Developing the "Integrated Transportation and Ecological Enhancements for Montana" (ITEEM) Process: Applying the Eco-Logical Approach

Final Report

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16. Abstract

Construction and maintenance of transportation systems can result in direct, indirect and cumulative effects on ecosystems. Typically, mitigation of unavoidable adverse impacts occurs on a project-by-project basis and commonly attempts to restore the same affected resource as close to the site where the impact occurs. This piecemeal approach may fulfill regulatory requirements but greater mitigation value may be achieved for a similar investment by evaluating and prioritizing off-site mitigation opportunities in the context of the entire ecosystem. Additionally, project-by-project environmental permitting practices involve repetitious procedures that sometimes unpredictably delay project delivery. Recently-released federal guidance encourages agencies to collaboratively and strategically plan infrastructure projects and related mitigation with goals of conserving and connecting important habitats, while increasing predictability and transparency of planning and regulatory permitting processes. This guide, entitled, "Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects," was used by an interagency group in Montana to create the "Integrated Transportation and Ecosystem Enhancements for Montana" (ITEEM) process. As the first effort to "pilot" Eco-Logical's guidance, cooperating agencies gained insights that may help others follow Eco-Logical's framework. This report summarizes Montana's efforts to adapt Eco-Logical to create the ITEEM process and offers insights for other interagency efforts working to increase the efficiency of transportation project delivery while mitigating adverse impacts where the conservation efforts are most needed.

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1. INTRODUCTION

Construction and maintenance of transportation systems can result in direct, indirect, cumulative, and secondary effects on ecosystems and can adversely affect the long-term viability of fish and wildlife populations (National Academy of Sciences 2005; Forman et al. 2002). Typically, mitigating adverse impacts associated with highway systems occurs on a project-by-project basis and commonly attempts to restore the same affected resource near the site where the impact occurs, regardless of regional ecological conservation priorities. This piecemeal approach may fulfill regulatory requirements but greater mitigation value may be achieved for a similar investment by evaluating and prioritizing off-site mitigation opportunities important to sustaining ecosystem processes associated with water quality, sustainable resource management practices, wildlife habitat and connectivity, and other environmental assets that contribute to a high quality of life. Further, project-by-project environmental permitting practices frequently involve repetitious procedures that sometimes unpredictably delay project delivery. Agencies want more effective mitigation approaches, while streamlining planning and permitting processes for transportation programs.

A federal multi-agency team recently developed a guide to encourage agencies to consider alternative approaches for more effective ecological mitigation and efficient transportation program delivery. The guide, entitled, "Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects" (Brown 2006; referred to as "Eco-Logical"), provides a framework and examples for agencies to collaboratively and strategically plan infrastructure projects and related mitigation to conserve and connect important habitats while increasing the predictability and transparency of infrastructure planning processes. The ecosystem approach outlined in Eco-Logical encourages expedited regulatory approvals for infrastructure projects – in compliance with applicable laws – while maintaining high standards for safety, environmental health, and effective public involvement.

Following guidance outlined in Eco-Logical, an interagency working group in Montana created the "Integrated Transportation and Ecosystem Enhancements for Montana" (ITEEM) process. As the first known effort to adaptively apply the Eco-Logical guidelines, the cooperating agencies encountered and overcame challenging issues, acquiring perspectives that may be helpful to other collaborative endeavors working to establish an Eco-Logical approach for other regions.

This report summarizes events that led to piloting the suggestions in Eco-Logical. The Eco-Logical document is briefly reviewed, followed by an account of the efforts to develop the ITEEM process using the Eco-Logical guidance, including a description of challenges encountered during the development of the process. The final ITEEM process is also described. The intent of this report is to summarize the outcomes, accomplishments and recommendations of this project for the sponsors and team members. The report also seeks to help other interagency collaborative efforts seeking alternative approaches to increase efficiency of transportation project delivery while mitigating adverse impacts where the conservation efforts are most needed.

2. BACKGROUND

In 2002, an Executive Order 13274 (EO 13274) "Environmental Stewardship and Transportation Infrastructure Project Reviews," was signed by President Bush (2002). The intent of EO 13274 was "to enhance environmental stewardship and streamline the environmental review and development of transportation infrastructure projects." One of the charges of EO 13274 included designating "a list of high-priority transportation infrastructure projects that should receive expedited agency reviews". The U. S. Highway 93 (US 93) corridor in Montana was identified as a priority transportation corridor.

The Montana Department of Transportation (MDT) plans a variety of reconstruction projects along the 286 mile-long US 93 corridor that passes through important wildlife habitats in northwestern Montana. Concerns were raised regarding the reconciliation between "expedited agency reviews" and faster project delivery versus the sometimes tedious process of environmental reviews, permitting, and planning for compensatory mitigation of adverse impacts to ecological resources. If traditional approaches to environmental compliance and mitigation planning were followed, each individual US 93 project would require repetitive and time-consuming environmental analyses that would likely result in piecemeal mitigation measures that may not contribute effectively to regional ecological conservation priorities. By broadening the opportunities for compensatory mitigation, important ecosystem functions could be protected and conserved beyond the right-of-way while streamlining the highway project development process, ultimately making better use of highway funding.

To this end, in 2003 an Interagency Review Team (IRT) was formed with upper-level managers from the following agencies:

- Montana Department of Transportation (MDT);
- Federal Highway Administration – Montana and Western Federal Lands Highway Divisions;
- Montana Department of Fish, Wildlife and Parks (FWP);
- Montana Department of Environmental Quality (DEQ);
- Montana Department of Natural Resources and Conservation (DNRC);
- Confederated Salish and Kootenai Tribes (CSKT);
- US Environmental Protection Agency (EPA);
- US Army Corps of Engineers (Corps);
- US Fish and Wildlife Service (USFWS); and
- US Forest Service (USFS).

The IRT designated representatives from their respective agencies to a working group (IRT working group or IRTWG; see Appendix A: IRTWG Member List for list of IRTWG agency representatives). This working group was directed by the IRT to develop a consensus-based, defensible ecosystem-oriented approach to integrated compensatory mitigation of US 93 highway project adverse impacts that would result in more predictable and efficient delivery of these projects.

As the Montana efforts were initiated, a parallel effort was already underway at the national level. Eight federal agencies and four state Departments of Transportation formed a Steering Team in 2002 to address concerns that current approaches to offset adverse environmental impacts due to infrastructure development may not contribute effectively to ecosystem sustainability. The Steering Team embarked on a collaborative effort to develop guidance to efficiently develop infrastructure projects and effective ecological mitigation via an ecosystem approach.

Recognizing similarities between the IRT and the Steering Team undertakings, FHWA managers from Montana involved in both efforts suggested that the IRTWG consider following the Steering Team's framework as they developed their approach to streamlining the environmental approvals and mitigation planning for the US 93 projects. The intent of this suggestion was to "pilot" the guidance from the Steering Team in a real world situation; the US 93 priority transportation corridor appeared to be an ideal situation for testing an ecosystem approach.

In 2005, the Steering Team produced a draft document entitled, "Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects" ("Eco-Logical"). Montana FHWA managers associated with both Eco-Logical and the IRT provided the draft to the IRTWG to guide the process of developing Montana's ecosystem approach. The Eco-Logical concepts that were adaptively applied by the IRTWG are summarized below.

2.1. Eco-Logical Concepts and Components

Building on the tenets outlined in a 1995 Memorandum of Understanding to "Foster an Ecosystem Approach" (1995), Executive Order 13352 for Cooperative Conservation (2004), and the "Enlibra Principles" (2002), Eco-Logical promotes an ecosystem approach to "comprehensively manage land, water, and biotic and abiotic resources to equitably promote conservation and sustainable use." Eco-Logical encourages agencies to use flexibility in regulatory processes to plan "ecosystem-based mitigation." Ecosystem-based mitigation is defined as "the process of restoring, creating, enhancing, and preserving habitat and other ecosystem features in conjunction with or in advance of projects in areas where environmental needs and the potential environmental contributions have been determined to be greatest."

When ecosystem-based mitigation is accomplished early in the planning of infrastructure projects (Eco-Logical targets all infrastructure sectors, not just transportation), agencies capitalize on meaningful conservation priorities and opportunities that may be vanishing or becoming prohibitively expensive over time, increasing the cost-effectiveness of the mitigation. Simultaneously, advanced mitigation should be targeted to fulfill regulatory requirements early on in the development of these projects, ensuring efficient project delivery by avoiding costly delays that can sometimes occur with permitting processes.

The goals of the Eco-Logical's ecosystem approach to developing infrastructure follow:

- *Conservation:* Protection of larger scale, multi-resource ecosystems;

- *Connectivity:* Reduced habitat fragmentation;

- *Predictability:* Knowledge that commitments made by all agencies will be honored – that the planning and conservation agreements, results, and outcomes will occur as negotiated; and

- *Transparency:* Better public and stakeholder involvement at all key stages in order to establish credibility, build trust, and streamline infrastructure planning and development.

To implement an ecosystem approach, Eco-Logical outlines three components that iteratively build upon each other through an adaptive feedback loop (Figure 1) that accommodates changing priorities, opportunities and threats over time and across landscapes. Starting with an eight-step integrated planning process, conservation priorities are established and used to determine mitigation options, and then as mitigation commitments are planned and executed, the effectiveness of the process and outcomes are assessed; this information influences the next cycle of the process. Each component is outlined in greater detail below.
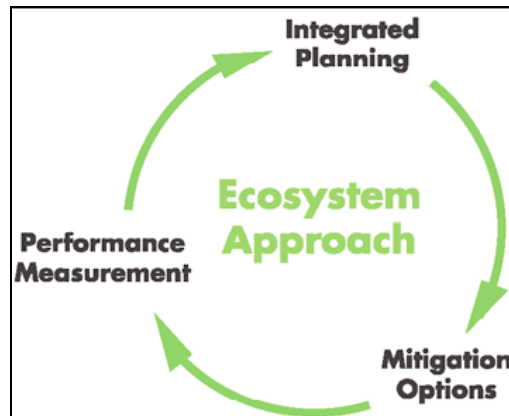
Figure 1. Components of the ecosystem approach as outlined in the Eco-Logical.

2.1.1. Integrated Planning

Key to the ecosystem-based mitigation approach is determining regional ecosystem conservation priorities. The integrated planning phase is pivotal in determining these priorities. Eco-Logical suggests an eight step approach to integrated planning (details and examples are provided in Eco-Logical):

1. Build and strengthen collaborative partnerships
2. Identify management plans
3. Integrate plans
4. Assess effects
5. Establish and prioritize opportunities
6. Document agreements
7. Design projects consistent with regional ecosystem framework
8. Balance predictability and adaptive management

2.1.2. Mitigation Options

Based on the agreed-upon priorities identified via the integrated planning process, recommendations may be incorporated into the NEPA process and project planning. A variety of mitigation approaches may be applied; e.g., project-specific mitigation, multiple-project

mitigation, or ecosystem-based mitigation agreements. Off-site and/or out-of-kind approaches may be used to offset adverse impacts, as well as mitigation banking, in-lieu-fee mitigation, and conservation banking techniques. Eco-Logical details important considerations and provides examples of the various mitigation approaches.

2.1.3. Performance Measurement

Finally, it is necessary to assess if outcomes met the goals of conservation, connectivity, predictability and transparency as infrastructure projects addressed in the ecosystem approach are completed. Partners must first collaboratively determine appropriate "measures of success" related to the process, project delivery, and long-term outcomes. Over time, information relevant to these measures is acquired and the effectiveness of various aspects of the process can be determined. Such feedback is important to adapting the process and accommodating changes that affect ecosystem priorities and efficient project delivery from one cycle to the next.

