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Forest Service
Ottawa National Forest Supervisor's Office
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File Code: 1950
Date: September 13, 2010

Dear Forest User:

Enclosed is a copy of the Off-Highway Vehicle (OHV) Connector Route Project Revised Environmental Assessment (EA). This document supplements the analysis contained in the March 2009 EA. The September 2009 Decision Notice and Finding of No Significant Impact (DN/FONSI) for the 2009 EA was reversed upon the receipt of two appeals. The implications of this reversal require the Ottawa to perform and disclose additional analysis in order to pursue this proposed project.

This Revised EA includes only new information available since the release of the 2009 EA and is tiered to the information disclosed in the 2009 EA as permitted by 40 CFR 1502.20. Therefore, the Revised EA is not a stand-alone document and should be viewed in context with the original analyses disclosed in the 2009 EA. New information includes new, modified and clarified actions and associated effects analyses, as well as an additional action alternative.

Four alternatives were evaluated in detail in the Revised EA. Alternative 1 (no action) would retain the current OHV access opportunities shown on the current Motor Vehicle Use Map. Alternatives 2, 3 and 4 (action alternatives) would designate a new north/south OHV connector route to allow OHV access to the existing east/west State of Michigan Multi-Use trails. Additionally, the action alternatives would designate local connector routes (up to seven routes under Alternatives 2 and 3 and up to six routes under Alternative 4) to enhance OHV access opportunities to communities and better serve the public's needs. Alternative 4 has been developed to respond to a concern raised for the September 2009 DN/FONSI regarding exclusion of designated motorized use within the project area's Semi-Primitive, Non-Motorized management area.

Other alternatives were considered during the analysis but not fully analyzed for various reasons and are disclosed in the EA. Alternative 3 has been identified as the preferred alternative.

How to Comment: This Revised EA is being sent to those who provided input on the 2009 EA and to those who have requested to receive copies of project proposals on the Ottawa National Forest.

Public participation is an important part of the analysis and, as such, I encourage you to take a look at the enclosed document. To ensure that I have an opportunity to consider your comments before I make my final decision they must be postmarked or received within 30 days beginning the day after publication of the legal notice in the Ironwood *Daily Globe* and Iron County *Reporter*. When the comment period would end on a Saturday, Sunday or Federal holiday, comments will be accepted until the end of the next Federal working day. No comments will be accepted after the 30-day comment period ends.

Please address your comments to Susan J. Spear, Forest Supervisor, E6248 US Highway 2, Ironwood, Michigan 49938. Office hours, for those who wish to hand deliver or provide oral comments, are 8:00 a.m. to 4:00 p.m., Central Time, Monday – Friday (except Federal holidays). A comment form is enclosed for your convenience.

Oral comments must be provided at the above listed office, or by telephone at (906) 932-1330, during those hours. Alternatively comments may be submitted by facsimile at (906) 932-0122, or by email at comments-eastern-ottawa@fs.fed.us (please put "Comments on "Comments on OHV Connector Routes Project" in the subject line).

In order to have standing to appeal, each individual or representative of a group or organization that submits comments must sign or provide for verification of identity according to the requirements of 36 CFR 215.6(3)(iv) and (v). Only those who provide comments or otherwise express interest, through one of the methods and including all of the information described above during this comment period, will have standing to appeal the decision.

Comments must be submitted by 11:59 p.m. Central Time on the closing date of the comment period. It is the responsibility of the sender to ensure timely receipt of any comments submitted.

If you wish to reference scientific literature in your comment letter I request that you send a copy of the reference you have cited and include rationale as to how you feel it is pertinent to the specific project at hand. This will allow me to fully evaluate your comments; if I do not receive a copy of the literature I may not be able to utilize it in making my decision.

Copies of the decision will be mailed to those who request it and those who comment on the project. The final decision on this project will be subject to appeal pursuant to 36 CFR 215.11; unless no comments expressing concerns (or only supportive comments) are received during this 30-day comment period.

Comments that are received on this proposal are part of the public record and therefore, are available for public inspection upon request. Comments submitted anonymously will be accepted and considered; however, those who submit anonymous comments will not have standing to appeal the subsequent decision under 36 CFR Part 215.

Thank you for your interest in this project. If you have any questions, please contact Bill Baer, Interdisciplinary Team Leader, at (906) 932-1330, extension 342.

Sincerely,

Susan J. Spear

SUSAN J. SPEAR
Forest Supervisor

Enclosure

United States Department of Agriculture
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Public Comment Form

Ottawa National Forest

OHV CONNECTOR ROUTE PROJECT – REVISED ENVIRONMENTAL ASSESSMENT

NAME: _____

ADDRESS: _____

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I have the following comments about the above proposal:

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Please Return to: USDA Forest Service, Supervisor's Office, Attn: to Susan Spear, Forest Supervisor, E6248 US Highway 2, Ironwood, MI 49928 (Or fold, seal, and add a stamp to the back of this sheet. It is pre-addressed).

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……...

place
stamp
here

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USDA Forest Service
Attn: Susan Spear
E6248 US Highway 2
Ironwood, MI 49928

Revised
Environmental Assessment

Off-Highway Vehicle
Connector Routes Project

United States
Department of
Agriculture

Forest Service

Eastern Region

September 2010

Bergland, Bessemer, Iron River, Kenton,
Ontonagon and Watersmeet Ranger Districts
of the Ottawa National Forest

Gogebic, Houghton, Iron and
Ontonagon Counties, Michigan

Deciding Official: **Susan J. Spear, Forest Supervisor**
Ottawa National Forest
E6248 US Highway 2
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For Information Contact: **Bill Baer**
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Ironwood, Michigan 49938
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This revised Environmental Assessment (EA) has been prepared to supplement the original 2009 EA. The information presented in this document is intended to be used in concert with the 2009 EA. The 2009 EA is available upon request from the Ottawa National Forest Supervisor's Office at E6248 US Highway 2, Ironwood, Michigan 49938; telephone: 906-932-1330; fax: 906-932-0122; TTY: 906-932-0301; e-mail: at comments-eastern-ottawa@fs.fed.us or at the following libraries: Gogebic Community College (Ironwood, Michigan, 906-932-4231, extension 344); J. Robert Van Pelt Library (Michigan Tech University, Houghton, Michigan, 906-487-2506); and Olson Library (Northern Michigan University, Marquette, Michigan, 906-227-1580).

The following is a brief summary outlining the framework of this document.

Chapter 1 includes a general project area description; a discussion about the objectives of the revised EA; a review of the project's purpose and need; a list of the decisions to be made; a summary of the project's history to date; information regarding the Ottawa's approach to managing the Forest's transportation system; a summary of the public involvement process and concerns previously identified.

Chapter 2 includes a description of the new information incorporated into the alternatives developed for the project area, including newly created design criteria and monitoring. This chapter also includes a detailed description of the parameters of analysis for the revised EA based on new information and changed circumstances; as well as the rationale for a modified route proposal; a summary of alternatives considered, but eliminated from detailed analysis; and a comparison of alternatives.

Chapter 3 describes the affected environment, including the physical, biological and human aspects of the environment that may be changed by implementation of an alternative. This chapter also presents baseline information for the existing environment conditions against which effects can be evaluated and from which progress toward desired conditions can be measured. The direct, indirect and cumulative impacts (effects) of alternative implementation on various resources are disclosed. The effects analyses discussions are specific to the outcomes of alternative implementation for new and/or modified actions. The effects analyses for areas where changes are not proposed have not been reiterated from what was presented in the original analysis. More information is available in the 2009 EA.

A reduction of paper as specified by 40 CFR 1500.4 has been an important consideration in the preparation of this revised EA. Generally, the objective of this type of documentation is to furnish enough site-specific information to demonstrate a reasonable consideration of environmental consequences of alternatives. Additional documentation, including more detailed analyses of project effects, may be found in the project planning record located at the Ottawa National Forest Supervisor's Office in Ironwood, Michigan.

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Chapter 1 – Purpose and Need

1.1 Introduction

This document discloses information specific to the revised analysis for the Off-Highway Vehicle (OHV) Connector Routes project. The Deciding Official for this project is Susan J. Spear, Forest Supervisor for the Ottawa National Forest.

The Forest Service has prepared this revised Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This revised Environmental Assessment (EA) is tiered to the 2009 OHV Connector Routes EA and its associated project file; as well as the 2006 Land and Resource Management Plan (Forest Plan).

A Decision and Finding of No Significant Impact was signed for the 2009 EA on September 9, 2009. However, the Decision was appealed by two parties and later reversed on December 18, 2009 by the project's Appeal Deciding Officer due to concerns raised during the appeal period as outlined in Section 1.6 of this chapter. The implications of this course of action require the Ottawa to perform and disclose additional analysis in a revised EA in order to pursue this proposed project.

As defined by the USDA Forest Service's National Travel Management Rule (TMR) and Forest Plan, an OHV is defined as "any motor vehicle designed for or capable of cross-country travel on or immediately over…natural terrain" (Forest Plan, Glossary, p. 13).

1.2 Objectives of the Revised EA

This document incorporates new information available since the release of the 2009 EA. This new information includes analysis performed by the project's Interdisciplinary (ID) Team to address concerns identified for the previous project decision. This revised EA also incorporates new information regarding routes proposed for OHV use, minor corrections as well as clarifications as deemed necessary (See Section 2.1 for more information). Direction contained in Forest Service Handbook 1909.15, section 18.4 allows reconsideration of decisions based on an environmental assessment and finding of no significant impact when new information or changed circumstances indicate changes are warranted. This includes revising an EA when changes are needed to address environmental concerns that have a bearing on the actions or impacts disclosed.

This revised EA is not a stand-alone document. As this document supplements the analysis contained in the 2009 EA, it should be viewed in context with this information. This document presents information specific to new, modified or clarified actions and associated effects analyses; therefore not all information from the 2009 EA will be reiterated. A copy of the 2009 EA is available upon request as instructed on the cover letter and page i of this document.

1.3 Project Area Description

The project area is located within the proclamation boundary of the Ottawa and encompasses portions of Gogebic, Houghton, Iron and Ontonagon counties (see the Project File for a complete legal description). The proposed routes travel through several management areas (MAs) on the

Ottawa, including MAs 1.1a, 2.1, 2.2, 3.1a, 4.1a, 4.2a, 6.1, 6.2, 8.1 and 9.3. Information regarding the management within these MAs can be found in the Forest Plan (pp. 3-2 and 3-81.9 as well as 3-101 to 3-105). See Appendix E, Maps 1 - 10 for a display of all routes proposed.

1.4 Purpose and Need for Action

The purpose and need of this project is to determine which roads and trails would be designated as OHV connector routes on the Forest's Motor Vehicle Use Map (MVUM). There is a need to designate roads and trails to meet the increasing demand for OHV access, including those areas requested by the public and other agencies. Designating connector routes would implement the Forest Plan's desired condition relative to the priorities for future designation of roads and trails for OHV use – namely to provide connections to existing designated public roads and trails and to utilize existing corridors to the extent possible to minimize new construction (pp. 2-4, 2-14 to 2-15).

There is limited connectivity between the State of Michigan's Multi-Use trails (e.g., the Iron River to Marenisco Trail and Sidnaw to Bergland Trail) and the network of designated roads and trails managed by the Ottawa. In addition, the State of Michigan has expressed interest in connecting some routes to the State of Wisconsin's off-road vehicle trail system. Therefore, a need has been identified to designate connector routes in an efficient manner to improve access to connecting roads and trails that are currently available for OHV access on the Forest's MVUM and other jurisdictions.

Consideration has also been given for the locations of proposed connector routes as well as the type of designated access allowed in light of existing motorized uses and existing road and trail conditions. The class of vehicle allowed on any given proposed connector route to provide increased opportunities for OHV use, such as ATVs, UTVs, and off-road motorcycles is also important. Logical connections to other open routes (Forest Service and other jurisdictions) would improve the recreational riding experience and provide connections between communities nestled within the Ottawa. Based on new information about available OHV access on non-federal lands, there is a need to re-evaluate some of the route locations analyzed by the 2009 EA (pp. 4, 5, 11 and 12).

There is a need to consider a site-specific, Forest Plan amendments in areas where designated OHV access is not allowed under current management direction in cases where adding a route would achieve the purpose and need of the project.

1.5 Decision Framework

The decision for this project will address each proposed route. The reversal of the September 2009 decision included all proposed routes, and therefore a new decision is necessary for each route regardless of the amount of change that has occurred since release of the 2009 EA (see Section 2.2). The project's Deciding Official will consider the purpose and need, Forest Plan direction, public input, the results of the resource specialists' analyses and the entirety of the Project File, in order to make the following decisions:

- Whether to open additional Objective Maintenance Level (OML) 1, 2 and 3 roads to OHVs, and if so, which roads (see Appendix D for a definition of OMLs);

- Whether to open snowmobile trails to OHVs, and if so, which trails;
- Whether to amend the 2006 Forest Plan to open specific OML 4 roads to OHVs, and if so, which roads;
- Whether to amend the 2006 Forest Plan to authorize an additional route for OHV access within MA 6.1;
- Whether to construct and reconstruct trails on federal lands to provide connections to existing or proposed OHV routes;
- Whether to reconstruct or maintain existing roads to provide connections to existing or proposed OHV routes and to provide conditions to meet standards for dual use access;
- Whether to change the class of vehicle allowed on the proposed connector routes;
- Whether to change the OML classification of proposed connector routes to accommodate a different type of motorized vehicle use than currently exists;
- What, if any, design criteria or site-specific monitoring are needed; and
- Whether preparation of an Environmental Impact Statement (EIS) is needed.

1.6 Summary of Project's History to Date

Planning for this project began in 2007 when the Interdisciplinary (ID) Team began developing the project's proposals based on the purpose and need for action identified in Section 1.4. The project's initial scoping effort for this project began in April 2008. Public participation occurred during the scoping process as well as information gathered at public meetings held in November 2007, December 2007, January 2008 and May 2008 have assisted the project's Interdisciplinary (ID) Team to develop and refine the proposed OHV connector routes and associated activities proposed in scoping[1].

In April 2009, the original EA was released for public review, which documented the results of the analyses performed for three proposed alternatives. These alternatives included a no action alternative (Alternative 1), the proposed action alternative as disclosed during scoping (Alternative 2, slightly modified as described in the 2009 EA, p. 4) and an alternative developed to provide additional miles of OHV connector routes based on scoping input received (Alternative 3). During the 30-day comment period associated with the 2009 EA, 51 comments were received from interested parties.

Based on the environmental analysis performed, in addition to the project file documentation and public feedback, the Deciding Official (Forest Supervisor) authorized Alternative 3, with modifications, for implementation. Selection of Alternative 3 was documented through a Decision Notice and Finding of No Significant Impact (DN/FONSI), which was signed on September 9, 2009. In response to this decision, two appeals were filed with the Appeal Deciding Officer (Kent Connaughton, Regional Forester of the Forest Service's Eastern Region). Based on the appeals, the Regional Forester determined that the Ottawa did not provide sufficient analysis for the following concerns: (1) the effects of motorized use on those seeking non-motorized recreational opportunities; and (2) the effects of unauthorized, motorized use on roads and trails not designated for motorized travel on the MVUM. As such, the Regional Forester reversed the 2009 DN/FONSI on December 18, 2009, which prohibited implementation of any portion of the activities authorized in the 2009 DN/FONSI. Any decision made for this revised EA would be subject to another public comment period, issuance of a new decision and additional appeal opportunity.

1.7 Existing Condition of Transportation System Management and OHV Use

The Ottawa's transportation system is a continually evolving network of federally-managed roads that provide access for a variety of uses. The Forest's transportation system is primarily in place and has been established through road management activities taking place over the past several decades. Motorized access on the Ottawa is allowed only on designated roads and trails published on the Forest's Motor Vehicle Use Map (MVUM). The Forest's proclamation boundary also encompasses several roads managed under county, state and private jurisdiction. The Forest Service roads, in combination with these other roads, provide a larger transportation network that brings both management opportunities and challenges.

Off-highway vehicle use on the Ottawa has changed dramatically over the years from a primary means of access during hunting seasons to the use of OHVs for recreational riding in all seasons. Along with the increased demand for OHV recreational opportunities, management of OHV access on the Ottawa has also evolved. To provide additional information about the Ottawa's current conditions and factors that led to those conditions, as well as estimated future uses, the following summary provides an overview of the changes that have occurred to motorized access on the Ottawa.

OHV Access Allowed Under the 1986 Forest Plan

Under the 1986 Forest Plan, there were limited restrictions for OHV use and the Ottawa had an "open unless posted closed" policy, which included allowing OHVs to travel cross-country (Final Environmental Impact Statement [FEIS], p. 1-6). The nature of this type of use, in concert with an increase in OHV use over time, has led to an increased amount of resource impacts (FEIS, p. 3-191). The majority of OHV use occurred during the hunting seasons on lower standard roads (e.g., OML 1 and 2 roads). This historic pattern of use helped to shape the current system available for use today.

2001 - Roads Analysis Process and Subsequent Planning Efforts

In January 2001, the Forest Service adopted a road management policy, which directed the Agency to maintain a safe, environmentally-sound road network that is responsive to public needs and affordable to manage (FEIS, p. 3-31). As part of this policy, the Ottawa completed a roads analysis process at the Forestwide scale in December 2002 to identify long-term access needs for planning purposes. Since that time, additional transportation system planning has occurred as part of site-specific project planning to determine the current and long-term access needs within a given project area. This site-specific planning process includes consideration of OHV access opportunities, as well as ensuring a transportation system plan is developed that provides resource protection, while responding to diverse management needs (i.e., administrative access for timber harvest operations). Site-specific project surveys are the primary means of gathering information to recommend MVUM updates (2008 M&E Report, p. 11).

As part of this site-specific planning process, unauthorized roads are addressed. Unauthorized roads are defined as abandoned road segments that are not managed as part of the Forest's system road network (see Project file). These roads have been developed and used for past management activities, such as timber harvest or have been created through other means, such as trails made from repeated recreational use. Often, an unauthorized road has not been maintained

according to appropriate road standards and therefore can pose problems for soil and water resources. Primarily, unauthorized road segments exist as road spurs off of OML 1 road segments and often terminate within forested stands, without connecting to other travel ways. In some cases, unauthorized roads are unlikely to be recognized as roads since they become revegetated over time, filling in with grasses and brush, followed by trees (FEIS, p. 3-33).

Under the 1986 Forest Plan, unauthorized roads were available for OHV use in the same manner that cross-country use was allowed. However, under the current Forest Plan, as unauthorized roads are not part of the Ottawa's managed transportation system, they are not available for OHV use until project-specific analysis is completed and a decision is made to add an unauthorized road to the managed transportation system and authorize designation for motorized use.

2003 – Unmanaged Recreation Identified as a Nationwide Management Concern

In 2003, the Chief of the Forest Service identified unmanaged recreation as part of Four Threats to National Forest System (NFS) land. To address this threat, the Chief outlined the importance of managing for the long-term sustainability of NFS lands and resources to maintain the quality of the recreation experience in the national forests. The growth of unmanaged recreation was identified as a management issue due, in part, to the increase of OHV use on NFS land and adverse resource impacts associated with this type of use (http://www.fs.fed.us/projects/four-threats). With this initiative, the Forest Service's proposed Travel Management Rule was announced.

