIS development process.
- Allow open discussion of issues of public concern.
- Permit inclusion of relevant, substantive public issues in the final written scope.

The scoping process can also allow the lead agency and other involved agencies to reach agreement on relevant issues in order to minimize the inclusion of unnecessary issues. Finally, scoping is intended to help the sponsor avoid the submission of an obviously deficient draft EIS. The Act mandates that the scoping process incorporate the following objectives (Laws of New York, 2007; NYDEC, n.d.B):

- Identify the significant environmental conditions and resources which the project may affect.
- Focus on the relevant environmental impacts to those environmental conditions and resources, thus providing the preparers with the specific issues to be addressed in the EIS.
- Eliminate irrelevant impacts or issues, and eliminate or de-emphasize nonsignificant impacts.
- Describe the extent and quality of information needed.
- List available sources of information.
- Specify study methods or models to be used to generate new information, including criteria or assumptions underlying any models, and define nature and presentation of the data to be generated by those studies and models.
- Define reasonable alternatives for avoiding specific impacts which must be included in the EIS, either as individual scenarios or a range of alternatives.
- Specify possible measures for mitigating potential impacts which must be discussed in the EIS, to the extent that they can be identified at the time of scoping.

Although formal scoping is done for most EISs, it is not required by law. If a formal scoping process is not conducted, then the burden of determining what issues and information should be included in the draft EIS falls completely on the applicant. The lead agency must then assess adequacy of the draft EIS without having formally indicated to the sponsor what criteria it will use in making that assessment. The lead agency has 60 days to generate a final written scope. Under section 617.8 of the Act, the scoping period starts when the project sponsor files a draft scope with the lead agency. The lead agency then circulates the draft scope, solicits public input, and provides a final written scope of issues to the applicant and all involved agencies within 60 calendar days of the filing of the draft scope. Scoping must include an opportunity for public participation. The lead agency may either provide a period of time for the public to review and provide written comments on a draft scope or provide for public input through the use of meetings, exchanges of written material, or other means. To prepare the final scope, the lead agency must compile all comments from its own review, from involved or interested agencies, and from the public, and use those comments plus the draft scope to develop the final written scope. It must distribute the final scope to the project sponsor, all involved agencies, and interested agencies and members of the public who provided written comments on the draft scope (Laws of New York, 2007; NYDEC, n.d.A; 2004).

Once scoping is completed, the next step of the environmental review process involves the preparation of a draft EIS. The applicant is permitted the opportunity to prepare the draft EIS. This contrasts with the State of Minnesota, in which all EISs are prepared by the RGU. If the applicant refuses to prepare the draft EIS, the lead agency has the option of preparing the draft EIS, having it prepared by a consultant or

terminating its review of the action. If the agency decides to prepare the draft EIS or have it prepared by a consultant, state law allows the agency to charge the applicant a fee to recover the direct costs of preparation. Additionally, if it does not charge a fee for its preparation, the lead agency has the ability to charge a SEQR fee for the review of an EIS.

Although state law is fairly flexible with regards to the specific format of the draft EIS, all draft EISs must include the following elements (Laws of New York, 2007; NYDEC, 2004):

- Concise description of the proposed action, its purpose, public need and benefits, including social and economic considerations.
- Concise description of the environmental setting of the areas to be affected, sufficient to understand the impacts of the proposed action and alternatives.
- Statement and evaluation of the potential significant adverse environmental impacts at a level of detail that reflects the severity of the impacts and the reasonable likelihood of their occurrence. The draft EIS should identify and discuss the following ONLY where applicable and significant:
 - Reasonably related short-term and long-term impacts, cumulative impacts and other associated environmental impacts.
 - Those adverse environmental impacts that cannot be avoided or adequately mitigated if the proposed action is implemented.
 - Any irreversible and irretrievable commitments of environmental resources that would be associated with the proposed action should it be implemented.
 - Any growth-inducing aspects of the proposed action.
 - Impacts of the proposed action on the use and conservation of energy (for an electric generating facility, the statement must include a demonstration that the facility will satisfy electric generating capacity needs or other electric systems needs in a manner reasonably consistent with the most recent state energy plan).
 - Impacts of the proposed action on solid waste management and its consistency with the state or locally adopted solid waste management plan.
 - Impacts of public acquisitions of land or interests in land or funding for non-farm development on lands used in agricultural production and unique and irreplaceable agricultural lands within agricultural districts.
 - Impacts of the proposed action on, and its consistency with, the comprehensive management plan for the special groundwater protection area program (only applied to proposed actions in or involving resources in Nassau or Suffolk Counties).
- Description of the mitigation measures.
- Description and evaluation of the range of reasonable alternatives to the action that are feasible, considering the objectives and capabilities of the project sponsor. The description and evaluation of each alternative should be at a level of detail sufficient to permit a comparative assessment of the alternatives discussed. The range of alternatives must include the no action alternative. The no action alternative discussion should evaluate the adverse or beneficial site changes that are likely to occur in the reasonably foreseeable future, in the absence of the proposed action. The range of alternatives may also include, as appropriate, alternative:
 - Sites (site alternatives may be limited to parcels owned by, or under option to, a private project sponsor).
 - Technology.
 - Scale or magnitude.
 - Design.
 - Timing.

- Use.
- Types of action. For private project sponsors, any alternative for which no discretionary approvals are needed may be described.
- List of any underlying studies, reports, EISs and other information obtained and considered in preparing the statement including the final written scope.

In addition to the analysis of significant adverse impacts required under the SEQRA Act, if information about reasonably foreseeable catastrophic impacts to the environment is unavailable because the cost to obtain it is exorbitant, or the means to obtain it are unknown, or there is uncertainty about its validity, and such information is essential to an agency's SEQRA findings, the EIS must:

- Identify the nature and relevance of unavailable or uncertain information.
- Provide a summary of existing credible scientific evidence, if available.
- Assess the likelihood of occurrence, even if the probability of occurrence is low, and the consequences of the potential impact, using theoretical approaches or research methods generally accepted in the scientific community.

The lead agency will use the final written scope, if any, and the standards contained in this section to determine whether to accept the draft EIS as adequate with respect to its scope and content for the purpose of commencing public review. This determination must be made in accordance with the standards in this section within 45 days of receipt of the draft EIS. If the draft EIS is determined to be inadequate, the lead agency must identify in writing the deficiencies and provide this information to the project sponsor. The lead agency must determine whether to accept the resubmitted draft EIS within 30 days of its receipt. When the lead agency has completed a draft EIS or when it has determined that a draft EIS prepared by a project sponsor is adequate for public review, the lead agency must prepare, file, and publish a publically available notice of completion of the draft EIS. The minimum public comment period on the draft EIS is 30 days. The comment period begins with the first filing and circulation of the notice of completion (Laws of New York, 2007; NYDEC, 2004).

Once a draft EIS is adequate for public review (state law does not prescribe a specific amount of time in which a draft EIS has to be completed), the lead agency will determine whether to conduct a public hearing concerning the action. In determining whether to hold a SEQRA hearing, the lead agency will consider: the degree of interest in the action shown by the public or involved agencies, whether substantive or significant adverse environmental impacts have been identified, the adequacy of the mitigation measures and alternatives proposed, and the extent to which a public hearing can aid the agency decision-making processes by providing a forum for, or an efficient mechanism for the collection of, public comment. The lead agency must prepare and file a notice of hearing, and such notice is also commonly contained in the notice of completion of the draft EIS. The notice of hearing must be published

at least 14 calendar days in advance of the public hearing, in a newspaper of general circulation in the area of the potential impacts of the action. The hearing will commence no less than 15 calendar days or no more than 60 calendar days after the filing of the notice of completion of the draft EIS by the lead agency. State law requires the lead agency to receive and consider comments for no less than 30 calendar days from the first filing and circulation of the notice of completion, or no less than 10 calendar days following a public hearing at which the environmental impacts of the proposed action are considered (Laws of New York, 2007; NYDEC, 2004).

Unless the lead agency determines, on the basis of the draft EIS and comments made thereon, that the action will not have a significant adverse impact on the environment, the agency must prepare or cause to be prepared and must file a final EIS, within 45 calendar days after the close of any hearing or within 60 calendar days after the filing of the draft EIS, whichever occurs later. A final EIS must consist of: the draft EIS, including any revisions or supplements to it; copies or a summary of the substantive comments received and their source (whether or not in the context of a hearing); and the lead agency's responses to all substantive comments. The draft EIS may be directly incorporated into the final EIS or may be incorporated by reference. The lead agency is responsible for the adequacy and accuracy of the final EIS, regardless of who prepares it. All revisions and supplements to the draft EIS must be specifically indicated and identified as such in the final EIS (Laws of New York, 2007; NYDEC, 2004).

The SEQR Act mandates that the lead agency and all other agencies involved in the environmental review process for a given project prepare a written SEQR findings statement after a final EIS has been filed and before the agency makes a final decision. The findings certify that the EIS preparation, filing, publication, and distribution requirements under the Act have all been satisfied. A positive findings statement means that the project or action is approvable after consideration of the final EIS and demonstrates that the action chosen is the one that avoids or minimizes adverse environmental impacts to the maximum extent practicable. A findings statement considers the relevant environmental impacts presented in the EIS and weighs and balances them with social, economic, and other essential considerations. The findings statement must provide a rationale for the agency's decision. If the action is not approvable, a negative findings statement documenting the reasons for the denial must be prepared. The findings can be finalized no sooner than 10 days following the filing of the Notice of Completion of the Final EIS and, if the action involves an applicant, the lead agency's findings must be made within 30 days from the filing date. Findings of each agency must be filed with all other involved agencies and the applicant at the time they are adopted (Laws of New York, 2007; NYDEC, 2004).

The SEQR Act also includes a section outlining the purpose and requirements of a GEIS. The Act states that a GEIS may be broader, and more general (based on conceptual information in some cases) than site or project specific EISs and should discuss the logic and rationale for the choices advanced. A GEIS may identify the important elements of the natural resource base as well as the existing and projected cultural features, patterns, and character, and these documents are to address in general terms the constraints and consequences of any narrowing of future options. The Act states that a GEIS may present and analyze various hypothetical scenarios that would be likely to occur. More specifically, a GEIS may be used to assess environmental impacts associated with the following (Laws of New York, 2007):

- Multiple separate actions in a given geographic area which, if considered singly, may have minor impacts, but if considered together may have significant impacts.
- Sequences of actions, contemplated by a single agency or individual.
- Separate actions having generic or common impacts.
- Instances where an entire program or plan has wide application or restricts the range of future alternative policies or projects, including new or significant changes to existing land use plans, development plans, zoning regulations or agency comprehensive resource management plans.

GEISs are frequently drafted in response to the adoption of a comprehensive plan prepared by local governments. Impacts of individual actions proposed to be carried out in conformance with these adopted plans and regulations and the thresholds or conditions identified in the GEIS may require no or limited SEQR review. The SEQR Act states that GEISs and their findings should set forth specific conditions or criteria under which future actions will be undertaken or approved, including requirements for any subsequent SEQR compliance. This may include thresholds and criteria for supplemental EISs to reflect specific significant impacts, such as site specific impacts, that were not adequately addressed or analyzed in the GEIS (Laws of New York, 2007).