In summary, Eco-Logical promotes more flexible approaches to permitting and mitigation to create "win-win" situations for collaborators involved in infrastructure project delivery and ecosystem conservation efforts. Years of interagency deliberations balancing diverse viewpoints and exploring the bounds of regulations and institutional processes are synthesized in Eco-Logical to provide a range of recommendations illustrated with pertinent definitions of terms, regulatory considerations, institutional challenges, and exemplary initiatives that have been successfully applied elsewhere. Eco-Logical demonstrates that agencies can work together to address the "bigger picture" (i.e., ecological integrity across landscapes beyond the right-of-way) while increasing the efficiency of project delivery.

It should be noted that Eco-Logical offers general guidance and numerous, relevant examples demonstrative of the concepts with few hard directives and no single, specific process to follow. Therefore, to apply the concepts outlined above, it is necessary to first develop clearly defined steps within the broad context of an ecosystem approach that accommodate the unique characteristics and needs of the involved entities. Once collaborators agree on the details of applying and evaluating an ecosystem approach, the process can then be initiated, evaluated and further adapted to meet established goals.

3. DEVELOPING MONTANA'S ECOSYSTEM APPROACH

Efforts to develop an ecosystem approach for Montana endured challenges common to any pioneering endeavor. This "process of creating a process" was likened to a baker creating a new type of cake: it requires a vision of the new cake, then trial and adaptation to find the right recipe for the envisioned cake. Similarly, the IRTWG started with an idea of what an ecosystem approach might entail and an untested framework of suggestions to develop the process. Through trial and error, the IRTWG shaped those concepts into a common vision of desired outcomes (i.e., the new cake, or more effective mitigation and efficient transportation program delivery) and iteratively fine-tuned components and procedures (i.e., the recipe or ITEEM process) aimed at achieving the desired outcomes.

This chapter describes the events and factors that influenced the development of an ecosystem approach. This history is outlined through the early establishment of "ground rules", understanding agency motivations and interests, adapting of Eco-Logical, and lessons learned (the final outcome, the ITEEM process, is outlined in the next chapter).

3.1. Establishing Direction

Efforts to expedite permitting processes via alternative mitigation techniques for the US 93 corridor in Montana began in 2004 when the IRTWG was formed. After numerous meetings, the IRTWG recognized the need for another entity to mobilize the group, document discussions, and handle time-consuming tasks requiring more effort than any one representative could provide to the group at that time.

In June 2005, FHWA contracted a project coordinator to assist the group with developing an ecosystem process that could be piloted on the US 93 corridor projects. The IRTWG and project coordinator began meeting in July 2005. The group's first major effort involved collaboratively establishing direction and "rules" as the members set out to develop an ecosystem approach. Eco-Logical was not yet available; therefore the following goals and objectives, roles and responsibilities, and scheduled milestones were developed based on the directives issued by the IRT.

3.1.1. IRTWG Goal

The US 93 IRTWG's overarching goal is *to develop an integrated approach to mitigating adverse impacts of the highway program to ecosystem functions*. Objectives to meet this goal include creating a process that incorporates the following characteristics:

- Conservation or enhancement of essential habitats and natural landscapes;
- Application of a crediting and debiting system that can address multiple highway projects and ecosystem conservation;
- Prioritization of opportunities and timeliness for ecosystem conservation;
- Reduction of project development times and increased predictability of project delivery requirements;
- Improved cost-benefit efficiency; and

- Garnered support from participating agencies to formalize the approach in a Memorandum of Understanding (MOU) including a conflict resolution process between IRT agencies.

3.1.2.   IRTWG Roles and Responsibilities

Roles and responsibilities were created to establish personal and agency accountability as well as respectful, consensus-building communication between all involved. Roles and responsibilities for the IRTWG agency representatives, project coordinator, and project sponsor and the IRT are listed below.

The IRTWG agency representatives are liaisons for the agencies they represent. Representatives arrange for at least one agency staff to attend and provide useful input at the meetings, relay information and decisions between their agencies and the IRTWG, and provide feedback to the IRTWG as needed. Specific responsibilities for IRTWG representatives include the following:

- Identify other agency representative(s) with decision-making authority that may serve as IRTWG members if needed;

- Involve others within agency that can help fulfill the IRTWG's goals by relaying information as necessary between agency staff and the IRTWG, and/or by inviting specific staff to critical meetings. Other agency participants need to work through the "official" IRTWG agency representatives as the point of contact to the IRTWG;

- Actively attend IRTWG meetings. Initially this involved 1 or 2 day-long meetings per month in Helena or Missoula from July 2005 through September 2006;

- Articulate your agency's position on critical issues as they arise. If attending representative does not have the agency's authority to vote or would like to confer with their agency managers, that representative will take the issue back to the appropriate people and report back to the IRTWG with the agency's vote on that issue within a reasonable amount of time;

- Identify your agencies' interests, policies and programs to be considered and addressed through this process. Identify opportunities and creative solutions to help achieve the IRTWG's goals;

- Help gather relevant information from your agency as needed to help the IRTWG achieve its goals;

- Review materials and provide feedback throughout process (no comments by the requested reply dates will be interpreted as "approval" of drafted material unless an extension is requested);

- Volunteer agency facilities as able, appropriate, and needed for achieving goals;

- Communicate openly with other representatives and project coordinator;

- Listen attentively and participate actively; and

- Build trust and respect amongst the team and agencies and work to achieve consensus.

The Project Coordinator's role is to garner a team-work approach with the IRTWG and to orchestrate meetings, assignments, information-gathering, and report writing in order to move

the group toward their goals. The following responsibilities are identified in the Project Coordinator work scope:

- Facilitate the IRTWG in order to reach their goals and objectives (from July 2005 – May 2006, this was defined as a 20 hour a week commitment);

- Plan, coordinate and facilitate IRTWG meetings, including payment for meeting space;

- Draft, distribute, revise and finalize meeting minutes and other group communications;

- Conduct one-on-one meetings with IRTWG representatives to define local plans, policies, programs, methods and technical issues related to the objectives;

- Help develop boundaries and definitions for Ecologically Similar Areas;

- Facilitate discussions to achieve consensus on crediting and debiting adverse impacts and mitigation measures;

- Locate, distribute, and assist in the development of technical resources and documents to help the IRTWG achieve goals. This may include previously published reports, materials, reprints, maps, and other products that are relevant to the development and deployment of the process. Interpret and synthesize information for efficient consumption by the IRTWG;

- Pursue the development of a crediting/debiting approach to identify and select alternative mitigation approaches for highway program that will meet broad scale ecosystem level conservation objectives, while improving the benefits to the highway project development process; and

- Draft, review, edit, finalize and reproduce documents for IRTWG and including development of a MOU, progress reports and a final report.

Oversight of the IRTWG includes FHWA (sponsor of the IRTWG Project Coordinator position), the US 93 IRT (made up of the executive-level decision makers of the state and federal agencies in Montana), and the Executive Order Taskforce for the US 93 priority corridor projects (including the high-levels of federal agency decision makers such as Agency Secretary or Directors). Specific responsibilities were outlined to ensure the hierarchy of accountability and oversight is understood, as follows:

- FHWA funds and oversees the IRTWG Project Coordinator position; and

- FHWA is the link back to the US 93 IRT and Executive Order (EO) Task Force effort and will relay information between the IRTWG and the US 93 IRT and EO Task Force as needed.

3.1.3. IRTWG Milestones and Schedule

The IRTWG outlined major milestones to break the process down into stages or tasks with deadlines. The ultimate deadline was to deliver a process via an MOU by May 2006. Milestones were established prior to having the Eco-Logical guidebook and therefore were based on the major points outlined in the project coordinator's work scope. The original milestones included the following:

1. Summarize background information including documentation of agency interests and motivations for piloting an ecosystem process (by mid-August 2005).
2. Determine geographic boundaries and descriptions where mitigation/compensation must be applied to offset adverse impacts (by mid-September 2005).
3. Establish system to quantify adverse impacts (debits) and mitigation approaches (credits) (by mid-December 2005).
4. Pilot and evaluate credit/debit system for US 93 corridor projects (by mid-January 2006).
5. Draft MOU outlining the process developed by the agencies and outcomes related to mitigation transportation adverse impacts for US 93 corridor projects (by mid-February 2006).
6. Finalize report and MOU for agency signatures (by May 2006).

In summary, developing goals, roles and responsibilities and milestones was possibly the most straightforward and important step in the effort to create an ecosystem process. This exercise initiated the project coordinator's rapport with the group and expectations of collaboration, proactive involvement and accountability were established, demonstrated and reinforced by practice during this exercise. The project coordinator often referred back to these goals and ground rules at the beginning meetings or if deliberations digressed. The milestones were helpful in assessing the group's progress. Many of these guidelines were adapted for the ITEEM process itself (see Chapter 4). With the goals, roles, and milestones clearly defined and communicated to the participants, the group could move forward with the substantive and specific tasks necessary to develop the process.

3.2. Understanding Motivations

One-on-one interviews were conducted with IRTWG representatives to document perspectives regarding the pursuit of an ecosystem approach and previous history of interactions between the agencies. The intent of this task was to compile and share this feedback with the group to increase understanding between agencies regarding their diverse missions. Additionally, the interviews were designed to acquaint the project coordinator with participating agencies' approaches and outlooks regarding transportation planning and permitting processes.

Identical interview questions were drafted and reviewed by the group, then revised and provided to interviewees before the interview (see Appendix C: IRTWG Interview Tool). Questions related to current transportation project planning and permitting procedures; perceptions regarding an ecosystem approach; and more proximate insights about group dynamics and available resources that might assist in the efforts to create and apply an ecosystem approach.

The project coordinator interviewed most (but not all) of the IRTWG agency representatives listed in Appendix A: IRTWG Member List. Interviews occurred between July and December 2005. By October, about 75% of the group had been interviewed and the responses were compiled by each question for a quick assessment of important information or issues that might influence the IRTWG's efforts. A draft synthesis of interview feedback was not distributed for review until April 2006, surpassing the first milestone deadline. Highlights from the synthesis of interview responses are summarized below.

3.2.1.   Current Planning and Permitting Approach

Regarding current approaches to transportation planning and regulatory permitting, all agencies stated they were comfortable with current approach to permitting transportation projects; this approach has been used for a number of years and, for the most part, agencies know what to expect and can plan accordingly. Several interviewees said the success of the current approach depends on the expertise and personalities of those involved.

Five agencies mentioned challenges regarding the timing of comments during the planning and permitting process; e.g., some agencies submit generic comments early that do not adequately address specifics of the project while others submit specific comments late, often after project design is complete or near completion and pressure to deliver the project is the greatest. Many said that the project-by-project approach can be repetitive, cumbersome, and time consuming, and all agencies stated that efficiency of the current process could be improved.

3.2.2.   The Ecosystem Approach

Most agencies defined an "ecosystem approach to mitigating adverse highway impacts" as an opportunity to prioritize and coordinate mitigation to promote species conservation and secure habitat linkages across landscapes while improving the efficiency of delivering transportation improvement projects. One agency saw the ecosystem approach as a chance to "open up [mitigation] options as much as possible".

Stated goals for applying the ecosystem approach reflected the agencies' missions. Transportation agencies want to streamline the permitting process, obtain earlier regulatory approvals, and speed up project delivery. Resource agencies want more effective mitigation.

