



Cobb to Brickyard Reconductoring Project, Karner Blue Butterfly Habitat Conservation Plan

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1.0 INTRODUCTION

The Karner Blue Butterfly (KBB) (*Lycaeides melissa samuelis*) has been listed as an endangered species by both the United States Fish and Wildlife Service (USFWS) and the Michigan Department of Natural Resources (MDNR). The KBB has been documented to populate portions of a Michigan Electric Transmission Company, LLC (METC) rights-of-way (ROW) in western Michigan. Wild lupine (*Lupinus perennis*), the obligate larval food plant of the KBB has also been documented to occur along the transmission line's ROW operated by METC (Fettinger, MDNR 2003). ENSR is applying for an incidental take permit on behalf of METC under section 10(a)(1)(B) of the Endangered Species Act to mitigate for potential impacts to any federally protected species, critical habitat, or sensitive resources located along the ROW operated by METC. This incidental take permit pertains specifically to the presence of the KBB and its habitat within the currently proposed work site.

The proposed work involves reconductoring a 4.07-mile segment of electric power transmission line within this ROW segment. Construction activities for the reconductoring project are scheduled to begin in March 2005 and will be completed by late spring 2005. All construction activities will take place within the existing 66-foot wide utility ROW. The reconductoring project will require METC's contractors to replace existing metal towers with new wooden utility poles (selected poles will require guy wires), and hang new 138 KV power lines on new insulators. This reconductoring project is necessary to provide adequate load capacity for an anticipated increase in customer demand in the region. Without this project the existing line will eventually fail or will require that METC trip off load to keep the system in operation. The transmission line segment where reconductoring is proposed is identified on the enclosed USGS topographic map section (Figure 1). An overhead aerial photograph of the transmission line segment is presented on Figure 2. There are 40 towers spaced approximately 300 to 400 feet apart along the 4.07-mile stretch of ROW that will be replaced with wooden poles.

Specific site location details are as follows:

- Project size/site location: 4.07-miles of transmission lines running from just north of the Muskegon County Sewage Reclamation Area (east-central Muskegon County) into the southwest corner of Newaygo County.
- Township 10 North, Range 15 West, Sections 1,2,11 and Township 11 North, Range 14 West, Section 31.

This document is a Habitat Conservation Plan (HCP), which is a required component of a section 10(a) (1) (B) incidental take permit application (application form 3-200). This HCP outlines steps METC will take during and after construction necessary for the recovery and protection of KBB metapopulations along the Cobb to Brickyard ROW in accordance with the USFWS KBB Recovery Plan, Section 1.321.6, Muskegon RU. Due to the linear nature of the METC ROW this HCP further supports the goals of the USFWS KBB Recovery Plan by providing "connectivity of subpopulations". The METC power transmission line ROW provides miles of connected suitable KBB habitat. METC is participating in the Michigan KBB HCP Work Group, which is developing the Michigan Statewide HCP for the KBB to maintain the KBB habitat and ensure its preservation in the future. In the

interim, METC is applying for a project specific Incidental Take Permit supported by this HCP for the proposed reconductoring project. If future work along other METC ROW is anticipated to result in the incidental take of KBB or if mowing or tree trimming is required in the ROW prior to finalization of the Statewide ITP and HCP, METC will consult with the MDNR and USFWS on permit options to cover any KBB take.

METC requests that this Section 10(a)(1)(B) permit be in effect for 5 years from the date of issuance, and that the permit allows for incidental takes of KBB within the geographical boundaries of the construction ROW identified in this submission. It is anticipated that this permit will allow for the incidental take of KBB until activities along the ROW are covered by the Michigan State HCP, which should be issued within the next 1 to 3 years. If necessary, METC will coordinate with the USFWS and MDNR on extension of the permit prior to expiration. METC will take all reasonable precautions and action to avoid any incidental takes of the KBB. Upon permit expiration, incidental takes of the KBB are prohibited pursuant to Section 9 of the Act.

2.0 IMPACT OF PROPOSED TAKING

2.1 METC Right-of-Way

Incidental take, if unavoidable, will occur within the ROW of the METC transmission line as defined in Section 1.0. 4.07 miles of transmission line is proposed to be reconductored in addition to the replacement of 40 metal towers by wooden poles along the ROW. During construction activities METC expects to disturb an area approximately 200 feet long by 66 feet wide (13,200 square feet) surrounding each tower; centered at the current location of the towers to be replaced. Approximately 300-400 feet of undisturbed ROW will remain unaffected by the project between towers. METC personnel and contractors will use the existing ROW access road, minimizing the disturbance to wild lupine and other vegetation between pole locations. In an effort to further reduce the impact of construction activities on KBB habitat and incidental take of KBB, in areas where wild lupine cover is prevalent locations will be marked where wild lupine cover is least dense. To the extent possible, contractors or sub-contractors will perform construction work in areas where wild lupine is less prevalent (i.e. dropping towers and/or poles in a certain direction to minimize impact). During a reconductoring project certain construction activities may result in the loss of wild lupine and a resultant incidental take of KBBs. Those construction activities include:

- Truck and heavy equipment traffic,
- Cutting and removal of the existing metal towers,
- Boring of holes for transmission line support poles, and
- Installation of new poles.

METC shall employ all reasonable efforts to eliminate or minimize incidental take of the KBB. At a minimum, these efforts will include:

- The limitation of all truck and heavy-equipment traffic to existing disturbed areas such as the access road that runs within the ROW,
- In areas where wild lupine cover is dense, all reasonable efforts to dismantle the existing metal towers in place before removing them from the ROW will be employed,
- METC shall employ a minimum of one Environmental Inspector (EI) for the duration of the construction activities that is familiar with the KBB and its habitat. This Inspector shall provide environmental training to the construction manager and foreman and will perform surprise field visits to monitor adherence to the environmental requirements of the project.

2.2 Site Survey

On July 25, 2002 Jennifer Fettinger of the Michigan Natural Features Inventory (MNFI) conducted a KBB survey in Newaygo County. This survey examined KBB populations and the occurrence of wild lupine ranging from the north terminus of this project south to the Maple River. The ROW distance that was surveyed totaled 0.68 miles. Numerous KBBs were observed and the prevalence of wild lupine was assigned a density ranking of 9 out of 9. The scale employed in this study assigned higher numbers to the most dense and prevalent clusters of wild lupine, and lower numbers to the least dense and scattered (see **Table 1**).