A supplement to a GEIS must be prepared if a subsequent proposed action was not addressed or was not adequately addressed in the GEIS and the subsequent action may have one or more significant adverse environmental impacts. The SEQR Act states that in situations where projects will be developed in phases or stages, agencies should address not only the site specific impacts of the individual project under consideration, but also, in more general or conceptual terms, the cumulative impacts on the environment and the existing natural resource base of subsequent phases of a larger project or series of projects that may be developed in the future. In these cases, a GEIS must discuss the important elements and constraints present in the natural and cultural environment that may bear on the conditions of an agency decision on the immediate project (Laws of New York, 2007).

In addition to EIS preparation and the associated environmental review process, an applicant also has file applications for needed permits. New York state law requires that all the necessary permit applications for a given project be submitted concurrently so they can be reviewed concurrently by the project manager (J. Nasca, personal communication, December 2007). One of the core permit applications that an applicant proposing to build or significantly expand a forest products processing facility will have to submit is an air pollution control permit. In addition to maintaining reasonable levels of air quality for public health and environmental purposes, these permits are invoked to ensure that all available practical and reasonable methods to prevent and control air pollution are considered during project design. More specifically, owners and/or operators of air contamination sources are required to obtain a Title V Facility Permit or State Facility Permit for source construction and operation. Authorizations are for all sources at a facility, not for individual emission points. State rules (Title 6, Chapter 2, Subpart 201-5) require that the following types of proposed projects submit applications for a State Facility Permit (DAR, 2007B):

- Stationary sources requiring an emission cap established in a permit pursuant to section 201-7.2 of the state rules to avoid the requirement to obtain a title V permit or other applicable requirement.
- Stationary sources subject to any department approved variance from the requirements listed in Title 6 (DEC Regulations) of the state rules.
- New facilities constructed in industrial categories to which a New Source Performance Standard (NSPS) applies with a potential to emit that is below major stationary source thresholds including those that have been deferred from the requirement to obtain a title V permit in section 201-6.1(c) of the *Air Resources* rules.
- New facilities constructed which emit any contaminant listed as a hazardous air pollutant under Part 200 of the DEC rules and regulations (these facilities include pulp and paper mills, plywood and other composite wood manufacturers, and metallic mineral processing facilities), excluding facilities subject to VOC RACT requirements under Parts 226, 228, 229, 230, 233 and 234 of the DEC rules and regulations. Such facilities must have a potential to emit that is below major stationary source thresholds, including those that have been deferred from the requirement to obtain a title V facility permit.

Furthermore, with respect to Title V facilities, state rules mandate that no applicant shall operate any of the following stationary sources without obtaining a Title V permit (DAR, 2007B):

- Major stationary sources (i.e., pulp and paper mills, plywood and other composite wood manufacturers, and metallic mineral processing plants).
- Stationary sources subject to a standard or limitation, or other requirement under the Federal New Source Performance Standards (NSPS) in 40 CFR part 60.
- Stationary sources including an area source (any stationary source of hazardous air pollutants that is not a major stationary source) that are subject to a standard or other requirement regulating hazardous air pollutants, except that a source is not required to obtain a title V permit solely because it is subject to regulations or requirements promulgated for the control of accidental releases of regulated substances.
- *Affected sources*. These are stationary sources that include one or more fossil fuel fired combustion units (“affected” units) that are subject to emission reduction requirements or

limitations established in accordance with the Federal Acid Rain Program under title IV of the Clean Air Act.

- Stationary sources in a category designated by the administrator and added by the department pursuant to rule making.

Another important state permit that applicants proposing to build major must obtain is the SPDES permit. SPDES was developed in order to better maintain reasonable standards of purity of the waters of the state consistent with public health and environmental values, and to require the use of all known available and reasonable methods to prevent and control the pollution being discharged into waters of the state.

Proposed activities that are required to obtain an SPDES permit include the following (NYDEC, n.d.C):

- Construction or use of an outlet or point source discharging into the surface waters or groundwater of the state.
- Construction or operation of disposal systems such as sewage treatment plants.
- Increase or alteration of the content of the wastes discharged from an outlet by a change in volume, or by a change in the physical, chemical or biological characteristics of the discharge.
- Storm water discharge associated with industrial activity, including new construction disturbing five or more acres.

In order to obtain a SPDES permit, state rules (Title 6, Part 750) require that the applicant include the following in the permit application:

- Information pertaining to the nature of the activities that will result in the discharge, including up to four SIC codes which best reflect the principal products or services provided by the facility.
- Publically Owned Treatment Works must provide information pertaining to private residential subdivisions, apartment or condominium developments or mobile home parks, the service area and population served.
- Information pertaining to the frequency, duration, and days of discharge.
- Information pertaining to the quality and quantity of the discharge.
- Information pertaining to the source of the wastewater or stormwater.
- Information pertaining to the type of wastewater or stormwater treatment, including the design flow of each unit.
- Topographic maps extending one mile beyond the property boundaries of the source, depicting the facility and each of its intake and discharge structures; each of its hazardous waste treatment storage and disposal facilities; the portion of the mapped area on Indian Lands; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant in the map area.
- Projects involving discharges to surface waters must supply the classification of the receiving waters and the water index number.
- Projects involving discharges to groundwaters must provide information pertaining to the soil type and the depth of the water table.

After a permit application for a major project is complete and notice in accordance with section 621.7 the state rules has been provided, the DEC must evaluate the application and any comments received to determine whether a public hearing will be held. If a public hearing must be held, the applicant and all

persons who have filed comments must be notified by mail. This must be done within 60 calendar days of the date the application is complete. The Uniform Procedures time frames are suspended as of the date the DEC notifies the applicant of its decision to hold a hearing and at that point the time frames associated with permit hearing procedures (Title 6, Part 624) apply. A hearing may be either adjudicatory (held in a state court) or legislative (held before a relevant legislative committee) (DAR, 2007B).

The determination to hold an adjudicatory public hearing shall be based on whether the DEC's review raises substantive and significant issues relating to any findings or determinations the department is required to make pursuant to the ECL, including the reasonable likelihood that a permit applied for will be denied or can be granted only with major modifications to the project because the project, as proposed, may not meet statutory or regulatory criteria or standards. In addition, where any comments received from members of the public or other interested parties raise substantive and significant issues relating to the application, and resolution of any such issue may result in denial of the permit application, or the imposition of significant conditions thereon, the DEC shall hold an adjudicatory public hearing on the application. Mere expressions of general opposition to a project are insufficient grounds for holding an adjudicatory public hearing on a permit application. In order to raise substantive and significant issues, written comments expressing objection or opposition to an application must explain the basis of that opposition and identify the specific grounds which could lead the department to deny or impose significant conditions on the permit. The department normally does not require public hearings in connection with applications for minor projects, and if a public hearing is required for a minor project (i.e., a significant number of public comments are received on a minor project) the application shall be treated as a major project with respect to satisfying public hearing requirements. If a public hearing on an application is required to be held, it must commence on or before 90 calendar days after the date the application is complete (DAR, 2007B).

Unless otherwise provided by statute or regulation, the Office of Hearings must publish notice of the hearing in the Environmental News Bulletin (ENB), and provide notice to the applicant and to persons who have made written request to participate. Additionally, public notice must also be published in a newspaper having general circulation in the area within which the proposed project is located. The applicant bears the cost of publication of the notice in a newspaper, and the state bears the cost of publishing notice in the Environmental News Bulletin. The notices in the Environmental News Bulletin and the newspaper must be published at least once and not less than 21 calendar days prior to the hearing date (DAR, 2007B).

8.0 APPENDIX B – State Environmental Review and Permitting for Mining Projects

8.1 Michigan

The Department of Environmental Quality (MDEQ) is Michigan's state agency responsible to initiating environmental review and permitting of proposed projects that could impose potentially significant impacts on the human environment. The agency exists within the state's executive branch of government, and administers programs and enforces laws that: protect public health, promote the appropriate use of the environment, prevent adverse effects on the environment, and restore the quality of the environment (MDEQ, n.d.).

Within MDEQ, the Office of Geological Survey (OGS) is responsible for environmental review and permitting of proposed mining operations. OGS is responsible for ensuring that the development of fossil fuel and mineral resources follows sound conservation principles and incorporates proper protection for other natural resources, the environment, property, and public health and safety. The OGS regulates the drilling and operation of wells for oil and gas production, exploration and production of brine and other minerals, and underground storage and disposal. The OGS also regulates the operation and reclamation of mines for industrial sand, metals, and other minerals. Finally, the OGS develops and distributes a variety of maps, publications, and data on fossil fuels, minerals, and groundwater for industry and public use. The OGS' Mining and Minerals Program is the entity with primary responsibility for permitting and oversight of metallic mining and reclamation projects in Michigan. At present, this only includes two iron mines and the Kennecott Eagle Project located in the Upper Peninsula (UP). Staff within the Mining and Minerals Program conduct permitting, inspection, and enforcement activities of the reclamation requirements at these operations (MDEQ, 2006).

Although Michigan does not have a state environmental policy act in place, the state has enacted legislation and administrative rules that require detailed analysis of potential impacts associated with proposed ferrous and nonferrous metallic mining projects. The most recent of such legislation was passed in 2004 when potential development of new metallic mining operations in the western UP created significant controversy and prompted concerns over the adequacy of Michigan's mining and reclamation laws and regulations. In response to those concerns and at the request of UP legislators, the MDEQ established a work group to evaluate Michigan's regulation of hard-rock mining. The work group included business organizations, citizens, interest groups, legislators, local governmental units, mining companies, Native American tribes, universities, the US Environmental Protection Agency, and other state government agencies. The work group drafted language for a comprehensive, progressive mining law, which was later incorporated into Public Act No. 449 of 2004. The new law, enacted on December

27, 2004, regulates for the first time the underground mining of sulfide ores for nonferrous metals (USGS, 2004). The 2004 amendment created a new Part 632 of the Natural Resources and Environmental Protection Act that prohibits a person from mining nonferrous metallic minerals except as authorized by a permit issued by the MDEQ (House Fiscal Agency, 2004). The Act requires a permit application to include the following: (1) a \$5,000 application fee; (2) an environmental impact assessment (the components of this plan are described in more detail below); (3) a mining, reclamation, and environmental protection plan that seeks to minimize the adverse impacts of the mining operation on natural resources, the environment, and public health; (4) a contingency plan that includes an assessment of the environmental, public health, and safety risks that may result from failures of the mining operation, and the operator's notification and response plans; and (5) financial assurances of the mining operation. The bill also provides that the applicant would have the burden of establishing that the terms and conditions provided in the application, environmental protection plan, and environmental impact assessment results in a mining operation that reasonably minimizes the actual or potential adverse impacts on air, water, and other natural resources.