Anticipated challenges for applying an ecosystem approach included fundamental conflicts between different agency missions; agreement on the region, resources and scope of mitigation efforts to be considered; and institutional and public acceptance and support for the approach. Some worried the transportation agencies may not see sufficient benefits (e.g., reduced project delivery times) to support the approach. Other potential "roadblocks" to applying an ecosystem approach included the following:

- Insufficient resources, staff time, and/or funding to effectively apply the process
- Insufficient or restrictions on funding for mitigation
- Lack of enforcement
- Communication
- Federal regulations, such as Federal Advisory Committee Act
- How to incorporate private land issues and local planning initiatives
- Ongoing maintenance of mitigation
- Development of an accepted credit/debit system
- Creation of an equitable process that serves competing interests without being so restrictive that projects fail to meet criteria
- Spread of invasive plants, insects, and disease if connectivity is achieved

- How to measure performance

- Feasibility of recapturing lost functions

- Compensation/accounting for mitigation "above and beyond" what is required

3.2.3.   Interests and Concerns

Interviewees were asked to identify their agencies' issues of interest or concern as it would relate to applying an ecosystem process. Predictably, responses were related to each agency's respective mission and responsibilities (Table 1). In addition to delivering transportation projects efficiently and conserving ecosystem resources, several agencies also mentioned quality of life concerns, recreational opportunities, aesthetics, and cultural resources.

Table 1. Issues of interest identified by agencies.

AGENCY	INTERESTS AND ISSUES OF CONCERN
MDT	Safety, including reduction of animal-vehicle collisions
	Improving Habitat Connectivity
	Permits
USFWS	Aquatics
	Species of Concern including bull trout in US 93 corridor
	Minimize Direct Mortality and maintain connectivity
	Quantify potential take
FWP	Habitat conservation
	Fisheries
	Adverse construction impacts
	Connectivity
	Loss of habitat under and fish passage through structures
	Mitigating past adverse impacts
DEQ	Water quality
	Maintaining, protecting & improving the beneficial uses of state water
	Riparian protection
	Wetlands
	TMDLs
	Watershed and Water Quality Restoration Plans
CSKT	Wildlife protection (cultural issue)
	Habitat, connectivity, linkage zones
	Aesthetics
	Sovereignty
FHWA	Wetlands
	Threatened & Endangered species
	Quality of Life
USFS	Water quality/flow
	Terrestrial wildlife habitat, mortality, & connectivity
	Noxious weeds/rare plants
	Adverse scenic/visual impacts
	Recreation
	Adverse indirect/cumulative impacts
	Adverse long term/ecosystem-wide impacts
EPA	Quality of Life Issues (i.e. growth)
	Air/Water quality
WFLHD	Wildlife
	Wetlands
	Cultural Resources
	Visual Quality
	Hazardous Waste
DNRC	Stream Crossing Structures (fish passage)
	Water Quality
	Aquatic Habitat
Corps	Physical, chemical, biological integrity of aquatic resources
	Ensuring that projects represent the least environmentally damaging practicable alternative on the aquatic environment.

3.2.4.   Mitigation Opportunities

When asked to identify potential mitigation opportunities that might be considered in an ecosystem approach, a wide variety of responses were generated (Table 2). The range of possible mitigation opportunities mentioned indicates that the agencies recognize the potential benefits of "alternative" approaches to off-setting adverse impacts in addition to the traditional "on-site, in-kind" mitigation commonly applied in traditional permitting and planning process.

Table 2. Potential opportunities to mitigate adverse highway project impacts identified by agencies.

AGENCY	OPPORTUNITIES CITED
USFWS	Conservation easements
	Crossing structures
	Recovery plan coordination
	Public relations opportunities
	Using permitting fees for mitigation fund
FWP	Mitigation of previous and unavoidable adverse impacts
	Cross-jurisdiction professional understanding
FHWA	Improving benefit/cost ratio for mitigation costs
	Improving quality of life
	Improving habitats and the human environment
CSKT	Controlling landscape features to guide animal movements
MDT	Creating design criteria
	Programmatic permitting
	Mitigation on public lands
	Improvements on existing mitigation efforts
	Address visual concerns of mitigation efforts
	Prioritization of mitigation measures
USFS	Stream connectivity/restoration
	Terrestrial species connectivity
	Managing invasive plant species
	Mitigating adverse impacts of highways on National Forest Land
DEQ	Riparian and storm water BMPs (i.e., buffers, swales, ditches, channelizing curbs, settling basins)
	Affect sand/salt maintenance activities and structure/road designs to minimize adverse effects
	Stream & wetland mitigation/restoration
EPA	Regional cumulative effects assessment
	Conserving "vanishing opportunities"
	Growth management
	Off-road vehicles
	Habitat degradation
DNRC	Conservation easements
	Secure important linkage areas
	Wetland mitigation
	Culvert/stream crossing improvements
	Reduction of unnecessary forest roads
	Cost savings/revenue generation
	Interagency coordination
Corps	Review projects permitted in the past to identify opportunities or needs for mitigation as necessary

3.2.5. Resources and Data

Agencies identified various in-house experts and data that might be of assistance while developing or applying an ecosystem approach to permitting and planning. Resources potentially available are summarized by agency in Table 3.

Table 3. Agency resources potentially available for process development or application of an ecosystem approach.

AGENCY	TECHNICAL EXPERTISE	DATA
FWP	Statewide Fish and Wildlife Conservation Strategy Coordinator	Statewide Fish and Wildlife Conservation Strategy Reports (e.g., "Design Considerations for Permanent Erosion Control Features to Reduce Sediment Transport" and Recommendations for Winter Traction Materials Management on Roadways Adjacent to Bodies of Water [MDT Project #8117-19 Final Report]) and management plans Statewide databases
FHWA	Resource Center (GIS) Volpe Center (GIS)	--
USFS	GIS Services Impact identification methods Impact quantification methods USFS GIS library Fish/Water expertise	Viability mapping Litigation data LANDSAT satellite images R1vmp shows dominant life form, canopy closure, tree diameter, etc. National Ag Inventory photos May be able to integrate data to prioritize issues of concern
DEQ	Standards section (reference database) Monitoring/Assessment section TMDL Planning and Implementation Sections	National database for agency data Contractor data 303D list with sources & causes of impairment DEQ permitting group Watershed and Water Quality Restoration Plans Nonpoint Source Plan
USFWS	Recovery Coordinators	Recovery Coordinators Data
CSKT	--	Lists of tribal priorities and areas of concern and special interest
MDT	--	Existing GIS data
EPA	--	Can search within existing data for relevant resources
WFLHD	Sr. Technical Experts at Resource Centers Headquarters staff	Thompson River Road project as potential mitigation area Resource Studies (for developing credit/debit system)
DNRC	Wildlife biologist Hydrologists Fisheries biologist Soil scientist	GIS Shop Forest Management Inventory Road Database (in development)
Corps	Project managers to review proposed projects in pre-application phase	Review of permit history to identify potential cumulative effects issues before they develop

3.2.6. Group Dynamics

Several interviewees remarked that interagency relationships have been influenced by previous disagreements between agencies with regards to permitting and mitigation issues. All

interviewees stated that they are being heard in the facilitated meetings; apparently this was not always true in the past, but communication has improved over time and facilitation has helped move the group forward. Many noted the group's tendency to digress when contentious issues arose between agencies and stressed the importance of keeping the group on task and moving toward clear objectives and goals. Additional comments and suggestions for managing the group include the following:

- Develop a manageable scope and make adjustments as process evolves

- Avoid broad brush approach and absolutes: provide guidance, not demands

- Consider programmatic approaches

- Document avoidance measures

- Reduce travel/promote teleconferences

- Don't interpret for other agencies

- Develop outreach plan to reach non-government organizations

- Link planning to NEPA

- Specify suggestions to improve mitigation and streamline process

- Document agreements to demonstrate progress

- Have decision making authority in the room

- Remind group of their commitments

3.2.7. Overview of Agency Motivations and Interests

Overall, interviews yielded predictable responses as well as new insights. Current approaches to project planning and permitting are familiar and therefore comfortable to most agencies; however, all agencies stated that efficiency could be improved, and many felt the project-by-project approach was repetitive, cumbersome and time consuming. Most interviewees felt the ecosystem approach was an opportunity to coordinate more efficiently and effectively to direct mitigation efforts for multiple transportation projects toward the resources in greatest need of conservation across landscapes; concurrently, representatives expressed some ambiguity about the effort to create an ecosystem approach, an understandable response given that this is the first known effort to apply the concepts of Eco-Logical within a state transportation planning and permitting framework.

Specific interests and concerns related to developing and applying an ecosystem approach were associated with agency missions. Transportation agencies motivations for piloting an ecosystem approach included streamlining the permitting process, obtaining earlier regulatory approvals, and delivering projects more efficiently; resource agencies were focused on applying more effective mitigation where it was most needed. Agencies seem willing to consider measures that may not have been commonly applied previously; a number of creative procedural and programmatic approaches, financing suggestions, habitat conservation, physical highway installations, and coordinated management initiatives were suggested as potential options for effectively and efficiently mitigating highway project adverse impacts.

Potential challenges to developing and applying an ecosystem approach included mention of fundamental conflicts between different agency missions; agreement on the region, resources and level of mitigation efforts to be considered; and institutional and public acceptance and support of this new and different approach. A range of expertise, in-house services and data were identified as potential resources (e.g., technical expertise, data, and geographic information system [GIS] services) available for this process, although it was apparent that it would require significant effort to mobilize and assimilate these resources.

Feedback from interviews confirmed that group chemistry has been affected by previous interactions and disagreements between the agencies over years of working together on transportation projects. Representatives recognized that the project coordinator role was necessary to generate a team atmosphere, set direction, build momentum, keep the group on task, and enforce accountability.

In summary, the issues of greatest concern related to group chemistry, having enough time and resources to invest in the effort (to create the process and to implement the process), and uncertainty about whether the group could agree upon a process given different missions. Despite these issues, agency representatives recognized the potential to improve transportation program delivery and focus ecological mitigation where it is most needed and agencies were committed to the task of creating an ecosystem approach for Montana.

3.3.   Adapting Eco-Logical to Create the ITEEM Process

An exercise in flexibility, the group's direction underwent ongoing adaptations. When goals were first established, Eco-Logical had not been released as a draft document, so goals were adapted when the guidance document became available to the IRTWG in September 2005. These goals and objectives were initially targeted toward multiple projects in the US 93 corridor, as originally directed. Standard planning and compliance processes were underway for the US 93 projects, and the IRT decided that applying an ecosystem approach for these projects would interfere with progress that had been made using standard planning and permitting approaches. The agencies agreed that efforts to develop an ecosystem process should continue, and the IRT selected the MT 83 corridor, with two projects that were in the earliest stages of planning, to pilot the approach on a smaller scale where actual outcomes could be used and monitored over time to assess how the process performs in the "real world". This change in direction slowed progress somewhat, but because the concepts of the process were finally beginning to take shape by then, the shift from one region of consideration to another was straightforward and demonstrated that the process was adaptable and transferable.

Some tasks diluted the focus of developing an appropriate process, although this was not obvious when tasks were underway. For example, the project coordinator summarized more than 170 relevant resources and examples in an annotated bibliography with links to the original resources. It was not apparent if this information was considered by the IRTWG during the development of the process. These experiences were more common at the outset, when the group struggled to apply these outcomes. Over time, however, the less useful approaches and outcomes dropped away while the techniques that recurrently resonated successfully with the group were selectively adopted over time.