On June 13, 2003, MNFI employees conducted a second survey on the same stretch of ROW in Newaygo County. KBBs were seen at various locations along the ROW, and wild lupine was prevalent throughout. On July 28, 2003 a survey was performed on the portion of ROW that encompasses the Muskegon Sewage Reclamation property and proceeds north towards Mosquito Creek (a distance of 1.76 miles). Several KBBs were observed and the density of wild lupine ranged from 4 (i.e. clumped) to 8 (i.e. dense). MNFI surveyed approximately 2.44 miles of the 4.07-mile construction ROW during these three survey events (see **Table 1**). Results of the MNFI KBB surveys are summarized in figures included in **Appendix A**.

The entire 4.07-mile section of ROW, including the 1.63-mile stretch of ROW between the stream crossings was surveyed by ENSR (Matt Groves and Carlos Labadia) accompanied by Jennifer Fettinger on June 8, 2004. The results of ENSR's June 2004 KBB habitat survey are presented in **Figures 3A** thru **3D**. Wild lupine and KBB were observed at locations spanning the majority of the length of ROW between the stream crossings (See **Figures 3B, 3C** and **3D**). Wild lupine cover had a density rankings as high as 9 (dense stands of wild lupine abundant and distributed through much or all of the area) in areas where it occurred. Lupine cover was not present along 100% of the ROW but rather would occur in patches. Some poles had dense Lupine cover around them while others had none at all (see **Table 2**).

2.3 Cultural Resources

This project was reviewed for compliance under Section 106 of the Historic Preservation Act by the Michigan State Historic Preservation Officer (MSHPO) and it was his determination that "no historic properties are affected within the area of potential effects of this undertaking". A copy of ENSR's letter requesting the MSHPO cultural resources review and the response from MSHPO is in provided in **Appendix B**.

2.4 Estimate of Take

Table 1 summarizes the location of wild lupine and KBB within the 4-mile stretch of proposed METC construction ROW, based on existing MNFI and ENSR's June 2004 survey data.

Table 1

Summary of MNFI and ENSR Survey Data

Location			Dates of Observation: July 25, 2002, June 13, 2003, July 28, 2003 (MNFI) and June 8, 2004 (ENSR)		
From	To	Miles of ROW	Wild Lupine Density Rank (1-9)	Karner Blue Butterfly Sightings	Comments
Northern End	Maple River Tributary	0.68	9 (Very dense and prevalent)	87 in July 2002 and 18 in June 2003	There are typically less KBB in June than in July.
Maple River	Mosquito Creek	1.63	0 to 8 (Dense in some areas not present in others)	10 to 15 KBB seen on June 8, 2004	KBB were seen in 3 different locations along this section of ROW.
Mosquito Creek	Southern End	1.76	4 to 8 (Dense in some areas clumped in others)	13 in July 2003	None

Based on the above table a conservative estimate of the potential KBB habitat area within the ROW encompassed by the METC reconductoring project is 4.07 miles (21,489.6 linear feet) by 66-foot wide. These dimensions yield a calculated habitat area of 1,418,313.6 square feet or 32.56 acres.

The estimated area of impact to wild lupine that may cause an incidental take of KBB is presented in **Figures 3A** through **3D**. During the reconductoring project, a total of forty (40) poles will be installed to replace the existing support towers. Ground disturbance will result from construction activities that include the take down of existing steel towers, on-site storage of electric cable spools and equipment, installation of new utility poles, and replacement of electric power lines. Rubber tracked vehicles will be used during construction, minimizing ground disturbance and subsequently damage to wild lupine. Construction activities are anticipated to disturb the ground surface from 0 to 6-inches below ground surface, with the exception of bore holes for new power line poles that will be bored to a depth of 10-feet below ground surface. METC expects to disturb an area approximately 200 feet long by 66 feet wide (13,200 square feet) surrounding each pole. The sum of disturbed areas on a project-wide basis equals 528,000 square feet or 12.12 acres. The estimated area of wild lupine patches (KBB habitat) within the 4.07-mile ROW based on survey data is approximately 619,649 square feet or 14.23 acres. Based on wild lupine locations documented in the field survey performed during June 2004, the area of disturbance inhabited by wild lupine is approximately 250,759 square feet or 5.75 acres. This equals 40 percent (%) of the estimated total wild lupine

inhabited area within the project area. It should be noted that the area of potential disturbance for the Cobb to Brickyard project is a small portion of both the total range of the KBB in the United States and the habitat within Western Michigan.

The range of the Karner Blue Butterfly in the United States historically included a geographic band between 41° and 46° North Latitude extending from Minnesota to Maine (U.S. FWS 2003). As previously discussed KBB favors habitats with sandy well drained soils and inhabits oak or pine barrens, where wild lupine is prevalent. As of 2002, populations of KBB were recorded in Indiana, Michigan, Minnesota, New York, Wisconsin and Ohio. The largest populations of KBB occur in Michigan and Wisconsin. Michigan has four of the thirteen KBB Recovery Units (RUs) established by the U.S. FWS to sustain and promote the recovery of the species. In Michigan the KBB RUs are the Allegan, Ionia, Muskegon, and Newago RUs. The largest KBB populations observed in Michigan occur on the Flat River State Game Area (SGA) in the Ionia RU and in the Allegan State Forest in the Allegan RU.

The Cobb to Brickyard ROW segment is located in the Muskegon RU. Surveys conducted in the fall of 2002 by the Michigan Natural Features Inventory (MNFI) in the Huron-Manistee National Forest within the Newago and Muskegon RUs identified the presence of KBB on 2,026 acres in 267 locations.

2.5 Nearby Habitat

Figures 3A through **3D** indicate the areas inhabited by wild lupine that were observed within the METC ROW. Additionally, it should be noted that wild lupine inhabits areas adjacent to the proposed construction sites, inhabits other portions of METC operated ROW, and is present on Muskegon County Sewage Reclamation Property and in the Muskegon State Game Area.

Due to the close proximity of wild lupine and other savanna flora to the proposed construction sites, it is expected that the naturally occurring plant life will repopulate the affected areas after the conclusion of construction activity. However, Best Management Practices (BMPs) such as seeding for wild lupine and other native savanna plants will be employed after construction to return the affected areas to suitable KBB habitat if necessary. If wild lupine does not repopulate disturbed areas previously inhabited by wild lupine during the first year, disturbed areas will be seeded during the spring of the second year.

3.0 HABITAT CONSERVATION

This section describes practices to avoid, minimize, monitor, and mitigate impacts on KBB and its habitat that will be followed during the reconductoring project.