2003 – Forest Plan Revision

The Notice of Intent to prepare an EIS for the Forest Plan revision process was announced in September 2003. As part of this revision, the increased demand for OHV access was taken into account, especially in the areas of trail loop opportunities and connectivity to existing OHV trails. In light of the Chief's new initiative to address unmanaged recreation, development of new Forest Plan direction was proposed to: (1) protect natural resources where OHV use may occur; (2) coordinate OHV use and access with adjoining roads and/or trails; and (3) allow designation of an OHV trail/route system (FEIS, pp. 1-6 and 1-7).

2005 – National Travel Management Rule Released

On November 9, 2005, the USDA Forest Service published the final National Travel Management Rule (TMR), which revised regulations for travel management on NFS lands (36 CFR 261.15). This rule requires the designation of roads and trails available for motor vehicle use, by class of vehicle and time of year, if applicable. The Rule prohibits motor vehicle use off of designated roads and trails, such as unauthorized roads. The Rule also requires annual publication of a MVUM to display those roads and trails designated as open for various classes of motor vehicles, including OHVs.

2006 – Forest Plan Revision Completed

In March 2006, the Ottawa completed revision of its Forest Plan. The Record of Decision for the Forest Plan and its associated FEIS, restricted cross-country use of OHVs, unless needed for administrative use (Forest Plan, p. 2-15). The Forest Plan includes direction that is compliant with the TMR, including allowing public, motorized access only as designated where the landscape can sustain such use. The FEIS analysis performed for development of Forest Plan direction included information regarding the expanding recreational uses of OHVs. This analysis recognized that there was an increasing public desire to use OHVs for recreational riding on the Forest, especially for routes that connected to other areas, such as other OHV trails and local communities. Use of OHVs was no longer primarily a means to access hunting grounds. As a result, the Forest Plan also included direction to provide OHV route connections to existing, designated public roads and trails (p. 2-15).

No changes to management direction were included during the revision process for MA 6.1, an area providing a semi-primitive, non-motorized (SPNM) recreation experience (see Appendix D, Glossary). The desired conditions for this area include allowing highway legal vehicle use (excludes OHV travel) on higher standard roads (OML 3, 4 and 5 roads); snowmobile use on existing, designated trails; allowance of all motorized use (includes OHV travel) on the Pioneer Multi-Use Trail; and providing motorized access under written authorization for administrative and/or other needs (e.g., special use permits).

The FEIS completed for Forest Plan revision provided mileage estimates for the types of roads that can be considered for OHV use on the Forestwide scale (p. 2-17). This included OML 1, 2 and 3 roads. The FEIS recognized that allowing OHV use on higher standard roads used by highway vehicles (e.g., OML 3) would require consideration of several factors associated with providing safe, dual-use opportunities (p. 3-35). The Forest Plan's FEIS included analysis to allow the development of north-south connector routes to link to the State of Michigan's multiple-use trails as part of the new designated travel management system for OHV access.

2007 – Motor Vehicle Use Map

In April 2007, the Ottawa produced its first MVUM pursuant to the National Travel Management Rule. This map presented the Ottawa's existing condition (e.g., the designated motorized access for 2007 at the Forestwide scale) and displayed those OML 1 and 2 roads available for OHV use. The most recent version of the Ottawa's MVUM was released in April 2010.[1] The MVUM is a continually-evolving document. Future editions of the MVUM will likely reflect refinements to the Ottawa's transportation system resulting from new information and changed conditions, such as implementation of Forest decisions that authorize changes to designated access.

[1]The MVUM is available at no cost from any district office or can be viewed or downloaded from the Ottawa's website at: http://fs.usda/gov/goto/ottawa/mvum.

Current and Anticipated Future OHV Use on the Ottawa

Based on the revised Forest Plan direction and implementation of the Travel Management Rule, the Ottawa has moved from an era of less restrictive OHV use towards an environment of managed use through designated access. Under current direction, any road not shown on the MVUM is not available for public motorized use, unless permission is granted through written authorization. Written authorizations mostly take the form of special use permits, which allow ingress/egress to private lands.

The Forest currently offers 2,389 miles of OHV access (2009 M&E Report, p. 20). To date, there has been an increase in the miles of OML 1 and 2 roads open to OHVs since the first MVUM was published in 2007. This has resulted in a net increase of 39 miles of OHV access available Forestwide since 2007. There has been a great deal of effort since April 2007 to implement the TMR through public education and outreach efforts. We opted to inform the public about these new regulations and associated travel management restrictions in lieu of citations for unauthorized use in 2007 and 2008. Other efforts have included public media announcements as well as several public meetings to disseminate information. These meetings have assisted the Ottawa to determine where the public desires motorized designations to be considered. In addition, site-specific projects that address proposed changes to the MVUM have also included further opportunities for public participation.

It is important to note that it is the Forest user's responsibility to ensure that they are compliant with the MVUM. To assist the Forest user, the Ottawa is currently undertaking a Forestwide project to sign all lower standard roads. In the future, this will help the Forest user to determine his/her location and to differentiate which roads are available for motorized use. The proposed routes were reviewed in light of the current progress of the signing effort. Arrangements have been made to sign all of those OML 1 and 2 roads off of the proposed routes in order to assist the Forest user in navigating to legal riding opportunities. As unauthorized roads are not managed as part of the Forest's transportation system, they are not signed. There has been evidence that some unauthorized use is occurring; increased patrols have been performed in areas of known violations, which in concert with signing has appeared to reduce violations in some cases (2009 M&E Report, p. 16).

The demand for OHV access is anticipated to increase into the future. As the Ottawa manages for multiple resources, such as the protection of soil, water and wildlife resources, as well as providing for non-motorized recreational experiences, the reallocation of OHV access to areas that can sustain such use will continue. Acknowledging that enforcement of the MVUM can be challenging, continued efforts to educate the public are very important to the success of managing access on the Ottawa.

Another key component is monitoring OHV use on the Ottawa. A monitoring strategy was developed as part of the Forest Plan revision process, which includes monitoring the effects of OHV use on various resources as well as opportunities for OHV access offered. Since implementation of the MVUM has been on-going for only four years, more information is needed to evaluate the monitoring data collected and determine trends.

1.8 Public Involvement

Public participation assists the ID Team to identify concerns and/or significant issues for the formulation of alternatives and analysis for possible effects of proposed activities. This information enables the Deciding Official to make decisions with an understanding of this project's potential environmental consequences.

In addition to those public involvement efforts outlined in Section 1.6, this project was listed in the Schedule of Proposed Actions (e.g., Ottawa Quarterly) beginning with the Spring 2008 edition and documentation has been posted on the Ottawa's website since this time. The revision of the EA was announced in the Spring 2010 edition of the Ottawa Quarterly. In addition, as noted in the cover letter for this revised EA, the Ottawa will be hosting a public meeting in during the comment period for this project. This meeting will offer a venue to provide information to the public regarding the revised proposals, offer an opportunity for interested parties to speak with specialists about concerns, and afford the public an opportunity to comment. As described in the cover letter for this revised EA, there is another opportunity to comment on the proposed alternatives disclosed in this document. As outlined in 36 CFR 219.6, there is a formal, 30-day comment period associated with this revised EA. To gain standing to appeal this project, interest or comment must be received during this 30-day comment period.

1.9 Issues

For the 2009 EA, the ID Team identified one significant issue based on the comments received during the 2008 scoping period (see Appendix D, Glossary). This issue was used to develop Alternative 3, which included an increased amount of access and more opportunities for longer distance riding on higher standard roads. However, in light of the concern for additional motorized use within the SPNM area (e.g., Route E within MA 6.1), the ID Team has developed Alternative 4 (see Section 2.3). This new alternative is equivalent to Alternative 2, except Route E is excluded from the proposal to address concerns related to OHV travel on Route E. The effects of not implementing Route E were addressed under Alternative 1 – the No Action alternative – in the 2009 EA.

Comments received on this revised EA will be evaluated to determine if the creation of additional alternatives is necessary. Comments identified as significant issues with the action alternative(s) disclosed in this revised EA would require further analysis. Concerns that are determined to not constitute an issue by the Deciding Official will be addressed in project file documentation (see Appendix D).

1.10 Consistency with the Forest Plan

This revised EA is tiered to the 2009 EA and its associated project file; and the Forest Plan and its FEIS and Record of Decision (ROD); as permitted by NEPA (40 CFR 1502.20). The Forest Plan has a wide variety of goals and objectives to achieve a balanced use of the Ottawa. The alternatives were developed to comply with the direction of the Forest Plan, except in those instances where site-specific amendments are proposed (See Section 2.4). Broad-scale issues of management direction, aside from the context of the proposed project, have previously been decided in the Forest Plan and are therefore outside the scope of this analysis.

Chapter 2 – Alternatives

2.1 Introduction

This chapter will focus on the description of the alternatives for the revised analysis. As stated in Chapter 1, this revised EA incorporates new, modified and clarified information into the action alternatives previously analyzed in the 2009 EA.

2.2 Modified Actions and Analyses

The following summary outlines the action alternative components addressed in this revised EA, specifically information to address concerns raised during the appeal and changes to the list of proposed routes that were offered in the 2009 EA as described.

New Analysis to Address Concern Raised During Appeal

Effects to Non-Motorized Opportunities - Additional analysis has been prepared to disclose the effects of designated connector routes on those seeking a non-motorized recreational experience. Our response to this concern includes analysis of the effects of motorized recreation from travel on the proposed connector routes both within and outside of the Ottawa's semi-primitive, non-motorized (SPNM) areas. This new effects analysis includes the effects of noise on both Forest visitors and wildlife species. The ID Team has also provided information and analysis for the anticipated effects to air quality from the motorized access that would be allowed under the proposed alternatives. As stated in Section 1.9, the ID Team has also developed another action alternative that excludes designating a Route E, the proposed OHV connector route within the SPNM area.

Effects of Unauthorized Motorized Use - Additional analysis and proposed activities have been developed to address the potential risks associated with unauthorized OHV use of roads and/or trails not designated for such uses on the MVUM. Our response to this concern includes an adaptive management strategy that would guide the Ottawa to perform monitoring of connector route use to determine problem areas and implement design criteria to address unauthorized use off of proposed routes, if discovered (see Chapter 2, p. 17 and Appendix B for more information).

Adaptive management is allowed pursuant to Forest Service Handbook 1909.15, Section 14.1, which provides an implementation tool that incorporates an "implement-monitor-adapt" strategy. This strategy provides flexibility to: (1) account for changes to initial assumptions; (2) adapt to changes in environmental conditions; and (3) allow for a management response based on monitoring information, which may indicate that desired conditions are not being met. Pursuant to 36 CFR 220.5(d)(2) and 36 CFR 220.7(b)(2)(iv), the analysis for an adaptive management strategy must include the effects of proposed alternatives, effects of likely adjustments made based on the parameters of the strategy, and the procedures established during implementation to monitor whether an action(s) produces the intended effect.

2.3 Alternatives Considered in Detail

Alternative 1 – No Action

Under the No Action alternative, current management plans would continue to guide access on the Ottawa's MVUM relative to this project. The effects analysis for Alternative 1 has not changed, except in those instances where new information is available; therefore the entirety of the discussion for Alternative 1 will not be re-iterated. Refer to the resource section discussions in Chapter 3 and the 2009 EA for more information.

Action Alternatives

The effects analysis for Alternatives 2 and 3 have not changed, except in those instances where new information is available; therefore the entirety of the discussion for the action alternatives will not be re-iterated. Refer to the resource section discussions in Chapter 3 of the 2009 EA for more information (pp. 16-45). See Appendix A of this document for a description of routes per alternative.

Alternative 2 Modified - This is the proposed action as described in the 2009 EA with modified route locations as discussed in Section 2.1 (herein referred to as Alternative 2). This alternative would designate up to eight additional OHV connector routes on the MVUM as displayed in Appendix E, Maps 1, 4, 5, 7, 8 and 9. As a result, up to 99 miles of new OHV access would be provided under Alternative 2.

Alternative 3 Modified – This alternative proposes to designate up to eight additional OHV connector routes on the MVUM as displayed in Appendix E, Maps 2, 4, 6, 7, 8, and 10. This alternative (herein referred to as Alternative 3) was designed to address public input and the issue of providing an improved recreation experience as identified in the 2009 EA, including more opportunities for longer distance riding (p. 7). As a result, up to 105 miles of new OHV access would be provided under Alternative 3.

Alternative 4 – This alternative proposes to designate up to seven additional OHV connector routes on the MVUM as displayed in Appendix E, Maps 3, 4, 5, 8 and 9. This alternative is equivalent to Alternative 2, except it does not include designation of Route E. As such, the remainder of information and effects analysis for Routes A through D and F through H will not be reiterated in this revised EA. This document focuses on the effects of excluding Route E from the proposal. Information and analyses pertaining to the other routes is available under the Alternative 2 discussion in this revised EA as well as the analysis for Alternative 2 disclosed in the 2009 EA and its associated project file.

Alternative 4 was designed to address the concern raised during the appeal for designating OHV access within the SPNM area. This alternative would result in designating up to 93 miles of new OHV access across the Forest.

Proposed OHV Connector Routes under the Action Alternatives

The following descriptions outline the set of proposed connector routes offered under this revised EA to meet the purpose and need for action (see Section 1.4). Some changes to the proposed connector routes have occurred since the release of the 2009 EA as described in the following discussion. A detailed description of the proposed route locations is displayed in Appendices A and E.

West Connector Route (Route A Modified) - After release of the 2009 EA, it was determined that this route could not be implemented as proposed due to jurisdictional issues outside of the Ottawa's authority to manage. During the 30-day public comment period for the 2009 EA, it was discovered that there are issues regarding motor vehicle access on those portions of the connector route involving non-Forest Service roads. Further field review has taken place since release of the 2009 EA, however no alternate routes were found to substitute this portion of the route (see Section 2.5). Therefore, the West Connector Route as analyzed in the 2009 EA, which included use of the Ethelwood Grade, is no longer proposed to serve as the primary, north/south OHV connector route to connect traffic between the existing east/west State of Michigan Multi-Use trails. Route A Modified as shown on Map 3 of Appendix E is the only portion of the original connector route that is being forwarded into analysis under this revised EA under all action alternatives.

East Connector Route (Route B Modified) – Due to changes that occurred with Houghton County's Off-Road Vehicle Ordinance 08-01, County Road HOU-163 (also known as South Sidnaw Road) is no longer available for OHV access. Route I, as analyzed in the 2009 EA, is proposed as a replacement for County Road HOU-163. The combination of these two proposed routes serve to provide a primary, north/south connector route on the eastern end of the Ottawa to connect traffic between the existing east/west State of Michigan Multi-Use Trails.

There are differences in the location of proposed routes and the amount of new and improved OHV access between Alternatives 2 and 4 versus Alternative 3 due to the alternate route connections available for the Iron River to Marenisco Multi-Use Trail. These differences are shown in more detail in Appendices A and E.

Marenisco-Wakefield Grade (Route C Modified) - After release of the 2009 EA, it was discovered that about 0.1 miles of Route C is privately-owned and therefore outside of the Ottawa's authority to manage. Due to this break in NFS ownership, Route C does not connect to Korpela Road as described in the 2009 EA (p. 4). There is no alternate route available to connect to Korpela Road.

The 2009 EA analysis was performed based upon a proposal to exclude highway vehicle traffic from a portion of this local connector route. Route C Modified is linked to the State of Michigan's Iron River to Marenisco Multi-Use Trail, which allows travel by all vehicles. This revised EA proposes to modify the type of designated vehicle class from that analyzed in the 2009 EA to maintain consistency with the access permitted on the State's trail under all action alternatives. As part of this change, approximately 12.2 miles of Route C Modified would be administratively upgraded from a trail to an OML 2 road so that road standards can be

maintained to sustain all vehicle traffic. Due to the width of the driving surface on some portions of the grade, this proposal includes a new design criterion, to post speed limit signs along this former railroad grade to provide a safe riding environment.

Pioneer Trail Connection (Route D) - There is no change proposed for this local connector route as proposed in the 2009 EA (p. 5). This route would connect a future re-route of the Pioneer Multi-Use trail to Old State Highway 28 under all action alternatives. The Pioneer trail's re-route that would connect to Route D was previously authorized under the Ridge Vegetation and Road Management Project. Old State Highway 28 is subsequently connected to the State of Michigan's Sidnaw to Bergland State Multi-Use Trail.

Forest Road 630 Local Connector (Route E) – There is no change proposed for this local connector route from that proposed in the 2009 EA (p. 5) under Alternatives 2 and 3. This route would connect the Pioneer Multi-Use trail to public trails of other jurisdiction, leading to the community of White Pine, Michigan. The Pioneer Multi-Use trail is subsequently connected to the State of Michigan's Sidnaw to Bergland Multi-Use Trail. This route is partially within the semi-primitive non-motorized area and would be excluded under Alternative 4.

Watersmeet Local Connector (Route F) – There is no change proposed for this local connector route as proposed in the 2009 EA (p. 5). This route would connect county roads that subsequently lead to the State of Michigan's Iron River to Marenisco State Multi-Use trail under all action alternatives.

Land O' Lakes Grade (Route G Modified) – As with Local Connector Route C Modified, this route was proposed to exclude highway vehicle traffic. Route G Modified is linked to the Iron River to Marenisco Multi-Use Trail, which allows travel by all vehicles. This revised EA proposes to modify the type of designated vehicle class from that analyzed in the 2009 EA to maintain consistency with the access permitted on the State's trail under all action alternatives. As part of this change, approximately 6.0 miles of Route G Modified would be administratively upgraded from a trail to an OML 2 road so that road standards can be maintained to sustain all vehicle traffic. The same, new design criterion to post speed limits along this former railroad grade would be implemented.

Sidnaw-Rousseau Local Connector (Route H – Alternatives 2 and 4) – There is no change proposed for this local connector route as proposed in the 2009 EA (p. 5). This route would connect State Highway M-28 to the Bill Nicholls trail, a State designated off-road vehicle trail in the area of Mass City, Michigan. State Highway M-28 is subsequently connected to the State of Michigan's Sidnaw-Bergland Multi-Use trail.

Sidnaw-Rousseau Local Connector (Route H Modified - Alternative 3) - Under Alternative 3, the Sidnaw-Rousseau Local Connector is modified from the proposed route disclosed in the 2009 EA (p. 12). Due to changes that occurred with Houghton County's Off-Road Vehicle Ordinance 08-01, Forest Highway 16 (north of US Highway 2) is no longer available for OHV access. Forest Highway 16 was expected to provide a non-federal connecting route between the eastern and western halves of the 2009 EA's route (e.g., connecting Forest Roads 1300 and 1460). Without use of Forest Highway 16, this local connector cannot be carried forward for

designation. Therefore, further field review has been performed and options to address these concerns have been evaluated. This revised EA discloses the ID Team's route evaluation process and the effects analysis for changes to the proposed route under Alternative 3. A new route has been identified to connect the eastern and western portions of Route H Modified as shown on Map 10 of Appendix E.

2.4 Actions Common to All Action Alternatives

All action alternatives would offer more OHV access than what currently exists to respond to demand, while striving to maintain the remote character of the Ottawa (FEIS p 3-204). The proposed activities would also meet the desired conditions outlined in the Forest Plan for providing OHV connector routes; improve OHV access to OML 1 and 2 roads as well as trails currently designated on the MVUM; enhance the Forest user's recreational riding experience; and provide opportunities for OHV travel between local communities.