The new law was designed to protect the environment, while ensuring that mining companies could develop economically promising sulfide deposits in Michigan (USGS, 2004). The legislation also amended and updated Michigan's earlier mining reclamation law (1994 PA 451), which applies primarily to open pit mining of iron ore. The new law represents a compromise between the mining industry and environmental groups and was triggered by the exploration activities of Bitterroot Resources, Ltd. and Kennecott in the UP (Eggert, 2004; Flesher, 2004; USGS, 2004). Kennecott supported the underground mining legislation during the enactment process (KEMC, 2004; USGS, 2004).

The new mining law set up a permitting system to oversee underground sulfide mining. The MDEQ is responsible for issuing the permits. The 2004 amendment requires that public hearings be held during the review of all permit applications. As part of the application process, mining companies must now submit plans to the MDEQ that cover all aspects of development, operation, monitoring, and decommissioning. In accordance with the Act, the MDEQ did not create more specific rules for mine construction, operation, and decommissioning until December 31, 2005. The MDEQ was expected to initially focus on minimizing the generation of acid mine drainage (AMD) waters and preventing their escape offsite. Conservation groups and residents of the UP were especially concerned about AMD contaminating ground water or environmentally sensitive surface waters (USGS, 2004).

The 2004 Amendment also laid out a timeline in which the associated Nonferrous Metallic Mining Permit would have to be processed by the MDEQ. In accordance with Michigan's Nonferrous Metallic Mining Regulations (Part 632), during the project review process, the MDEQ is mandated to proceed with permit application processing and review in the following manner:

- Process an application and determine if it is administratively complete.
- Distribute paper copies to locations for public review.
- Make files available as paper copies, on the internet and on CD (in accordance with FOIA).
- Announce and hold an initial public meeting on the application.
- Accept written public comments on the application after the public meeting is conducted.
- Make a preliminary decision to grant or deny the permit after the public comment period concludes.
- Make additional materials available to the public.
- Announce and hold a second public hearing on the application.
- Accept written public comments on the application after public hearing.
- Make a final decision to grant/deny the permit after concluding the final public comment period.

More specifically, the Act states that the MDEQ has 14 days after receiving the application to determine whether the application is administratively complete (i.e., contains all of the required information and fees). If the application is not complete, the MDEQ then has to notify the applicant of the deficiency. If the MDEQ does not make a determination as to whether the application is “administratively complete,” the application is automatically considered to be complete and the permit is awarded to the applicant. After an application is considered to be administratively complete, the MDEQ has 42 days to provide a public hearing on an application. The MDEQ then has to provide appropriate public notice of the hearing, and must accept written public comments on the application for 28 days after the public hearing.¹⁴ The MDEQ is required to make a preliminary decision to grant or deny the application within 28 days after the close of the public comment period. Once that preliminary decision is made, the MDEQ is required to hold another public hearing (with appropriate notice) on that preliminary decision, and also accept written public comment for 28 days after the public hearing (MDEQ, 2005; House Fiscal Agency, 2004).

After the 28-day comment period on the agency's preliminary decision concludes, the Act requires the MDEQ to make a decision to approve or deny the application. If the MDEQ requires additional information from the applicant to make its decision the 28-day period would not begin until the MDEQ receives the additional information. The MDEQ is required to approve the application if it determines that the application meets the requirements set forth in Part 632 and the proposed mining operation will not pollute, impair, or destroy the air, water, or other natural resources or the public trust in those resources in

¹⁴ Notice mechanisms include the MDEQ public notice process, which uses the MDEQ Calendar and local newspapers, internet postings, and email.

accordance with Part 17 of the Act. The MDEQ must deny the application if the above requirements are not met (MDEQ, 2005; House Fiscal Agency, 2004).

Once the permit is approved, the terms and conditions provided for in the application and the mining, reclamation, and environmental protection plan become part of the mining permit. The Act provides that, if a person submits an application for a mining permit and other permits required under the NREPA, MDEQ can elect to process those applications in a coordinated manner (as appropriate) to facilitate the timely review of the applications, including holding one public hearing for multiple permit applications (House Fiscal Agency, 2004).

Environmental review and permitting are conducted by the same personnel within MDEQ and the processes are in not separated in any meaningful way. The EIA, which is submitted as part of the mining permit application required by the NREPA (1994 PA 451), represents the primary environmental review document required under state law for projects that are expected to impose significant impacts on the environment. With respect to proposed mining operations, the state's *Nonferrous Metallic Mining Regulations* mandate that an EIA describe the natural and human-made features, including, but not limited to, flora, fauna, hydrology, geology, and geochemistry, and baseline conditions in the proposed mining area and the affected area that may be impacted by the mining, and the potential impacts on those features from the proposed mining operation. The EIA must also define the affected area and address feasible and prudent alternatives. R 425.202 (which details the required components of an EIA) of the Nonferrous Metallic Mining Regulations states that each of the identified conditions and features (i.e., topography, groundwater, fish and wildlife habitat, and other resource topics) included in an EIA must include the following:

- An identification and description of the condition or feature as it currently exists within the mining area and the affected area.
- An identification of the proposed mining activities that may impact the condition or feature, and the process or mechanism through which the impact may occur.
- An analysis of the potential impacts of proposed mining activities on the condition or feature and, where applicable, the effects of the condition or feature on the proposed mining activities.
- A reference to the measures proposed to be taken under the mining, reclamation, and environmental protection plan to reduce or mitigate the potential impacts, and the predicted effects of those measures. If the measures are not required under part 632 of the act, then the environmental impact assessment shall identify other statutes or regulations, if any, under which the measures are required.
- A map or maps and appropriate photographs, with any necessary explanatory documents or notations, showing the affected area for the condition or feature, and a description of the basis for determining the affected area.
- An analysis of the potential cumulative impacts on each of the conditions or features listed within the mining area and the affected area from all proposed mining activities and through all

processes or mechanisms. The analysis shall consider additive effects, and the assessment of significant interactions between chemical and physical properties of any discharges, with reference to the physical and chemical characteristics of the environment into which the discharge may be released.

- An analysis of feasible and prudent alternatives for the mining activities consistent with the reasonable requirements of the public health, safety, and welfare. The analysis shall include all of the following:
 - Description of feasible and prudent alternatives.
 - Description of alternatives considered but not carried forward for further evaluation.
 - Description of why the chosen alternatives are preferred.
- The name and qualifications of the person or persons who prepared the environmental impact assessment.
- A description of the methodologies applied in preparing the environmental impact assessment, including the following:
 - Quality assurance and quality control as approved by the department.
 - Information that demonstrates that the methodologies are appropriate and effective, or are widely used and generally accepted.
 - The sources of information used in preparing the environmental impact assessment.

In addition to the mining permit itself, a company proposing to engage in ferrous or nonferrous metallic mining operations will also have to complete an application for the following state permits (also administered by MDEQ) as well (MDEQ, 2005):

- *Michigan Air Quality Permit – Permit to Install Application*: The Air Quality Division, within the MDEQ is responsible for issuing Permits to Install to assure that all new or modified sources of air pollution will not have a detrimental impact on human health, human welfare, or the environment and will comply with all applicable state and federal requirements. Statutory authority for this permit comes from air pollution control provisions included in Part 55 of the NREPA (1994 PA 451), as amended. This permit is required of any application who intends to install, construct, reconstruct, or modify any process or process equipment (including metallic mining operations) which may emit an air contaminant, except for a process or process equipment exempted from this requirement under R 336.1279 through R 336.1290 of the Michigan Air Pollution Control Rules.
- *Groundwater Discharge Permit Application*: The Water Bureau, within the MDEQ has responsibility for issuance of groundwater discharge permits under the authority of Part 31 of the NREPA (1994 PA 451), as amended. The purpose of these permits is to ensure that groundwater quality is maintained for all of the protected uses of groundwater pursuant to Section 3109 of Part 31. Any project that will ultimately discharge waste or waste effluent into or onto the ground is required to obtain this permit.
- *Permit for Use of Water in Low-Grade Iron Ore*: The OGS, Minerals and Ground Water Unit, Geological Services Section, within the MDEQ, processes permits for use of water in mining low-grade iron ore under the authority of Part 35, Use of Water in Mining Low-Grade Iron Ore, of the NREPA (1994 PA 451) as amended. The purpose of this permit is to protect the public interest, prevent damage to riparian lands or water, and prevent danger to public health and safety. Any project that intends to divert and control of water for the mining and processing of low-grade iron ore is required to obtain this permit. The applicant must demonstrate that the proposed drainage, diversion, control, or use of water is necessary for the mining of substantial deposits; other feasible and economical methods of obtaining a continuous supply of water are

not available; the proposed control will not be against the public interest or damage riparian lands or waters; and the activity will not endanger the public health or safety.

- The Water Bureau within the MDEQ has responsibility for processing NPDES permits under the authority of the Federal Water Pollution Control Act and Part 31 of the NREPA (1994 PA 451), as amended. The purpose of this permit is to control the discharge of pollutants into surface waters of the state to protect the environment. In order to be in compliance with the requirements of the NPDES Permit, a Notice of Coverage for storm water management during construction activities and a Notice of Intent for storm water management during operations must be submitted to the MDEQ for the potential release of noncontact storm water runoff. Any project that will discharge waste, waste effluent, and certain categories of storm water runoff into the surface waters of Michigan are required to obtain this permit.

8.2 Minnesota

See the corresponding subsection included within Appendix A1 (Forest Products Projects) of the report for the broad overview of state environmental review and permitting policies and processes in Minnesota

With respect to the mining and processing of both ferrous and nonferrous (i.e., copper and nickel) metals in Minnesota, state statutes and associated rules require the applicant to file for several different permits. An applicant will have to submit a number of federal (i.e., Section 404 Permits for Wetland Impacts as administered by the US Army Corps of Engineers) and local permit applications as well, but these will not be detailed in this report. Relevant state-level permits include the following:

Minnesota DNR Issued Permits (italicized permits are applied for under the Permit to Mine)

- Permit to mine.
- *Water Appropriations permit.*
- *Dam Safety permit.*
- *Protected Waters permit.*
- *Wetland Conservation Act permits.*
- *Burning/Land Clearing permit (if needed).*
- Threatened and Endangered Species Takings permit (if needed).

Minnesota Pollution Control Agency Issued Permits

- Minnesota Air Emission permit.
- Section 401 Wetland Certification SDS/NPDES permit.
- NPDES Construction Stormwater Discharge permit.
- Waste Tire Storage permit.
- Storage Tank permit.
- Solid Waste permits (if needed).
- Hazardous Waste Generator and Storage permit (if needed).

Minnesota Department of Health

- Radioactive Material Registration (radioactive materials are present in many measuring devices).

Minnesota Iron Range Resources Board

- Collateralized loan for project development.

The most substantial permit that applicants wishing to establish a mining operation must submit is a *Permit to Mine*. It is important to note, however, that the substantive and procedural requirements for permits to mine differ depending on whether the applicant is seeking to extract/process ferrous or nonferrous metallic minerals.