3.1 Avoidance and Minimization of Impacts

No KBB habitat outside of the proposed construction areas will be impacted during reconductoring and utility tower replacement activities. Measures taken include a pre-construction survey conducted by ENSR in June 2004 to identify KBB and wild lupine locations. Flags were placed in the direction from the existing towers where there is no wild lupine or the least amount of wild lupine. These flags will serve as a guide to the construction crew as to which direction they should drop the existing towers. See **Table 2** for a listing of the suggested direction to drop each tower. To avoid and minimize impacts to KBB habitat during reconductoring, construction crews will be asked to dismantle the existing metal towers in place before removing them at nine locations where wild lupine cover is dense in all directions around the towers (**See Table 2**). However, METC expects some level of habitat disturbance during the construction project. All truck and heavy equipment (cranes and earthmovers) traffic will stay on the existing access road that runs along the ROW when not located at one of the active construction areas. The use of rubber tracked vehicles should reduce impact to the ROW. However, vehicle traffic will likely impact the areas where construction takes place.

METC will instruct all individuals involved in construction activities about the presence and status of KBB, the importance of minimizing adverse impacts to this species, and the measures required to minimize adverse impacts to this species.

TABLE 2
Recommended Directions for Tower Drop to Minimize Impacts to KBB Habitat

Pole Identification Number	Recommended Direction to Drop Tower	Additional Comments
7727	None	No wild lupine
7726	None	No wild lupine
7725	None	No wild lupine
7724	None	No wild lupine
7723	None	No wild lupine
7722	None	No wild lupine
7721	None	No wild lupine
7720	None	No wild lupine
7719	None	No wild lupine
7718	None	No wild lupine
7717	None	No wild lupine
7716	None	No wild lupine

Pole Identification Number	Recommended Direction to Drop Tower	Additional Comments
7715	None	No wild lupine
7714	SW	Some Wild lupine, not dense
7713	W	Wild lupine all around bases of tower
7712	None – Tower will be dismantled in-place	Wild lupine dense all around base of tower
7711	NE	Least wild lupine towards road to the NE.
7710	SW	Wild lupine on North side of road between road and ravine.
7708	N	No Wild lupine, drop away from ravine.
7707	None – Tower will be dismantled in-place	Wild lupine all around bases of tower
7706	None	No wild lupine
7705	None – Tower will be dismantled in-place	Wild lupine all around bases of tower
7704	None	No wild lupine
7703	NE	Wild lupine all around bases of tower, the least to the NE.
7702	None – Tower will be dismantled in-place	Wild lupine all around bases of tower
7701	None	No wild lupine
7700	None	No wild lupine
7699	N	Some wild lupine, not dense
7698	None – Tower will be dismantled in-place	Wild lupine all around bases of tower
7697	SW	Wild lupine on east side of tower
7696	SW	Wild lupine on east side of tower
7695	None – Tower will be dismantled in-place	Wild lupine all around bases of tower
7694	None – Tower will be dismantled in-place	Wild lupine all around bases of tower
7693	None – Tower will be dismantled in-place	Wild lupine all around bases of tower
7692	N	Wild lupine denser to the South.
7691	N	Drop away from ravine
7690	NW	Wild lupine all around bases of

Pole Identification Number	Recommended Direction to Drop Tower	Additional Comments
		tower, the least to the NW
7689	None	No wild lupine
7688	None – Tower will be dismantled in-place	Wild lupine all around bases of tower
7687	None	No wild lupine

3.2 Mitigation

On-site mitigation will be performed to create additional KBB habitat equal to 25% of the area of lupine disturbed during the reconductoring project. The calculated acreage for creation of new KBB habitat during proposed mitigation is 5.75 acres x 0.25 or approximately 1.4 acres.

During mitigation, new habitat will be created by seeding of wild lupine to increase the extent of existing wild lupine patches in the 4.07 mile ROW segment at six locations indicated on **Figures 3-C** and **3-D**. The total area of the proposed mitigation sites is approximately 2-acres, to allow some flexibility in the selection of areas to be seeded with lupine to ensure the mitigation goal of creating 1.4 acres of additional KBB habitat is achieved.

The proposed mitigation sites were selected to provide conditions favorable for the growth of wild lupine. The mitigation areas indicated on **Figures 3-C** and **3-D** are upland areas within the power line ROW with sandy soils, which do not include depressions or surface water body crossings. The proposed mitigation sites will include a 50-foot buffer zone surrounding power line poles, to allow for future maintenance activities without disturbance of newly planted wild lupine. Lupine seeding will take place in 2005 during the growing season following the completion of construction activities.

It is anticipated that a combination of restoring areas disturbed during installation of new power line poles with mitigation activities will result in an overall increase of wild lupine patches within the affected ROW segment. Creating patches of wild lupine between existing lupine beds (approximately 1.4 acres) will add to connectivity between local populations of KBB, supporting goals of the KBB Recovery Plan (U.S. FWS, September 2003).

If wild lupine and nectar plants do not re-establish in disturbed areas to pre-disturbance conditions by the second growing season following the reconductoring project, appropriate measures shall be taken to ensure successful reintroduction to the project ROW. A determination of a return to preconstruction conditions will be made by comparing the future condition of wild lupine patches with the findings of the surveys described in **Table 1**. Specifically when wild lupine patches have returned to the preconstruction density values, KBB habitat recovery will be considered to have been completed. Re-seeding efforts will include a native seed mix of wild lupine, grasses, and KBB nectar plants that may provide a more dense population of KBB habitat than currently exists.

No additional habitat mitigation or monitoring is proposed for O&M activities within the ROW segment, as mowing and tree trimming activities will not be conducted in the area of construction

activity until those O&M activities are permitted under the coverage of the Statewide Michigan ITP and HCP.

3.3 Monitoring

Impacted areas along the ROW will be monitored by the proposed Environmental Inspector (EI) occasionally during the project and following completion. Levels of wild lupine concentration will be monitored and compared to pre-disturbance conditions to ensure recovery of disturbed areas. KBB population size will also be monitored along the ROW but will not be used as a determination of post construction habitat recovery. This monitoring plan ensures the availability of KBB habitat along the Cobb to Brickyard ROW for the duration of the ITP in agreement with the **USFWS KBB Recovery Plan, Section 1.322: Implement strategies to guarantee the long-term availability of the geographic land base for the viable metapopulations.** When the ITP permit expires, future preservation of the KBB habitat along the Cobb to Brickyard ROW will be managed under a Michigan statewide KBB HCP and associated statewide incidental take permit. MDNR, USFWS, and other interested parties are currently participating in a KBB workgroup to prepare a statewide KBB HCP.

The following items will be monitored:

- Effects of construction on wild lupine densities in areas disturbed by construction.
- The success of the return of wild lupine, grasses, and native nectar plants to disturbed areas (with seeding for wild lupine, grasses, and native nectar plants if necessary). If wild lupine does not repopulate disturbed areas previously inhabited by wild lupine during the first year, disturbed areas will be seeded during the spring of the second year. Reseeding of disturbed areas will continue beyond the second year until restoration is successful.
- The success of mitigation activities to create additional KBB habitat by seeding of wild lupine, grasses, and native nectar plants at wild lupine patches located on the ROW. If wild lupine does not grow in the proposed mitigation sites during the first year, the proposed mitigation sites will be seeded during the spring of the second year. Reseeding of proposed mitigation areas will continue beyond the second year until restoration is successful.
- The presence/absence of KBB populations along the Cobb to Brickyard ROW after construction.