It was sometimes necessary to demonstrate the feasibility and practicality of different components being considered for the process. Representatives listed management plans and

available data as examples when interviewed. Each agency presented an overview of their most relevant management plans to the other IRTWG representatives to raise awareness of agency priorities, although the exercise did not arrive at specifics of how to integrate these plans during implementation of the process. Alternatively, efforts to layer spatial data to identify relevant issues and opportunities across the landscape of interest were attempted with less than ideal outcomes; however, this led to constructive suggestions on how to better handle the logistics of this task to more efficiently identify and document the significant points of interest.

Midway through the IRTWG's efforts to create an ecosystem approach, the IRTWG was struggling with creating a defendable credit and debit system that met all participants' expectations within the timeframe provided. The IRTWG recognized that such a system was not an immediate necessity to the process and agreed that the agencies would initially cooperatively determine appropriate "trade-offs" via open negotiations. Eventually, it was hoped that the adaptive management step of the Eco-Logical approach might provide helpful insights that could be used to further this objective in the future.

Similarly, the IRTWG was interested in programmatic agreements (PA) to address repetitive, common adverse impacts that are regularly addressed with standard methods from one project to the next. It was evident, however, that the time commitment for drafting a PA was prohibitive given the time provided to arrive at a final process in which any PA was not essential to the initial development and application of the process. By deferring such "sticking points", recognizing that the adaptive management approach might further these objectives in the future, the IRTWG was able to focus on other components more germane to developing the basic process.

After much trial and error, redirection and refocusing, the IRTWG finally arrived at a framework for the ITEEM process and produced an implementation plan explaining the components of the consensus-based process. The ITEEM implementation plan for piloting on the MT 83 corridor is described in Chapter 4.

3.4.   In Hindsight: Lessons Learned

Reflecting on the IRTWG's efforts, it is fair to say that the path followed was bumpy and sinuous. Aspects of the effort went well while others floundered. Although many of these points may seem minute, cumulative effects of these details rippled through the group's efforts and the working atmosphere. It is hoped that the lessons learned documented below will help other similar collaborative efforts run smoothly and effectively.

To start, the IRTWG emphasized that leadership (i.e., upper-level management) support is essential. Having IRTWG agency representatives with upper-level management connections helped the group advance.

Redirecting the IRTWG's focus from the US 93 projects to MT 83 projects reinforced the necessity to work with projects (or candidate projects prior to being nominated) that are at the very beginning of the planning process. Projects that have completed the NEPA process are too far along in the planning effort to allow for negotiating creative mitigation trade-offs.

Of critical importance, "partnership building" should not be underestimated. Although such exercises take time and may not directly advance objectives, creating an environment of understanding, respect, and cooperation can reduce the time necessary to work through

challenging issues and the probability of having to elevate contested issues through a dispute resolution process. Having each agency present its management plan to the team helped all of the agencies understand each other's goals, issues and interests; it is recommended that this occur early in interagency collaborative efforts.

The IRTWG did not dedicate significant time to specific team-building exercises, but there were two instances that helped to bring the group together. One of the first group activities involved each representative and the project coordinator sharing their history and background with the group. People shared professional, educational, and personal histories and pursuits, and despite having worked together for years, many commented that they learned new aspects about their colleagues. All participants shared a common interest in outdoor activities such as recreation, hunting and fishing. This discussion seemed to quell tensions between individuals and likely provided a much-needed break from cycling debates that had previously consumed the group's energy.

Additionally, the group felt that the field visit was beneficial not only in terms of helping to develop the steps in the process, but also in terms of "team building"; in hindsight, the field visit may have been more beneficial to the group if done earlier. Early team building efforts would help with this essential aspect of interagency working group efforts.

The group benefited by meeting face-to-face regularly (at least once a month); through these meetings, communications have improved and momentum of effort was maintained. One-on-one interviews between agency representatives and the facilitator helped identify agency interests, issues and available information and allowed the facilitator to become better acquainted with the individual representatives and their independent viewpoints.

Facilitation with accountability improved the effectiveness of the process. Agendas with goals, outcomes, and a schedule, and the facilitator's efforts to stick to the agenda, kept the group focused and reduced digressions that previously built tensions between agencies. Early on, the project coordinator established the practice of using a computer projector to display documents being developed (e.g., goals, roles and responsibilities, etc.) for collaborative discussion and revision of the material during meetings. This helped maintain the group's focus and allowed deliberations and revisions to be witnessed by all attendees, increasing mutual understanding of differing interests and critical issues. Material developed in meetings was then distributed (as part of the meeting minutes) to IRTWG representatives for confirmation of approval and consensus that the material satisfied the involved agencies. Repetitive reminders of action items increased the accountability of individuals and were important to keeping the momentum and group engaged in the effort.

While the Statewide Habitat Conservation Plan was seen as an important source of information, it was recognized that additional local data are necessary to help in the decision making process. The effort required to obtain and integrate even a small subset of data to demonstrate how information may be used to guide decisions as the process was being developed was underestimated. It was also noted that not all data may be in electronic spatial (GIS) formats and the process needs to incorporate valuable information that may be only available in paper formats. The level of effort necessary to assimilate existing information should be commensurate to the size of the project/region and the complexity of the anticipated construction in question. It will be important to provide adequate resources for this task when the process is implemented.

While GIS will be an important tool to apply when the process is implemented, GIS wasn't critical to developing the process. However, by projecting electronic spatial data for all to simultaneously view did facilitate discussions about how strategic "trade-offs" may be identified; e.g., by looking at maps of blocked fish passage culverts, it was easy to see that improving fish passage on a few culverts on one stream may provide aquatic connectivity for an entire drainage while other streams may require significantly more effort to open up extensive stretches to fish movements. At the same time, the IRTWG found that projecting various combinations of GIS map layers alone wasn't effective in prompting focused feedback about agencies' concerns and opportunities. As such, it is recommended that corresponding paper maps be provided to better facilitate discussions and allow participants to document their feedback on these maps.

Developing a process is iterative – it takes time and possibly several discussions and drafts to arrive at a final product that all agencies can support. The concepts outlined in Eco-Logical were sometimes difficult to translate into practical tasks; the details for these tasks had to be negotiated as the effort to develop the process advanced. At times the group got "stuck" on a developing a particular aspect of the process, but by taking the time to actually apply that aspect (i.e., "test-driving" that component), the group could better judge how to develop it. In one case, however, the group was unable to make enough headway to advance credit/debit concepts toward a process that could be tested. Discussions about the credit/debit system dominated several meetings while other aspects of developing the process stagnated. The group recognized this impediment and agreed to "negotiate trade-offs" rather than use a hard, quantitative credit-debit system allowed the group to move on from that step. While the IRTWG deserves most of the credit for overcoming that particular obstacle, Eco-Logical helped the group redirect their efforts to get back on track.

It is important to understanding that aspects of the process, when implemented, may not achieve the intended outcome and therefore will need to be changed through an adaptive management/assessment process. Further, the available tools for implementing the process will change; hence the process will change. The final ITEEM process outlined in the next chapter is embryonic and piloting the approach will help the process grow if agencies commit to working together to identify weak components that can be improved. Ultimately, remaining open to critical assessment, creative collaborative solutions, and employing changes will be key to shaping a process that meets the objectives and goals.

4. THE ITEEM PROCESS

The previous chapter described issues and events that affected the effort to develop an ecosystem approach. The final product of those efforts, the Integrated Transportation and Ecosystem Enhancements for Montana (ITEEM) process, is outlined in this chapter. Goals and desired outcomes, roles and responsibilities, and a dispute resolution process set the foundation for the ITEEM process. An implementation plan with tasks, products, outcomes, schedule and budget is then outlined for a pilot study to "test" and evaluate the ITEEM process in the future.

4.1. ITEEM Goals and Desired Outcomes

The broad goal of the ITEEM process is to streamline transportation program delivery while applying more effective ecosystem conservation. More specifically, the goal of the ITEEM process is to collaboratively identify, within an identified region, issues and opportunities for larger scale ecological conservation or restoration projects to offset adverse impacts for multiple transportation projects within that given region. This goal will be achieved by integrating existing information from multiple sources to cooperatively identify cost-effective opportunities in the given region to offset adverse transportation impacts on ecosystem resources and fulfill environmental regulatory permitting requirements early in the planning process. Through earlier and more effective coordination, greater environmental benefits can be accomplished while maximizing efficient use of public funds and improving transportation program delivery. Desired outcomes the ITEEM process include the following:

- *Conservation*: Protection of larger scale, multi-resource ecosystems;

- *Connectivity*: Enhanced or restored habitat connectivity and reduced habitat fragmentation;

- *Early Involvement*: To the extent possible, early identification of transportation and ecological issues and opportunities;

- *Cost Efficiency*: Making the best use of transportation program funding by focusing mitigation efforts where they would be most effective;

- *Cooperation*: Finding solutions acceptable to all participating agencies;

- *Predictability*: Knowledge that commitments made early in the planning process by all agencies will be honored – that the planning and conservation agreements, results, and outcomes will occur as agreed; and

- *Transparency*: Better stakeholder involvement to establish credibility, build trust, and streamline infrastructure planning and development.

The ITEEM process strives to balance environmental and transportation values. Participants share the responsibility of finding solutions that meet both transportation and ecosystem conservation goals. Schedule, cost, safety, quality, public input, regulatory requirements, ecological concerns and other factors will all be considered with no single factor dominating as the top priority.

4.2. ITEEM Roles and Responsibilities

The participating agencies (see Chapter 2, page 2 for list of participating agencies) will designate one representative and one alternative representative for an ITEEM Oversight Group. If a member or alternate is unable to attend a meeting, that member or alternate will temporarily delegate responsibilities to other appropriate staff of that agency for that meeting only. Oversight Group members agree to:

- Serve as their agency's point of contact;

- Participate to the maximum extent that agency resources and budgets, and other program commitments allow (it is recognized that resource and budgetary constraints, and other program commitments, may limit the extent of such participation);

- Represent their agency's interests and responsibilities to the extent possible;

- Actively share agency concerns and information at all stages of the process;

- Listen respectfully; and

- Ensure their agency's commitments are honored.

All participatory agencies will strive for unanimous consent (i.e., consensus) on all recommendations made throughout the ITEEM process. Recommendations, as well as circumstances or issues inhibiting consensus, will be documented throughout the process. The agencies agree that, while recognizing the areas of expertise and authority of the members, deliberations will focus on the mutual intent of applying the ecosystem process to deliver transportation projects in a streamlined and predictable manner while optimizing opportunities to improve ecosystem conservation. It is the responsibility of the Oversight Group to incorporate the following broad objectives into the process:

- Exchange information and perspectives, identify issues and opportunities, reduce project development time, and increase predictability of program delivery;

- Collaboratively seek solutions that address the identified issues and opportunities;

- Prioritize opportunities and timeliness for ecosystem conservation;

- Conserve, enhance and/or connect essential habitats and natural landscapes;

- Improve cost-benefit efficiency;

- Apply programmatic approaches or establish Best Management Practices as appropriate;

- Document recommendations;

- Establish work groups dedicated to cooperatively implementing recommendations;

- Evaluate and adapt the process as needed to better meet the goals and objectives; and

- Establish measures of success in order to evaluate and adapt the process as needed to better meet the goals and objectives.

Regional stakeholders and non-government organizations will play important roles in the process as well. Further, general public involvement is critical to the success of the process, as are collaboration and open communication.

4.3.   ITEEM Dispute Resolution

In the event that consensus may not be achieved at any point in the ITEEM process, a dispute resolution process may be used, if necessary. If the unresolved issue is not critical to the process, the parties with the contrasting points of view can respectfully "agree to disagree" with no further implications; these disagreements will be documented for the record. If the issues must be resolved for the process to effectively move forward, deliberations will advance to a dispute resolution process.