All action alternatives would designate OHV connector routes using OML 1, 2, 3 and 4 roads, former railroad grades, and snowmobile trails. Trail construction and reconstruction, as well as road maintenance and reconstruction would be completed prior to adding routes to the MVUM as deemed necessary (see Appendices A, B and C for more information). Some portions of routes would be subject to a change in the class of vehicles allowed (see Appendix A for more information).

How would the proposed routes be added to the MVUM?

As presented in Appendix A, each proposed route includes segments of roads and/or trails that would require varying amounts of improvements prior to designation on the MVUM. In some instances, design criteria (such as hazard tree removal, brushing and mowing) have been proposed, and in other areas, construction and reconstruction activities are needed to ensure a safe riding experience. Appendix A displays a summary of the lengths of road and trail proposed to be opened to OHV use under the action alternatives.

A dual-use analysis has been conducted by the project's engineer for all OML 3 and 4 roads identified in this proposal. This analysis determined what type of activities may be needed to ensure safe driving conditions on those roads where OHV access is proposed to occur along with highway vehicle access.

It is important to note that the maps present the locations for the entire length of each OHV connector route (see Appendix E); only the highlighted portions as shown on Maps 1, 2 and 3 are proposed under this project. However, this revised EA focuses on only those roads and trails under federal jurisdiction where OHV travel is proposed under the alternatives. Some OML 2 road segments shown as part of the proposed routes are currently designated open to OHV access; this EA proposes no changes to these road segments. Portions of the proposed connector routes are comprised of roads managed under different jurisdictional authority; the action alternatives assume that roads under other jurisdiction currently available for OHV access would continue to be open to this type of access in the future.

The action alternatives have been designed to offer a safe OHV riding experience. Forest users that drive on roads and trails not designated for such use on the MVUM would be in violation of the Travel Management Rule and the Forest's MVUM.

Proposed Forest Plan Amendments

The action alternatives include proposals for two, site-specific Forest Plan amendments. If selected by the Deciding Official, the Forest Plan would be amended as necessary for the implementation of the proposed actions. One proposed amendment would allow OHV travel on OML 4 roads. The Forest Plan (p. 2-15) includes a Guideline that generally prohibits the use of OML 4 roads by OHVs. As this type of use was not analyzed as part of the FEIS that accompanied the Forest Plan, a site-specific amendment is needed to allow for the use of OML 4 roads by OHVs. Allowing OHV use on these road segments would assist to increase the opportunities for OHV access on the Ottawa and further support the purpose and need for the project as stated in Chapter 1. See Appendix A for a display of mileages of OHV access on OML 4 roads by alternative.

A second amendment proposed would authorize OHV travel on FR 630, which partially traverses MA 6.1, the semi-primitive non-motorized area. This road is currently open to highway vehicle traffic. Forest Plan direction (pp. 3-57 and 3-58) for MA 6.1 restricts OHV use to only those routes that were previously designated for this use (e.g., the Pioneer Multi-Use Trail). About 1.7 miles of the total 2.2 mile length of FR 630 is within MA 6.1. This local connector route would connect the Pioneer Multi-Use trail to public trails of other jurisdiction, leading to the community of White Pine, Michigan. In addition, this local connector route would allow OHV travel to a network of roads and trails managed by the Ottawa that are currently not accessible without the need of trailering OHVs to the site using Forest Road 630 (see Appendix E, Map 7). Designating FR 630 as a local connector route would meet the purpose and need through subsequently providing additional local community connections between White Pine, Bergland and Rockland Michigan (as the Pioneer Trail currently accesses the latter two communities). This amendment would not be required if Alternative 4 was chosen for implementation.

Design Criteria and Adaptive Management Strategy

The project's design criteria are intended to reduce or eliminate potentially adverse effects of allowing OHV travel on the proposed routes. These criteria would be in addition to Forest Plan Standards and Guidelines, and all other applicable laws, regulations, and Forest Plan direction. See Appendix B of this document for more information.

Site specific monitoring measures for determining whether unauthorized use is occurring off of proposed connector routes have been developed. Roads and trails at potential risk for unauthorized use have been mapped see project file. As the risk of unauthorized use on any given road/trail is not yet known, monitoring would allow the Ottawa to have the flexibility to address violations on a case-by-case basis. The list of monitoring measures and adaptive management strategy is displayed in Appendix B.

2.5 Alternatives Considered, but not Analyzed in Detail

The list of alternatives eliminated from further analysis as discussed in the 2009 EA have not changed (2009 EA, pp. 13 and 14). As discussed in Section 2.3, the ID Team efforts to find an alternate route to complete the West Connector Route (Route A) through field review has been unsuccessful. This has led the ID Team to evaluate other alternatives for Route A to serve as a connection to the proposed route shown on Map 4. All alternatives to propose a West Connector Route that links the State of Michigan's Multi-Use Trails have been considered, but dropped from further analysis for reasons discussed below.

Route A – Original Route Disclosed in the 2009 EA

Comments received during the 30-day comment period raised concern about potential risk associated with increased dual use of OHVs and heavy equipment used for timber harvest. To address these concerns, the ID Team has dropped portions of Forest Road 230 from further consideration. Without this road, there is no viable connection between the remaining portions of the route that are already open to OHV access.

Alternate Route A – Merriweather to Bergland – Option 1

Based on the concerns expressed during the 30-day comment period, the Lake Gogebic Area Chamber of Commerce brought forward an alternate route for the ID Team's consideration to complete the West Connector Route. This route would circumvent portions of the original route by using existing trails and establishing new trails traversing between Forest Roads 230 and 250. The ID Team evaluated this route in the field and determined that the landscape would prove challenging for designing and maintaining an OHV route in this area due to concerns about OHV traffic on Forest Road 230, obtaining access across private properties, and construction of new trail in areas of sensitive soils and water features. Based on these factors, the ID Team has not carried this option forward for detailed analysis in this revised EA.

Alternate Route A – Merriweather to Bergland – Option 2

The Lake Gogebic Area Chamber of Commerce also requested that the ID Team consider a route using Forest Roads 250, 254, 303, and an existing trail crossing NFS land within Section 33 (T49N, R42W), in addition to Ontonagon County roads and private land to complete the West Connector Route. Field review of the existing trail across Section 33 showed that this route would not be suitable for OHV access. The trail crosses several wetlands and the risk of sedimentation into adjacent wetlands and streams would be high, in addition to concerns for trail rutting and soil erosion. This route would also require private landowners to grant easements for crossing their property and there is no support for these easements at this time. Based on all of these concerns, the ID Team has not carried this option forward for analysis in this revised EA.

Chapter 3 – Affected Environment and Environmental Effects

Recreation

3.1 Introduction

This section contains additional information and effects analysis to address: (1) the risk of unauthorized use of roads and trails off of the proposed connector routes; (2) the impacts of designated motorized use on those recreationists seeking non-motorized opportunities; and (3) the proposed changes to some connector routes since the release of the 2009 EA, including new effects analysis for Route E as proposed under Alternative 4.

3.2 Affected Environment

OHV Use on the Ottawa

As discussed in Chapter 2, the OHV use on the Ottawa has changed over time as the demand for recreational opportunities has grown. The development of a designated system of roads and trails for motorized access has occurred pursuant to the Travel Management Rule. One important factor to consider is that the amount of OHV access available since the Travel Management Rule was established has not dramatically changed. However, there has been a re-allocation of existing uses to areas that have been deemed suitable to sustain motorized use in the future.

Table 1 displays the top five recreational activities on the Ottawa National Forest, which is based on the interviews of Forest visitors during implementation of the National Visitor Use Monitoring program (USDA 2008[a]). These results are consistent with field observations of visitations over the years. On the Ottawa, most of the OHV use occurs during the fall hunting seasons, which is also consistent with Michigan State OHV studies. Over half (53%) of the state licensed OHVs are for ATVs, and 65% of these are used by deer hunters (Nelson, et. al. 2000).

The Upper Peninsula has the highest percentage of ATV use for hunting compared with any other region in Michigan (Nelson, et al. 2000). Field observations also indicate hunter numbers have decreased over the years. This is consistent with the decline of Michigan hunting license sales by 10% from 2000 to 2006 (MDNR 2008 (b)). Nationally, about 7% of Forest visitors take part in OHV activities and about 3% of Forest visitors said it is the primary reason for visiting the forests (Stynes and White, 2005). The Ottawa's statistics, at roughly 1% and 0%, respectively, are below the national average (Table 1).

Although OHV activities on Ottawa are less compared to national statistics and other recreation activities, the number of State off-road vehicle registrations have grown significantly (67%) from years 1994 to 2007 (see Project File). According to the Forest Plan, OHV use has evolved over the years from people using OHVs primarily to access camps and for hunting, to including individuals and groups looking for places to ride recreationally (p. 3-31).

Table 1. Ottawa National Forest comparable recreation activities.

	2003		2007	
Activity	**% Participating**	**% As Main Activity**	**% Participating**	**% As Main Activity**
Viewing Natural Feature (scenery)	22.16	9.87	60.0	19.8
Viewing wildlife, fish, etc.	17.70	2.01	48.5	1.6
Hiking or Walking	11.5	2.64	50.6	23.9
Relaxing	10.83	1.03	48.2	4.4
Snowmobile Travel	9.55	9.55	28.9	27.8
Hunting	8.82	8.80	7.2	6.0
OHV Use	1.42	0.30	1.3	0.0

Unauthorized OHV Travel

As discussed in Chapter 1, the Forest Plan only allows designated road routes and trails for motorized recreation and access that are managed to provide for resource protection, public health and safety and to minimize user conflict (pp. 2-4 and 2-14). Therefore, driving any route not shown on the current MVUM is considered unauthorized use. In addition, unauthorized cross-country use is not allowed under the Forest Plan (p. 2-15).

The 2009 Monitoring and Evaluation (M&E) Report states:

> "It is difficult to say how effective trail and road closures are because the Ottawa does not systematically collect data on how many users obey the closures compared to the number or percentage of users who violate closures. There is evidence (tracks around or over barriers) of some unauthorized motor vehicle use in many areas across the Ottawa; however, this may be from a minority of users. Increased patrols have been performed in areas of known violations, but this effort produced little contact with violators. In some cases, increased patrols and increased signing appear to have reduced violations. Going forward, the Forest should develop and implement practical effectiveness monitoring in areas of known, repeated violations. The goals would be to determine effectiveness of various closure devices over time, and reduce breaching of closure devices over time through an adaptive management approach." (pp. 19 and 20; available on the Ottawa's website at: http://fs.usda.gov/goto/ottawa/planning).

The MVUM continues to be the enforcement tool and it is the responsibility of the Forest user to remain compliant with the MVUM. Some unauthorized OHV use has been documented since implementation of the Travel Management Rule via publication of the Ottawa's first MVUM in 2007. Beginning in 2007 and continuing in 2008, the Forest chose to inform the public of the travel management restrictions instead of issuing citations for violation of unauthorized OHV use. Informational efforts have included public media announcements, public meetings, signing

roads and trails, and making public contact during high recreational use periods, specifically during the deer hunting seasons (USDA 2008(b)). These efforts have led to an increase in public awareness about the Ottawa's travel management restrictions. In some cases, increased patrols and signing appear to have reduced illegal use (USDA 2008(b)). Field contacts made by Forest Service personnel during the 2007 and 2008 deer hunting seasons indicate that hunters are walking further to access traditional hunting sites (USDA 2008 (b)).

Non-Motorized Recreation Opportunities

The Ottawa has a character of scenic beauty that is unique for the Upper Midwest. Visitors have a perception of remoteness when entering the Ottawa. This is in contrast with most areas outside the Ottawa, which tend to show more signs of human development and activity. Many people value the different areas within the Ottawa for a variety of personal reasons.

There are opportunities for non-motorized recreation opportunities across the Forest, regardless of the management emphasis in any given management area (MA). Examples of the types of opportunities available are outlined in Table 1. The Recreation Opportunity Spectrum (ROS) is a classification system to identify, describe, plan and manage a range of recreation settings, opportunities and experiences (Forest Plan, p. B-1). Approximately 80% of the Ottawa in a ROS classification of "Roaded Natural" (USDA 2006(b)), which means there is moderate evidence and interaction with other users, including sights and sounds. The classification also provides for motorized use.

Approximately 6% of the Forest has an ROS classification goal of "Semi Primitive Non-Motorized" setting, MA 6.1 (USDA 2006(a)). The ROS characterizes the SPNM setting as providing low interactions between users, but there is often evidence of other users; and motorized use is not permitted (Forest Plan, p. B-1). It is important to note that although the Ottawa's SPNM areas (e.g., MA 6.1) are managed to provide for a desired condition for a SPNM setting, some motorized use within these areas is allowed by the Forest Plan. Public motorized uses are permitted on higher standard roads (e.g., OML 3, 4 or 5 roads), existing Forest Service designated trails (e.g., Pioneer Multi-Use Trail) and roads managed under other jurisdictions (e.g., county roads) as outlined in the Forest Plan (p. 3-57).

All lower standard roads (OMLs 1 and 2) and trails are managed closed to public motorized uses, except as needed for administrative use (Forest Plan, p. 3-57). The Ottawa's SPNM areas have not yet reached this long range desired condition as there are currently about 17 miles of existing roads and trails (e.g., 7.7 miles of OML 1 road and 9.0 miles of OML 2 road) open to OHV travel within MA 6.1 across the Ottawa (2009 M&E Report, p. 32). There are on-going efforts in MA 6.1, including the portion of this management area within the project area to bar motorized access in areas where closed roads have been illegally used. Signs have been erected to further educate the public about access within MA 6.1, including signage to inform Forest visitors that highway legal vehicle use is not permitted on the Pioneer Multi-Use Trail (see Project File).

Most of the proposed OHV routes are within MAs that have a Roaded Natural classification. The one exception is Route E, which has a ROS classification of Semi-Primitive Non-Motorized (see Appendix D, Glossary).

Proposed Connector Routes

The majority of the roads and trails comprising the proposed connector routes already exist on the ground, and a few portions of the larger connector routes are available for motorized use per the 2010 MVUM. The affected environment for the proposed routes has not changed from the information disclosed in the 2009 EA (pp. 16-21) and associated project file. Therefore, the information will not be reiterated here. However, the existing condition for Route H has changed under Alternative 3. A portion of Route H under Alternative 3 (herein referred to as Route H Modified) is being evaluated as a new route in this revised EA. This portion of Route H Modified includes Forest Roads 1320, 1439, 1440 and 1462, all of which are already available for OHV travel under the 2010 MVUM. Forest Roads 1320 and 1440 are also designated for highway legal vehicles.

3.3 Direct, Indirect and Cumulative Effects

The bounds of analysis, methodology for collecting information and measurement indicators to quantify and compare the effects differ for the three discussions of this section: unauthorized OHV travel; non-motorized recreation opportunities; and the effects analysis that discloses the impacts of designating proposed routes. The following analysis complements the information disclosed in the 2009 EA.

No discussion of Routes D, F and H Modified under any alternative has been provided under Section 3.3c as there is no change to the proposed designation of these proposed routes. See the 2009 EA for more information about these proposed routes (pp. 16-21) and its associated project file (Tab D) for more information. However, the effects analysis under Sections 3.3a and 3.3b does encompass all routes, including Routes D, F and H Modified.

3.3a. Effects of Unauthorized OHV Travel

The bounds for the direct and indirect effects for the potential risk of OHV travel on routes closed to such use, specifically those closed OML 1 and 2 roads as well as unauthorized roads that are linked to the proposed routes (see Project File). This analysis incorporates calculations and analyses performed using GIS, as well as the estimation of effects based upon professional judgment, field visits and literature review.

Unauthorized use occurs when OHVs travel on roads and trails that are closed to such use (which may also serve as a starting point for unauthorized cross-country travel). This may occur when there is a junction between a road or trail open for OHV use and one that is closed to such use. The Forest Plan direction provides for the legal and safe use of OHVs as one of the multiple uses of the Forest. The OHV Connector Routes Project includes this direction in the purpose and need to provide riding opportunities for OHV use (see Section 1.4).

It is assumed that designation of the proposed connector routes would decrease the amount of OHV trailering needs via highway legal vehicles, in order to gain access to those OML 1 and 2 roads currently designated for OHV use on the MVUM.

The following measurement indicators are used to assess the potential effects of unauthorized use. The analysis for each alternative is displayed by each indicator.

- Indicator 1 - Miles of OML 1 and 2 roads currently designated open for motorized use that would be accessible via the proposed connector routes.

- Indicator 2 - Miles of proposed OHV connector routes.

- Indicator 3 - Miles of closed Forest Service roads and unauthorized roads that are risk of unauthorized use due to potential access points off of proposed connector routes.

See Tables 2, 3 and 4 for a display of road/trail mileages associated with these indicators.

Indicator 1

Travel on the existing, MVUM-designated OML 1 and 2 roads accessible via the proposed connector routes can subsequently increase the potential risk for travel onto other roads and trails that are not open to motorized uses as well as unauthorized cross-country travel (the latter is discussed under Indicator 3).

Alternative 1 – Highway legal vehicle use of the currently designated OML 1 and 2 roads would continue. As no connector routes would be designated for OHV access, the primary way to access the currently designated OML 1 and 2 roads via OHV would be to continue to trailer vehicles between access points using a highway legal vehicle.

The Forest's adaptive management strategy, when implemented, would address points of unauthorized use in general for closed OML 1 and 2 roads, as well as unauthorized roads; on a case-by-case basis (see p. 17 of this revised EA for more information).

Alternatives 2, 3 and 4 – If an action alternative is selected for implementation, there would be a direct effect of increasing the amount of access to those OML 1 and 2 roads currently open to OHVs on the MVUM (see Table 2) as trailering would no longer be necessary. Indirectly, this could result in an increased risk of unauthorized travel since the existing OML 1 and 2 roads do lead to other roads and trails that are not open to motorized use on the MVUM.

For Indicator 1, Alternative 3 provides the greatest amount of improved access to those OML 1 and 2 roads already designated for OHV use on the MVUM (see Table 2).

Table 2: Miles of OML 1 and 2 roads accessible via the proposed connector routes and currently open to OHVs

OML	Alternative 1	Alternative 2	Alternative 3	Alternative 4
1	0	186	202	181
2	0	72	82	70
Total Miles	**0**	**258**	**284**	**251**

Indicator 2

The mileage of proposed connector routes per alternative gives an indication of the potential reduction in any current unauthorized use of the roads and trails comprising these routes. Implementation of the proposed connector routes would provide a legal riding opportunity where none existed previously.

Alternative 1 - Under the No Action alternative, there would be no change to the existing condition. Since none of the proposed connector routes would be designated, there would be a foregone opportunity to reduce the risk of unauthorized travel on the roads and trails that comprise the routes.

Alternatives 2, 3 and 4 – These alternatives would increase the miles of open roads and trails relative to the existing condition (Alternative 1). Although minor portions of some proposed connector routes are already available for OHV access on the MVUM, the majority of the proposed roads and trails encompassing the connector routes are not currently designated. An increase in miles of OHV access would reduce potential unauthorized use since the proposed OHV routes provide for a riding experience that might otherwise be fulfilled by riding on routes closed to OHV use (See Table 3).