Procedures for monitoring and assessing the success of recovery of KBB habitat (wild lupine) along the ROW can be found in **Appendix C: KBB Monitoring Plan.**

3.4 Demonstration of Fund Availability

Funding for each component of the project (minimization, monitoring, and management) will be funded initially through the METC capital budget and, following construction of the reconductoring

project, annually through the METC operation and maintenance budget. METC attests to this commitment in the letter attached in **Appendix D**.

4.0 ALTERNATIVE ACTIONS

4.1 Alternative 1 – Alternate Route

The transmission line ROW bisects a forested area and effectively creates the savanna-like conditions that allow for KBB habitat to exist at the location in question. ROW management techniques such as occasional mowing and sapling removal mimic the effects of fire and help sustain the oak savanna ecosystem. Even if alternate ROW was available, moving the location of the ROW may actually imperil the existing KBB population.

4.2 Alternative 2 – No Action Alternative

The construction project is necessary to provide a stable supply of electricity to meet the growing demand of METC customers. Without this project, the growing demand will eventually result in line failure, overloads on the METC system and ultimately power outages to the customers.

4.3 Proposed Actions

The proposed actions are to reconnector the existing transmission lines and replace the existing metal support structures with wooden poles. Details of this project are shown on the **Figures 3A-3D**. This project will allow for efficient transmission of electricity to meet the growing demand on the METC system and will prevent outages that would ultimately be caused by overloads on the existing line. After construction is complete impacted areas of the ROW will be restored to their previous condition as discussed in this Habitat Conservation Plan. Guidelines for ROW mowing and the conservation of KBB on METC property will be established for future reference.

5.0 OTHER REQUIRED PERMITS

In addition to applying for a KBB ITP from the USFWS, METC is submitting an application to the Michigan Department of Natural Resources (MDNR) for a Threatened/Endangered Species Permit in accordance with Part 365 of the Michigan Natural Resources and Environmental Protection Act (Act 451 of 1994). A copy of this HCP and a completed Michigan Threatened/Endangered Species Permit form will be submitted to MDNR for concurrent review.

No other environmental permits are being applied for in connection with the proposed reconductoring project. Two wetland areas have been delineated within the project site at two water body crossings, but construction activities will avoid entering or impacting these wetlands and a wetland permit is not required under Michigan Part 301 and 303 regulations.

6.0 FUTURE PROJECTS

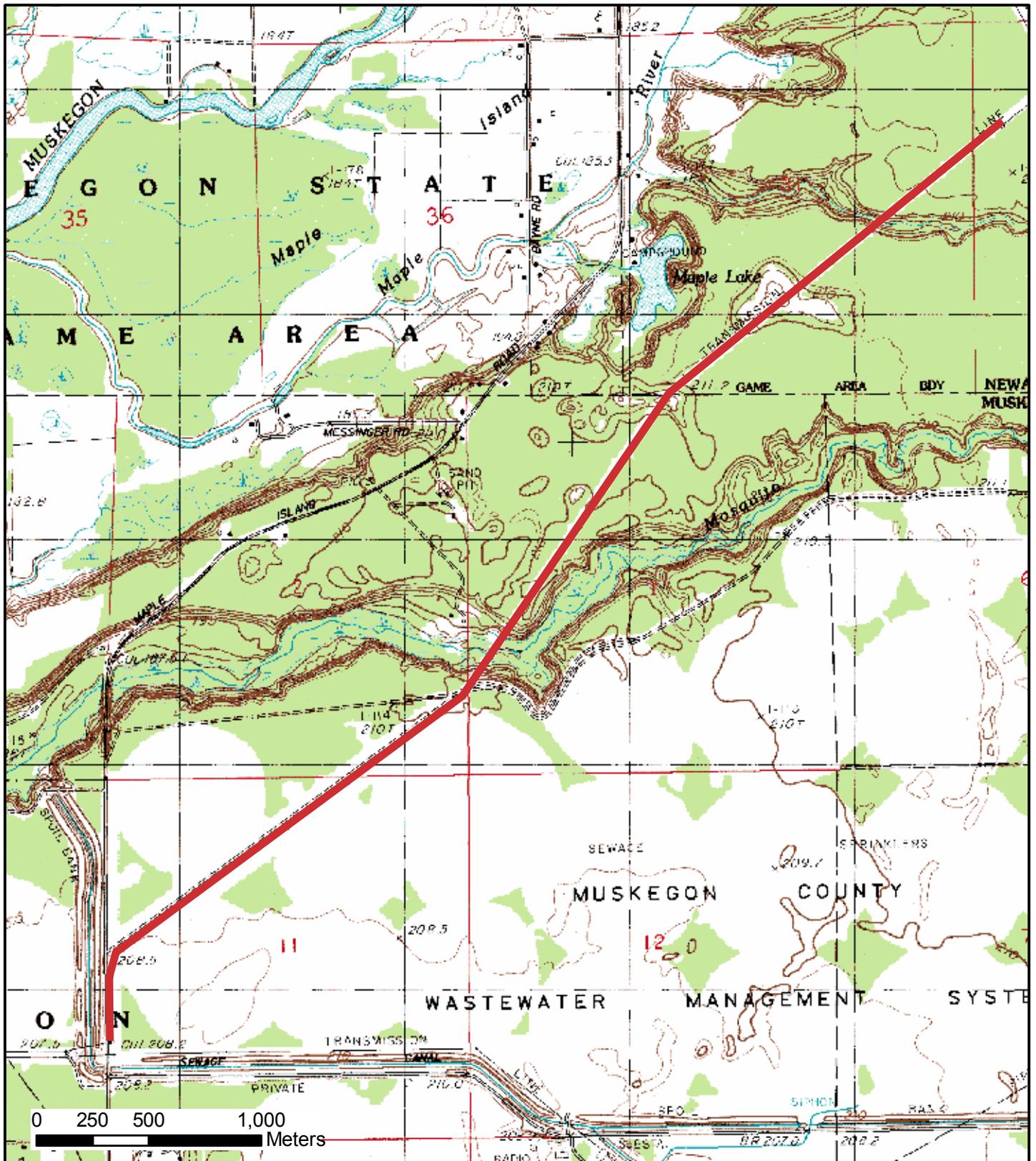
METC will conduct similar projects in the future to maintain and upgrade electric service to its customers. Projects of this type are part of regular transmission line maintenance and are periodically necessary. METC is an active participant in the Michigan Karner Blue Butterfly Habitat Conservation Workgroup and will work with the USFWS and MDNR on all future projects that may impact endangered species or their habitat.