Any applicant applying for a Permit to Mine for *ferrous* metallic minerals must submit the following materials to the Minnesota DNR:

Documents

- Certificate or evidence of insurance.
- Duplicate public notice that was disseminated to announce the proposed project and an affidavit of publication from the publisher.
- Financial and income statements from all applicants for the previous three years, consisting of annual reports or, if annual reports are not available, a similar statement describing financial capability to perform reclamation obligations.

Organizational data

- Address of the applicant.
- General organizational structure of the applicant, any parent companies, owners, principal stockholders, partners, and joint ventures.
- Information on managing agents or subsidiaries which are or may be involved in the mining operation.
- Organizational relationships between or among joint applicants.

Environmental setting maps (the applicant is required to submit the following overlays on USGS quadrangle maps to delineate the mining area)

- Bedrock geology, including the general shape of orebody and known or inferred reserves and resources within and adjacent to the mine area. Appropriate cross-sections which show the horizontal and vertical relationships shall also be included.
- Water basins, water courses, and wetlands which could be affected by the mining operation.
- Boundaries of watersheds which are or could be affected by the mining operation.
- Details of groundwater conditions based on best available information and exploratory drill holes.
- Natural resource sites identified by the commissioner of the DNR
- A forest inventory, including species, density, size class, and height.
- A soil inventory including soil type, extent, and thickness.
- Past mining facilities including stockpiles, tailings basins, mines, and processing plants.
- Surface ownership of record within the mining area, and severed mineral ownership as set forth in verified statements.
- Exclusion, avoidance, and setback areas.

Environmental setting analysis

- Environmental reports prepared relative to the mining operation.
- Explanation of the basis for siting those parts of operation which will be developed hereafter, including a description of the positive and negative aspects of all sites considered, and how the selected site will aid in the attainment of the reclamation goals.

Mining and reclamation maps – The applicant must submit maps and cross-sections containing all features normally found on a USGS quadrangle map, and these maps must do the following:

- Define the shape and extent of the orebody which will support the operating life of the mine.
- Identify all known and inferred mineral reserves resources which are located within the mining area but which have not been included as part of the mining plan.

- Identify lands proposed for use as vegetative reference areas.
- Depict the detailed drainage patterns for waters which may contact leachable materials.
- Depict at appropriate intervals, approved by the commissioner, the status of:
 - Mining the ore body.
 - Watershed modifications (including changes in the boundaries, diversions, disposition of surface water flows, and runoff).
 - Construction (including shape, extent, and content) and reclamation (including contouring, dust control, temporary stabilization, vegetation, and deactivation) of each: stockpile, tailings basin, mine, reservoir, dam, diversion channel, drainage control, settling basin, and auxiliary facilities.

Mining and reclamation plan – In this plan the applicant must describe the following:

- Operating life of the mine, including the rate of mining and anticipated changes in that rate, and the factors used to determine the minable reserves and changes which would expand or diminish such reserves.
- Mining activities to be conducted, including:
 - Types, amounts, sequence, and schedule for mining the orebody and stockpiling materials, including the distinctions among ore, lean ore, and waste rock; a discussion of in-mine disposal; and the physical and chemical character of mine waste.
 - Description of the ore beneficiating process, including a discussion of the type and amount of any chemicals to be added and the types, amounts, sequence, schedule, and means of tailings disposal.
 - Methods, sequence, and schedules of reclamation which address the goals and meet the requirements of Minnesota Rules parts 6130.1000 to 6130.4100, including anticipated reclamation research.

Although the content that must be included in Permit to Mine for nonferrous metallic minerals is quite similar to that which is required in an application to mine for iron ore, the nonferrous mining permit application does differ in a few important ways. The most notable difference in permit applications requirements is that applicants proposing to mine for nonferrous metallic minerals must include a detailed plan for the activities planned during the first year of operation. Minnesota Rules (6132.1300) mandate that this plan include the following information:

- Anticipated rate of mining.
- Anticipated mining activities, including the types, amounts, sequence, and schedule of mining the ore body and storage piling materials, including the distinctions among ore, lean ore, and waste rock.

Another important difference is that the nonferrous metallic mining permit application must include information on the following within its *Environmental Setting* section:

- Identification and description of hydrogeologic information including, but not limited to:
 - Plan view and cross section maps of overburden and rock features.
 - Description of features on maps including, but not limited to, well locations, uses, well logs, pumping rates, and capacities.
- Recorded locations of rare, endangered, and threatened species.
- Recorded archeological or historic sites.
- All known surface and subsurface uses, such as pipelines and cables.

- Zoning ordinances and associated land use plans applicable to the proposed mining area.

There also are requirements included in the ferrous metallic mining application that are not included in the nonferrous metallic mining application. The most prominent of these is that an applicant for a nonferrous metallic mining permit is not required to include a section on *Environmental Setting Analysis* (as described above for the ferrous metallic mining permit). In addition, with ferrous metallic mining, the nonferrous metallic mining permit application does not have to identify all known and inferred mineral reserves or resources which are located within the mining area but which have not been included as part of the mining plan.

The *Air Emissions Permit* issued by the MPCA is also a substantial permit with respect to its substantive requirements and the level of documentation involved. A proposed facility is required to file an air emissions permit application if it has the potential to emit pollutants into the air in excess of the state and federal thresholds shown in Table 8.2.1.

Table 8.2.1. State and federal permitting thresholds based on potential to emit. (Source: Facts about Air Quality Permit Rules)

Pollutant	State Permit Threshold	Federal Permit Threshold
Volatile organic compounds (VOC)	100 tons per year	100 tons per year
Carbon monoxide (CO)	100 tons per year	100 tons per year
Nitrogen Oxides (NO _x)	100 tons per year	100 tons per year
Sulfur dioxide (SO ₂)	50 tons per year	100 tons per year
Fine particulate matter (PMO ₁₀)	25 tons per year	100 tons per year
Combined HAPs	25 tons per year	25 tons per year
Single HAPs	10 tons per year (each)	10 tons per year (each)
Lead	0.5 tons per year	10 tons per year

In addition, there are categories of sources that require permits because new or modified facilities in the categories are subject to the EPA’s New Source “Performance Standards” (NSPS) that dictate the amount of pollution a new *stationary source* may produce. Facilities that fall within these categories designated under NSPS are considered to be “major stationary sources” of air pollution. Furthermore, these performance standards outline how a process can be operated to minimize emission of pollutants. However, although NSPS mandates that certain types of facilities be treated as major sources, it is important to note that the fact that a facility is subject to NSPS requirements does not mean that it is a major source by default. Metallic mineral processing facilities are one of the categories of operations that are automatically classified as major sources under NSPS (MPCA, 2003). Applications for an Air Emissions Permit must include the following information regarding the proposed facilities operating

processes, products produced, and potential emissions (Minnesota Administrative Rules, Chapters 7001 & 7007):

- Description of the stationary source's processes and products (by SIC Code) including any associated with each alternate scenario identified by the stationary source.
- Emissions-related information, including the following:
 - Information about fugitive emissions in the same manner as stack emissions, regardless of whether the stationary source category in question is included in the list of stationary sources contained in the definition of a 'major source' in part 7007.0200, subpart 2.
 - Identification and description of each emission point in sufficient detail to verify the applicability of all applicable requirements. This must include the location of all emission points, and the location of all emissions units and processes venting through each emission point. In addition, if the exhaust gas flow rate and temperature, and the stack height and diameter of an emission point are needed to determine applicability of or show compliance with any applicable requirement, this information must be provided.
 - Description of potential emissions, as defined in part 7005.0100, subpart 35a, in tons per year from the stationary source as a whole. These potential emissions must be specified for each regulated air pollutant and each hazardous air pollutant that is not yet a regulated air pollutant, as defined in part 7007.0100, subparts 12a and 19. In addition, for each emissions unit subject to an applicable requirement, the permit application must specify, in tons per year, the amount of these pollutants the proposed project will emit.
 - Emission limits that will be imposed on the stationary source by applicable requirements.
 - Fuels, fuel use, raw materials, production rates, and operating schedules (as they pertain to emissions).
 - Identification and description of all air pollution control equipment and compliance monitoring devices or activities. A permit application must also contain the design operating efficiency of the air pollution control equipment.
 - Description of any work practice or physical limitation on stationary source operation that affects emissions of regulated air pollutants.
 - Explanation of the means by which emissions information is gathered, and provide the calculations on which they are based.

A NPDES/SDS Permit is a document that establishes the terms and conditions that must be met when a facility discharges wastewater to surface or ground waters of the state. The permit is jointly issued under both the NPDES and SDS programs. At the federal level the NPDES program, which aims to protect waterways from point and nonpoint sources, is administered by the EPA. At the state level the NPDES program is administered by the MPCA under a delegation from the EPA. The SDS is a state program administered by the MPCA, and the SDS Permit alone regulates water discharges to the ground surface or subsurface. In Minnesota, when both permits are required they are combined into one NPDES/SDS Permit administered by the state. The permits are issued to applicants proposing projects that will ultimately result in the discharge of treated wastewater into surface or subsurface water within the state. A site evaluation is a required component of the permit application, and the purpose of this assessment is to ensure that the project's proposed location meets the site suitability requirements for a subsurface discharging system. Additionally, these permits require that a hydrogeologic study be conducted to

evaluate the extent to which groundwater quality would be impacted by the project. Applications are generally submitted within 180 days prior to the date in which the applicant plans to commence construction. The MPCA considers the comments generated during the EAW scoping process, along with any information collected during the permit application process, as it moves forward in developing the draft permit. After the draft permit is completed, it is put on public notice for 30 days for review by any interested parties. Comments received during this period may result in revisions to the draft permit. When all concerns are adequately addressed, a final permit is issued and its conditions become effective upon issuance (MPCA, 2002A; 2002B).

Although it does not pertain directly to environmental review and permitting, it is important to note that the State of Minnesota has recently established a *taconite production tax*. The taconite production tax is the largest tax paid by the iron mining industry, and it is a major source of revenue to the counties, municipalities, and school districts within the taconite relief area of northeastern Minnesota. For instance, of the approximately \$77 million in tax monies raised from the mining industry in 2003, more than \$73 million of this amount came from the taconite production tax levied industry-wide. The production tax distributed in a given year is equivalent to the tax revenue raised from existing mine operations during the preceding year. The taconite production tax rate for concentrates and pellets produced in 2003 was \$2.103 per taxable ton. Similar to the severance taxes levied on the coal mining industry in West Virginia (discussed in a later section), the taconite production tax is a severance tax paid on concentrates or pellets produced by the taconite companies. It is paid in lieu of ad valorem (property) taxes on taconite and lands containing taconite. Land and structures used in the production of taconite are also excluded from property tax, with some exceptions. Electric power plants principally devoted to the generation of power for taconite mining and concentrating are considered to be used in the production of taconite (or direct reduced ore) and are covered by the *in lieu exemption* for property taxes. If part of the power is used for other purposes, that proportion of the power plant is subject to the general property tax. The power plant must be owned by a company subject to production tax to qualify for the exemptions. Under Minnesota law, production tax revenues are distributed to various cities, townships, counties, and school districts within the Taconite Assistance Area. The Taconite Assistance Area is comprised of present taconite mining areas as well as areas where natural ore was formerly mined. Funds are also allocated to the Iron Range Resources (IRR), a state agency whose mission is to advance regional growth by stabilizing and enhancing the economy of northeastern Minnesota's Taconite Assistance Area (MNDOR, 2004).