Table 3. Proposed road and trail miles per alternative

Road/Trail	Alternative 2	Alternative 3	Alternative 4
OML 1	0.9	3.4	0.9
OML 2			
• new designation	4.6	7.5	4.6
• currently designated	8.3	8.3	8.3
OML 3	23	20.5	22.8
OML 4	18.3	19.8	16.0
Trail			
• new trail (construction)	6.7	6.7	6.7
• existing trail (reconstruction)	1.0	1.0	1.0
Total Miles	62.7	67.2	60.3

However, as discussed under Indicator 1, adding these connector routes to the designated system may lend to indirect effects through a potential increase in unauthorized uses since the connector routes would provide improved access to those roads and trails that are not open to motorized use. Alternative 3 would carry with it the least risk of unauthorized use by OHVs since it would implement a connector route with a decreased amount of potential access points to closed roads and/or trails that directly intersect the proposed routes when compared to Alternatives 2 and 4 (see Table 4).

As discussed under Indicator 1, the adaptive management strategy would assist to reduce or eliminate effects of unauthorized use, which includes uses off of the proposed routes (see Chapter 2, p. 17 and Appendix B for more information).

Indicator 3

Closed Forest Service roads are generally OML 1 roads (but can also be OML 2 roads) that are maintained on the Ottawa's transportation system, but are not open for public motorized use. Therefore, these roads are not available on the MVUM. In general, these closed roads can be used for administrative purposes, such as resource management projects, and some can be identified as access to private property under a written authorization. Motorized use on these roads, without authorization, is defined as an unauthorized use.

Generally, unauthorized roads were created during past timber harvest operations or have illegally been created by Forest visitors. Travel on unauthorized roads is considered equivalent to unauthorized cross-country travel. Unauthorized roads are not managed as part of the Ottawa's transportation system; they are generally grown over with vegetation and some crossing structures (i.e., culverts) have been removed. As stated in Chapter 1, cross country travel is defined by the Forest Plan as travel off of a designated route or trail.

There are both direct and indirect effects involving the risk of travel on closed Forest Service roads due to their location in relation to the proposed routes (see Table 4 and Project File, Tab D). For Indicator 3, direct effects of project implementation refer to the risk posed by OHV travel on closed OML 1 or 2 roads and/or unauthorized roads that intersect the proposed OHV connector routes. Indirect effects refer to a situation where an OHV would travel on one of these intersecting routes to subsequently reach additional roads and/or trails closed to motorized uses.

Alternative 1 - As none of the proposed routes would be designated on the MVUM under the No Action Alternative, there is no effect to the amount of travel on closed and/or unauthorized road accessed off of the proposed routes under Alternative 1. Any unauthorized, motorized uses of these roads would be addressed through the Forest's adaptive management strategy when implemented (see Chapter 2, p. 17 and Appendix B for more information).

Alternatives 2, 3 and 4 – There is a greater risk in direct effects since potential travel on roads and trails not designated for motorized use could be more easily accessed if an action alternative is selected for implementation. The risk of indirect effects of implementing the proposed routes for Indicator 3 are reduced when compared to direct effects. Subsequent travel on roads and trails leading from directly intersecting closed/unauthorized roads are not as readily accessible

for travel. However, there is still an increased risk of OHV use on these closed roads since there would be an increased amount of OHV traffic expected on the proposed routes if an action alternative is implemented. Although Alternative 3 connects to more miles of roads closed to motorized use directly intersecting the proposed routes, it offers the least amount of indirect effects or subsequent risks of travel to other closed roads and/or trails (see Table 4).

Overall, there are very minor differences between the alternatives and therefore the direct and indirect effects do not vary at the project scale. Unauthorized use of closed OML 1 and 2 roads or unauthorized roads can result in several resource impacts, such as effects to those seeking a non-motorized experience. Under either scenario (direct or indirect effects), travel on closed and/or unauthorized roads can lead to resource damage. Motorized use of these roads can create trails that may lead to subsequent uses, whether purposely accessed or driven in error. Measures to address resource impacts could include effective road closure and decommissioning techniques, as well as ongoing education and law enforcement efforts. These measures are expected to lessen or eliminate effects caused from unauthorized use.

Table 4: Miles of Closed Forest Service roads and unauthorized roads which connect directly or indirectly to the proposed routes.

Measurement Indicator 3	**Alternative 2**	**Alternative 3**	**Alternative 4**
Miles of Forest Service OML 1 Roads Closed to OHV Traffic			
• Direct Effects (intersecting proposed routes)	12	13	12
• Indirect Effects (subsequent travel off intersecting routes to other closed roads and/or trails)	28	31	28
TOTAL MILES	**40**	**44**	**40**
Miles of Unauthorized Roads			
• Direct Effects (intersecting proposed routes)	30	32	29
• Indirect Effects (subsequent travel off intersecting routes to other closed roads and/or trails)	112	98	112
TOTAL MILES	**142**	**130**	**141**

The Forestwide signing effort of designated roads and trails can assist the Forest user to navigate the Ottawa's transportation system and avoid accidental use of closed and unauthorized roads. Under Alternatives 2, 3 and 4, implementation of an adaptive management strategy would assist the Forest to monitor designated routes and implement measures to address issues associated

with potential risks of unauthorized travel (see Chapter 2, p. 17 and Appendix B for more information).

Summary - The potential for negative effects resulting from unauthorized motorized uses would be similar under all action alternatives as any closed road or trail or unauthorized route could conceivably be used. These proposed routes may increase the risk of direct and indirect effects of unauthorized use of closed and/or unauthorized roads.

Cumulative Effects

The analysis for unauthorized use does not change the substance or conclusion of the other resources since effects from unauthorized use is similar to the existing condition (Alternative 1). The bounds of analysis for cumulative effects include the era of the 1986 Forest Plan through the planning period for the Forest Plan. These bounds have been determined appropriate because the events within this timeframe display how the Ottawa's management of unauthorized motorized use has changed. The spatial bounds of this analysis includes the proposed routes, the currently designated OML 1 and 2 roads intersecting the proposed routes and the intersecting closed roads (e.g., OML 1 and 2 roads as well as unauthorized roads) as described on page 22.

Past and Present Uses - As discussed in Chapter 1, motorized travel on the transportation system under the 1986 Forest Plan was less restrictive than what exists today. This led to a recreational environment where most roads and trails, as well as unauthorized cross-country travel, were available and few restrictions were in place to deter this type of use.

Under the current 2006 Forest Plan, use of roads and trails not designated for motorized use is not acceptable as the Forest Plan is consistent with the Travel Management Rule. The designated transportation system for the Ottawa was established in 2007 with the release of the Forest's first MVUM. The era of allowing less restrictive motorized uses (e.g., prior to implementation of the 2006 Forest Plan) has proven challenging to overcome. Public education is an important tool in changing the way that Forest visitors view and use the transportation system.

Future Uses - As the MVUM is the enforcement tool for the Ottawa's transportation system, Forest users are be required to travel on roads and trails offered by each year's MVUM. The adaptive management strategy implemented under any alternative would allow the Forest to address unauthorized use (see Chapter 2, p. 17 and Appendix B for more information). In the future, project or area by area decisions will continue to review local road needs and determine necessary changes.

3.3b. Effects to Non-Motorized Recreation Opportunities

Forest visitors choose recreational activities to meet their expectations. Expectations are a function of people's values; they can influence what people define as acceptable or unacceptable. Thus, a person's expectations are used to judge the importance of an event or feeling and assist one to assign values, such as the importance of phenomenon such as solitude or privacy.

People that seek solitude in a forested setting or engage in non-motorized activities can be affected by the use of OHVs. An effect is the displacement of some users seeking solitude, such as hikers, mountain bikers, backpackers, primitive campers, bird watchers, and some hunters. This is generally attributed to sound that can be generated from OHVs. It can be disturbing for recreationalists engaging in non-motorized activity to encounter OHVs, particularly in isolated or secluded areas.

The bounds for the direct and indirect effects of motorized use on non-motorized recreation opportunities are the proposed connector routes. This analysis incorporates an assessment of noise disturbance that would occur if the proposed routes were implemented. The following measurement indicator is used to assess the potential effects of noise from OHV use.

- Sound impacts to forest visitors in relation to OHV detectable distance

The Michigan State standards for ATV exhaust noise emissions is 95 decibels (dB) (MDNR 2005). Michigan State vehicle code for noise emissions, measured at 20 inches from the exhaust pipe, is 95 decibels for motorcycles and 88 for motor vehicles (Michigan Vehicle Code). Table 5 lists decibels levels of some common sounds.

There is limited documented information on the effects of OHV sound impacts to Forest visitors in relation to OHV detectable distance. One study found that under normal forest conditions, no more than 5 percent of the vehicles on an off-road vehicle track would be detected at distances equal to or greater than 0.5 miles from the track (USDA 1975, p. 9). Another study found that high performance motorcycle noise (101 dB) is not detectable beyond 1,900 feet (< 0.5 mi.) in forest conditions (USDA 1993). There are several variables that can influence sound levels at a distance. These include wind, temperature, vegetation, topography, and humidity.

Table 5. Noise levels of common sounds

Sound	Decibel (dB)
Jackhammer	130
Jet Plane Take-Off, Car Stereo	120
Rock Music, Model Airplane	110
Snowmobile, Chainsaw	100
Lawnmower, Truck Traffic	90
Busy Street, Alarm Clock	80
Conversation, Dishwasher	60
Moderate Rainfall	50
Quite Room	40
Whisper, Library Noise	30

Alternative 1 - As none of the proposed routes would be designated on the MVUM under the No Action Alternative. Current sound levels are within the State of Michigan and Environmental Protection Agency (EPA) noise and emissions standards. As the level of motorized use is not expected to change under this alternative, these standards would continue to be met.

Alternatives 2, 3 and 4 - OHV sound effects would be concentrated on designated trails and on designated road routes. It is expected that most OHVs would meet State of Michigan noise and emissions standards, which are consistent with the Environmental Protection Agency standards. The sound effects from OHV use, in addition to the existing highway legal vehicle traffic, are not expected to exceed these standards.

Based on the literature review, it can be expected that hikers and other non-motorized recreationist may encounter OHV noise within a 0.5 mile of the proposed routes, depending on the variables at the time the OHV travels by the hiker's location. Forest visitors should expect to hear traffic noise along the open roads. The sound however should be minor (< 5% of all vehicle traffic) when about 0.5 miles away from the proposed route. About 5% of the OHV traffic volume would be detected around 0.5 mile of the proposed routes. Therefore, the sound level of OHVs would be expected slightly higher (< 10 dB, less than a whisper) than the surrounding forest at this distance.

An example of motorized vehicle use in a forest setting is provided in Table 6. This information is specific to the noise disturbance of an off-road motorcycle. Considering the information in Tables 5 and 6, the sound level of motorized uses, such as motorcycles, beyond 0.5 miles would be equivalent to the sound level of a normal conversation or that of moderate rainfall, and only about 5% of the overall sound level of motorized traffic volume would be detected. Compared to busy city streets or even residential neighborhoods, the amount of traffic on Forest roads open to OHV use is relatively low, which further limits the actual potential impacts on non-motorized users' recreation experiences.

Table 6. Sound Levels of Five Motorcycles Traveling over Forest Trails (USDA Forest Service 1993)

Course Number	Distance from trail (in feet)	dB measured for 5 minutes with no motorcycles	dB measured for 5 minutes with motorcycles	Maximum dB with no motorcycles	Maximum dB with motorcycles
1	1,100-5,000	34	35	49	55
2*	1,900-4,000	36	37	57	53
2*	1,900-4,000	47	40	62	55
3	400-2,700	43	46	57	67

*Course 2 was measured twice.

All of the proposed routes, except Route E, are within a Roaded Natural ROS classification. As previously described, all of the proposed routes are on existing Forest Service System roads open to highway vehicle traffic, with the exception of about 3.5 miles of trail. The new trail construction would be implemented in connection with the proposed routes so they too would be within 0.5 miles of an existing or proposed route. Hence, visitors should expect to encounter other recreationists, including motorized vehicles, such as OHVs. Thus, experiencing motor vehicle use along the routes is an existing occurrence, with the heaviest use occurring during the fall hunting seasons. The use of these routes would be less during other times of the year (May 16 through August 15). Even though the routes are open from May 16th through March 14th, for all practical purposes OHV trails are closed due to snow around the first of December.

One concern brought forward for the 2009 EA and subsequent appeals was the risk of increased traffic on roads already subject to highway legal vehicles and the resulting sound effects due to the addition of OHV access. We recognize that an increase in overall motorized traffic may occur on any given route if an action alternative is implemented. The amount of increase in traffic is difficult to estimate, especially given that OHV use on the Ottawa has decreased (see Table 1). However, it is conceivable that, once open to OHVs, a route could receive more motorized use. In some instances, OHVs may be used in lieu of current highway legal vehicle traffic as recreationists would no longer have to trailer OHVs between access points. The resulting sound effects of changing the contribution of vehicle class type using the routes (e.g., either the increased use by OHVs in addition to existing motorized traffic or the use of OHVs in lieu of highway legal vehicles), is not anticipated to exceed noise and emissions standards.

Alternatives 2 and 3 Only - As stated, Route E is partially within a SPNM setting. This route is currently open to highway legal vehicles and terminates on the Pioneer Multi-Use Trail, which already allows motorized access for OHVs and other vehicles. Adding OHV use to this route would result in the same effects as the other proposed routes; sound from OHV travel would be detected within 0.5 miles of the road.

Although the desired condition for MA 6.1 includes providing a SPNM environment, the change to allow all motor vehicle travel on Route E is minor in scope and would not result in a significant change to the Forest Plan's Objective for maintaining or increasing opportunities for quiet and remote experiences in the SPNM area (p. 2-4).

The Ottawa currently allows OHV access on the "Powerline Road", which is located east of proposed Route E, as well as a portion of Norwich Road. This road has been recently rehabilitated to a standard that supports winter activities, specifically snowmobile use and operations associated with timber harvest. As such, this road is not suitable for long-term OHV access; it is being used on a temporary basis and the original intention was to allow use only until alternate means of access in the vicinity could be found. Use of this temporary access route outside of the winter season has resulted in resource damage concerns for the effects of motorized travel on the area's sensitive soils. In addition, the Powerline Road crosses the Cranberry River, where long-term OHV access could pose a risk to retaining the integrity of the rehabilitated road approaches to the river as well as the river's crossing structure. Designating Route E would relocate OHV access onto Forest Road 630, an OML 4 road that can support such use.

As stated, Route E is currently subject to effects related to highway vehicle access, which leads to the motorized Pioneer Trail; and this project would not change the availability of this road to existing motorized uses. Route E is also located near the boundary of MA 6.1 and adjacent private land. Therefore, any additional effects of noise within the SPNM environment from travel on Forest Road 630 would occur within about 0.5 miles from Route E. As this route is located in the most northwestern corner of the SPNM area, additional effects of noise would be more isolated from the MA as a whole.

Alternative 4 Only – As outlined in Chapter 2, this alternative is equivalent to Alternative 2 except it excludes designation of Route E. Therefore, no OHV access would be designated on Route E (Forest Road 630), within MAs 3.1a, 6.1 and 9.3. Implementation of Alternative 4 would result in retention of the existing condition and vehicle access allowed as described under Alternative 1 (2009 EA, pp. 16-17; and associated documentation in Tab D of the project file). Therefore, the current OHV access route on the Powerline Road would continue to be used under Alternative 4. Due to the lack of alternate routes in the area for OHV access, the Powerline Road would need to be evaluated on a separate basis to determine if this access should continue and if so, what type of activities may be necessary to facilitate sustainable OHV access in the future, while affording resource protection.

Implementation of this alternative would not change the existing motorized access allowed on Route E as described in Section 1.7; motorized access by highway legal vehicles on Route E would continue. In addition, there would be no change to the motorized access, including OHV travel, allowed on the Pioneer Multi-Use Trail. Under Alternative 4, access to the Pioneer Multi-Use Trail would only be allowable via trailering OHVs on Forest Road 630.

As disclosed for Alternative 1, the level of motorized use is not expected to change under this alternative, and therefore noise and emissions standards would continue to be met.

Not designating Route E as a connector route would be consistent with current Forest Plan direction; no amendments for allowing use on Forest Road 630 as an OML 4 road or within the SPNM area would be required.

Cumulative Effects

The bounds of analysis for cumulative effects of the potential effects of motorized use on the non-motorized recreating public include the era of the 1986 Forest Plan through the planning period for the Forest Plan. These bounds have been determined appropriated because the events within this timeframe display how the Ottawa's management of OHV use has changed. The spatial bounds of this analysis includes the proposed routes, the currently designated OML 1 and 2 roads intersecting the proposed routes and the potential direct and indirect unauthorized and closed OML 1 and 2 roads that may be illegally travelled.

Past and Present Uses - Motorized travel on the transportation system under the 1986 Forest Plan was less restrictive. This led to a recreational environment where most roads and trails, as well as cross-country travel, was available and little restrictions were in place to deter this type of use (see Chapter 1 for more information). Under the current Forest Plan, use of roads and

trails not designated for motorized use is not acceptable as the Forest Plan is consistent with the Travel Management Rule.

The designated transportation system for the Ottawa was established in 2007 with the release of the Forest's first MVUM. Since the release of the 2007 MVUM, the Ottawa has taken opportunities to focus motorized use in areas that can sustain such use given resource protection needs and Forest Plan direction. These changes to the MVUM have resulted primarily from implementation of site-specific resource management projects outside of MA 6.1 areas. Although efforts have been made to effectively bar unauthorized, motorized travel within MA 6.1, no reduction to the currently designated access (about 8 miles of OML 1 road and 9 miles of OML 2 road) has been made since 2007 (2009 M&E Report, p. 32). Changes to designated access within MA 6.1 would need to be addressed at a site-specific, project scale.

Future Uses - For Alternative 1, the conclusion of cumulative effects is the same as direct and indirect effects to the non-motorized public. Most of the county roads are currently open to OHV travel. Thus, the cumulative effects on the non-motorized public are the same as the existing condition.

Alternatives 2, 3 and 4 - As the MVUM is the enforcement tool for the Ottawa's transportation system; Forest users would be required to travel on roads and trails offered by the annually updated MVUM. The adaptive management strategy implemented under Alternatives 2, 3 or 4 would allow the Forest to address competing recreational interests (see Chapter 2, p. 17 and Appendix B for more information). If Alternative 4 is selected for implementation, an alternate route for OHV access would need to be designated in lieu of Route E to address resource concerns associated with the Power Line road and Cranberry River crossing. In the future, project or area by area decisions would continue to review local recreation needs and determine necessary changes.

Given the past and present uses, in combination with the proposed actions under the action alternatives, it may be reasonable to predict that traffic volume may increase by opening Forest roads to OHV traffic. It is difficult to estimate how much of an increase would occur. However, inferring from known, Forestwide data shown in Table 1, it appears that OHV riders decreased from 2003 to 2007. Assuming a 203-day riding season (May 16 through December 2, weather dependent), the number of OHV riders decreased from 52 riders per day in 2003 to 32 riders per day in 2007. Alternatives 2, 3 and 4 would add 99 miles, 105 miles and 93 miles of OHV access, respectively. Compared to the existing condition, the effects to the non-motorized user across the within the 0.5 mile of any given proposed route would be minor given that the majority of the road miles encompassed by the proposed routes are currently subject to motorized use.

3.3c. Proposed Routes

The bounds for the direct and indirect effects analysis is the proposed routes themselves. The following discussion is specific to the impacts on recreationists in those areas where the proposed routes have been changed. No changes under the existing condition are anticipated, so no analysis of Alternative 1 is presented here; see the 2009 EA for more information. In addition, other facets of the proposed actions under Alternatives 2 and 3 have not changed,

which is disclosed in the following discussion. More information per route is disclosed in Chapter 1. The following indicators have been selected for this analysis:

- Indicator 1 – Miles of proposed OHV connector routes
- Indicator 2 – Miles of OML 1 and 2 roads currently designated open for motorized use that can be accessible via the proposed connector routes.