The dispute resolution process establishes a two-week timeframe for the issues to be resolved via the Oversight Group, in which conflicting parties can openly discuss the issues and collaboratively seek solutions that satisfy the conflicting parties' concerns. If the parties are unable to come to a solution within two weeks, the issue will be immediately elevated to the IRT for upper-level management to address within the dispute resolution process identified in the US 93 Interagency Review Team Memorandum of Understanding (2004) outlining the IRT's commitments. Elevating the issue to the IRT is the last resort if the process comes to a stalemate; the Oversight Group will make every effort to resolve the conflict within the two-week dispute resolution process.

4.4.   ITEEM Implementation Plan

If the ITEEM process is adopted after the pilot study, the ITEEM process will be initiated as needed by MDT, who will notify the Oversight Group of its interest in addressing transportation needs within a geographic region where multiple (>1) transportation projects are proposed for future programming. From this starting point, the following tasks will occur for implementing the ITEEM process in this region:

- Task 1: Define and document the boundaries of the region;

- Task 2: Prepare materials for ITEEM Workshop (includes four sub-tasks);

    o Task 2a: Compile existing information for the region;

    o Task 2b: Select a facilitator to guide ITEEM process;

    o Task 2c: Seek public involvement; and

    o Task 2d: Select final datasets;

- Task 3: ITEEM Workshop (includes several sub-tasks);

    o Task 3a: Identify issues and opportunities (at coarse-scale);

    o Task 3b: Conduct field review of identified issues and opportunities;

    o Task 3c: Prioritize options for addressing issues and opportunities; and

    o Task 3d: Document recommended options; and

    o Task 3e: Establish measures of success to evaluate process;

- Task 4: Draft and circulate ITEEM workshop report including measures of success;

- Task 5: Finalize ITEEM report; and

- Task 6: Evaluate and adapt ITEEM process based on established measures of success.

Each task and subtask is detailed below including the anticipated products and outcomes. Many deliverables will be the responsibility of the facilitator; however, it is expected that the Oversight Group will review, provide feedback and concur on all products. A simplified flowchart of the ITEEM process tasks is included in Appendix D.

4.4.1.   Task 1: Define Boundaries of ITEEM Region

Using an ecosystem approach to address unavoidable impacts and opportunities to optimize mitigation, the Oversight Group will likely use a watershed approach to determine appropriate bounds for the region of interest (see e.g., Appendix B: Montana Watersheds). For the pilot study, the IRT selected the MT 83 corridor through the Clearwater and Swan River Valleys in northwestern Montana as the general geographic region of interest (Figure 2). Issues will be identified that are associated with the highway corridor, while opportunities to offset potential adverse effects of the proposed projects will be considered across a wider area within the established bounds of the region. These boundaries are flexible; e.g., if an ideal opportunity lies just beyond the defined bounds of the region, the Oversight Group would be allowed to consider extending their efforts beyond the defined boundaries if there is consensus to do so. The Oversight Group has further defined the boundaries of the ITEEM pilot study region as follows (Figure 2):

- Identification of issues will be associated with two MDT transportation projects proposed for MT 83 between the community of Seeley Lake and the Clearwater-Swan watershed divide.
- Identification of opportunities for mitigating:
  - *Adverse aquatic resource impacts* will be considered across the entire Clearwater drainage plus the section of the Blackfoot drainage in Missoula County (MDT prefers to keep effort within a single district, if possible).
  - *Adverse terrestrial resource impacts* will be considered from the junctions of MT 83 and MT 35 at the north end, and MT 83 and MT 200 at the south end (Clearwater Junction) and from the crests of the Mission and Swan Mountain ranges to the west and east, respectively.
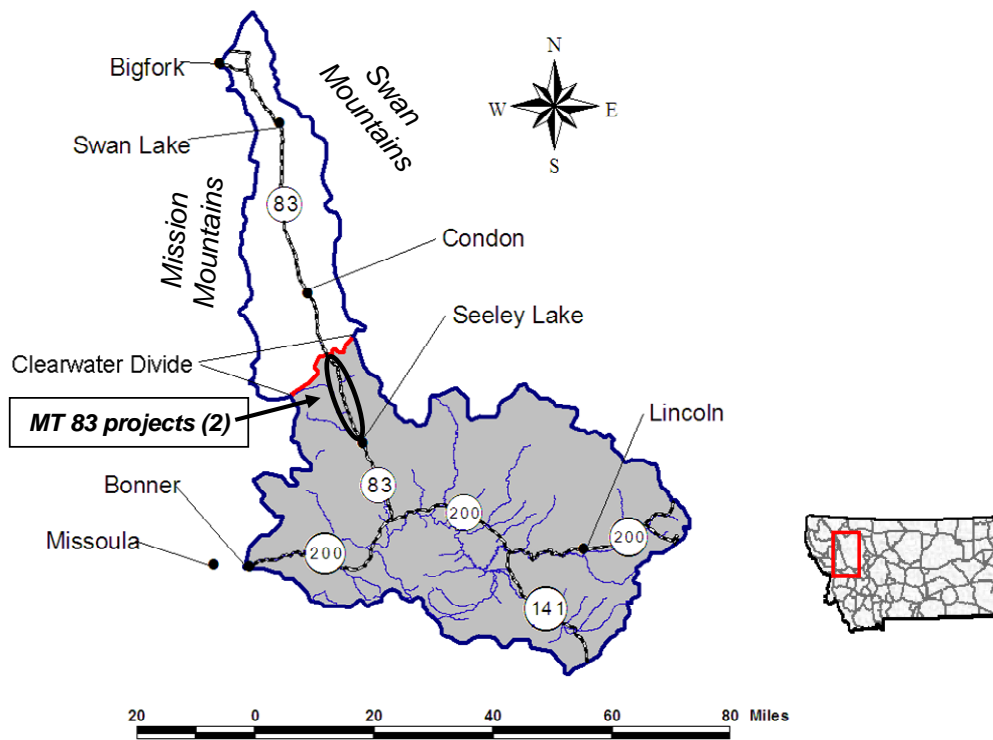
Figure 2: The MT 83 region identified for ITEEM pilot study. Oval encompasses the stretch of MT 83 with two upcoming Montana Department of Transportation projects, where issues will be identified. Adverse terrestrial impacts associated with these projects may be mitigated anywhere within the larger region outlined here. Adverse aquatic impacts may be mitigated in the shaded area, south of the Clearwater-Swan watershed divide shown in red.

4.4.1.1.   Task 1 Products and Outcomes

A study area map will be produced and used for general reference and to guide the effort to obtain relevant spatial data. The entity employed to compile the spatial data will likely be responsible for this map. This product will be included in the final workshop report.

- DELIVERABLE 1: Map of the MT 83 corridor where the ITEEM pilot process will be applied; and
- OUTCOME: Clear identification of the region of interest to guide the process.

4.4.2.   Task 2: Prepare Materials for ITEEM Workshop

With the ITEEM region defined, MDT, with guidance and support from the Oversight Group, will orchestrate the resources required for the ITEEM workshop (task 3). This task will require significant effort from all participating agencies to assemble information in formats conducive to prompting constructive discussions between the entities participating in the workshop.

4.4.2.1. Subtask 2a: Compile Existing Information for the Region

MDT will be responsible for assembling existing data, management plans and ecological information provided by Oversight Group members or other participants. This effort is focused on compiling existing spatial information relevant to the issues, regulations, and opportunities that will be considered during the workshop (task 3).

Participating agencies will be responsible for providing the best available data in a timely manner. Additionally, the public will be invited to provide relevant information for consideration in the ITEEM process (also see subtask 2c). If new, unique and significant data becomes available after priorities are set (see task 4, subtask 4c), the new information will not change set priorities without consensus of participating agencies. Examples of the type of information and data to be collected may include the following:

- Land ownership;
- Population densities from Census;
- Traffic data & projections;
- Road densities;
- Accident data;
- Multi-modal use;
- Planned developments & projected growth, land use & land use change;
- Conservation easements;
- State Wildlife Conservation Plan (other items listed here may be covered in this single document);
- Wildlife crossings, road kill locations & numbers of animal strikes;
- Species ranges & migration maps;
- Critical habitat designations and maps;
- Habitat connectivity models;
- Plant & animal species of concern;
- Wetland locations;
- Flood plain information;
- Water quality impaired streams (i.e, 303(d) listed streams) & TMDLs;
- Water quality restoration plans;
- Local watershed management groups' efforts;
- Municipal storm water runoff plans;
- Sanding and deicer use;
- Fisheries and fish passage maps;
- Cultural sites & national historic landmarks;
- Parklands & other 4(f) and 6(f) lands;
- Fishing access sites;
- Hunter block management areas;
- Recreational trails, trailheads;
- Ground water aquifers;
- Hazardous waste areas; and
- Other collaborative conservation efforts.

4.4.2.2. Subtask 2b: Select a Facilitator

MDT, with input and guidance from the Oversight Group, will select an impartial facilitator to help assemble the compiled information into useful and accessible formats that will encourage constructive discussions of issues and opportunities at the ITEEM workshop. This entity may or may not be the same entity selected to compile information and data.

The facilitator will work with the Oversight Group and the entity assigned to compiling spatial information to identify sources and types of information that would be useful for evaluating concerns and issues in the region. Based on feedback from the Oversight Group, the facilitator will make necessary arrangements for the workshop. The selected facilitator will guide the

Oversight Group through the workshop process and ultimately be responsible for the deliverables.

4.4.2.3.   Subtask 2c: Seek Public Involvement

The facilitator will be responsible for advertising and holding an open house to encourage the public and non-governmental organizations to provide relevant information that may be important to making recommendations in the ITEEM workshop. Valid sources of data identified at the open house will be included in the compilation of information for the workshop.

4.4.2.4.   Subtask 2d: Select Final Datasets

The facilitator will present a comprehensive list of the compiled data and sources to the Oversight Group. The Oversight Group will determine the final set of information that will be considered through the ITEEM process. The facilitator will document these decisions in a technical memo, including justification for retaining or rejecting information, which will be distributed to the Oversight Group prior to the workshop. Additionally, this documentation will be included in the final report disclosing the process and outcomes.

4.4.2.5.   Task 2 Products and Outcomes

The entity employed to compile data and (if not the same entity) the facilitator will be responsible for assimilating the existing regional information into formats that can be easily presented, understood, and used to identify issues and opportunities at the workshop. Prior to the workshop, this final list of information and datasets will be summarized in a technical memorandum for the Oversight Group reporting on the types and sources of data that will be available at the workshop, with maps of the data that will be presented at the workshop. The intent of this document is to prepare workshop participants and to provide them with materials that can be used to obtain feedback from their agency experts and to "mark up" maps that can then be brought to the workshop. At the workshop, the spatial information will be provided in large hardcopy maps for display; further, this information will be available electronically to demonstrate how different parameters of interest overlay and relate to each other during the workshop.

- DELIVERABLE 2a: Contract to compile data;
- DELIVERABLE 2b: Contract a facilitator, who will assist with assembling and inventorying data and primary contacts to obtain these data;
- DELIVERABLE 2c (1): Inventory of information provided by the public at the open house;
- DELIVERABLE 2c (2): Convert useful information from public open house into usable format;
- DELIVERABLE 2d (1): Comprehensive inventory of all sources and types of relevant data available, including information gathered at the public open house. The Oversight Group will select the final datasets to be used in the process;
- DELIVERABLE 2d (2): A technical memo outlining the final datasets to be used in the ITEEM process, including justification for retaining or rejecting available information. This memo will include smaller-format maps that will be used for the workshop coarse-level identification of issues and opportunities. In addition, larger format maps will be

provided in hardcopy and the data layers will be available in a GIS for dynamic manipulation and projection at the workshop; and

- OUTCOME: Workshop participants will be able to prepare their agency's feedback prior to attending the workshop.