8.3 Montana

8.3.1. Environmental Review

The Department of Environmental Quality (DEQ) is the agency charged with implementing environmental review and environmental permitting procedures in the State of Montana. The agency exists within the executive branch, and its mission is “to protect, sustain, and improve a clean and healthful environment to benefit present and future generations” (<http://www.deq.mt.gov/about/mission.asp>).

The Permitting and Compliance Division (PCD) of the DEQ reviews and assesses all environmental permit and license applications to determine the correct control measures and requirements needed to meet the laws and rules that have been enacted to protect the quality of the state's air, water, and land. The division prepares the appropriate environmental review documents to comply with the Montana Environmental Policy Act (MEPA) (described in more detail below). This work includes coordination and preparation of environmental impact statements, ensuring methods and standards are consistent with department policy, and coordination with regulatory programs in the division, the department and other state and federal agencies. (<http://www.deq.mt.gov/about/mission.asp>)

The Environmental Management Bureau (EMB), which exists within the PCD of the DEQ, regulates activities governed by the Montana Metal Mine Reclamation Act and the Major Facility Siting Act (MFSA). The EMB coordinates the permitting process for proposed “hard rock” (i.e., gold, silver, copper) mines and quarries, provides periodic review and maintenance of reclamation bonds, issues permits when appropriate, inspects permitted mining operations and ensures that disturbed areas are properly reclaimed after mining ends. It also performs environmental reviews for large powerlines, and pipelines or geothermal facilities proposed under the MFSA. The Hard Rock Mining Program exists within the EMB, and this program regulates the mining of all ore, rock, or substances except oil, gas, bentonite, clay, coal, sand, gravel, peat, soil materials, and uranium. This program is also responsible for issuing permit modification decisions for mining and reclamation of hard rock minerals to help ensure that the mineral development that does occur will do so with adequate protection of environmental resources. Finally, the Hard Rock Mining Program ensures appropriate public involvement through compliance with MEPA and other public notice and public participation statutes.

(<http://www.deq.mt.gov/about/mission.asp>)

The Environmental Quality Council (EQC) is another important actor in environmental review in Montana. This is a 17-member state legislative committee (composed of six state senators, six state

representatives, four members of the general public, and one nonvoting member who represents the governor) created by MEPA that exists within the legislative branch of state government. In general, the EQC reviews and appraises state programs and activities related to the environment to ensure compliance with MEPA (<http://leg.mt.gov/css/lepo/default.asp>). As outlined in MEPA, the EQC's purpose is to encourage conditions under which people can coexist with nature in "productive harmony." The EQC fulfills this purpose by assisting the Legislature in the development of natural resource and environmental policy, by conducting studies on related issues, and by serving in an advisory capacity to the state's natural resource programs and agencies (Mudinger and Everts, 1998).

Finally, the Hard Rock Mining Impact Board plays an important role in the review process for metallic mining projects. The Board is a five-member, quasi-judicial board appointed by the governor. The Board is attached to the Montana Department of Commerce for administrative purposes only. The Board was created in 1981 with the enactment of the Hard-Rock Mining Impact Act (HRMI). The Board administers the HRMI Act and parts of the companion Property Tax Base Sharing Act (PTBS) and provides technical assistance with metal mines license tax distributions. The Board also adjudicates certain disputes about impact plans. Purpose of HRMI and PTBS acts is to mitigate the local government service, facility, and fiscal impacts from new large-scale hard-rock mineral developments in the state. Mineral developer and affected local governments prepare and implement impact plans intended to ensure that local government services and facilities are available when and where they are needed as a result of new mineral developments, without imposing additional costs on the existing local taxpayer. Developer pays new capital and net operating costs through prepaid property taxes with a subsequent tax credit, grants, or facility impact bonds. Under specified circumstances, affected entities may petition the Board to amend approved impact plans.

Procedures governing the EIS analysis process in Montana are defined in administrative rules implementing the National Environmental Policy Act (NEPA) and the MEPA. These laws require an EIS to be prepared if any action taken by the State of Montana or the USDA-Forest Service may significantly affect the quality of the human environment (as defined in NEPA and MEPA). The purpose of MEPA is to declare the following:

"...a state policy that will encourage productive and enjoyable harmony between humans and their environment, to protect the right to use and enjoy private property free of undue government regulation, to promote efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humans, to enrich the understanding of the ecological systems and natural resources important to the state..."

Because it is modeled after NEPA, MEPA requires an environmental assessment for state actions and state-permitted actions only, and the Act does not apply to privately funded projects that would not otherwise require state approval (LEPO, 2000).¹⁵ Like NEPA, MEPA includes three distinct parts. Part 1 is the “spirit” of MEPA, which establishes and declares Montana’s environmental policy. This part acknowledges that human activity can have a profound impact on the environment, and it requires state government to coordinate state plans, functions, and resources to achieve various environmental, economic, and social goals. Part 1 has no legal requirements, but the policy and purpose provide guidance in interpreting and applying the statutes. Part 2 is the “letter of the law,” and requires state agencies to carry out the policies in Part 1 through the use of a systematic, interdisciplinary analysis (i.e., to ensure that appropriate perspectives and disciplines from the various sciences and the environmental design arts are incorporated in the agency’s analysis) of state actions that have an impact on the human environment. This is accomplished through the use of a deliberative, written environmental review. Part 3 of MEPA establishes the Environmental Quality Council (EQC) and outlines its authority and responsibilities. (Mudinger and Everts, 1998; LEPO, 2000B)

It is the view of the EQC that the policy and purpose of MEPA is to promote the following: informed state government decisions, accountable and open state government decisions, balanced state government decisions, and ultimately better state government decisions.

MEPA requires state agencies to conduct thorough, honest, unbiased, and scientifically based full disclosure of all relevant facts concerning impacts on the human environment that may result from *state actions*.¹⁶ The term “action” as defined by the MEPA Model Rules is very broad. If an agency project, program, or activity falls within the following definition of the term “action,” then it is potentially subject to MEPA review: a project, program, or activity directly undertaken by an agency; a project or activity supported through contract, grant, subsidy, loan, or other form of funding assistance from the agency, either singly or in combination with one or more other state agencies; or a project or activity involving the issuance of a lease, permit, license, certificate, or other entitlement for use or permission to act by the agency, either singly or in combination with other state agencies (Mudinger and Everts, 1998). The following actions are exempt from environmental review under MEPA (LEPO, 2000B):

- Public Service Commission activities.

¹⁵ MEPA is similar to the state environmental policy acts (SEPA) in South Dakota, Massachusetts, and Wisconsin in that these states also only require an environmental assessment for state actions and state-permitted actions. Under these laws, private actions that would only require permits from local governments are not required to draft an EIS.

¹⁶ MEPA does not apply to private actions taken by companies or other such entities, and thus an EIS is only required of a private project if a state agency provides funding, offers direct assistance in planning and implementation, or provides land for the project.

- Legislation.
- Certain emergency timber sale situations (fire, fungus, insect, parasite, blowdown, etc.) or time-dependent access situations involving timber.
- DNRC is exempt from MEPA review to the extent that DNRC's compliance with MEPA is precluded by limited time.
- Issuance of a historic right-of-way deed (subsequently ruled unconstitutional).
- Certain actions that involve an amendment to a hard-rock mine operating permit (categorical exclusions, administrative actions, ministerial actions, repair and maintenance actions, investigation and enforcement actions, actions that are primarily economic or social in nature, insignificant boundary changes in the permit area, and changes in an operating plan that was previously permitted).
- The transfer of permits for portable emission sources.
- Qualified exemption for reciprocal access agreements on state land. DNRC is not required to analyze or consider potential impacts of activities that may occur on private or federal lands in conjunction with or as a result of granting access.
- Transfer of an ownership interest in a lease, permit, license, certificate, or other entitlement for use or permission to act by an agency, either singly or in combination with other state agencies. This does not trigger review under MEPA if there is not a material change in terms or conditions of the entitlement or unless otherwise provided by law.
- DNRC's issuance of lease renewals.
- Non-action on the part of DNRC or the Board of Land Commissioners.

Environmental review is accomplished through a systematic and interdisciplinary analysis that ensures the integrated use of the natural and social sciences and the environmental design arts in planning and decision-making (Mudinger and Everts, 1998). This analysis usually takes the form of an EA or an EIS depending on the magnitude of a project's anticipated impacts. NEPA and MEPA require an EIS to be prepared if any action taken by the State of Montana or the USDA-Forest Service may significantly affect the quality of the human environment (as defined in NEPA and MEPA). MEPA provides three different levels of environmental review—categorical exclusion (a type of action that seldom, if ever, causes significant environmental impacts), EA, and EIS (LEPO, 2000). In situations where it is unclear if the proposed action will cause significant impacts, then an agency may prepare an EA in order to determine the potential significance (Mudinger and Everts, 1998; MEPA Model Rules, 1988). If the EA determines that the proposed action will have significant impacts, then either an EIS must be prepared or the effects of the proposed action must be mitigated below the level of significance and documented in a *mitigated EA* (Mudinger and Everts, 1998; MEPA Model Rules, 1988). It is important to note that for a routine action with limited environmental impact, the contents of an EA may be reflected on a standard checklist format. At the other extreme, whenever an action is one that might normally require an EIS, but effects that otherwise might be deemed significant are mitigated in project design or by controls imposed by the agency, the analysis, format, and content must all be more substantial (Mudinger and Everts, 1998; MEPA Model Rules, 1988; ARM–MEPA).

MEPA's thresholds for the type of environmental analysis required depend on the significance criteria in the Model Rules, and the preparation of each document (i.e., EA vs. EIS) is based on the significance of the potential impacts of the proposal (MEPA Model Rules, 1988). The MEPA Model Rules allow for agencies to define (list), through rule or through the preparation of a programmatic environmental review, those actions that could be categorically excluded (LEPO, 2000; MEPA Model Rules, 1988).¹⁷ Otherwise, the threshold for conducting a MEPA review is any major state action that significantly affects the quality of the human environment. The terms “action” and “human environment” are defined in the Model Rules. Model Rule IV sets forth the criteria for subjectively determining significant impacts (LEPO, 2000; MEPA Model Rules, 1988). MEPA generally requires the agency to generate and organize information, in the EA or EIS, that at a minimum (Mudinger and Everts, 1998; LEPO, 2000B):

- Describes the need for the action or the agency's proposal (purpose and need).¹⁸
- Explains the agency's intended action (proposed action).
- Discusses other possible options (i.e., alternatives) to the proposed action (including a no action alternative).
- Analyzes the potential consequences of pursuing one alternative or another in response to the proposed action (impacts to the human environment).
- Discusses specific procedures for alleviating or minimizing adverse consequences associated with the proposed actions (mitigation).