West Connector Route (Route A Modified) - After release of the 2009 EA, it was discovered that this route could not be implemented as proposed due to jurisdictional issues outside of the Ottawa's authority to manage (see Section 2.2 for more information). Route A Modified maintains only 3.6 miles from the total 17.5 miles encompassed by the original Route A under the 2009 EA. Although Route A Modified originally included a higher amount of miles, it is important to note that it did not provide more or better access as it included Forest Service and County roads that are currently open to OHV travel.

Indicator 1 – Miles of proposed OHV connector routes

Alternative 2, 3 and 4 - These alternatives contain the propose designation of Route A Modified. This route encompasses 0.9 miles of Forest Road 254, 2.65 miles of Snowmobile Trail 8, and maintains 0.11 miles of new construction. Forest Road 254 is a closed OML 1 road and also serves as segment of Snowmobile Trail 8. The remaining portion of Snowmobile Trail 8 is located on a gas pipeline right-of-way 2.65 miles in length which travels east, just north of Bergland. The 0.11 miles of new construction is to provide access off the pipeline to Bergland.

Indicator 2 - Miles of OML 1 and 2 roads currently designated open for motorized use can be accessed via the proposed connector routes.

Alternatives 2, 3 and 4 - These alternatives contain the propose Route A Modified. This route provides access to Forest Roads 250 and 303, which are both open to ATV traffic. Forest Road 250 is 2.4 miles in length and Forest Road 303 is 1.5 miles. The direct and indirect effects for the 3.6 mile segment are the same as those identified in the 2009 EA (pp. 17 - 21).

East Connector Route (Route B Modified) – As described in Chapter 2, changes occurring with county off-road vehicle ordinances has caused changes to this proposed route. The combination of Routes B and I as analyzed in the 2009 EA now serve as the East Connector Route. For clarification, Table 7 shows the differences in available access between the proposal under the 2009 EA and Modified Route B, per alternative.

Indicator 1 - Miles of proposed OHV routes

Table 7. Miles of Connector Routes per Alternative

	2009 EA			2010 Revised EA		
	Alt 2 Route B	Alt 3 Route B	Alt 3 Route I	Alt 2 Route B Modified	Alt 3 Route B Modified	Alt 4 Route B Modified
Roads	**Miles**	**Miles**	**Miles**	**Miles**	**Miles**	**Miles**
FR 3270	2.3	6.9	n/a	2.3	6.9	2.3
FR 3275	2.1	n/a	n/a	2.1	n/a	2.1
FR 3350	3.3	n/a	n/a	3.3	n/a	3.3
Iron Co. 657	14.5	14.5	n/a	12.7	15.4	12.7
Houghton Co. 163	6.4	6.4	n/a	n/a	n/a	n/a
FR 2127	n/a	n/a	3.9	3.9	3.9	3.9
FR 3500	n/a	n/a	5.9	5.9	5.9	5.9
Houghton Co. D161	n/a	n/a	0.7	1	1	1
FR 2009	n/a	n/a	2.8	2.8	2.8	2.8
FR 3660	n/a	n/a	0.7	0.7	0.7	0.7
Total	28.6	27.8	14.0	34.7	36.6	34.7
OHV Access by Alternative	28.6 miles	41.8 miles		34.7 miles	36.6 miles	34.7 miles
Miles of OHV Access Discounting Route I	28.6 miles	27.8 miles		20.7 miles	22.6 miles	20.7 miles

Alternatives 2, 3 and 4 - As the 2009 EA included analysis for the Forest Service jurisdiction portions of Routes B (under Alternatives 2, 3 and 4) and I (under Alternative 3 only), and no changes to these portions of the routes are proposed, no changes are anticipated in the miles of proposed OHV routes offered. However, the changed amount of county road encompassed by each route does result in a change of proposed designated route per alternative. Although access on county roads on the proposed routes is the jurisdiction of the respective county, overall there is a decrease in miles offered when compared to the 2009 EA. Given that the 14 miles provided by Route I is now incorporated into all action alternatives under this revised EA, an overall decrease in the amount of OHV access is proposed when compared to the 2009 EA (see Table 7).

<u>Indicator 2 – Miles of OML 1 and 2 roads currently designated open for motorized use that can be accessed via the proposed connector routes.</u>

Table 8. Miles of Open OML 1 and 2 Roads Accessed[1]

	2009 EA			2010 Revised EA		
	Alt 2 Route B	Alt 3 Route B	Alt 3 Route I	Alt 2 Route B-Mod	Alt 3 Route B-Mod	**Alt 4 Route B-Mod**
Roads	**Miles**	**Miles**	**Miles**	**Miles**	**Miles**	**Miles**
OML 1	12	29	13	25.1	25.1	25.1
OML 2	0	13	6	7.6	7.6	7.6
Total Miles	12	42	19	32.7	32.7	32.7

[1]Changes in the mileages shown for the 2010 revised EA column reflect updated GIS information, such as MVUM edits occurring for publication of the 2010 MVUM publication as well as changed route descriptions as outlined in Chapter 2.

Alternatives 2, 3 and 4 - As the mileage of OML 1 and 2 roads accessed by those portions of routes under Forest Service jurisdiction have not changed, there is no difference in the direct and indirect effects for indicator 2 than the analysis disclosed in the 2009 EA.

Although outside of the Ottawa's jurisdiction to manage, the loss of Houghton County Road 163 does affect the ease of access to the OML 1 and 2 roads connected to this county road. The recreational rider is no longer able to access these OML 1 and 2 roads without trailering an OHV to any given access point. The reduced mileage shown in Table 8 for this revised EA's action alternatives reflects this new information.

Marenisco-Wakefield Grade (Route C Modified) and Land O' Lakes Grade (Route G Modified) - - The 2009 EA analysis was performed based upon a proposal to exclude highway vehicle traffic from portions of these local connector routes. The revised proposal for Routes C and G is to allow the continued use by all vehicle classes. The reasons for this new proposal are due to the following:

- These routes are linked to the State Multi-Use Trail which allows travel by all vehicles.
- The public is currently traveling these routes in all vehicle types.
- These routes are similar to the State Multi-Use Trail regarding trail width and grade surface.
- Enforcement of use by UTV, ATV, and motorcycle only would be challenging due to the vehicle sizes differences between a small highway legal vehicle and a large UTV.

Indicator 1 - Miles of proposed OHV connector routes

Alternatives 2, 3 and 4: These alternatives contain the proposed routes C and G. The 2009 EA identified Route C Modified as being 11.8 miles in length and Route G Modified as 9 miles in length (pp. B – 3 and 4). The updated GIS information reveals that Route C Modified is 10.8 miles in length; the mileage for Route C Modified remains unchanged (see Table 9). There is no change in the direct and indirect effects for the miles of access available provided by these routes. Designating these routes as open to all motorized access is no different than the existing condition.

Indicator 2 – Miles of OML 1 and 2 roads currently designated open for motorized use that can be accessed via the proposed connector routes.

Table 9. Miles of open OML 1 and 2 Roads accessed from Routes C and G under all action alternatives.

	2009 EA		2010 Revised EA	
Roads	**Route C**	**Route G**	**Route C-Mod**	**Route G-Mod**
OML 1 miles	18.3	0	18	0
OML 2 miles	11	0	11	.7

Alternatives 2, 3 and 4 - These alternatives contain the proposed, modified routes C and G. The 2009 EA identified about 28.3 miles of OML 1 and 2 roads connected directly to Route C, and no OML 1 and 2 roads directly connected to Route G (pp. 4 and 5). The updated GIS information indicates there are about 29 miles of OML 1 and 2 roads directly connected to Route C Modified, and about .4 miles of OML 1 and 2 roads directly connected to Route G Modified.

There is no difference in the direct and indirect effects from the existing condition that currently allows the use of the grades by all vehicles even though the road miles of OML 1 and 2 roads are less according to updated GIS information. There is no difference in the effects as identified in the 2009 EA. The only change on the ground would be posted speed limit signs along the grades. The MVUM designation would change from “other public trail” to “open to all vehicles”.

Sidnaw-Rousseau Local Connector (Route H Modified) – A modified Route H was analyzed under the 2009 EA, for Alternative 3, as a means to provide additional miles of OHV access to address concerns raised. There are no changes to Route H under Alternatives 2 or 4, and therefore no anticipated change to the effects analysis disclosed for this route under the 2009 EA (pp. 17 - 20).

At the time of alternative development in the 2009 EA, Forest Highway 16 (FH 16) in Houghton County was open for OHV travel. Since this time, Houghton County has changed their ordinances, which included prohibiting OHV traffic on primary county roads (such as FH 16; Houghton County ORV Ordinance 08-01, 2008). Table10 displays the difference in miles and type of roads comprising Route H Modified between the 2009 EA and this revised EA.

In order to retain a proposal for Route H Modified under Alternative 3, additional field review was necessary to determine if a route could be established without the use of FH 16 (see Project File). As seen on Map 10 of Appendix E, four additional roads have been added to Route H Modified to offer a solution to the access concern for this route. Aside from the four new portions of this route, the remainder of the route has not changed and therefore no additional effects are anticipated from that disclosed in the 2009 EA (pp. 17 - 20). Although the four additional roads slightly increase the amount of access available on Route H Modified, it is important to reiterate that the four roads are already designated for use by OHVs on the 2010 MVUM. This project would not change the pre-existing designations.

Table 10: Comparison of Route H Modified for Alternative 3 under the 2009 EA and 2010 revised EA (* roads currently open to OHV travel).

	Alternative 3 2009 EA	**Alternative 3 2010 Revised EA**
Road	**Miles**	**Miles**
Houghton County Road 152	2.5	2.5
Forest Road 1300 (OML 4)	6.2	6.2
Forest Highway 16	0.75	**0**
Forest Road 1460 (OML 3)	3.8	3.8
Forest Road 1100 (OML 3)	7.4	7.4
*Forest Road 1320 (OML 2)	0	0.9
*Forest Road 1440 (OML 2)	0	2.0
*Forest Road 1439 (OML 1)	0	1.4
*Forest Road 1462 (OML 2)	0	1.0
Total Miles	**20.7**	**25.2**

Cumulative Effects

The bounds of analysis, and past, present and reasonably foreseeable actions have not changed; they are not reiterated here (see 2009 EA, pp. 20 - 21). The following discussion incorporates new information based on changes occurring since the release of the 2009 EA as well as the cumulative effects the new proposed actions.

Present Actions - Through changes in county ordinances for OHV use, both Forest Highway 16 (north of State Highway M-28) and Houghton County Road 163 (South Sidnaw Road) were removed from available OHV use in 2009. As Routes B and H-Modified under the 2009 EA relied on the incorporation of these roads for connector route completion, designation of Routes B and H-Modified as analyzed could not occur.

Future Actions - The Agonikak National Recreation Bike Trail is planned to be rerouted on about 0.25 miles of Route G on non-Forest Service lands. By relocating the Agonikak Bike trail to this segment, it would result in dual use encounters between motorized and non-motorized users. The OHV Connector Route project would not affect the Agonikak Bike Trial project because motorized use is currently occurring on this segment (grade) of trail.

Summary - This project proposes about 62 miles of connector routes for Alternative 2; about 67 miles of connector routes for Alternative 3; and approximately 60 miles of connector routes under Alternative 4 (see Table 3). All proposed routes, with the exception of about 4.4 miles, are on existing motorized trails or roads.

As outlined in Table 2, this project identifies for Alternative 2 identifies about 258 miles of OML 1 and 2 roads accessible from the connector routes. Alternative 3 identifies about 284 miles of

OML 1 and 2 roads accessible. As Alternative 4 excludes Route E, this alternative would designate less miles of improved access; about 251 miles of OML 1 and 2 roads accessible from the connector routes. The increase in OML 1 and 2 roads is due to updated GIS information. The updated information does not change the direct and indirect effects as indentified in the 2009 because routes are currently open to ATV traffic.

Given the past, present and future actions disclosed in both the 2009 EA and this revised EA, the additive effect of designated routes under any action alternative would improve recreational access, although Alternative 3 would be slightly more beneficial. Although there would not be a considerable increase in the total number of anticipated OHV users given monitoring information available, or the miles available for OHV use between alternatives, there would be a change in the location of OHV riding opportunities. This reallocation of use, or change in the amount of use in any given area of existing OHV routes available, would continue to occur as other projects with proposed MVUM changes are implemented.

Implementation of any action alternative would progress the Ottawa towards providing connector routes, which would allow OHV travel between the State's Multi-Use Trails as well as provide access between local communities. Providing these important connections is consistent with the purpose and need for this project, the Forest Plan's direction and its FEIS analyses.

Air Quality

3.1 Introduction

The air contains hundreds of different chemicals and some of these chemicals are recognized as having a higher potential for adverse effects and are therefore regulated by the United States Environmental Protection Agency (EPA) and the States. The regulated chemicals, or pollutants, can be broken into two classes: *criteria* and *air toxics*. State and federal governments are responsible for monitoring some of these pollutants.

OHVs emit air pollution in two ways: through tailpipe emissions and from the abrasive action of the wheels on the road causing fugitive emissions (e.g., dust). Off-highway vehicles emit a number of *criteria* pollutants directly, such as: nitrogen oxides, carbon monoxide, and hydrocarbons and various *air toxics*. For tailpipe emissions, two criteria pollutants, fine particulate matter ozone and carbon monoxide, are of most interest as these would be theoretically most affected by OHV emissions.

3.2 Affected Environment

The condition of the air with respect to the criteria pollutants can be determined by referring to air monitoring data. The State of Michigan does not consider the counties that contain the Ottawa to be in nonattainment of the NAAQS for any of the *criteria* pollutants (e.g., air quality is good). The State of Michigan does not have any *air toxics* monitoring data in the Upper Peninsula (MDNRE 2010). However, data can be inferred from other sources. For example, Minnesota is generally upwind, has extensive OHV use, and recently conducted a five year statewide air toxics monitoring study (Minnesota Pollution Control Agency [MPCA], 2005). At the time the MPCA found 4 of the 73 chemicals analyzed to be above health benchmarks, although more recent monitoring data has shown that levels of 3 of those four have since fallen

below their health benchmarks (MPCA, 2009). Air quality in the Ottawa's airshed (the airspace above the Forest) is rated as very good (see Project File) – all measured pollutants are below EPA standards.

3.3 Direct, Indirect and Cumulative Effects

The bounds analysis for the direct and indirect effects for the potential risk to air quality from OHV travel on the proposed routes is the airshed of the Ottawa. This analysis area was selected because it is the area where the Forest Service has the management responsibilities. Air quality in rural areas such as the Ottawa does not vary considerably over short distances so larger analysis areas are appropriate. The temporal scale is also important to understand. Air quality effects are seen only during the time emissions are generated. Therefore the time scale of concern for mobile sources such as OHVs tends to be short, such as a 24 hour period. Any effects to the concentration of air pollutants would be immediate during the emissions and then would rapidly dissipate as the pollutants dispersed.

This analysis incorporates the estimation of effects for all proposed routes based upon professional judgment and literature review. This section addresses new information brought forward since the release of the 2009 EA. More information regarding air quality on the Ottawa can be found in the FEIS (pp. 3-26 to 3-30).

Effects from air pollutants will be estimated by considering current air quality, differences in the location and amount of OHV use between alternatives, and potential resulting effects to air quality (both from tailpipe and fugitive emissions) on the Forest.

Alternative 1

None of the proposed routes would be authorized for implementation. In consideration of the air quality monitoring data, the effects from existing motorized activity and associated fugitive dust, as well as and other activities that emit air pollution, the current air quality situation on the Forest is expected to remain rated as very good.

Alternatives 2, 3 and 4

Air quality would continue to be very good under all action alternatives. OHV emissions are proportional to OHV use or vehicle miles ridden. Although we don't anticipate there would not be an appreciable difference in the total number of OHV users or miles traveled on the Ottawa between alternatives, there would be a change in the location of OHV riding opportunities. The changes contemplated in the action alternatives are adjustments to the existing system. These adjustments include adding use to loop roads that already support motor vehicle use. Forestwide air quality should not change from air pollutants due to a shift of OHV use to new locations since the contribution of OHV emissions to Forestwide air quality is minimal.

Under any of the action alternatives, the effects of OHV travel to air quality at the Forestwide scale would be very minor. There would be very minor effects at particular locations immediately adjacent to newly designated OHV connector routes. However, OHV tailpipe emissions resulting from travel on proposed routes is not expected to change the very good air

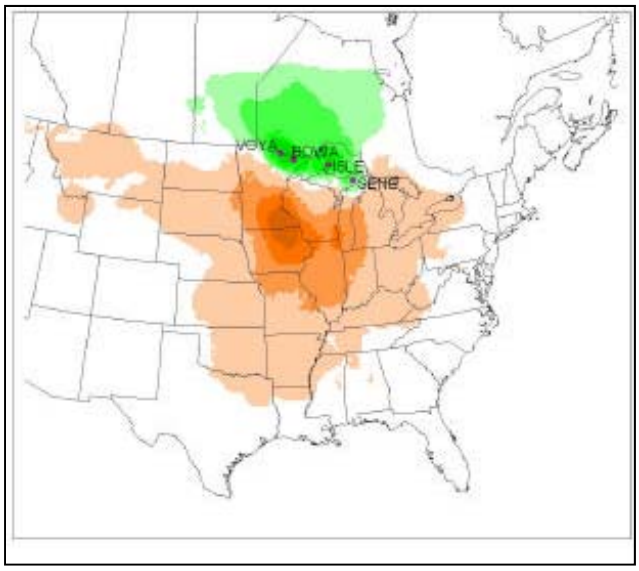
quality currently experienced. There would be a very minor change in the location of site-specific fugitive dust effects due to a shift of locations of OHV use. Existing fugitive dust effects are already occurring due to current OHV and highway legal vehicle use. Fugitive dust rapidly settles out near unpaved roads and therefore does not affect regional air quality. Typically 90% of fugitive dust falls within 50 meters of the road (p. 125, Air and Waste Management Association [AWMA], 2000) making any effects very localized to the road. The impacts from fugitive dust emitted by OHVs are anticipated to be very similar to the existing condition, because vehicles currently travel these roads. Dust impacts causing adverse effects to vegetation have not been documented by the Ottawa near these roads. The difference in effects to air between all alternatives would be very small.

Cumulative Effects

The bounds analysis for the cumulative effects for the potential risk to air quality from OHV travel on the proposed routes is the same as above - the airshed of the Ottawa National Forest.

Past and Present Influences - When cumulative effects are considered, there are many other sources than OHV and motor vehicles on the Ottawa that contribute air pollutants to the airshed, including wildfires, residential and commercial sources within local towns, resource management equipment, and long range transport of industrial air pollution from other states. However, it is important to note that any effects to air quality are generally immediate and have a short duration. There are four areas located near the Ottawa that are termed Class I Areas, due to their special protection under the Clean Air Act. These areas are Voyagers National Park and the Boundary Waters Canoe Area in Minnesota; and Isle Royale National Park and Seney Wildlife Refuge Wilderness in Michigan (see Figure 1). The states are required by EPA to develop plans to improve visibility in these areas. The figure shows the areas in orange where air is most likely to come from on high fine particulate days, indicating the source regions.

Figure 1. Map showing where air originates (orange areas) on high fine particulate days in the Northern Great Lakes area.