4.4.3.   Task 3: ITEEM Workshop

With regional spatial information assimilated in a manner conducive to display during assessment and interactive discussions, a workshop will be held for the Oversight Group to collaboratively discuss and document issues, opportunities and recommendations for addressing possible environmental effects of the proposed transportation projects. The workshop will be organized and led by the selected facilitator, and participants will include the Oversight Group representatives, as well as other agency representatives and non-government entities that the Oversight Group deems capable of providing relevant, unbiased, and constructive feedback in the workshop. The workshop's success will hinge on the participants' ability to interact with the available information and each other; hence, efforts will be made to limit the number of attendees to a select group of individuals with regional expertise and an understanding of the ITEEM process and desired outcomes.

Depending on the breadth of the information to be considered, the workshop may require two to three days of participants' time. The workshop will be held within the identified region to facilitate a field review of identified locations of interest; this workshop will be held during the spring, summer, or fall when there's no snow or ice cover. Each step described as a subtask, below, will lead to the next, building off the feedback and documentation derived from participants.

4.4.3.1.   Subtask 3a: Identify Issues & Opportunities at Coarse Scale

Workshop attendees will use the compiled regional information to identify transportation program and ecosystem conservation issues and opportunities at a coarse scale. The facilitator will document these issues and opportunities for reference and further discussion in the field review.

4.4.3.2.   Subtask 3b: Conduct Field Review of Issues & Opportunities

Workshop attendees will visit specific sites in the region where the coarse-scale issues and opportunities were identified to further assess and "ground-truth" the information. Options for addressing these issues and opportunities will be evaluated and those that are not feasible due to physical, social or land use constraints will be eliminated while practical options with favorable site conditions will be retained for further consideration. Documentation of the field discussions about possible mitigation options or opportunities may include the following information:

- what the option entails including where, when and potentially how the option might be carried out;
- how the option(s) addresses regional priorities and regulatory statutes, and will contribute to streamlining the transportation program delivery process and ecosystem conservation;
- identification of other areas that would relinquish substantial mitigation improvements in trade for focusing mitigation efforts and limited funding toward the documented option or set of options;

- whether there may be opportunities to leverage funds for a greater good (i.e., if cooperative efforts can contribute to other on-going efforts and collaborations); and
- workshop attendees' preliminary comments on the option(s).

4.4.3.3.   Subtask 3c: Prioritize Options to Address Issues and Opportunities

After the field review, workshop participants will evaluate and eliminate options judged inappropriate for further consideration, with documented justification for dropping each idea. The remaining list of options to address the documented issues and opportunities will be collaboratively prioritized, with the facilitator guiding the participants' discussions toward this goal and summarizing the main points of discussion until a final, prioritized list is agreed upon by all participants.

4.4.3.4.   Subtask 3d: Document Recommended Options

The facilitator will synthesize workshop discussions, including recommendations and options not adopted. Documentation may include an implementation plan with designated tasks, roles and responsibilities, and performance measures associated with each recommendation. Depending on the complexity of any given recommendation (e.g., recommendations that require coordination between several agencies, conservation easements, land swaps, etc.), work groups may be identified to further detail an implementation plan, including parties responsible for tasks and estimated costs to accomplish the recommendation if details can not be determined during the workshop. Each agency will consider its specific interests when describing these details to provide the support and justification to preemptively anticipate possible concerns from management. The facilitator will document recommendations that have consensus from all participating agencies, as well as those that do not have consensus (including justifications of support or opposition from participants).

4.4.3.5.   Subtask 3e: Establish Measures of Success

The final task at the workshop is to establish measures of success in order to evaluate and adapt the process in the future. Because it will take years to see many of the outcomes, workshop participants could establish measures to be evaluated over time (e.g., by tasks or phases of the process and for long-term outcomes). Three general factions of the ITEEM effort should be considered when establishing measures and performance standards or "grades", as follows:

1. The process (e.g., data assimilation, workshop preparation, coarse-scale identification of issues and opportunities, field review to refine issues and opportunities, prioritization approaches, documentation and reporting, agency representation and involvement, agency follow-through on commitments, etc.);

2. The construction projects (e.g., mitigation options applied, permits obtained and construction projects delivered in a timely manner, etc.); and

3. Ecosystem outcomes (e.g., ecosystem benefits realized, how mitigation may have leveraged other resources to achieve a greater ecological good, etc.).

The participating agencies will determine appropriate and achievable measures for variables related to desired outcomes. Based on these measures, a corresponding "grading system" or "desired outcome targets" will be agreed upon at the workshop. Finally, because outcomes may not be realized until years after the workshop and reporting are completed, the Oversight Group

will meet periodically to evaluate measures of success (see Task 6) until the process-associated activities are completed.

4.4.3.6. Task 3 Products and Outcomes

The facilitator will be responsible for guiding discussions, and documenting and summarizing issues and opportunities identified at the workshop. It is not expected that these products will be formalized, and these documents will not be distributed beyond the workshop (however they will be archived for reference as needed).

- DELIVERABLE 3a: List of identified coarse-scale issues and opportunities, including a brief description, location, and name of participant who identified the issue or opportunity. This product will be delivered to workshop participants before the field review;
- DELIVERABLE 3b: Refined list of issues and opportunities based on field review discussions, including the following details:
    - o what the option entails including where, when and potentially how the option might be carried out;
    - o identification of mitigation priorities and associated trade-offs;
    - o how option(s) addresses regional priorities, regulatory statutes, and will contribute to streamlining the transportation program delivery process and ecosystem conservation;
    - o whether there may be opportunities to leverage funds for a greater good (i.e., if cooperative efforts can contribute to other on-going efforts and collaborations); and
    - o workshop attendees' preliminary comments on the option(s).
- DELIVERABLE 3c: List of issues, opportunities and options that were dropped from consideration, with justification, as well as a prioritized list of the issues and opportunities that the workshop participants collaboratively selected to advance to recommendations;
- DELIVERABLE 3d: Final list of workshop's prioritized recommendations with an outlined implementation plan including tasks, roles and responsibilities, and needs for additional working group efforts to accomplish complex implementation plans; and
- DELIVERABLE 3e: Documented measures of success identifying appropriate and achievable quantitative and qualitative measures for variables related to desired outcomes, including a corresponding "grading system" or "desired outcome targets" and a schedule for agencies to meet periodically to evaluate measures of success.
- OUTCOME: A detailed, documented progression of the workshop from beginning to end, summarizing the thought processes, deliberations, justifications, final recommendations, and measures of success from the workshop in order to prepare the draft report for review.

4.4.4.   Task 4: Draft and Circulate ITEEM Workshop Report

The facilitator will compile the documented outcomes into a draft workshop report. Participating agencies will have 45 days to review the draft report and provide comments. After revisions have been made, the report will be made available for public comment for 30 days. A summary of the public's comments and agency responses will be included in the final ITEEM report as an appendix. Options that are not adopted will also be documented with justifications in the final report as an appendix.

4.4.4.1.   Task 4 Products and Outcomes

The facilitator will compile the documented outcomes into a draft workshop report. Participating agencies will have 45 days to review the draft report and provide comments. After revisions, the draft will then be released to the public for a 30-day comment period.

- DELIVERABLE 4a: Draft report of workshop outcomes with details outlining the progression and justifications for the final recommended options and measures of success. The draft report will be distributed to the participating agencies for a 45-day comment period;
- DELIVERABLE 4b: The revised draft report will be released to the general public for comment; and
- OUTCOME: Complete disclosure and transparency of the ITEEM process and results derived from the workshop effort for interested parties to review and provide feedback.

4.4.5.   Task 5: Finalize ITEEM Report

The facilitator will finalize the workshop report including the recommendations with identified action items and work groups as needed. All agencies will receive the final report for review and final concurrence. A signatory page will be included documenting agency concurrence, and all recipients of the final report will be listed. The Oversight Group representatives will continue to serve as their agency's contact for further correspondence regarding plans to accomplish any outcomes resulting from the agreed-upon recommendations.

4.4.5.1.   Task 5 Products and Outcomes

The facilitator will revise and finalize the draft report based on feedback from the agencies and public.

- DELIVERABLE 5: Final report including agency commitments to implement the recommendations. Additionally, this report will include appendices summarizing public feedback and options not adopted; and
- OUTCOME: Streamlined project delivery while maximizing the effectiveness of ecosystem conservation for the region.

4.4.6.   Task 6: Evaluate and Adapt ITEEM Process

After the report is finalized and agencies are moving forward with ITEEM recommendations, the Oversight Group will meet periodically (e.g., annually) to revisit the final report, discuss progress and outstanding issues, and to update measures of success as possible. It will be up to the Oversight Group to plan these meetings; compile necessary data inputs for measures of

success; and document progress, outstanding issues and suggestions to adapt the process. These periodic meetings will take place until all commitments are fulfilled, which will take many years. Once all agencies agree that all commitments documented in the final report have been met, the Oversight Group will have a final meeting to document success, lessons learned, and recommendations to improve the ITEEM process; this documentation will result in an addendum for the final report.

4.4.6.1.   Task 6 Products and Outcomes

The Oversight Group will be responsible for arranging periodic meetings to evaluate progress of the ITEEM process. Once all agencies agree that all commitments documented in the final report have been met, the Oversight Group will have a final meeting to document success, lessons learned, and recommendations to improve the ITEEM process

- DELIVERABLE 6: An addendum for the final report documenting the Oversight Group's final determinations of success, lessons learned and recommendations to improve the process.
- OUTCOME: A critical assessment of successes and possible improvements for the next ITEEM project.

4.5.   Pilot Project Schedule

The entire pilot effort is anticipated to take one year from start to completion. An example timeline is outlined in Table 4. It is recommended that the workshop be delayed until spring after the snow has receded. Task 6 will occur after the final report is delivered; it is the Oversight Group's responsibility to schedule periodic meetings to evaluate progress after the final report is completed and until agencies agree that all commitments are met.

Table 4. Tentative schedule for piloting the ITEEM process.

ITEEM Tasks	Example one-year schedule (July-June)											
	J	A	S	O	N	D	J	F	M	A	M	J
Task 1: Define Regional Boundaries	█											
DELIVERABLE 1: Map of Region of Interest	█											
Task 2: Workshop Preparation	█	█	█	█	█							
Task 2a: Compile Existing Information	█	█	█	█	█							
Task 2b: Select Facilitator	█											
DELIVERABLES 2a & 2b	█											
Task 2c: Public Open House		█										
DELIVERABLE 2c(1) and (2)			█									
Task 2d: Select Final Datasets				█								
DELIVERABLE 2d(1)				█								
DELIVEABLE 2d(2)					█							
Task 3: Workshop *(incl. DELIVERABLES 3a-3e)*						█						
Task 4: Draft, Circulate & Revise Workshop Report							█	█	█			
DELIVERABLE 4: Draft Workshop Report								█				
Task 5: Final Report										█	█	
DELIVERABLE 5: Final Report												█
Task 6: Evaluate & Adapt ITEEM process *DELIVERABLE 5: Addendum for final report*	Assessment will occur as process plays out; final evaluation & suggested adaptations will be summarized for an addendum to final report.											