Similar to NEPA, which describes impacts as being direct, indirect, or cumulative, MEPA uses the terms primary, secondary, and cumulative (MEPA Model Rules, 1988; ARM–MEPA). The determination of whether or not an impact will be considered significant is left to the DEQ, and the agency makes its determination through the review process, which usually involves obtaining information from other agencies and institutions (LEPO, 2000). Montana has not developed a specific list of *measurable* significance criteria by which to gauge the need to prepare an EIS (LEPO, 2000; Sigford, 1993). Determination of how “significant” the impacts associated with a proposed action will be is typically subjective and left to the judgment of the agency or the interpretation of the courts. However, MEPA and

¹⁷ Categorical exclusion refers to a type of action which does not individually, collectively, or cumulatively require an EA or EIS, as determined by rulemaking or programmatic review adopted by the agency, unless extraordinary circumstances, as defined by rulemaking or programmatic review, occur (ARM-MEPA).

¹⁸ The *purpose and need* section describes the problem that the agency intends to solve or the reason why the agency is compelled to make a decision to implement an action. The following five general elements must be addressed:

- Description of the proposed action (including maps and graphs) and an explanation of the benefits and purpose of the proposed action;
- Explanation of the decision(s) that must be made regarding the proposed action;
- Acknowledgment and explanation of the concerns and issues that have been generated through public and agency comment;
- List of any other local, state, or federal agencies that have overlapping or additional jurisdiction or responsibility for the proposed action and a list of all necessary permits and licenses; and
- Description of any other environmental review documents that influence or supplement this document.

associated rules require that DEQ consider the following criteria in determining the significance of each impact on the quality of the human environment (Mudinger and Everts, 1998; MEPA Model Rules, 1988; ARM–MEPA):

- 8) Severity, duration, geographic extent, and frequency of occurrence of the impact.
- 9) Probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur.
- 10) Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts.
- 11) Quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources or values.
- 12) Importance to the state and to society of each environmental resource or value that would be affected.
- 13) Precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions.
- 14) Potential conflict with local, state, or federal laws, requirements, or formal plans.

In considering impacts affecting the environment, Montana does not limit environmental review to a relatively restricted set of resources (i.e., air, water, land, plants, animal, historical sites or buildings, and cultural resources) the way that other states with state environmental policy acts (e.g., Georgia, Indiana, Massachusetts, and Minnesota) have done. For instance, whereas California restricts review to the physical environment but allows agencies to weigh the indirect social or economic effects when considering whether or not the effect on the physical environment is significant, Montana, Hawaii, Maryland, and Connecticut all require the evaluation of at least some economic and social effects when determining the potential impacts associated with a proposed project. As stated before, the term in MEPA and its rules is “human environment,” and this includes, but is not limited to “biological, physical, social, economic, cultural, and aesthetic factors that interrelate to form the environment” (LEPO, 2000; MEPA Model Rules, 1988). Economic and social impacts alone do not trigger an EIS, but if DEQ determines that an EIS is necessary, these factors must be addressed in the document (LEPO, 1988). MEPA and its associated rules also require the DEQ to consider the cumulative impacts of a proposed project.

Cumulative impacts are defined under MEPA as those collective impacts on the human environment of the proposed action when considered in conjunction with other past, present, and future actions related to the proposed action by location or generic type. However, related future actions may only be considered in an assessment of cumulative impacts when these actions are under concurrent consideration by any agency through pre-impact statement studies, separate impact statement evaluations, or permit processing procedures (Mudinger and Everts, 1998; MEPA Model Rules, 1988; ARM–MEPA). Furthermore, state law requires that any *agency* carrying out an action that will have significant impacts on the human

environment must adopt a *Programmatic Environmental Review* if any of the following conditions are met:

- State statute requires that a programmatic environmental review be carried out for such an action.
- An agency is contemplating a series of agency-initiated actions, programs, or policies that in part or in total may significantly impact the human environment.

A programmatic environmental review must address the environmental impacts that will be imposed by the proposed series of agency-initiated actions, and this review must include, at a minimum, a concise analytical discussion of alternatives and the cumulative environmental effects of these alternatives on the human environment. The DEQ has the discretion to determine whether the programmatic environmental takes the form of an EA or an EIS based on the previously mentioned criteria that have been established to determine when the environmental impacts of a project are anticipated to be significant enough to warrant an EIS. The agency shall adhere to the time limits specified for distribution and public comment on EISs or EAs, whichever is applicable. While work on a programmatic review is in progress, the agency may not take major state actions covered by the program in that interim period unless such action is part of an ongoing program, justified independently of the program, or will not prejudice the ultimate decision on the program. State rules specify that interim action will be considered to prejudice the ultimate decision on the program if it tends to determine subsequent development or foreclose reasonable alternatives (MEPA Model Rules, 1988; ARM–MEPA).

Montana requires the state or its consultants conduct the environmental review process and the applicant pay only the costs of gathering data and information up to a statutory limit for those projects that require an EIS that will incur costs in excess of \$2,500 (Mudinger and Everts, 1998; MCA, 2005). If an agency intends only to file a negative declaration of impacts for the project, the agency absorbs all costs. After receipt of the applicant's estimated cost of the project and analysis of an agency's preliminary estimate of the cost of acquiring information and data for the EIS, the DEQ is required to notify the applicant within 15 days of the final amount of the fee to be assessed (ARM–Environmental Impact Statement—Fees). The fee assessed must be based on the projected cost of acquiring all of the information and data needed for the EIS. Unless costs can be tied to the cost of gathering data and information for the preparation of an EIS, Montana agencies absorb the costs of complying with the scoping, contract management, document reviews, public meetings, comment response, and other procedural costs of complying with MEPA. Montana's metal mine reclamation laws do include specific language that authorizes the state to recover MEPA document review costs (ARM–Environmental Impact Statement—Fees; Mudinger and Everts, 1998; MCA, 2005).

MEPA and the MEPA Model Rules require that members of the public have the opportunity to be involved in the environmental review process. The appropriate level and type of public involvement for EAs depend on the complexity of the project, the seriousness of the potential environmental impacts, and the level of public interest in the proposed action (Mudinger and Everts, 1998; MEPA Model Rules, 1988). Procedural requirements for public involvement increase as a proposed project's level of complexity increases.

Although almost identical in their substantive requirements, EAs and EISs are procedurally very different. For an EA, the agency's responsibility to provide public access to the process is largely discretionary (i.e., the public scoping process is optional if an EA is being prepared). Although an agency has considerable discretion, MEPA Model Rule VI notes that an EA is a public document and may be inspected upon request. The use of a public comment period for an EA is also discretionary, again depending on the level of public interest and the seriousness and complexity of the potential impacts of the decision (Mudinger and Everts, 1998; MEPA Model Rules, 1988).

The MEPA Model Rules also require agencies to *consider substantive comments* to EAs prior to making final decisions about the adequacy of the analysis in the EA, modifications to the proposed action, and the necessity of preparing an EIS. Additionally, the MEPA Model Rules require that if the agency chooses to initiate a process to determine the scope of an EA, the agency must follow formal EIS scoping procedures. Public involvement for a mitigated EA must include the opportunity for public comment, a public meeting or hearing, and adequate notice. The scoping process typically includes a request for public participation in the identification of issues. Notifications for a public scoping process by the DEQ must be objective and neutral and may not speculate on the potential impacts of a proposed action. When a proposed action warrants an EIS, MEPA involves the public through each step of the decision-making process by undergoing the following process (Mudinger and Everts, 1998):

- Informing the public that an agency action is pending (i.e. dissemination of agency announcements).
- Seeking preliminary comments on the purpose and need for the pending action (scoping);
- Preparing an environmental review that describes and discloses the impacts of the proposed action and evaluates reasonable alternatives and mitigation measures.
- Requesting and evaluating public comments about the environmental review
 - Provide a minimum 30-day public comment period for the draft EIS and a 15-day public comment period for the final EIS.
 - Include public comments and the agency's *response to public comments* in the final EIS.
- Convening a formal public hearing on a draft EIS if requested by the applicant, another agency with jurisdiction over the action, by an association having no fewer than 25 members who will be directly affected by the proposed action, or 25 individuals (or 10% of the total, whichever is less) that will be directly affected by the proposal.

- Informing (via announcement in local newspaper) the public of the agency's ultimate decision and the justification for that decision.
- Providing a 60-day judicial period for members of the public to challenge the EIS process and the adequacy of the EIS.

With respect to its final permitting decision, in situations where the DEQ does not believe a final EIS is necessary (the draft EIS will suffice), the agency's procedural rules (as laid out in the *Administrative Rules of Montana*) require the DEQ to notify the governor, the Environmental Quality Council, the applicant, and all members of the public that submitted formal comments on the project of its decision and provide a statement describing its proposed course of action. This notification must be accompanied by a copy of all comments or a summary of a representative sample of comments received in response to the draft statement, together with, at minimum, an explanation of why the issues raised do not warrant the preparation of a final EIS. If DEQ elects to adopt the draft EIS as the final EIS, it may make a final decision on the proposed action no sooner than 15 days after providing public notice of its decision to adopt the draft EIS as a final EIS (ARM–MEPA).

The MEPA Model Rules require a ROD for actions requiring an EIS (MEPA Model Rule, 1988). The ROD is a concise public notice that announces the decision, explains the reasons for the decision, and explains any special conditions surrounding the decision or its implementation. Although the MEPA Model Rules do not specify how an agency will use the EIS, the rules do require the agency to inform the public about how it used the EIS. The MEPA Model Rules do not require a detailed ROD for EAs. However, Montana DEQ does advise agencies to include some form of documentation for the decision on an EA. The Model Rules do require, at least, that the agency make a finding on the need for an EIS (MEPA Model Rules, 1988).

The following state-level permits and licenses are routinely required of proposed mining operations in the State of Montana:

- *Exploration License* (Metal Mine Reclamation Act): License is required in order to commence exploratory activities including construction of an evaluation adit and testing of a bulk sample. Proposed activities must comply with state environmental standards and criteria. Approval may include stipulations for final designs and monitoring plans. A sufficient reclamation bond must be posted with the state prior to implementation of approved activities. In the case of the Rock Creek Project, the DEQ was required to coordinate review and analysis with KNF.
- *State Hardrock Mine Operating Permit* (Metal Mine Reclamation Act): This permit is required in order for the DEQ to allow mine development activities. Proposed activities must comply with state environmental standards and criteria. Approval may include stipulations for final design of facilities and monitoring plans. A sufficient reclamation bond must be posted with the state prior to operating permit issuance. In the case of the Rock Creek Project, the DEQ was required to coordinate review

and analysis with KNF. The Director of the DEQ can make the decision to approve or deny an operating permit application no sooner than 15 days following publication of the final EIS.