7.0 REFERENCES

1. United States Fish and Wildlife Service (USFWS), September 2003, Karner Blue Butterfly Recovery Plan (*Lycaeides Melissa samuelis*).
2. Michigan Natural Features Inventory (MNFI), February 3, 2004, Karner Blue Butterfly Powerline Survey 2003 Figures.
3. Michigan Natural Features Inventory (MNFI), (Date Unknown), KBB Survey Protocol – Presence/Absence Surveys (Adapted from Wisconsin HCP).

FIGURES

Site Location Map



Legend

 **Project Location**

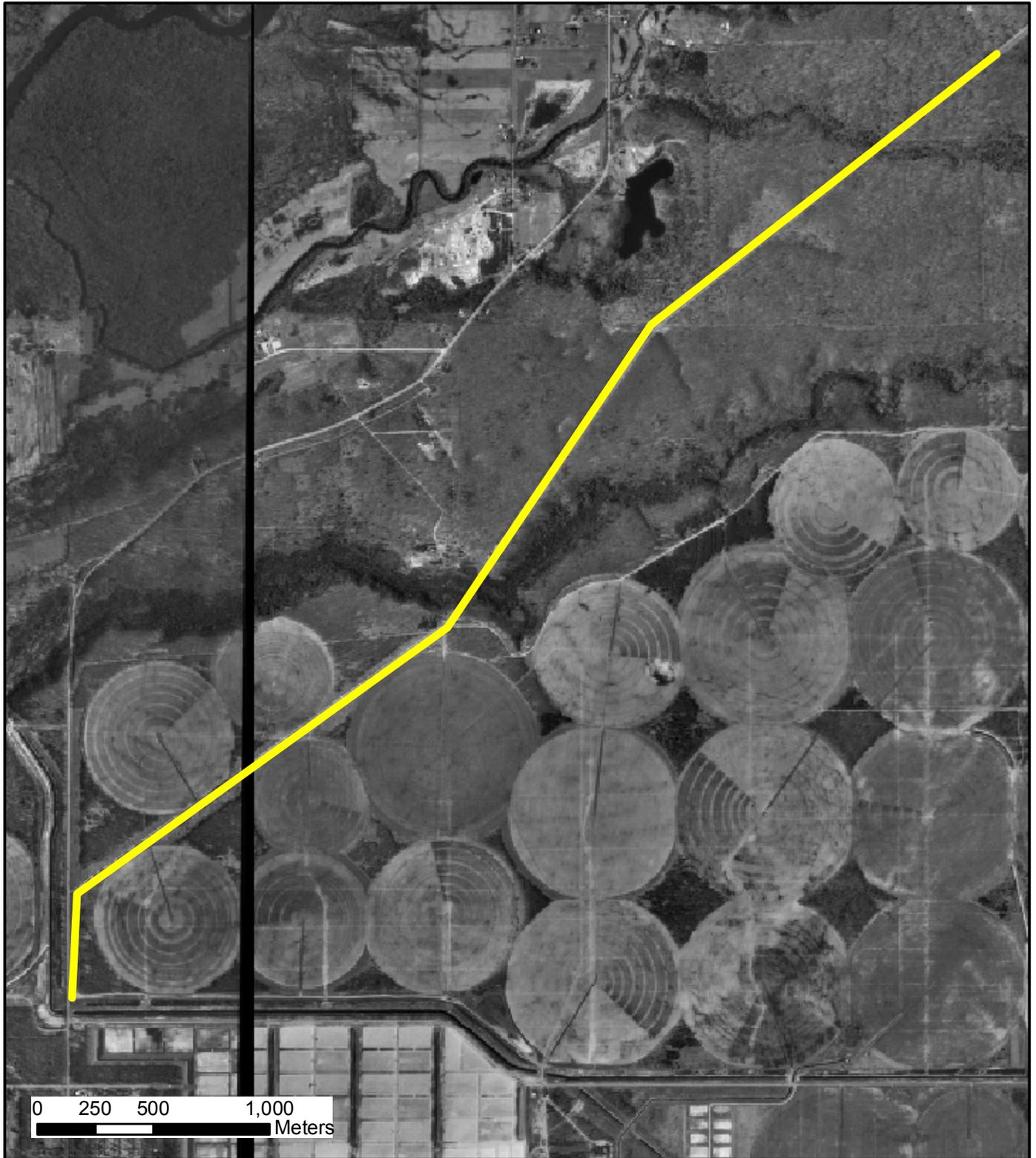


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FIGURE 1

SITE LOCATION MAP
COBB-BRICKYARD RECONSTRUCTING PROJECT
Prepared by METC, LLC.
24K USGS Topographic Map, 1985.