4.6.   Pilot Project Budget

Estimated costs for the ITEEM process are summarized in Table 5. These costs may change depending on the person or agency that MDT and the Oversight Group may select for data compilation and facilitation. Additionally, the estimated costs do not include any overhead. The first column under "ITEEM Team" in Table 5 specifies estimated in-kind time that MDT anticipates investing in the pilot process, while the second column lumps the other eight agencies' estimated in-kind time investments; this information is further broken down in Table 6 on the following page, summarizing the estimated in-kind needs from each individual agency (mirroring the estimated in-kind time investments in Table 5).

Table 5. Estimated budget for the ITEEM process pilot project.

Budget		ITEEM Team					Other Direct Expenses		Totals
		MDT	Other Agencies (8)	Data Compiler	Facilitator	Total Hours/Total Costs	Travel	Operations/Communications	Total Costs
Task #	Task Title	inkind (hours)	inkind (hours)	$60.00	$70.00				
1	Define, document regional boundaries	1	8	5	2	16			
				$300.00	$140.00	$440.00			$440.00
2	Prepare ITEEM workshop (subtasks follow)								
2a	Compile existing regional data	20	160	600	320	1100			
				$36,000.00	$22,400.00	$58,400.00			$58,400.00
2b	Select facilitator	80	80	0	0	160			
				$0.00	$0.00	$0.00			$0.00
2c	Public Open House	40	80	20	160	300		$ 500.00	
				$1,200.00	$11,200.00	$12,400.00	$ 500.00		$12,900.00
3	ITEEM Workshop	200	320	80	80	680			
				$4,800.00	$5,600.00	$10,400.00	$ 1,000.00	$ 500.00	$11,900.00
4	Draft, circulate workshop report	100	160	80	200	540			
				$4,800.00	$14,000.00	$18,800.00		$ 500.00	$19,300.00
5	Finalize report	40	80	40	80	240			
				$2,400.00	$5,600.00	$8,000.00		$ 500.00	$8,500.00
	TOTAL HOURS	481	888	825	842	3036			3036
	TOTAL DIRECT COSTS	n/a	n/a	$49,500.00	$58,940.00	$108,440.00	$ 1,500.00	$ 2,000.00	$111,940.00

Table 6: Estimated in-kind contributions from each agency involved in piloting the ITEEM process pilot project.

Agency	Estimated in-kind (staff hours) needs
MDT	481
FHWA	111
MTFWP	111
MTDEQ	111
MTDNRC	111
USEPA	111
Corps	111
USFWS	111
USFS	111
Totals	1369

5. ITEEM POTENTIAL BENEFITS

The Integrated Transportation and Ecosystem Enhancements for Montana (ITEEM) process is anticipated to yield benefits for agencies, the public, and the environment on several levels. Potential benefits of the ITEEM process include the following:

- *Early Involvement*: The ITEEM process guarantees that all participating agencies meet face-to-face to discuss issues and opportunities early in the planning process;

- *Cooperation*: The foundation of the ITEEM process is built on interagency collaboration where participants work together to:

    o Avoid setting conflicting directives;

    o Find solutions acceptable to all participating agencies; and

    o Complement regional ecological conservation and restoration programs.

- *Public Involvement*: Public input is solicited and integrated into the ITEEM process at two different stages;

- *Predictability*: Documentation of recommendations is fundamental to the ITEEM process; with clearly stated agreements for all to refer to, accountability and predictability will follow with no unexpected outcomes;

- *Streamlined permitting processes*: With early interagency involvement and coordination, and documentation of issues and pledges to address issues, the ITEEM process sets the stage for fulfilling requirements for regulatory permits in advance of construction;

- *Streamlined National Environmental Policy Act (NEPA) process*: The ITEEM process initiates early agency and public involvement and documents issues and justification of recommendations; these efforts will feed into and bolster the NEPA process, with prospects to reduce the overall time and resources needed to comply with NEPA regulations;

- *Effective Ecosystem Enhancements:* The ITEEM process emphasizes a "big picture approach" to collaboratively identify the best opportunities to conserve and connect habitats and protect larger scale, multi-resource ecological systems;

- *Cost Efficiency*: Public funds will be applied more effectively via the ITEEM process in the following ways:

    o Reduced labor by addressing multiple projects at the same time;

    o Reduced potential for imposing critical requirements late in the planning process that result in the need to redesign plans or delay the permitting process;

    o More effective application of mitigation investments by:

        ▪ Ensuring resources effectively address regional ecosystem priorities that may not be considered when mitigating adverse impacts project-by-project; and

        ▪ Leveraging mitigation funding to complement and support regional ecological enhancement or restoration initiatives.

- o Investing in advanced mitigation to avoid inflationary cost increases; and

- o Reduced labor for NEPA and regulatory permitting processes.

The potential benefits outlined above may be useful for establishing specific measures of success. Additionally, the oversight group and facilitator can refer to these potential benefits for a broad perspective of desired outcomes.

6. CONCLUSIONS AND RECOMMENDATIONS

The IRTWG collaboratively created the ITEEM process to, in theory, streamline transportation program delivery while focusing mitigation efforts where they are most needed. Eco-Logical was a useful reference for the IRTWG during the development of the ITEEM process. Suggestions provided in Eco-Logical served as a framework without imposing rigid steps that limited options as different approaches were considered. Nonetheless, the path to developing the ITEEM process was not always straight given diverse interests and the wide range of options and flexibility offered in Eco-Logical. These challenges were not unexpected and similar collaborative efforts will, no doubt, experience these same issues; however it is hoped that the experiences documented in this report will provide useful insights for other groups to bypass avoidable pitfalls.

Participating agency representatives collectively devoted hundreds of hours to successfully achieve the immediate goal of developing a consensus-based ecosystem approach for Montana. Through these efforts, the IRTWG established stronger working relationships between the agencies, providing an important foundation for implementing the process. Only by implementing the ITEEM process can it be determined whether this cooperative approach offers more efficient and effective methods for planning, permitting and delivering transportation projects. The following recommendations are offered to ensure the efforts to develop the process are fully cultivated:

- Reconfirm agency commitments for piloting the ITEEM process and monitoring long-term outcomes. This could include requesting that MDT (as the lead agency for the pilot study) establish a timeline for initiating the pilot study.

- Pilot the ITEEM process for the MT 83 corridor as soon as possible, in order to maintain continuity and momentum of the IRTWG. When developing measures of success, include measures specifically related to determining whether to adopt the ITEEM process for future infrastructure projects and programs in Montana.

- Disseminate insights from this report to help other collaborative efforts apply the Eco-Logical guidance and establish ecosystem-based approaches to offsetting unavoidable infrastructure impacts.

- Consider securing future resources to assimilate the results of this report with the outcomes observed in the pilot study to provide a comprehensive overview of the effort and what factors were important in deciding whether to adopt the process for future application.

In conclusion, the ultimate judgment of the ITEEM process will be determined when the process is initiated, recommendations are implemented, outcomes are evaluated and suggested adaptations to improve the process are documented. Continued agency commitment and support will be key to seeing the pilot study through to completion.

7. REFERENCES

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8. APPENDIX A: IRTWG MEMBER LIST

**Table 7: Members of the Interagency Review Team Working Group (IRTWG).**

Agency	IRTWG member	Title	email	phone	ext.
CSKT	Dale Becker	Wildlife Manager	daleb@cskt.org	406-883-2888	7278
EPA	Steve Potts	NEPA Coordinator	potts.stephen@epa.gov	406-329-3313	
FHWA	Ted Burch	Program Development Team Lead	Theodore.Burch@fhwa.dot.gov	406-449-5302	231
FHWA	Carl James	ROW Program Manager/Environmental Specialist	Carl.James@fhwa.dot.gov	406-449-5302	238
FHWA	Paul Garrett	Wildlife Ecologist, Water and Ecosystems Team	paul.garrett@fhwa.dot.gov	720-963-3071	
FHWA	Craig Genzlinger	Operations Engineer/American Indian Coordinator	craig.genzlinger@fhwa.dot.gov	406-449-5302	240
MDT	Jean Riley	Bureau Chief, Environmental Services	jriley@mt.gov	406-444-9456	
MDT	Bonnie Steg	Resources Section Supervisor	bsteg@mt.gov	406-444-9205	
MDT	Pat Basting	Missoula District Biologist	pbasting@mt.gov	406-523-5872	
MDT	Deb Wambach	Butte District Biologist	dwambach@mt.gov	406-444-0461	
MTFWP	Glenn Phillips	Habitat Protection Bureau Chief	gphillips@mt.gov	406-444-2449	
MTFWP	T.O. Smith	Fish and Wildlife Conservation Plan Coordinator	tosmith@mt.gov	406-444-3889	
MTFWP	Steve Knapp	Wildlife Habitat Bureau Chief	sknapp@mt.gov	406-444-4717	
MTDEQ	Jeff Ryan	Water Quality/Wetland Specialist	jeryan@mt.gov	406-444-4626	
MTDEQ	Bonnie Lovelace	Water Protection Bureau Chief	Blovelace@mt.gov	406-444-4969	
MTDEQ	Robert Ray	Section Supervisor, Watershed Protection Section	Rray@mt.gov	406-444-5319	
MTDEQ	Dean Yashan	Environmental Program Manager, Watershed Management Section	dyahshan@mt.gov	406-444-5317	
MTDEQ	Linda Saul	Wetlands Program	lsaul@mt.gov		
DNRC	Ross Baty	Wildlife Biologist, Trust Land Mngt Division	rbaty@mt.gov	406-542-4200	
USACE	Todd Tillinger	Hydraulic Engineer	todd.n.tillinger@usace.army.mil	406-441-1375	
USACE	Allan Steinle	State Program Manager	allan.e.steinle@usace.army.mil	406-441-1375	
USFS	Fred Bower	Transportation Planning Engineer	fbower@fs.fed.us	406-329-3354	
USFS	Jim Claar	Carnivore Program Leader	jclaar@fs.fed.us	406-329-3664	
USFWS	Scott Jackson	Wildlife Biologist Section 7 DOT	scott_jackson@fws.gov	406-449-5225	201
USFWS	Anne Vandehey	Wildlife Biologist Section 7 Supervisor	anne_vandehey@fws.gov	406-449-5225	212
W. Fed. Lands	Terry Schumann	Environmental Specialist	Terry.Schumann@fhwa.dot.gov	360-619-7607	