- *Air Quality Permit* (Federal Clean Air Act) – Permit is required to ensure that applicant will be mandated to monitor and control particulate emissions of more than 25 tons per year.
- *MPDES Permit* (Water Quality Act) – Permit is required in order to establish effluent limits, treatment standards, and other requirements that an applicant must adhere to in order for the proposed project to be approved for point source discharges to state waters including ground water. Discharges to surface waters may not violate downstream states water quality standards. In the case of the Rock Creek Project, the DEQ also had to coordinate with EPA and State of Idaho.
- *Storm Water Discharge Permit* (Water Quality Act) - To control discharge of storm water from the mine site (may be merged with MPDES permit).
- *Public Water Supply and Sewer Permit* – This permit is required if the applicant wishes to construct a public water supply or sewer system and is intended to protect public health.
- *401 Certification* (Federal Clean Water Act) – Required to ensure that any activity that requires a federal license or permit (such as the 404(b)(1) permit from COE) complies with Montana water quality standards.
- *Hazardous Waste and Solid Waste Registration* – Required to ensure safe transport of hazardous materials to and from the site and proper disposal of solid wastes.

One of the central permits that a mining project must obtain before proposed actions can commence is an Operating Permit. An individual or company is required to obtain an Operating Permit for mining if the conditions of a Small Miner Exclusion Statement (SMES) cannot be met.¹⁹ The time required to obtain an Operating Permit can be quite variable, and depends upon many factors (i.e., the size and nature of the proposed project, the proposed project location, the number of agencies with jurisdiction). In general, relatively small projects with a low environmental impact potential can take 3 to 6 months; medium-sized, moderate impact projects can take 6 to 12 months; large, high-impact potential projects can take 1 to 3+ years (MTDEQ, n.d.). Regardless of the size or impact potential of a proposed project, however, a potentially time-consuming unknown always exists: the public's perception of, or reaction to, a specific proposal. Generally, as public controversy surrounding a proposed project increases, so does the amount of time it takes to complete the required environmental analysis process.

For mines starting operations after November 3, 1998, open pit mining for gold or silver using heap leaching or vat leaching with cyanide ore-processing reagents is prohibited. An application for an Operating Permit consists of three major parts (MTDEQ, n.d.):

- Environmental Baseline information (existing conditions for hydrology, soils, vegetation, wildlife, cultural, etc.); for some disciplines (such as hydrology and wildlife), at least one full year of baseline data is required. It is strongly recommended that potential applicants meet

¹⁹ An SMES is not actually a permit or license, but rather an “exclusion” from obtaining an operating (full-scale mining) permit as the name implies. It consists of a signed and notarized affidavit stating that an operator will stay within the requirements or conditions of the exclusion. In essence, an SMES excludes small operators from the stricter requirements of the MMRA if they meet several conditions (i.e., the operation will result in disturbing not more than 5 acres, and no river or stream will be polluted) (MTDEQ, n.d.B)

informally with DEQ's Hard Rock Program staff to discuss site-specific informational needs prior to initiating baseline studies.

- Operating Plan (type of mining/milling operation, reagents used, equipment used, tons/day, types of liners and installation procedures, and location of all facilities).
- Reclamation Plan (states reclamation objectives and how they would be implemented).

It is also important to note the role that the HRMI Act of 1981 (Title 90, Chapter 6, Parts 3 and 4) plays in the review of proposed metallic mining operations. This Act is implemented by the Hard-Rock Mining Impact Board, and the purpose of the Act is to ensure that local government services and facilities not be unduly impacted by new large-scale hard rock mineral developments that often impose significant adverse economic impacts without the benefit of major increases to the tax base in the long-run. The Act is also intended to ensure that the increased cost of the services provided to mineral development interests will not unnecessarily impact local taxpayers. Under the Act, each new large-scale hard-rock mineral development in Montana is required to prepare a local government *Fiscal Impact Plan*. In the plan the developer is required to identify and commit to pay all increased capital and net operating costs to local government units that will result from the mineral development. More specifically, the Act requires that the developer and the affected local government units ensure the Impact Plan includes the following elements (MCA, 2005B):

- Timetable for development, including the opening date of development and the estimated closing date.
- Estimated number of persons coming into the impacted area as a result of the development.
- Increased capital and operating cost to local government units for providing services which can be expected as a result of the development.
- Financial or other assistance the developer will give to local government units to meet the increased need for services.

The Impact Plan is a condition of the operating permit issued to the developer by the Montana DEQ and is prepared by the company proposing the project in cooperation with affected local governments. The developer then submits the proposed plan to the affected local government units and to the Hard-Rock Mining Impact Board for their formal review. Local governments review the plan for its accuracy and adequacy with respect to anticipated service and facility needs and costs. The Board reviews the plan for its compliance with the HRMI Act and associated administrative rules. In the plan, the developer may commit to provide assistance that will prevent increased costs or may commit to pay increased costs through grants, property tax prepayments, or education impact bonds.

A reclamation performance bond must be posted with DEQ before an operating permit may be issued (82-4-335, MCA). DEQ is authorized to bond mining operations under the Metal Mine Reclamation Act (82-4-338, MCA). The bond amount (established by DEQ and other lead agencies) must be sufficient for the

state to complete reclamation in case of default by the applicant. DEQ reclamation bonds include the cost of returning the site to comparable stability and utility, and other assurances that there would be no continuing impacts to the environment.

The amount owed to cover a reclamation performance bond is site specific. Calculations are based on the cost of reclaiming roads, parking lots, embankments, diversion channels, ponds, impoundments, and other facilities. Costs involve replacing topsoil on all disturbed areas. Costs for reclamation depend on the volume of material required for regrading, the distance the material must be moved, and volumes of and distances to move topsoil for proper placement. In addition, if any capping materials or other special handling or treatment are required as a part of the reclamation plan, those volumes and distances hauled are part of the calculation. Bond calculations also include the costs of revegetation, fertilization, repair and maintenance of reclaimed areas damaged by erosion and other acts of nature, temporary irrigation, demolition and removal of buildings and other structures, portal plugging, and restriction of access to the site. Bonding includes costs for yearly monitoring and laboratory testing as well as ongoing active water treatment for as long as necessary after mine closure, and costs for reasonably foreseeable accidents. The bond must be submitted by the applicant prior to permit issuance. Bonds are calculated by the agencies once an alternative has been approved. The calculation would then be on file and available for public review. Bonds are reviewed whenever a permit modification is approved and are re-evaluated at least every five years (ARM 17.24.141).

8.4 West Virginia

The West Virginia Department of Environmental Protection (DEP) depends on legislative rules to implement the statutes and laws created by the West Virginia Legislature and the United States Congress. The process of developing and promulgating new administrative rules is technical and guided by specific duties and obligations described by the Secretary of State's office and the Legislative Rule Making Review Committee of the state legislature. The DEP is required to have public hearings on each proposed legislative rule to receive comments from the public and the regulated community. As the rule goes through the legislative process, the public continues to have opportunities to request public hearings and make comments on the proposed legislation.

To initiate the pollution control permit process, a proposed project that will be environmentally regulated submits a permit application to the appropriate division or office within the DEP. The following four divisions and offices issue permits within DEP: Division of Air Quality, Division of Mining and

Reclamation, Division of Water and Waste Management, and Office of Oil and Gas. A DEP permit reviewer is assigned to examine the application to see that it contains all of the information necessary to process it. Designating an application complete for the purposes of the permit processing does not preclude a division's director from requesting or accepting any additional information. If the application is determined to be both administratively and technically correct, a draft permit is prepared. The various divisions and offices, directed by different federal agencies, require public comment periods for their permit applications. Because divisions are directed by different federal agencies, the lengths of comment periods vary. Members of the general public are able to review a permit application by visiting a DEP office during the public comment period. The DEP also makes an effort to make the information available in or near the community where the proposed permitted action is to occur.

The Division of Mining and Reclamation (DMR) oversees all mining activities and regulates the mining industry in accordance with federal and state law. This includes reviewing initial permit applications renewing previously issued permits for surface and underground coal mines, renewing previously issued mining permits, preparation plants, coal loading facilities, haulage ways and coal-related dams. The division also reviews permit applications for noncoal quarry operations (sand, gravel, limestone, etc.) and for NPDES permits for coal and noncoal mining operations. Additionally, DMR tracks site ownership changes and issues and assessed violations to statutes and agency regulation. Finally, DMR enforces compliance through regular inspections and ensures site reclamation through a bonding program. The DMR is guided by the following laws and rules: Surface Mining and Control Act (WV Code, Chapter 22, Article 3); Mining and Reclamation of Minerals Other than Coal (Chapter 22, Article 4); Dam Control Act (Chapter 22, Article 14); Water Pollution Control (Chapter 22, Article 11); Ground Water Protection Act (Chapter 22, Article 12); W.Va. Code, Chapter 22B, Article 1. Rules: Title 38 Series 2 and 2B, CSR 47-30, CSR 47-10, CSR 46-1, CSR 38-3, and CSR 46-12. Rules require permit applicants to solicit public comments on proposed permits and permit modifications, and certain permits may employ unique public participation requirements on an as needed basis. A copy of any mining permit will be available for public review at the local county courthouse in the county where the mining site is located, and at the DEP field office responsible for formally reviewing the permit application. If a mining site spans county lines, the public notification will be published in each county and the permit will be available for review in each county courthouse where the mining site is located.

Another important governmental actor in the review and permitting of proposed coal mining operations is the Office of Coalfield Community Development (OCCD) within the West Virginia Division of Energy. The mission of the OCCD, is to identify and assist communities affected by surface mining activity to

develop plans for long-term economic viability after mining. The office was formed to do the following (<http://www.wvdo.org/community/mission.html>):

- Establish a procedure for developing a community impact statement (“CIS”, described in the following section).
- Establish a procedure for determining the assets that could be developed in and maintained by the community to foster its long-term viability.
- Establish a procedure for determining the land and infrastructure needs in the general area of the surface mining operations.
- Determine the need for meetings among the various interested parties in the communities impacted by surface mining operations and, when appropriate, to facilitate them.
- Offer assistance (e.g., preparation of a master land use plan) to facilitate the development of economic or community assets.

West Virginia state law does not require an environmental review process (i.e., drafting of an EIS) to take place concurrent with environmental permitting or otherwise. As a result, state law does not call for nor provide detailed guidance with respect to EIS-level assessments of potential environmental impacts associated with a particular proposed mining project. However, it is worth noting that Paragraph 11 of §22-3-9 (“Permit application requirements and contents”) of the “Surface Coal Mining and Reclamation Act” does address the need for permit applications to address the cumulative impacts that the proposed project could have on water quality and quantity and general hydrological processes in the vicinity of the site. That is, the law calls for the following:

A determination of the probable hydrologic consequences of the mining and reclamation operations, both on and off the mine site, with respect to the hydrologic regime, quantity and quality of water in surface and groundwater systems, including the dissolved and suspended solids under seasonal flow conditions and the collection of sufficient data for the mine site and surrounding areas so that an assessment can be made by the director of the probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area, and particularly upon water availability...the permit application shall not be approved until the information is available and is incorporated into the application.