To support these plans the states have developed technical information to understand the sources of fine particulates, since these particulates are responsible for causing visibility impairment. The states determine which sources impact visibility and which should be controlled. All emission sources are included in the analyses (natural and anthropogenic) and any human-caused source is potentially subject to controls. The conclusions of this effort are instructive for the Ottawa, as the Forest is located between these areas (LADCO 2008).

Air pollutant problems in the rural Great Lakes area are regional in nature and are caused by a variety of sources across the state and region, including coal fired power plants, industrial boilers and motor vehicles. The pollutants and source sectors that contribute the most to fine particulate include sulfur dioxide emissions from electrical generating units (EGUs) and certain non-EGUs, which lead to sulfate formation and nitrogen oxide emissions from a variety of source types (e.g., motor vehicles). The source regions that contribute the most to visibility impairment are the States of Michigan, Minnesota, and Wisconsin. Other nearby states, including Illinois, Indiana, Iowa, Missouri, and North Dakota, also contribute to visibility impairment. Based on Figure 1, it can be concluded that there are many sources across many states are responsible for fine particulate pollution in the rural northern Great Lakes area.

Future Influences - In addition to setting standards for ambient air, EPA also sets emission standards for industries. This includes information that was released in 2002 announcing a goal for future emissions standards for recreational vehicles (such as OHVs) to be reduced, which includes a 71 percent decrease in hydrocarbon emissions, an 80 percent reduction in nitrogen oxide emissions, and a 57 percent reduction in carbon monoxide emissions in the year 2020 (EPA 2002).

The increase in OHV use under all alternatives would not be expected to cause a change in effects to air quality because the existing level of effect is so small. When considering the effects of past, present and reasonably foreseeable future use, and the minor changes at the Forestwide level from implementation of the proposed routes, the effects are anticipated to be so small as to not be identified by any regulatory agency as a source that adversely affects air quality in the area.

Soil and Water Resources

3.1 Introduction

This section contains additional information and effects analysis to address: (1) the risk of impacts to water features from fugitive dust emissions from OHV use; and (2) the impacts upon soil and water resources from the newly proposed roads and trails that comprise Route H Modified; (3) a summary of effects for other proposed routes, where no new roads/trails are proposed, but new information/changed conditions has resulted in minor changes to the direct, indirect or cumulative effects analyses disclosed in the 2009 EA; (4) effects analysis for Alternative 4; and (5) the cumulative effects of the potential risk for unauthorized use associated with this project. Some of the numbers in the tables vary from the 2009 EA due to the modifications made to the proposed routes or improved/updated GIS data.

Fugitive dust was a component of the original analysis in this section of the EA but was not explicitly described. Instead, general statements were made concerning erosion and sedimentation. This analysis discloses fugitive dust in more detail. In addition, effects are slightly less than originally analyzed due to changes described in Chapter 2.

3.2 Affected Environment

Fugitive dust emissions

Dust develops during dry summer months when vehicles travel on routes currently open. About 90% of the dust settles within 50 meters (164 feet) of the roadway (AWMA 2000, p. 125) and streams, wetlands, and ponds/lakes within this distance are impacted. Dust in water increases turbidity and sedimentation, adversely impacting aquatic species and habitats. All existing routes currently have dust generated during dry, snow-free periods and aquatic features impacted by dust are displayed in the following table.

Table 11. Aquatic features receiving dust

Aquatic Feature	Within 50 Meter Buffer of Open Routes
Stream Miles	**15**
Wetland Acres	**774**
Pond/Lake Acres	**13**

Proposed Routes

Soil Resources - The affected environment for soil resources does not change from that disclosed in the 2009 EA (pp. 25-30), except for the Route H Modified proposal under Alternative 3 and Route E under Alternative 4.

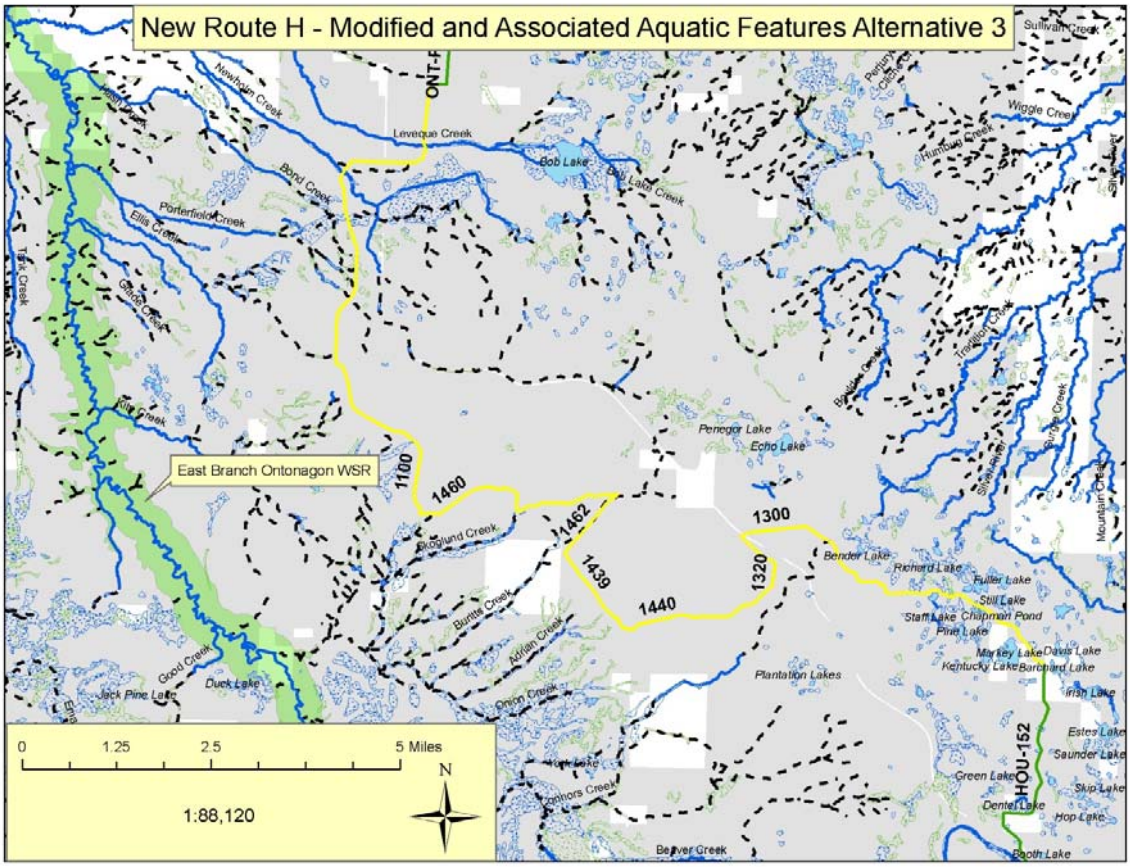
The existing condition for Route H Modified now excludes OML 3 and 4 roads, as well as FH 16, and would be replaced with OML 2 roads (Forest Roads 1320 and 1440) and OML 1 roads (Forest Road 1439 and 1462) as shown in Figure 2. These roads were recently utilized for timber management and improvement work was completed within the past four years. Therefore, these roads are in good condition. These roads have been deemed suitable to sustain OHV traffic and are currently open to OHVs. The OML 2 roads are designated as open to all, which allows dual use of the roads by OHVs and highway legal vehicles.

Water Resources - The affected environment for water resources does not change from that disclosed in the 2009 EA, except for the Route H Modified proposal under Alternative 3 and Route E under Alternative 4. Due to a change in the route location for Route H Modified, this proposed route now includes an additional road stream crossing on the intermittent portion of Buritts Creek; increasing the road stream crossings from one to two on Forest Road 1462 (see Figure 2). The road also closely parallels the intermittent stream for about 0.7 miles. This route is currently open to OHV traffic only. Therefore, since the road surface is periodically disturbed with use, a small amount of sediment enters the stream at the crossings and a small amount of dust settles within the stream where the road is within 50 meters of Buritts Creek.

Route E - No change to the existing condition has occurred for this route (see the 2009 EA, pp. 28). The road does cross two streams, including the perennially flowing Cranberry River and an un-named intermittently flowing tributary to the Cranberry River. The route also crosses or is adjacent to six wetlands.

As discussed in the Recreation section, OHV traffic is currently allowed on the Powerline Road, where improvements have recently been made to the Cranberry River road/stream crossing. Enhancements included providing for higher flow capacity, aquatic organism passage, and reduction of erosion and sedimentation. Due to the road's condition (maintained at a low standard), and the sensitive soil resource, this road is currently not suitable for sustaining OHV traffic over the long-term.

Figure 2. Aquatic features associated with Route H Modified (Sidnaw - Rousseau Local Route)[1]



[1]The wetlands with very poorly drained soils are identified as blue speckled polygons and poorly drained soils are green speckled polygons. Perennially flowing streams are solid blue lines and the intermittently flowing streams are dark colored dotted lines. Gray background is National Forest System ownership and white background denotes other ownership.

3.3. Direct, Indirect and Cumulative Effects

The bounds of analysis for the direct and indirect effect of fugitive dust is 164 feet from the roadway. Bounds of analysis for other effects are the same as described in the original EA. The measurement indicators to quantify and compare the effects are displayed in Table 10.

Fugitive dust emissions

The effects are the same as disclosed in the 2009 EA (pp. 25-37), with the exception of the following additional discussion. Fugitive dust emissions are anticipated to occur on OML 1 and 2 roads due to native substrate of the roadbed. Emissions are also expected to occur on OML 3 and 4 roads since there are anticipated to be some OHV use of road shoulders in addition to the existing running surfaces (Project File, Tab D). Use of all roads and associated shoulders are anticipated to cause some road surface erosion and subsequent dust. However, road shoulders in many cases are on fill material or gravel, and so they should in general be able to sustain OHV traffic, in addition to current uses, without detrimental impacts.
Increased route use anticipated with implementation of the action alternatives would increase dust levels, which would in turn increase stream and wetland turbidity, as well as sedimentation. The amount of increased turbidity and sedimentation is unknown since the amount of increased use is unknown. However, we do not anticipate State water quality parameters to be exceeded.

Proposed Routes

The effects are the similar to those disclosed in the 2009 EA, with the following additional information pertaining to the changes for Routes A, B, C, E, G and H (the latter under Alternative 3 only). See Tables 10 and 11 for a comparison of effects between alternative.

Alternative 1 – The effects are the same as written in the main specialist report with the additional information described in the affected environment section, with exception of Route E under Alternative 4. If Route E is not designated, the current OHV designated route on the Powerline Road would not change. Until a reroute can be located, the continued OHV use of this route poses a risk to soil and water resources as the road standard was designed to be used during the winter season only. Potential risk of resource damage to the sensitive soils in the area, as well as the approaches to and crossing of the Cranberry River would continue under the No Action Alternative.

Alternatives 2, 3 and 4 - There is one less stream crossing with Alternative 3 than Alternatives 2 and 4, for Route H Modified, so slightly less risk to streams and wetlands and their associated vegetative communities from road surface erosion and dust. Although Alternative 3 has more road miles (Appendix A), Alternatives 2 and 4 has slightly more risk to aquatic resources due to the number of stream crossings on Route H when compared to Route H Modified.

As displayed in Table 12, however, there is an overall reduced risk to soil and water resources under Alternative 4. This is due to less impact to streams, wetlands and their associated vegetative communities in the vicinity of Route E, since this route would not be designated for OHV access. Although highway legal vehicle access would continue on Route E, there would be no additive road surface erosion and dust associated with OHV traffic, and therefore the overall risk would be slightly less than the other action alternatives.

As stated in Chapter 2, some of the proposed routes have changed since the release of the 2009 EA. For the soil and water resources within the bounds of analysis, there is no change in the effects as a result of the minor changes to proposed routes A or B. As Routes C and G are now

proposed as open to all vehicles under all action alternatives, and the original EA adequately described the existing condition (e.g., presently open to all vehicles), no further changes are warranted. Table 12 and associated discussion above reflects the change to Route H Modified under Alternative 3 and the effects of excluding Route E under Alternative 4.

Table 12. Comparison of alternatives for soil and water condition

Soil and Water Conditions	**Alt 1**	**Alt 2**	**Alt 3**	**Alt 4**
Number of Stream Crossings	0	45	44	43
Miles of Wetland Crossings	0	11	11	11
Increased route surface disturbance, sedimentation risk and dust – Yes or No	No	Yes	Yes	Yes
Route erosion sources improved – Yes or No	No	Yes	Yes	Yes

Cumulative Effects

The bounds of analysis for fugitive dust cumulative effects is 164 feet along the intersected OML 1 and 2 roads. These bounds have been deemed appropriate as effects of fugitive dust to aquatic resources are not anticipated to extend beyond the described buffer area adjacent to these roads.

The effects are the same as disclosed in the 2009 EA, with the following additional discussion. As with direct and indirect effects we anticipate increased route use of the intersected OML 1 and 2 roads and therefore dust levels would increase. This would result in increased stream and wetland turbidity and sedimentation that are anticipated to remain within State water quality parameters.

Unauthorized Road Use

The analysis disclosing the potential cumulative effects from unauthorized road use upon soil and water resources was included in the 2009 EA (p. 35) and its project file (Tab D). For this revised EA, the miles for OML 1 and 2 roads that intersect the designated connector routes was re-analyzed in order to capture improved and updated information for the current condition. Changes included analyzing OML 1 roads open and closed to OHVs, OML 2 roads open to OHVs, and unauthorized roads closed to OHVs that intersect the connector routes. These direct and indirect effects were analyzed in the Recreation section of this revised EA.

Although the mileages at risk for potential unauthorized travel have changed based on the incorporation of new routes and/or updated calculations, the effects are essentially the same as disclosed in the 2009 EA (p. 35) and its associated project file (Tab D). Unauthorized use of closed OML 1 and 2 roads generates more adverse impacts to soil and water resources since most of these routes were originally designed for timber management operation use during the winter. Spring, summer and fall use would likely result in rutting, compaction, erosion and sedimentation where the roads go through wetland and across streams. Some closed roads do not have stream crossing structures in place; OHV use across water features violates state law.

The potential use of the unauthorized roads would be similar to effects from unauthorized use of closed OML 1 roads. For unauthorized roads that are user-created and were never constructed to the OML 1 road standard, effects would be similar to unauthorized cross-country travel. Use of unauthorized roads in proximity to streams and wetlands often generates more sediment, erosion, rutting and compaction than use of system roads since the routes are not developed to a standard to sustain motorized use and deteriorate quickly with repeated use.

Based on the results displayed in Table 13, Alternative 3 continues to have more cumulative risk to aquatic resources, although Alternative 2 has more risk with use of unauthorized roads. Implementation of the adaptive management strategy would allow the Ottawa to address unauthorized motorized uses on those direct and indirect connecting routes (see Chapter 2, p. 17 and Appendix B for more information). Effectively barring access would assist to address the risk to soil and water resources described in this section.

Table 13. Cumulative effects alternative comparison.

Measurement Indicator	Alt 1	Alt 2	Alt 3	Alt 4
Number of Connector Route Stream Crossings	0	85	82	80
Miles of Connector Route Wetland Crossings	0	17	17	17
Increased route surface disturbance, sedimentation risk and dust – Yes or No	No	Yes	Yes	Yes
Route erosion sources improved – Yes or No	No	Yes	Yes	Yes
Miles of OML 1 that intersect and are accessible via the designated connectors and currently open to OHVs	0	186	202	181
Miles of OML 1 that are accessible via the designated connectors, but currently closed to OHVs and pose a potential risk of unauthorized access	0	40	44	40
Miles of OML 2 that intersect and are accessible via the designated connectors and are currently open to OHVs	0	72	82	70
Miles of Unauthorized roads that may be accessible via the designated connectors, but are not managed for public motorized use and therefore can pose a potential risk of unauthorized access[1]	0	142	130	141

[1]It is important to note that the existing condition of the entrance to any given unauthorized road may or may not currently be accessible due to previous activities performed to close these roads.

Wildlife and Botany Resources

3.1 Introduction

This section contains additional information and effects analysis to address: (1) the risk of impacts to wildlife from noise emissions from OHV use; and (2) the risk of impacts to wildlife and plants from dust emissions from OHV use; and the impacts upon wildlife and plant species

from newly proposed roads and trails that comprise Route H Modified and other route location changes.

3.2 Affected Environment – Noise Emissions

Studies of the effects of noise on wildlife from OHVs are lacking due to the difficulty of the effort and the complexity of the variables affecting animal survivorship. Wildlife impacts have been most studied in relation to Western habitats and in regards to snowmobile use and aircraft noise (Noise Pollution Clearinghouse, 2010; Stokowski and LaPointe, 2000). Wildlife are negatively impacted by the presence and noise of OHVs, however, OHV-related Eastern studies have not been completed (Stokowski and LaPointe, 2000). Impacts of noise generated by motors upon vertebrate wildlife usually take the form of disturbance; causing individual animals vacate the immediate vicinity for the duration of the motorized activities. Typically, vertebrate animals return to the area after motorized activities have ceased. Furthermore, more intelligent animals, such as mammals and birds, can grow accustomed to motorized disturbances such as OHVs and become more tolerant of them over time.

The effects of noise emissions were taken into consideration in the effects analysis provided for the 2009 EA (p. 40) and biological evaluation (Project File, Tab D). As there are no changes to the predicted effects to wildlife species as a result of this revised EA, no changes to the biological evaluation are deemed necessary. Potential noise sources that may affect wildlife vary in intensity and therefore effects can be varied. Sources include aircraft over-flights; recreational activities such as snowmobiling, motor boating, OHV use, and firewood gathering; as well as industrial activities such as logging and mining operations. Two-cycle engines found in many snowmobiles, motorboats, and chainsaws are louder and can be more disturbing at close range than 4-cycle engines. Vehicles with diesel engines are louder than comparable vehicles with gas engines. Most heavy equipment and logging trucks operate with diesel fuel with corresponding increased power and noise generated from operation of these varied pieces of equipment.

3.3 Direct, Indirect and Cumulative Effects – Noise Emissions

The bounds of analysis for noise emissions effects upon wildlife is the connector routes as this is where effects of additional noise disturbance to wildlife is anticipated. The temporal bounds for the cumulative effects analysis is from 2006, when the Forest Plan was approved and unauthorized cross-country OHV use was prohibited, through about 2020, which is the projected planning period for the current Forest Plan. Spatial bounds for this analysis are the physical footprints of the proposed routes, extending out 100 yards perpendicular to the routes, because sound carries through the woods, based on professional observations, beyond approximately 100 yards most animals would not feel threatened by it.

Alternative 1

As all connector routes are available to highway legal vehicles, with exception of trail segments, the No Action alternative would have less effect on wildlife species when compared to the action alternatives.

Alternatives 2, 3 and 4

As stated, many sources of noise already exist at various times from currently designated motorized access. Noise emissions on the proposed routes already include two-cycle, four-cycle and diesel engines. Off-highway vehicles with four-cycle engines are no noisier or more disturbing to wildlife than highway legal vehicles.