9. APPENDIX B: MONTANA WATERSHEDS

Figure 3. Sixteen watershed districts used by the Montana Department of Transportation and the U.S. Army Corps of Engineers for wetland mitigation projects in Montana.
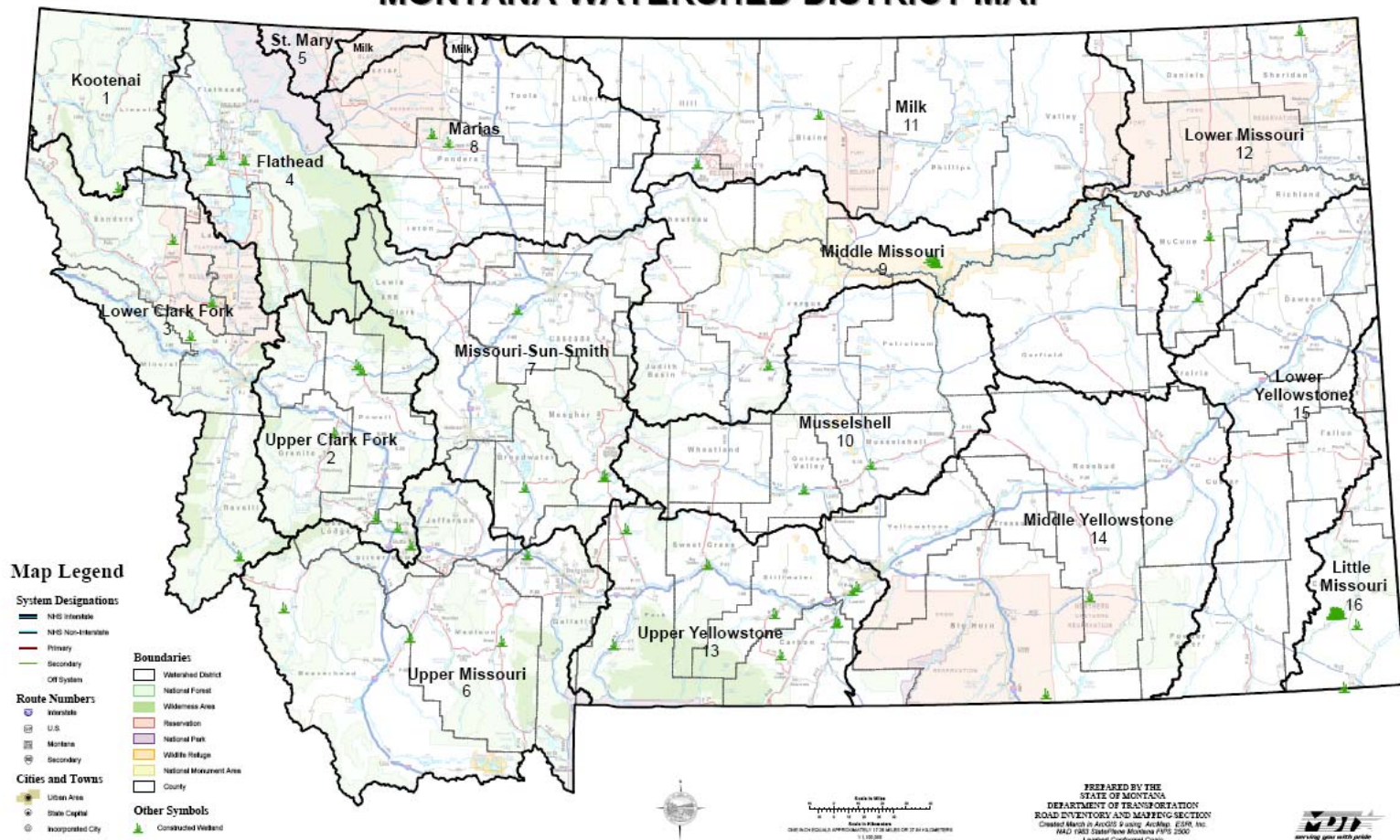
10. APPENDIX C: IRTWG INTERVIEW TOOL

US 93 IRTWG interview questions for agency representatives.

Goals for interviews are to better understand what your agencies want to get out of this effort and how your agencies relate to these issues. This information will help us identify similarities and differences in order to foresee where we may excel or falter in our mission to develop an approach to mitigating or compensating hwy program impacts.

What is your agency's current "standard operating procedure" for addressing transportation projects?

- What are the pros and cons to this approach?
- Do you feel this is an effective process? (please explain how you define "effective" in this context)
- Do you feel this is an efficient (time-wise) process?
- Approximately how much of your agency's time and resources are dedicated to regulatory approvals related to transportation infrastructure projects? (please provide, as best able, person hours/year, dollars/year plus % of total budget)

What specific impact(s) and resources are you and your agency most concerned about mitigating or compensating?

- List, prioritize specific impacts and resources…
- What policies, programs, protocols, data, and/or funding does your agency employ to address these specific impacts? Which of these are regulatory versus non-regulatory?
- Does your agency use specific language and/or "units" (acres of wetlands, number of recruited juveniles, etc.) to describe and quantify these resources of concern?
- Does your agency have specific "measures of effectiveness" that are applied after mitigation is completed, to monitor success of those efforts?

How would you define the "ecosystem approach to mitigating highway impacts"?

- What does your agency hope to gain from the "ecosystem approach" to mitigating impacts related to highway infrastructure?
- What are the biggest opportunities to reaching your agencies hopes using the "ecosystem approach"?
- What are your agency's biggest concerns regarding the "ecosystem approach" to mitigating impacts related to highway infrastructure?
- Do you foresee any specific "road blocks" to advancing the US93 IRTWG effort?

What resources can your agency contribute to the IRTWG to help achieve our goals?

- Core team members (the regulars, on the email list)
- Technical expertise
- Technical services (GIS, impact identification/quantification methods, etc.)
- Data (types, quality, accessibility, etc.)

What can you tell me about this group's history that will help me understand and work with our "dynamics" in order to pull this off?

- Do you feel you are being "heard" in the meetings?
- Do you have any suggestions for how to best manage the group and tasks at hand

11. APPENDIX D: ITEEM PROCESS FLOW CHART

Figure 4a & 4b: Flow chart of ITEEM process, beginning with desired outcomes (4a) and Tasks 1 and 2 (4b).

4a)

> **Desired outcomes from this process include the following:**
> •Conservation: Protection of larger scale, multi-resource ecosystems;
> •Connectivity: Enhanced or restored habitat connectivity and reduced habitat fragmentation;
> •Early Involvement: To the extent possible, early identification of transportation and ecological concerns and issues;
> •Cost Efficiency: Making the best use of transportation program funding by focusing mitigation efforts where they are most needed;
> •Cooperation: Finding solutions acceptable to all participating agencies;
> •Predictability: Knowledge that commitments made early in the planning process by all agencies will be honored – that the planning and conservation agreements, results, and outcomes will occur as negotiated;
> •Transparency: Better stakeholder involvement at key stages to establish credibility, build trust, and streamline infrastructure planning and development.

4b)

Prior to Workshop (Tasks 1 & 2)

Participating Agencies appoint one representative & one alternate to serve on Oversight Group (OG)

MDT selects region with multiple transportation projects *(for ITEEM pilot, the IRT selected MT 83)*

Task 1: OG defines boundaries of region

Task 2a & 2b: MDT/OG selects *entity to compile information* for determining issues, opportunities in region and a *facilitator* to guide process

Task 2a: Participating agencies provide information to info-compiling entity

Task 2c: Facilitator conducts public open house to obtain other relevant information.

Task 2d: Facilitator works with info-compiling entity to list all candidate info for workshop; OG selects final datasets to be used in workshop; facilitator prepares final package of info to be used in workshop to OG in advance of workshop so that agencies can prepare initial input prior to workshop.
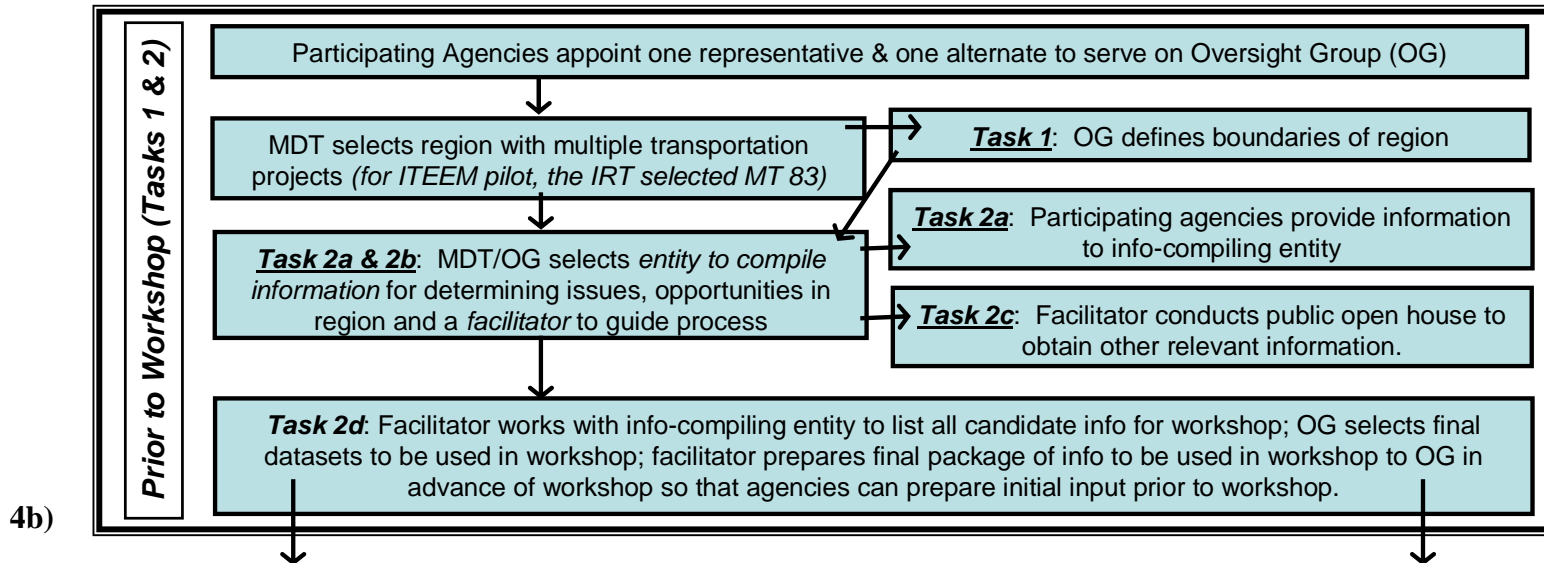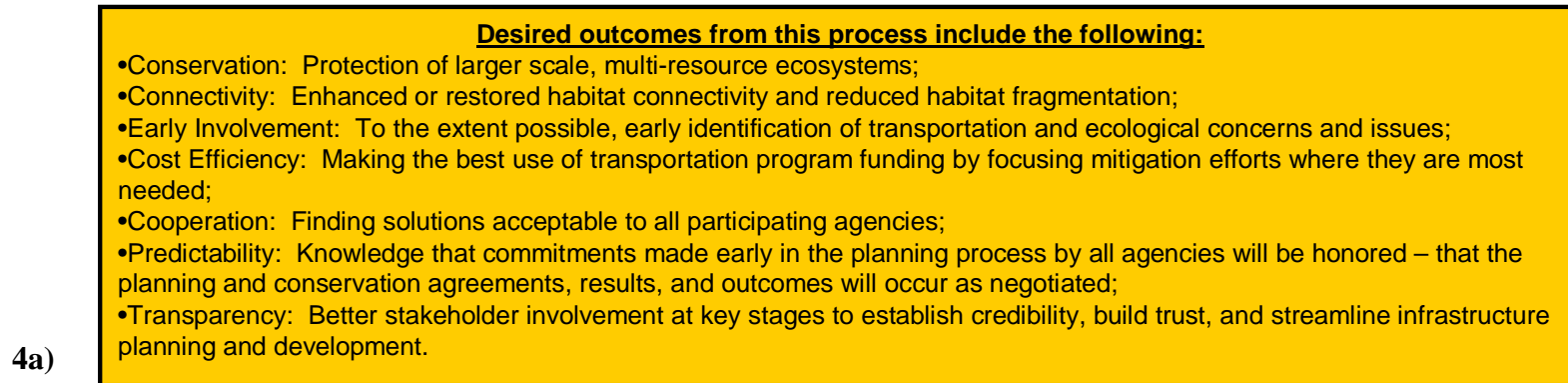
Figure 5a & 5b: Flow chart of ITEEM process, continuing with Task 3 (5a) and Tasks 4, 5 and 6 (5b).