Aerial Photograph



Legend

 Project Location

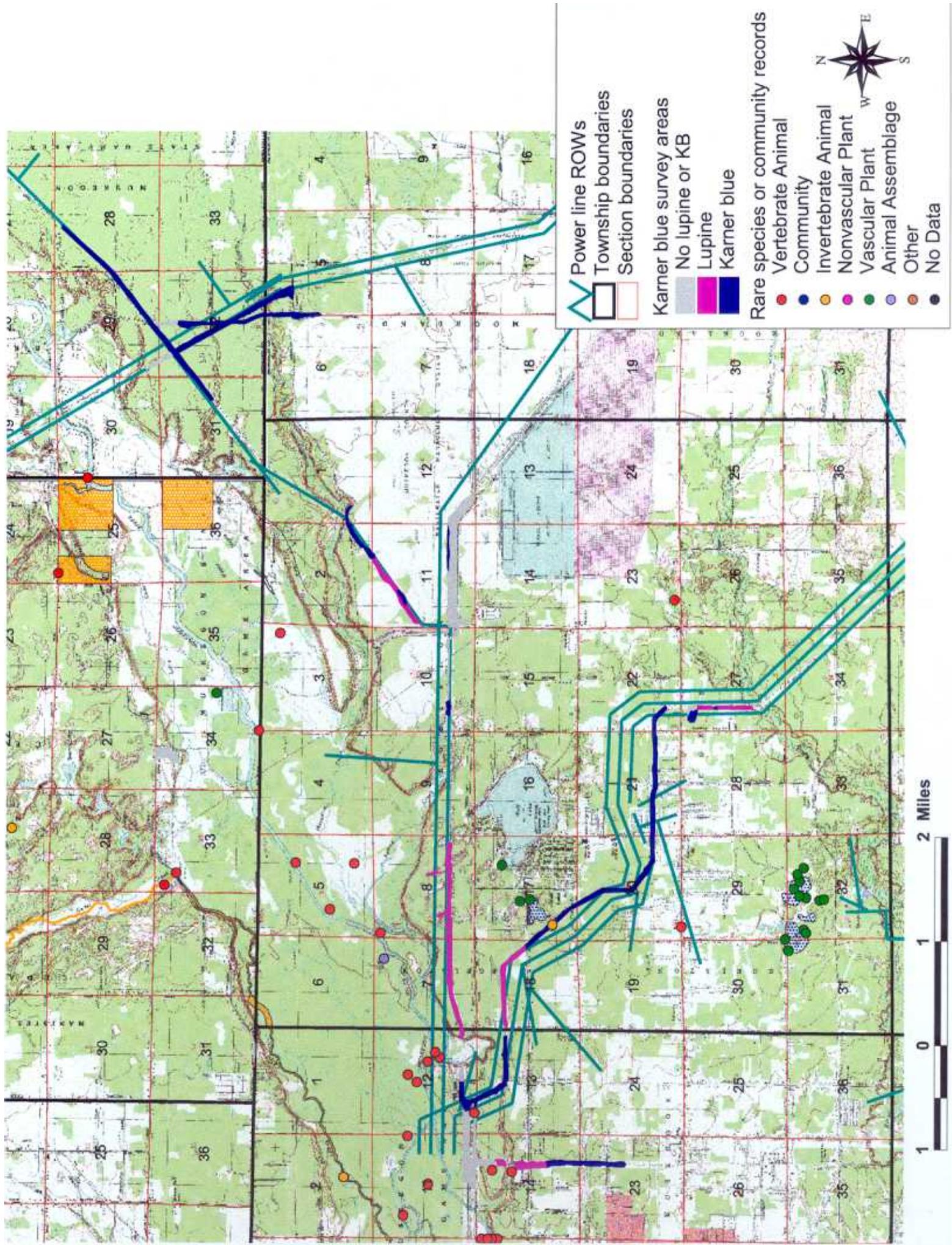


Aerial Photograph
COBB-BRICKYARD RECONDUCTING PROJECT
Prepared by ENSR for METC, LLC
USGS DOQQ, 1992

Figure 2

Drawn by: M.G.

APPENDIX A
KBB Habitat Survey Data from MNFI



Karner Blue Butterfly Powerline Surveys 2003

Muskegon Wastewater
Muskegon SGA
T10N R14W
T11N R14W

Powerlines



Lupine



Karner blue



Lupine present but
Karner blue not observed



Karner blue present



Sources:

Digital orthophotos from USGS

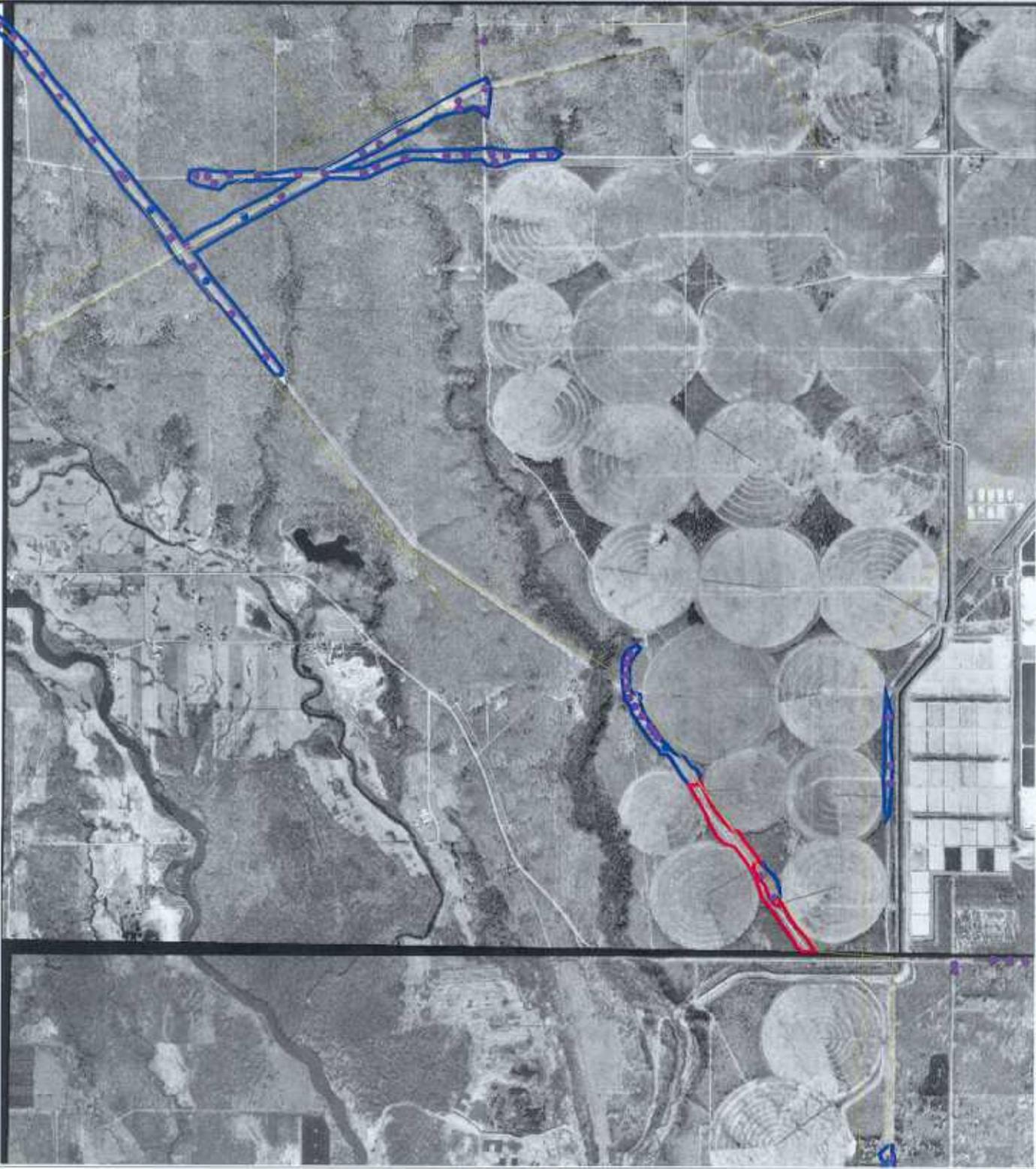
Survey and Karner blue Data from MNFI



Michigan
Natural
Features
Inventory

MICHIGAN STATE
UNIVERSITY
EXTENSION

Map by J. Fettingler, MNFI 02/03/2004



0 1 2 Miles

*Karner Blue Butterfly
Powerline Surveys
2003*

*Muskegon Wastewater
Muskegon SGA
T10N R14W
T11N R14W*

Powerlines

-  Lupine
-  Karner blue

**Lupine present but
Karner blue not observed**

-  Lupine present but
Karner blue not observed
-  Karner blue present



Sources:
Digital orthophotos from USGS
Survey and Karner blue Data from MNFI



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Karner Blue Butterfly Powerline Surveys 2003