Additionally, state law also lays out extensive requirements for mine reclamation and general performance standards. For instance, §22-3-13 of the state code requires companies to “Restore the land affected to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses of which there is reasonable likelihood...”

The *West Virginia Surface Mining Reclamation Rule* (38CSR2) also requires that each application include fish and wildlife resource information for the permit area and adjacent area, and this rule states that the scope and level of detail for such information shall be determined by the secretary of the DEP in consultation with state and federal agencies with responsibilities for fish and wildlife resources and shall be sufficient to develop a *protection and enhancement plan*. Furthermore, state law requires that each

application include a description of how, to the extent possible using the best technology currently available, the operator will minimize disturbances and adverse impacts on fish and wildlife and related environmental values, including compliance with the Endangered Species Act, during the surface mining and reclamation operations and how enhancement of these resources will be achieved where practicable. These plans must include both protective (i.e., prevention-oriented) and enhancement (i.e., restoration-oriented) measures. Additionally, when the proposed mining operation will affect threatened or endangered species of plants or animals or their critical habitats, the application must describe control measures, management techniques, and monitoring methods to be employed in order to protect or enhance such species and habitats.

Coal Mining Permits

The purpose of a coal mining permit is to preserve the integrity of land and water resources that will be disturbed by mining operations and related activities. Any entity who intends to disturb surface land for the following purposes must apply for a coal mining permit: underground or surface coal mining; construction of haul or access roads; construction of preparation plants for coal, tipples, and load outs; and establishment of coal refuse areas. The DMR requires advertisement for public notification of a mining permit application in a qualified newspaper once a week for four consecutive weeks. There is a 30-day public comment period that begins on the date of the last publication. A public hearing on the permit will be scheduled should an individual request such a hearing during the public comment permit. Interested parties may appeal the DEP's permit decision to the Surface Mine Board. Public participation also can occur concurrent with the technical review of the permit, depending on whether a public hearing is required. Coal mining permits are valid for a period of five years and carry a \$1,000 application fee and \$2,000 renewal fee. A complete coal mining permit application typically must provide the following:

- Ownership information of the applicant.
- Evidence of who owns both surface land and mineral rights; the applicant must state the source of legal right that permits conducting the proposed operations.
- Names and addresses of all surface land owners within one hundred feet of the proposed operation (these owners must also be notified that a coal mining permit is being sought)
- Insurance information.
- Bond information.
- Maps and location of operation.
- Subsidence control plan and underground abandonment plan for underground mines and auguring.
- Fish and wildlife resource information.
- Parks and historic land information.
- Hydrological data showing seasonal variations.
- Geological information.
- Blasting plan.

- Drainage plan.

With respect to application processing time, the following may serve as a general template:

Administrative review—five working days, as set by law; *Technical review*—two to 12 calendar months (application review and deficiency notice with corrections must be sent to company within 30 calendar days of the time that the deficiency in the permit application is noticed and the process continues until application satisfies applicable laws, regulations, and policies); *Public participation*—two to four calendar months (concurrent with technical review) depending on whether a public hearing is required; *Total time required*—two to 12 calendar months, depending on complexity of the application. It should be noted that after receipt of the mining permit application by DEP, the agency completes a review of the application to see if it is administratively complete. Within five days of receiving the application, the applicant has an additional 30 days to make the required changes and resubmit the application to the DEP. Similarly, after the DEP completes its technical review of the application the applicant has an additional 30 days to make the required technical corrections to the application (L. Alt, personal communication, December 2007).

Other approvals (all described below) required of entities wishing to mine for coal include an NPDES permit and approval for its groundwater protection plan, a dam control permit and state 401 certification, compliance with federal Department of Labor and state Workers' Compensation laws, and approval from the US Army Corps of Engineers. Finally, a reclamation bond in the amount of \$500 per affected acre must also be paid to the state as part of the coal mining permit application process.

Permits for Non-Coal Surface Mining

Surface mining for non-coal minerals has been done in West Virginia to extract limestone, flagstone, sandstone, shale, sand, iron ore, gravel, clay, and other metals and metallurgic ore. Public notification about the permit will be placed in a local newspaper for three consecutive weeks. The 30-day comment period begins on the first date of the publication of the notice. As with the coal mining permitting process, any member of the public can request a public hearing on a given permit at any time during the public comment period. Interested parties may appeal the DEP's decision on the permit to the Surface Mine Board. Public participation also can take place concurrent with the technical review of the permit, depending on whether a public hearing is required.

National Pollutant Discharge Elimination System Permit (NPDES) – Mining

The purpose of the NPDES permit is to ensure the integrity of the rivers, streams, and other surface water disturbed by discharges from coal, non-coal mining operations, and related activities. A Class I legal

advertisement is required in a local newspaper to notify the public of the proposed NPDES permit application. In West Virginia, a Class I legal advertisement is an announcement that appears in one of the many state newspapers that have been identified by the West Virginia Secretary of State and the Public Service Commission as having circulation in the area of interest and at least weekly publication. The publication date in the newspaper begins the 30-day public comment period. A public hearing on the permit is conditional, based on the level of public interest in issues that are relevant to the permit. The length of time for public participation and a permit decision is approximately 90 days. Additionally, a Groundwater Protection Plan is routinely processed as part of the NPDES permit. The purpose of the groundwater protection plan is to ensure the integrity of groundwater when it is disturbed by coal and non-coal mining operations. No public participation is required because the groundwater protection plan is a mere component of the NPDES permit.

State 401 Certification is used to ensure that any proposed activity that will fill in West Virginia surface waters with dredge or fill material will comply with state water quality standards. The certification must be obtained whenever a federal permit or license (i.e., US Army Corps of Engineers permit) is issued. The State 401 Certification requires that a Class I legal advertisement be placed in a local newspaper as a public notice, with a 30-day public comment period. Similar to the Groundwater Protection Plan, 401 Certification is processed as part of the NPDES permit. A public hearing is conditional, based on the level of public interest in issues relevant to the permit. Interested parties may appeal the agency's decision to the West Virginia Environmental Quality Board (WVEQB). The WVEQB hears appeals regarding the issuance or denial of permits, permit conditions, or enforcement actions rendered by the DEP Division of Water and Waste Management (<http://www.wveqb.org/>).

As defined by the federal Surface Mining Control and Reclamation Act (SMCRA) (30 U.S.C. 1257, Section 507(b)), a Cumulative Hydrologic Impact Assessment (CHIA) is required for all proposed coal mine permits. A determination of the probable hydrologic consequences of the mining and reclamation operations, both on and off the mine site, with respect to the hydrologic regime, quantity and quality of water in surface and ground water systems including the dissolved and suspended solids under seasonal flow conditions and the collection of sufficient data for the mine site and surrounding areas so that an assessment can be made by the regulatory authority of the probable cumulative impacts of all anticipated mining in the area up on the hydrology of the area and particularly upon water availability. This is the only requirement for cumulative impact assessment of proposed coal mining operations. These assessments do not consider cumulative impacts to wildlife habitat, air quality, forest resources, soils, or other environmental components, and as a result the DEP does not formally consider impacts to resources

other than water outside the designated project boundary (L. Alt, personal communication, December 2007).

State rules (Title 145, Series 8), as provided for under W.Va. Code § 5B-2A, establishes procedures for preparation and submission of *Community Impact Statements* (CIS) for new surface mining operations. These statements are submitted to the West Virginia Office of Coalfield Community Development (OCCD). The CIS requirement runs concurrent with, but separate from, the surface mining permit application process administered by the DEP. The state has promulgated guidelines to assist applicants proposing mining surface mining projects (and current surface mining operators as well) to comply with the requirements of the rule. Because this rule was enacted several months after (June 1999) the Spruce No. 1 Mine was permitted, a CIS was not prepared during initial permit application and review, and was instead prepared for the mine upon arrival of the first permit renewal date (October 2003). A CIS is intended to summarize the impact (biophysical, economic, social) of surface mining operations on surrounding areas. Content of the CIS is taken from the DEP surface mining permit application, and certification of the accuracy of this information is required. The CIS describes (WCOCCD, 2000; WVCSR–Community Impact Statements):

- Location, extent and duration of mining operation.
- Property impacts.
- Proposed blasting and valley fills.
- Post-mining land uses.
- Impacts on infrastructure and area economy.

In accordance with state law, the operator is required to notify individuals and business owners and operators in affected communities of the proposed mining activity within 30 days after the CIS is filed by the permit application with the OCCD. The applicant is also required to solicit comments from affected individuals and business owners concerning how their communities are anticipated to be affected by the planned surface mining operations and the intended post-mining land use. Comments received by the OCCD concerning a proposed mining project are provided to the county development and redevelopment authority and are used to assist in the incorporation of the CIS into the land use master plan for the county. The notice is required to contain the following information:

- Name of the permit applicant and the location of the intended surface mining operations.
- Locations in the affected communities where the CIS has been filed by the applicant for public review.
- Expected duration of the surface mining operations in each area of the community.

9.0 APPENDIX C – Focus Group Meeting Agency

Minneapolis, Minnesota
Wednesday, January 23, 2008

8:45 a.m. Refreshments and Sign-In

- a) sign-in
- b) Fill out lunch order
- c) Reimbursement forms handed out

9:00 Welcome and Introductions

- a) Formal welcome for participating and BROAD purpose of the study
- b) Overview of MPCA's interest in this project
- c) State participants – introduce themselves, who they represent, and their expectations and interest in the study
- d) Observers – introduce selves and role in the study/meeting
- e) Overview of the agenda

9:30 Overview: Forestry & Mining Benchmarking Study

9:45 Brief Summaries: State Environmental Review & Permitting Programs

- a) State-by-state overview of program(s) highlighting 1-2 key aspects
- b) Review of focus group questions
- c) BREAK

10:30 Discussion of Key Environmental Review & Permitting Issues (current practices, key barriers and challenges, and success):

- a) Linkages and Integration: Environmental Review & Permitting:
- b) Focus on Cumulative Environmental Impacts
- c) Coordination Within and Outside State Government
- d) Data, Methods, and Technology

Noon LUNCH

1:00 p.m. Linkages between Environmental Review and Economic Development

- a) Characterize the relationship between Environmental Review and Economic Development policies in your state. Are they complimentary or competitive? How?
- b) How can the Environmental Review policies and practices improve the economic competitiveness of your state?

2:00 Environmental Review and Permitting: Opportunities for Improvement

- a) Two things states would change (policies, funding, implementation, etc)
- b) Greatest strengths of the program and future directions
- c) Wrap-up – thank you, reimbursement forms, other...

3:00 ADJOURN