Some wildlife can become habituated to OHV travel, such as white-tailed deer (2008 M&E Report, p. 35). Exceptions exist for sensitive wildlife species that are known to be disturbed by human activities and noise, including bald eagle, northern goshawk, red-shouldered hawk, common loon, trumpeter swan, and gray wolf (active den and rendezvous sites). These species are known to be sensitive to human intrusion and are protected by road closures, activity distance restrictions, and timing restrictions at known and discovered sites. Protection measures for TES wildlife (Forest Plan, pp. 2-27 through 2-30) would apply to roads and trails opened to travel under this proposal. No additional design criteria are deemed necessary as part of this proposal. Since lower standard roads (OML 1 and 2) are more likely to transect and impact wildlife habitat (2008 M&E Report, p. 35), the portions of connector routes comprised of lower standard roads and trails are anticipated to have more impact to wildlife species than OHV travel on OML 3 and 4 roads. In consideration of existing OHV designated access, and given that the action alternatives would only add about 6.4 miles of lower standard roads to the MVUM for OHV access (e.g., estimated as 10% of the total connector route miles for Alternatives 2, 3 and 4) potential effects upon wildlife from noise emissions are anticipated to be low. In addition, effects to wildlife species disturbed or displaced by OHV travel are anticipated to be temporary.

The Forest recognizes that unauthorized use of closed routes does occur. Such use is usually infrequent, and unpredictable in timing and extent. The adaptive management strategy would allow the Ottawa to manage the proposed routes (see Chapter 2, p. 17 and Appendix B for more information). Temporary or permanent route closures could be implemented if OHV travel is deemed as a cause of resource concern (i.e., nesting habitat for sensitive species).

Potential exists for violators to cause disturbance to sensitive wildlife species. The magnitude of such disturbances is inherently difficult to estimate, but we expect they would likely be minor, however, because the areas in the vicinity of the proposed connector routes are relatively roaded, some existing motorized use is currently designated, and this project includes implementation of the adaptive management strategy.

Effects of Noise upon Threatened and Endangered Species

Wolves are common across the Ottawa at this time (M&E Report, 2008), and colonized the Forest during an era of cross-country OHV use (prior to the Forest Plan's prohibition on cross-country OHV travel). Because existing roads and trails would be used under the proposal, many of which are currently open to motorized uses, the minor increase in OHV use would not have discernable effects upon wolves. Nonetheless, all the alternatives are expected to result in disturbance to individual wolves, and therefore, the determination is "may affect, not likely to adversely affect" individual wolves (see BE for more details).

Kirtland's warbler is present and breeding on the Ottawa, in the Baraga Plains area (M&E Report, 2009, 2008). None of the proposed routes are in the Baraga Plains area, nor are there potentially-suitable stands of jack pine along any of the proposed routes. Therefore, no effects to this species are expected from the proposed actions.

Canada lynx have not been documented in the western UP for many years, despite on-going tracking efforts by the Forest Service and Michigan DNRE (M&E Report, 2008). Potentially-suitable habitat for lynx occurs along some of the proposed routes. However, we do not believe the Ottawa harbors lynx, therefore, no effects are expected from noise generated by vehicles on the proposed routes.

Cumulative Effects

Since revision of the Forest Plan in 2006, the Forest has been attempting to curtail off-road motorized vehicle use by the public. Gradually, the extent of area used by OHVs and highway legal vehicles has been shrinking, with use getting more concentrated on designated routes. Overall, therefore, there has probably been an increase in size and number of areas that do not get as much motorized traffic as formerly. Though use on designated routes has been increasing, there is no data or studies that support limiting the number of highway legal vehicles or OHVs on designated routes due to disturbance of wildlife populations.

As stated above, most birds and mammals can adjust to the higher levels of motorized traffic along the designated routes. In consideration of past, present and reasonably foreseeable future actions, it is anticipated that the effects of motorized use on wildlife due to implementation of proposed routes could lead to temporary displacement, however, no resulting significant cumulative effects are anticipated.

3.4 Affected Environment – Fugitive Dust Emissions

There appear to be few studies of the effects of the chemical and physical effects of road dust on nature (Spellerberg 1998). The scant literature available focuses on plants where the effects are more easily monitored on a non-mobile life form. Studies of dust effects on wildlife are even more complex than those assessing the effect of noise due to the difficulty of the effort and the complexity of the variables affecting animal survivorship.

3.5 Direct, Indirect and Cumulative Effects – Fugitive Dust Emissions

The bounds of analysis for dust emissions effects upon wildlife are the connector routes as this is where effects of new sources of dust are anticipated. The temporal bounds for the cumulative effects analysis is from 2006, when the Forest Plan was approved and unauthorized cross-country OHV use was prohibited, through about 2020, which is the projected planning period for the current Forest Plan. Spatial bounds of analysis include the physical footprint of the proposed routes, extending perpendicular to the routes 164 feet as this is where 90% of the dust would be expected to travel through the air in our densely-vegetated environment (AWMA 2000, p. 125).

Direct effects of dust on wildlife are expected to be rare. Indirectly, perhaps certain wildlife species would be displaced temporarily if dust became very dense and persistent. Some work has been done on the effect of road dust on forest invertebrates. A study on the Daniel Boone

National Forest found that in areas with acid soils, a greater mass of calcium requiring snails and millipedes were found closer to roads with limestone gravel (Kalisz and Powell 2003). This was because the surrounding area was calcium-deficient, thus causing roadsides with calcium-rich dust to be attractive. The Ottawa does not use limestone gravel, so similar effects would not be expected here.

Dust generated by motor vehicles occasionally settles directly in aquatic habitats and also enter as runoff affecting water quality for aquatic organisms. For the Ottawa's Management Indicator Species (MIS), the mayfly-caddisfly-stonefly suite of aquatic insect orders, no additional effects from fugitive dust are expected. OHVs would generate dust (primarily on OML 3 and 4 roads open to highway legal vehicles) that would enter aquatic ecosystems directly and indirectly as runoff. As outlined in Table 10, implementation of Alternative 4 has slightly less risk to water resources, and therefore would pose less impact to aquatic ecosystems. However, under any action alternative, the amount of sediment and dust directly or indirectly caused by opening these roads to OHVs would be within State standards. These roads receive the most maintenance, which would reduce the risk of an unacceptably large increase in sediment entering area streams. Since dust is composed of fine particles, much of it would be trapped by the water's surface tension. This would prevent it from reaching these benthic macroinvertebrates. Stream flow would entrain and carry the remaining dust particles and spread them out over a much larger area than it would for heavier particles, substantially reducing the risk of burial of MIS individuals. As described in the 2009 EA, a small amount of road (less than one mile) would be constructed, some of which would be constructed through wetland. This would result in a small amount of additional sediment being generated that would persist until the disturbed areas re-vegetated. The effect these actions would have on MIS populations would be small and undetectable.

Cumulative Effects

Because direct and indirect effects of dust upon vertebrae and invertebrate wildlife are expected to be minor, and probably immeasurable; no cumulative effects are expected to result.

3.6 Affected Environment - Proposed Routes

The bounds of analysis for the effects upon botanical and wildlife resources are the connector routes themselves as this is where effects are anticipated. The temporal bounds for the cumulative effects analysis is from 2006, when the Forest Plan was approved and cross-country OHV use was prohibited, through about 2020, which is the projected planning period for the current Forest Plan.

The affected environment for the proposed routes has slightly changed regarding Routes A, B, C, E, G and H as outlined in Chapters 1 and 2. As Route H Modified is the only route where a location change is being proposed, this is the only route that required additional field surveys for botanical resources.

The new sections of Route H Modified were surveyed on May 20, 2010. As disclosed in Chapter 2, these roads are currently designated for motorized use on the Forest's MVUM. Forest Roads 1320 and 1440 are both well-traveled two-track roads. Forest Road 1439 and most of 1462 show signs of regular OHV use. Some of FR 1462 is obstructed by fallen trees and

apparently is not receiving regular OHV use. No rare plants, unusual habitat features, or priority invasive plants were found.

New information has emerged concerning the invasive plant garden valerian (*Valeriana officinalis*) around the City of Bergland. Garden valerian is a perennial herb that has become abundant along road edges and non-forested wetlands in and around Bergland. The eastern edge of the infestation includes Forest Road 400 and the Northern Natural Gas Pipeline. Current unauthorized OHV travel along the pipeline east of Forest Road 400, on private land, is moving garden valerian east onto National Forest land, and along proposed Route D.

3.7 Direct, Indirect and Cumulative Effects – Proposed Routes

Wildlife Resources

No changes to the 2009 EA effects analysis for Alternative 1, or for those proposed routes that have not been changed, are anticipated.

Routes A Modified and B Modified, under all action alternatives, would result in fewer miles of OHV access available, which would reduce overall impacts to wildlife resources across the Forest. Therefore, the net effect of the alternatives analyzed in this revised EA is expected to be generally less than impacts predicted due to the 2009 EA (pp. 37-44). No additional impacts to wildlife are expected from allowing highway legal vehicles to use Routes C and G, because highway legal vehicles currently use these railroads grades.

About 4 miles of additional roads and trails are being proposed to complete Route H Modified under Alternative 3. Because all the mileage is already existing roads and trails, which are already open to motorized traffic under our 2010 MVUM, additional effects to vertebrate and invertebrate wildlife would be very minor. Increased traffic volumes would be expected after designation, but nonetheless, detectable impacts would not be expected.

The exclusion of Route E under Alternative 4 is anticipated to result in a positive effect on vertebrate and invertebrate wildlife; however, given that Forest Road 630 would remain open to highway legal vehicles, the benefits would be very minor. Given these slight route modifications and new information, no changes to the effects disclosed in the 2009 EA are anticipated.

Cumulative Effects

Because no discernable direct or indirect effects to vertebrates or invertebrates would be expected, no cumulative effects are expected.

Botanical Resources

Reducing the length of Route A Modified would decrease the risk of introducing invasive plants in that area of the Forest, and specifically decrease the risk of garden valerian spreading west from Bergland. Changing Route B Modified to include Route I would not affect rare or invasive plants; the effects would be the same as disclosed in the original EA.

Adding highway legal vehicles to Routes C Modified and G Modified would increase the risk of vehicles bringing in invasive plant seeds. However, the conclusions of the 2009 EA are unchanged. Opening more trails to OHVs and highway legal vehicles would contribute the spread of non-native invasive plants, as disclosed in the Forest Plan Final Environmental Impact Statement (Page 3-93).

To help reduce the risk of garden valerian spreading east, one new design criteria is proposed (see Appendix B). Implementation of this measure would help prevent Route D from spreading Garden valerian from Bergland north along the Pioneer Trail or east along the Bergland-Sidnaw trail. Treatment of this NNIP would occur regardless of alternative; however, if Route D was selected for implementation, treatment would occur more quickly to prevent future effects on Route D and routes leading from it.

The exclusion of designated OHV use on Route E under Alternative 4 would result in less risk to the spread of NNIPs in this area. However, the current highway legal vehicle traffic on Route E would continue to contribute the spread of non-native invasive plants. No effects to rare plants as a result of this alternative; therefore the conclusions of the 2009 EA are unchanged.

There would be no direct effects to rare plants or non-native invasive plants from the proposed change to Route H Modified under Alternative 3. The proposed additional segments are already open to OHVs. The only change is that they would be become a part of a longer connector route connecting Sidnaw to Rousseau. This would presumably lead to the indirect effects of more OHV travel along these roads. The direct effects presented in the 2009 EA describe the predicted effects to the revised Route H Modified.

Cumulative Effects

The effects of the spread of NNIPs by increased OHV use onto uninfested roads is already well-captured by the Forest Plan's FEIS. As discussed in the 2009 EA (p. 44), and Forest Plan's FEIS (p. 3-93), an indirect effect of all the proposed new connector routes would be the spread non-native invasive plants (NNIPs) along the connector routes. Another indirect effect of the proposed action could be increased travel of OHVs on roads and trails intersecting the new connector routes. This would likely include some OHV use on roads not open to OHVs. Thus, a cumulative effect of the proposed action could be the spread of NNIPs by unauthorized use of OHVs onto roads and trails that intersect the connector routes. Otherwise, cumulative effects of the alternatives are expected to be the same as presented in the 2009 EA (p. 44) and associated project file.

The effects of the spread of NNIPs by increased OHV use onto uninfested roads is already well-captured by the Forest Plan's FEIS. As discussed in the 2009 EA (p. 44), and Forest Plan's FEIS (p. 3-93), an indirect effect of all the proposed new connector routes would be the spread non-native invasive plants (NNIPs) along the connector routes. Adding the proposed eight connector routes would contribute to the spread of non-native invasive plants along the routes and into adjacent roads and natural areas, as disclosed by the Forest Plan's FEIS.

Transportation

3.1 Introduction

This section contains additional information and effects analysis to address: (1) the reduction of roadwork costs associated with changes to Alternative 3 for Route H Modified; and (2) the reduction of roadwork costs associated with Alternative 4. All other information is the same as disclosed in the 2009 EA (pp. 21-25)[2].

3.2 Affected Environment

The affected environment for the proposed routes has slightly changed regarding Routes A, B, C, E, G and H as outlined in Chapters 1 and 2. The new sections of Route H Modified under Alternative 3 are comprised of OML 1 and 2 roads that are currently designated for motorized use on the Forest's MVUM (see Chapter 2 for more information).

3.3 Direct, Indirect and Cumulative Effects

The spatial bounds of analysis for direct, indirect and cumulative effects includes the proposed connector routes as the effects of implementing associated design criteria and roadwork is not expected to result in effects outside the rights-of-way for these routes. The temporal boundary for cumulative effects is a 15-year period (including 10 years in the past and 5 years into the future), which has been deemed appropriate for estimating what projects have affected current routes and those that may be proposed in the vicinity in the future.

Routes A and B - Changes to Routes A and B do not affect this analysis for any action alternative as the portions of the routes dropped are either OML 2 road (not included in the original dual-use analysis and associated cost calculations of alternative implementation) or county roads (outside of Ottawa jurisdiction).

Routes C and G - Under the 2009 EA, highway legal vehicle use on Routes C and G was not analyzed under the action alternatives (see Chapter 2 for more information). Due to the existing condition of these former railroad grades, attempts to bar highway legal vehicle traffic, while allowing traffic by larger OHVs (e.g., UTVs) were determined to be an enforcement challenge. The historical and existing use of these grades does include highway legal vehicles. A review was conducted to determine if the routes could sustain this type of use into the future. It was determined that dual use could be designated on these routes if the proposal included re-assigning portion of the grades as OML 2 roads as well as posting of speed limit signs to ensure a safe riding environment (see Appendix B). The cost of this signing project is anticipated to be very minor and is not expected to increase the cost of implementing any given action alternative.

Route E - As disclosed in the 2009 EA and Appendix B of this revised EA, Route E would require implementation of design criteria and road maintenance activities for this OML 4 road (2.2 miles). The cost associated with this work is estimated at $53,000. As Alternatives 2 and 4

[2] Funding received as part of the 2009 American Recovery and Reinvestment Act was used in road improvement projects across the Ottawa that had been previously identified for roadwork needs apart from this site-specific proposal. This analysis recognizes that the cost of alternative implementation would be less than originally calculated based on the completion of roadwork for those route portions identified as a candidate to receive this funding (see Project File, Tab D).

are equivalent in all respects, except for Route E, it is anticipated that the cost of implementing Alternative 4 would be between $670,000 and $810,000, which excludes the $53,000 required for Route E's roadwork needs. No change to the cost disclosed for Alternative 2 would be necessary, and therefore would remain between $723,000 and $863,000 as disclosed in the 2009 EA (p. 23).

Route H Modified– As stated, the new OML 1 and 2 road segments (Forest Roads 1320, 1440, 1439 and 1462) are already designated on the MVUM to receive motorized use; this proposal would not alter the vehicle class type allowed. No design criteria or roadwork needs have been identified for these four road segments. Therefore, the only change to implementation costs would be due to portions of Forest Roads 1300 (1.3 miles) and 1460 (0.8 miles) being dropped from Route H Modified in lieu of the four new segments of road. Under the 2009 EA, only design criteria (such as hazard tree removal) were proposed for Forest Roads 1300 and 1460. Discounting the need for implementation of design criteria, the cost of implementing Route H Modified under Alternative 3 would decrease by about $31,000 from that disclosed in the 2009 EA (p. 24). Therefore, the overall costs of implementing Alternative 3 would be between $987,000 and $1,157,000. As Route H Modified is only included under Alternative 3, this change would not cause a modification to the cost estimates for Alternatives 2 and 4.

Summary –Implementation of any action alternative would offer a more efficient transportation system with improved access to currently designated roads and provide connections to local communities. Although Alternative 4 is the most economically efficient alternative, it would provide the least amount of proposed OHV connector route access. Alternatives 2 and 3 (in that order) would offer more OHV connector routes and increased costs associated with providing this access.

Cumulative Effects

There are no changes to the cumulative effects analysis disclosed in the 2009 EA. The minor changes to route locations and associated costs of implementation, in light of past, present and reasonably foreseeable actions, does not change the effects predicted in the 2009 EA (pp. 24-25).

Heritage Resources

3.1 Affected Environment

The affected environment for the proposed routes has slightly changed regarding Routes A, B, C, G and H as outlined in Chapters 1 and 2. Route H Modified is the only route where a location change is being proposed under Alternative 3, however, as disclosed, the new route location is already available for motorized access via the 2010 MVUM. As discussed in Chapter 2, Route E has been excluded from Alternative 4.

3.2 Direct, Indirect and Cumulative Effects

There is no change to the direct, indirect or cumulative effects of the 2009 EA (pp. 44-45). The risk of using OHVs in areas not designated for their use could potentially disturb cultural resource sites. Implementation of existing regulations and proposed design criteria (see Appendix B) would further protect heritage resources.

CHAPTER 4. Contributors

The following Forest Service employees participated in the preparation of this environmental analysis

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Appendix A. Description of the Proposed Connector Routes

The following tables display all the route segments proposed for designation to the Ottawa's MVUM; the NFS road and trail routes previously designated for motorized access (e.g., existing access) that are encompassed by each proposed route; and the road routes under other jurisdictions that assist to complete each connector route.

Route A Modified - West Connector Route under Alternatives 2, 3 and 4 (see Appendix E, Maps 1 through 4)

This proposed route would offer a connection to the community of Bergland and offer a connection to currently designated routes as shown in the existing access table below. The town of Bergland and the Lake Gogebic Area Chamber of Commerce is currently considering a trail that would link Route A Modified to the town on adjacent ownerships.

Proposed Route	Mileage	OML	Motorized Access Allowed	Other Actions
Forest Road 254 (partially co-located with Snowmobile Trail 8)	0.96	1	ATVs, UTVs and motorcycles	Trail Reconstruction
Snowmobile Trail 8	2.65	n/a	ATVs, UTVs and motorcycles	Trail Construction
Existing Access[1]	**Mileage**	**OML**	**Motorized Access Allowed**	**Other Actions**
Forest Road 250 (co-located with Snowmobile Trail 8 and 102)	0.88	2	All Vehicles	None

[1]Roads denoted as existing access are already designated for motorized use on the 2010 MVUM.

Route B Modified - East Connector Route under Alternatives 2 and 4 (see Appendix E, Maps 1, 3 and 5)

This proposed route would connect the State of Michigan Multi-Use Trails as well as provide a primary connector route between areas on the Iron River and Kenton Districts and the community of Sidnaw, Michigan. The site-specific amendment to allow access on OML 4 roads applies to Forest Roads 3350 and 3500.