Muskegon Wastewater
Muskegon SGA
T10N R14W
T11N R14W

Powerlines

-  Lupine
-  Karner blue

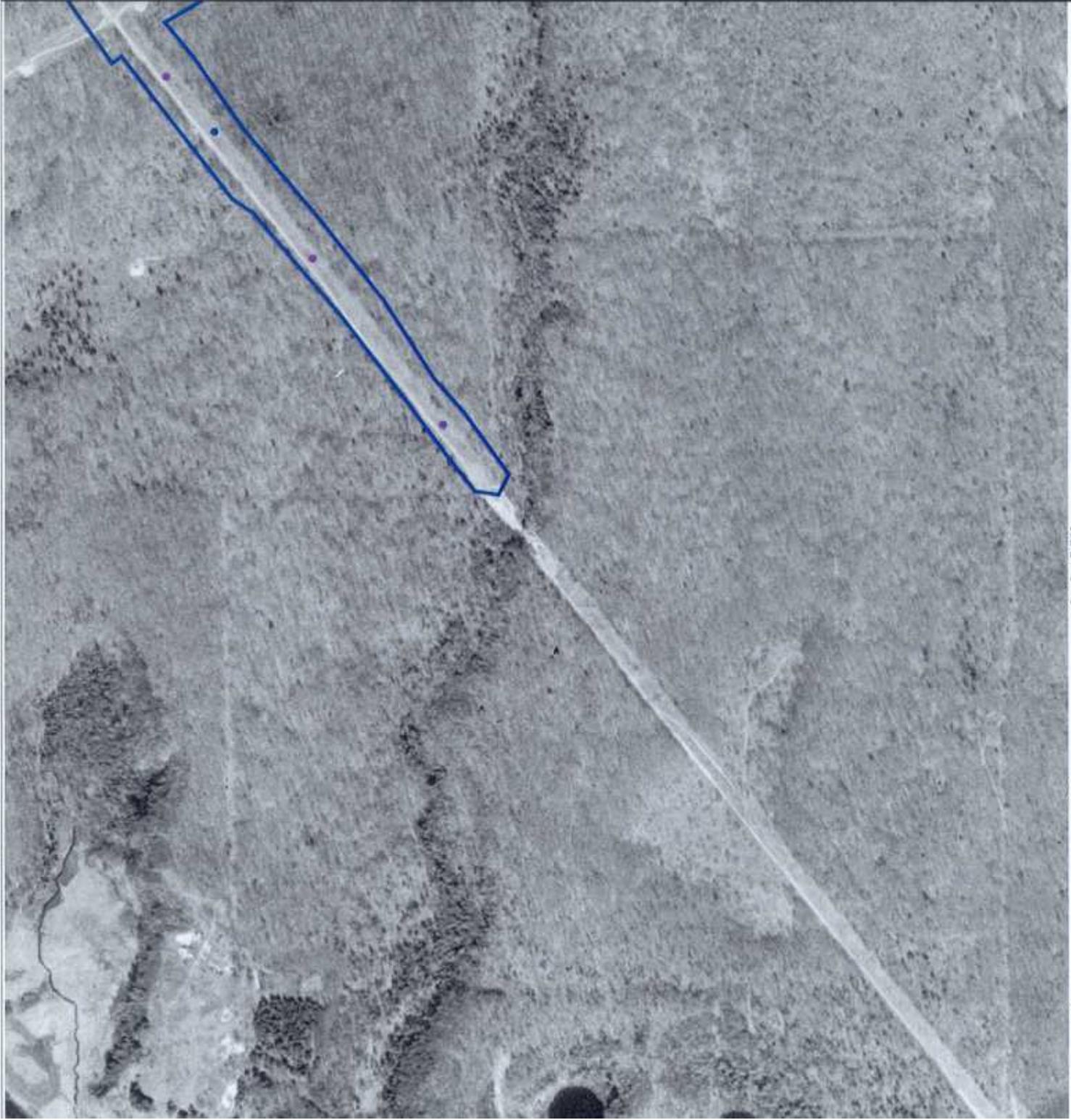


-  Lupine present but Karner blue not observed
-  Karner blue present

Sources:
Digital orthophotos from USGS
Survey and Karner blue Data from MNFI



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EXTENSION



Karner Blue Butterfly Powerline Surveys 2003

Muskegon Wastewater
T10NR14W

Powerlines

-  Powerlines
-  Lupine
-  Karner blue

**Lupine present but
Karner blue not observed**

-  Lupine present but Karner blue not observed
-  Karner blue present