Proposed Route	Mileage	OML	Motorized Access Allowed	Other Actions
Forest Road 3270	2.3	4	All Vehicles	Design Criteria and Forest Plan Amendment
Forest Road 3275	2.1	3	All Vehicles	Design Criteria and Road Reconstruction

Proposed Route	Mileage	OML	Motorized Access Allowed	Other Actions
Forest Road 3350	3.3	4	All Vehicles	Design Criteria, Road Reconstruction, and Forest Plan Amendment
Forest Road 2127	3.90	3	All Vehicles	Design Criteria and Road Reconstruction
Forest Road 3500	5.70	4	All Vehicles	Design Criteria, Road Reconstruction, and Forest Plan Amendment
Forest Road 3660	0.68	3	All Vehicles	Design Criteria and Road Reconstruction
Forest Road 2009	2.82	3	All Vehicles	Design Criteria and Road Reconstruction
New Trail	300’	Trail	All Vehicles	Construction

Other Jurisdictions	
Road	**Mileage**
IRN- 657	12.7
HOU-161D	1.00
HOU-161	0.76

Route B Modified - East Connector Route under Alternative 3 (see Appendix E, Maps 2 and 5)

This proposed route would connect the State of Michigan Multi-Use Trails as well as provide a primary connector route between areas on the Iron River and Kenton Districts and the community of Sidnaw, Michigan. The site-specific amendment to allow access on OML 4 roads applies to Forest Roads 3270 and 3500.

Proposed Route	Mileage	OML	Motorized Access Allowed	Other Actions
Forest Road 3270	6.90	4	All Vehicles	Design Criteria and Forest Plan Amendment

Proposed Route	Mileage	OML	Motorized Access Allowed	Other Actions
Forest Road 2127	3.90	3	All Vehicles	Design Criteria and Road Reconstruction
Forest Road 3500	5.70	4	All Vehicles	Design Criteria, Road Reconstruction, and Forest Plan Amendment
Forest Road 3660	0.68	3	All Vehicles	Design Criteria and Road Reconstruction
Forest Road 2009	2.82	3	All Vehicles	Design Criteria and Road Reconstruction
New Trail	300’	Trail	All Vehicles	Construction

Other Jurisdictions	
Road	**Mileage**
IRN- 657	15.0
HOU-161D	1.00
HOU-161	0.76

Route C Modified - Marenisco-Wakefield Grade under Alternatives 2, 3 and 4 (see Appendix E, Maps 1 through 4)

This proposed route would offer a connection between the south State of Michigan Multi-Use Trail to aid the State in providing a connection between the communities of Marenisco and Wakefield, Michigan.

Proposed Route	Mileage	OML	Motorized Access Allowed	Other Actions
Forest Service Trail (co-located with Snowmobile Trail 2)	6.17	2	All Vehicles	Change to OML 2
Forest Road 8190 (co-located with Snowmobile Trail 2)	4.39	2	All Vehicles	None

Route D - Pioneer Trail Connection under Alternatives 2, 3 and 4 (see Appendix E, Maps 1 through 4)

Construction of this 0.4 mile trail would provide a connection between a future re-route of the Pioneer Multi-Use Trail and the State of Michigan’s Multi-Use Trail via other public roads. Only OHV use (vehicles weighing 1,750 pounds or less) would be designated on this local connector route.

Route E - Forest Road 630 Local Connector under Alternatives 2 and 3 (see Appendix E, Maps 1, 2 and 7)

This proposed route would provide a connection to the Pioneer Trail Multi-Use Trail. Designation of this route would allow travel between the communities of Bergland, Rockland and White Pine, Michigan. The site-specific amendments to allow access on OML 4 roads as well as within MA 6.1 apply to Forest Road 630. **Alternative 4 would exclude designation of Route E and associated Forest Plan amendments.**

Proposed Route	Mileage	OML	Motorized Access Allowed	Other Actions
Forest Road 630	2.24	4	All Vehicles	Design Criteria and Forest Plan Amendment

Other Jurisdictions	
Road	**Mileage**
Ontonagon Potato Farm Road	3.56

Route F - Watersmeet Local Connector under Alternatives 2, 3 and 4 (see Appendix E, Maps 1 through 3, and 8)

This proposed route would offer a connection from the south State of Michigan Multi-Use Trail and trail construction would provide access to the boundary of tribal land in holdings. The Lac Vieux Desert Band of Lake Superior Chippewa could then construct a trail that links to Route F to allow continued OHV access to the Dancing Eagles Resort and Casino.

Proposed Route	Mileage	OML	Motorized Access Allowed	Other Actions
Forest Road 6110	2.63	3	All Vehicles	Design Criteria
Forest Road 5081	300’	2	All Vehicles	None
New Trail	600’	Trail	ATVs, UTVs and motorcycles	Construction

Other Jurisdictions	
Road	**Mileage**
Gogebic County 206	2.35
Gogebic County Russ Road	1.10
Bass Lake Road	2.2

Route G Modified - Land O' Lakes Grade under Alternatives 2, 3 and 4 (see Appendix E, Maps 1 through 3, and 8)

This proposed route would offer a connection between the south State of Michigan Multi-Use Trail as well as the communities of Watersmeet Michigan and Land O' Lakes Wisconsin.

Proposed Route	Mileage	OML	Motorized Access Allowed	Other Actions
Land O' Lakes Grade	6.06	2	All Vehicles	Change to OML 2

Other Jurisdictions	
Road	**Mileage**
Land O' Lakes Grade (Watersmeet Township)	3.0

Route H - Sidnaw-Rousseau Local Connector under Alternatives 2 and 4 (see Appendix E, Maps 1, 3 and 9)

This proposed route would offer a connection between the northern Multi-Use Trail managed by the Michigan DNR and the communities of Sidnaw and Rousseau, Michigan. The site-specific amendment to allow OHV access on OML 4 roads would apply to Forest Road 1300.

Proposed Route	Mileage	OML	Motorized Access Allowed	Other Actions
Forest Road 1100	10.71	3	OHVs	Design Criteria
Forest Road 1300	4.69	4	OHVs	Design Criteria, Road Reconstruction and Forest Plan Amendment

Other Jurisdictions	
Road	**Mileage**
HOU-152	3.9
HOU-154	2.92
HOU-154B	0.58
HOU- 139	.2
ONT-PORI	2.64

Route H Modified - Sidnaw-Rousseau Local Connector under Alternative 3 (see Appendix E, Maps 2 and 10)

This proposed route would offer a connection between the northern Multi-Use Trail managed by the Michigan DNR and the communities of Sidnaw and Rousseau, Michigan. The site-specific amendment to allow OHV access on OML 4 roads would apply to Forest Road 1300.

Proposed Route	Mileage	OML	Motorized Access Allowed	Other Actions
Forest Road 1300	4.9	4	OHVs	Design Criteria and Road Reconstruction
Forest Road 1460	3.0	3	OHVs	
Forest Road 1100	7.4	3	OHVs	Design Criteria
Existing Access[1]	**Mileage**	**OML**	**Motorized Access Allowed**	**Other Actions**
Forest Road 1320	0.9	2	All Vehicles	None
Forest Road 1440	2.0	2	All Vehicles	None
Forest Road 1439	1.4	1	UTV, ATV, and Motorcycles	None
Forest Road 1462	1.1	1	UTV, ATV, and Motorcycles	None

[1]Roads denoted as existing access are already designated for motorized use on the 2010 MVUM.

Other Jurisdictions	
Road	**Mileage**
HOU-152	3.9
HOU- 139	.2
ONT-PORI	2.64

Appendix B. Design Criteria, Monitoring Measures and Adaptive Management Strategy

Design Criteria

In addition to the proposed actions discussed in Chapter 2 and displayed in Appendix A, the ID Team has developed the following project design criteria. These measures are in addition to those design criteria disclosed in Appendix C of the 2009 EA.

These measures would be implemented to address any potential resource concerns related to implementation of the proposed actions. These criteria would be in addition to applicable Forest Plan direction, measures associated with standard contractual agreements (i.e., design criteria used during implementation of roadwork, such as reconstruction) as well as other applicable laws and regulations.

Botanical Resources

1. The Forest Service will work with Northern Natural Gas to remove garden valerian from the pipeline corridor east of Forest Road 400, as authorized by the 2006 Ottawa National Forest Non-Native Invasive Plant (NNIP) Control Project. When implemented, this design criterion would allow proactive management of this NNIP to address the risk of further spread of this plant along the proposed Route D and other motorized routes connected to Route D.

Heritage Resources

The proposed OHV connector routes have been designed to exclude cultural resource sites, which includes a 30 meter buffer area for each site. The following design criteria have been developed to further protect cultural resource sites.

1. Recreation Technicians and Law Enforcement Officers regularly patrol OHV trails. These employees will be advised of the location of cultural resources in order to identify potential disturbances.

2. There is always potential for unidentified cultural resources sites to be encountered as the project proceeds. If such sites were encountered, immediately notify the Forest Archaeologist.

Transportation

1. Post speed limit signs on Route C Modified and Route G Modified to encourage safe dual-use speeds on these former railroad grades. The speed limits would be consistent with those limits imposed by the State of Michigan or county, as applicable.

2. If a connector route is needed for commercial log hauling, or other resource management projects involving heavy equipment use, restrict the use of ATVs, UTVs and off-road

motorcycles (vehicles weighing 1,750 pounds or less) as needed to ensure a safe, dual use environment.

Monitoring Measures

The following monitoring needs have been identified for this project. These measures are site-specific to the proposed routes described below and these needs are in addition to any monitoring that occurs at the Forestwide scale as part of Forest Plan implementation (see Forest Plan, Chapter 4). These measures were identified by the project's Hydrologist and Soil Scientist in the specialist report prepared for the 2009 EA (see Project File, Tab D). However, this information unintentionally omitted from the 2009 EA. No changes in monitoring measures have been deemed necessary in light of the new information and changed route locations proposed.

Implementation of Alternatives 2, 3 or 4

The following routes should be visually monitored for road surface, shoulder, and ditch erosion to determine if further mitigation measures are necessary to reduce stream or wetland sedimentation. Additional design criteria or mitigation measures may be established if erosion issues are identified following designation of motorized use on proposed routes.

The following proposed routes have been identified for monitoring (in priority order):

a. Route A Modified
   i. Forest Road 254
   ii. Snowmobile Trail 8

b. Route C Modified
   i. Forest Road 8190

c. Route F
   i. Forest Road 6110;

d. Routes H or H Modified
   i. Forest Road 1100; and
   ii. Forest Road 1300

Adaptive Management Strategy

As discussed in Chapters 2 and 3, this project proposes to implement an adaptive management strategy if an action alternative is selected. This strategy would be designed to allow the Ottawa to address uncertainty or the risk involved in the management of the proposed routes relative to unauthorized motorized uses that may occur off of the proposed connector routes.

Adaptive management is allowed pursuant to Forest Service Handbook 1909.15, Section 14.1, which provides an implementation tool that incorporates an "implement-monitor-adapt" strategy.

This strategy provides flexibility to: (1) account for changes to initial assumptions; (2) adapt to changes in environmental conditions; and (3) allow for a management response based on monitoring information, which may indicate that desired conditions are not being met. In addition, this strategy would allow us to incorporate new information and techniques as they are available.

Pursuant to 36 CFR 220.5(d)(2) and 36 CFR 220.7(b)(2)(iv), the analysis for an adaptive management strategy must include the effects of proposed alternatives, effects of likely adjustments made based on the parameters of the strategy, and the procedures established during implementation to monitor whether an action(s) produces the intended effect.

Potential Risk of Unauthorized Use

Closed roads and trails as well as unauthorized roads that have been determined to be at risk for potential unauthorized use have been mapped (see Project File). The level of risk for motorized use, or the likelihood that use will occur, on any given road or trail is not yet known. The threat posed by unauthorized use may vary depending on the specific road or trail. Characteristics of a road or trail, such as surface material, terrain, as well as proximity to non-motorized recreational facilities, such as hiking trails, may define the threat or impact of unauthorized uses. As not all of the proposed routes would be implemented (e.g., designated for motorized use) at the same time as discussed below, and the routes are located in different areas, which may lead to different levels of use, monitoring becomes very important.

Implement-Monitor-Adapt

Unauthorized use is assessed at the Forestwide scale through monitoring and evaluation of Forest Plan implementation. This effort includes monitoring and evaluation for management of OHV use, effectiveness of road and trail closures in prohibiting unauthorized use. The 2009 M&E Report identifies a need to develop effectiveness monitoring for various closure devices over time through an adaptive management approach (pp. 19-20). Any measures associated with the site-specific monitoring and adaptive management strategy as a part of this site-specific, OHV Connector Route project would be consistent with the Forestwide approach developed.

Implement - Implementation of this project would include incorporating the proposed routes on the Forest's MVUM. As outlined in Chapter 2, not all routes could be available for motorized use immediately due to the varying amounts of road and trail improvements necessary to ensure a safe riding experience. If an action alternative is chosen, the only routes that could be immediately added to the next publication of the MVUM are Route C Modified and Route G Modified as these roads do not require roadwork actions outside of signing.

Monitor - This strategy would include monitoring of closed roads and trails, which <u>are not</u> designated for motorized use, which may be perceived as accessible from the proposed connector routes. These features could be OML 1 or 2 roads managed as part of the Ottawa's transportation system, but closed to public use as deemed necessary for resource protection or unauthorized roads as defined in Appendix D of this document.

Adapt: Based on results of monitoring, processes for adapting our management to resolve concerns would be initiated. These processes would be geared toward improving areas where unauthorized use is expected or found. Corrective measures to address unauthorized use would be established based on the assessment of conditions, identification of the causes leading to violations (either intentional or unintentional) and resolution of issues. Measures may include establishment of effective barriers, signing and/or other public education efforts and increased enforcement patrols. In cases where resource protection is not an issue, closed/unauthorized roads and trails may be evaluated for adding to the MVUM. A variety of adaptive management measures would allow the Ottawa to have the flexibility to address violations on a case-by-case basis.

Appendix C. Literature Cited

AWMA, 2000. Air Pollution Engineering Manual, 2nd Edition. Air and Waste Management Association.

EPA 2002. Frequently Asked Questions Environmental Impacts of Newly Regulated Nonroad Engines EPA420-F-02-033, September 2002

Houghton County ORV Ordinance 08-01, 2008.

Kalisz, P. J., and J. E. Powell. 2003. Effects of calcareous road dust on land snails (Gastropoda: Pulmonata) and millipedes (Diplopoda) in acid forest soils of the Daniel Boone National Forest of Kentucky, USA. For. Ecol. Manage. 186: 177-183.

LADCO 2008. http://www.ladco.org/reports/rpo/consultation/products/regional_haze_in_the_upper_midwest_summary_of_technical_information_v2.2_feb_22_2008.pdf

Michigan Department of Natural Resources and Environment. 2010. Website viewed on 5/21/2010, http://www.michigan.gov/deq/0,1607,7-135-3310_4195---,00.html).

Michigan Department of Natural Resources, 2005. The Handbook of Michigan Off-Road Vehicle Laws, p. 41.

Michigan Department of Natural Resources, 2008. Michigan Statewide Comprehensive Outdoor Recreation Plan (SCORP) 2008-2012, p. 15.

Michigan Vehicle Code, Act 300 of 1949, 257.707c Noise limitations; prohibitions.

Minnesota Pollution Control Agency, May 2005. Minnesota Statewide Air Toxics Monitoring Study (1996-2001), Final Report,

Minnesota Pollution Control Agency, 2009. Air Quality in Minnesota: Emerging Trends, 2009 Report to the Legislature, January 2009

Nelson, C.M., Lynch, J.A., and Stynes, D.J., 2000. Michigan Licensed Off-Road Vehicle Use and Users, 1998-99. East Lansing, MI: Department of Park, Recreation and Tourism Resources, Michigan State University, pp. 4 and 12.

Stynes, D.J. and White, E.M., 2005. Spending Profiles of National Forest Visitors, NVUM Four Year Report, pp. 36.

USDA Forest Service, 2008(a). Ottawa National Forest, National Visitor Use Monitoring Results, pp. 6 and 18.

USDA Forest Service, 2008(b). Ottawa National Forest, Fiscal Year 2008 Monitoring and Evaluation Report, pp. 10, 11 and 40.

USDA Forest Service, 2006(a). Ottawa National Forest, Final Environmental Impact Statement, Volume I, pp. 3-186 and 3-192.

USDA Forest Service, 2006(b). Ottawa National Forest, Final Environmental Impact Statement, Volume II, Appendices, p. B-1.

USDA Forest Service, 1993. Sound Level of Five Motorcycles Travelling Over Forest Trails, Rock Creek ORV Area, p. 6.

USDA Forest Service, 1975. Impact of Off-Road Vehicle Noise on a National Forest, p. 9.

Appendix D. Glossary

Concerns are defined as those comments that can be addressed through implementation of Forest Plan direction, project design criteria, clarification of the project's intent, or some other means.

Issues are defined as a point of discussion, debate, or dispute that cannot be resolved without changing the type or amount of activity proposed (as defined by 40 CFR 1500).

Scoping is a process used to determine the scope of issues to be addressed and identify significant issues related to a proposed action. In addition to public meetings, the scoping process for the OHV Connector Route EA included a scoping letter that was sent to interested and affected parties that outlined the purpose and need for action, as well as the OHV routes proposed for designation on the Forest's MVUM.

Off-Highway Vehicle is defined as an all-terrain vehicle (ATV) is a subset of an OHV, and is generally considered to be 50 inches in width or **less**. Other vehicles less than 50 inches commonly used include off-road motorcycles. Utility terrain vehicles (UTVs), which are also defined as a subset of OHV, are any motorized vehicle manufactured and used exclusively for off-highway use that has four or more low pressure tires (of 15 pounds per square inch [psi] or less), including a vehicle width of 65 inches or less, and has a maximum curb weight of 1,750 pounds or less. Licensed highway vehicles, such as pick-up trucks, can also be considered OHVs. Therefore, for those routes that are open to highway legal vehicles as well as vehicles weighing less than 1,750 pounds, this project would designate access as open to all vehicles, which is consistent with the MVUM language.

Objective Maintenance Level (OML) is the intended level of maintenance to be received by each road commensurate with the planned function and us of the road. Definitions outlined below were obtained from the Forest Plan Glossary (pp. G-13 to G-14).

OML 1 - Assigned to intermittent service roads when they are closed to highway vehicle traffic. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate". OML 1 roads may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic, are not maintained, but may be open and suitable for non-motorized uses.

OML 2 - Assigned to roads operated for use by high clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted (such as log haul), dispersed recreation, or other specialized uses. Appropriate traffic management strategies are either (1) discourage or prohibit passenger cars, or (2) accept or discourage high clearance vehicles

OML 3 - Assigned to roads open and maintained for travel by a prudent driver in a passenger car. User comfort and convenience are not considered priorities. Roads are typically low speed, single lane with turnouts and spot surfacing. Roads may also be double lane. Appropriate traffic

management strategies are either to 'encourage' or 'accept'. Discourage or prohibit strategies may be employed for certain classes of vehicles or users.

OML 4 - Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced.

Semi-Primitive, Non-Motorized Area –About 8% of the Ottawa is managed for a semi-primitive, non-motorized recreation experience (e.g., MA 6.1, which does not include wilderness). Portions of the Ottawa managed under MA 6.1 are characterized as predominately natural or natural appearing environments where interaction between users is low; however, there is often evidence of other users (Forest Plan, Appendix B). Motorized use is not permitted on OML 1 and 2 roads. Highway legal vehicle use is allowed on higher standard roads (OMLs 3, 4 and 5). A portion of the Pioneer Multi-Use Trail is encompassed by MA 6.1 in the vicinity of proposed Route E. This trail allows all motorized uses.

APPENDIX E

MAPS