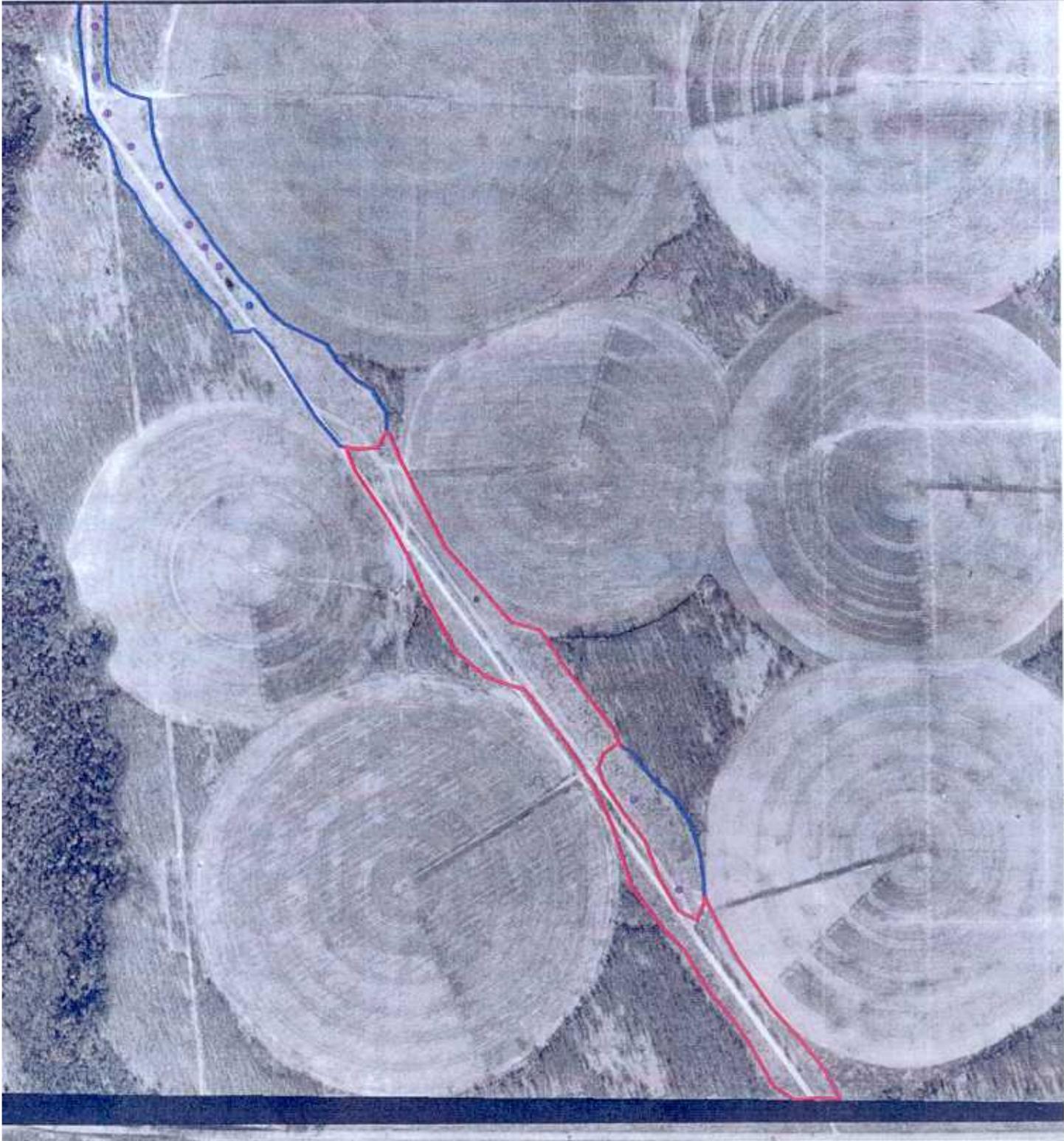


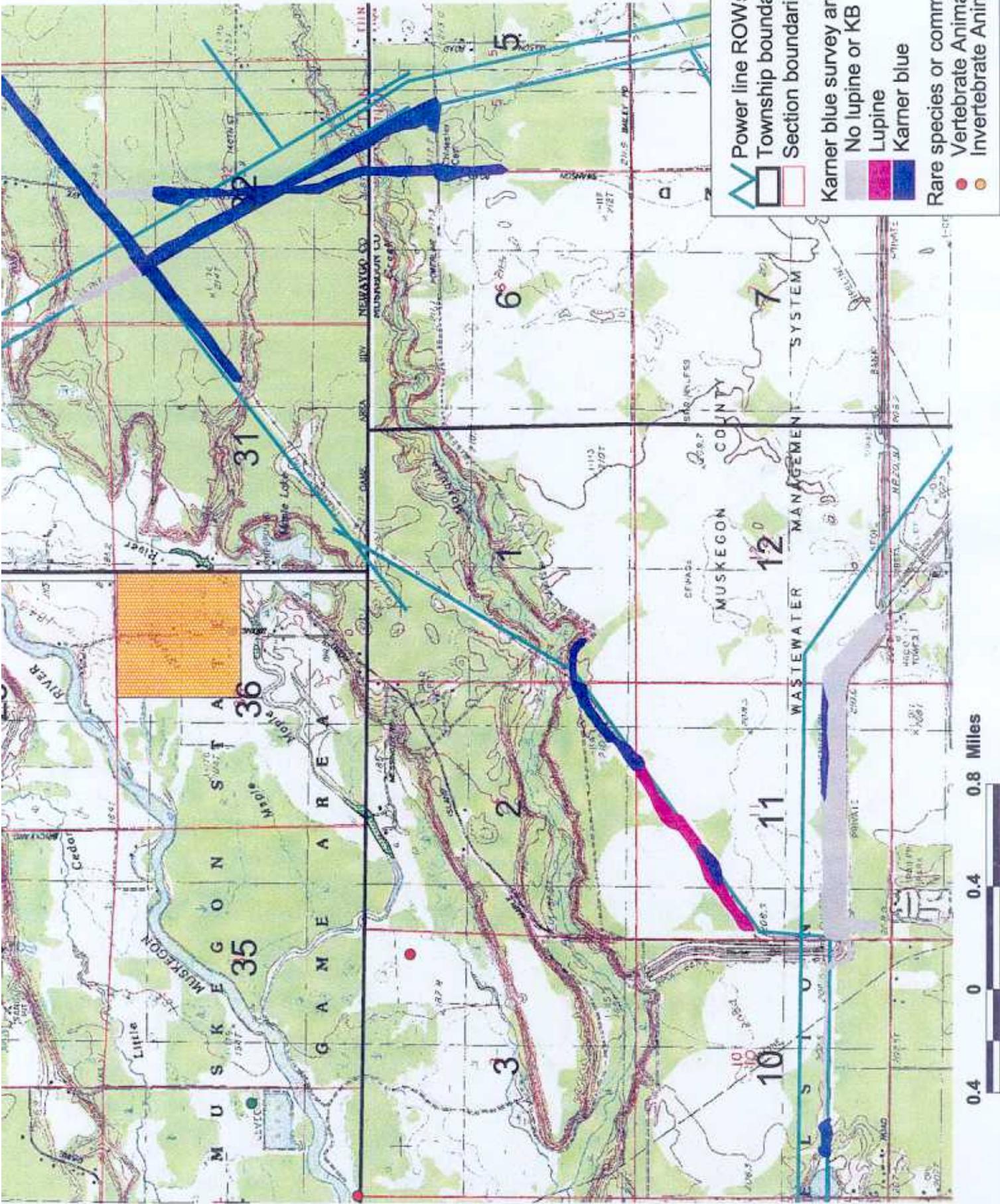
Sources:
Digital orthophotos from USGS
Survey and Karner blue Data from MNFI



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EXTENSION

Map by J. Fetting, MNFI 02/03/2004





APPENDIX B
Michigan SHPO Correspondence

January 26, 2004

ENSR Project Number: 10333-004-200

Mr. Brian D. Conway
State Historic Preservation Officer
Michigan Historical Center
Michigan Department of State
717 West Allegan Street
Lansing, Michigan 48918-1800

RE: Proposed Reconductoring Project Section 106 Review, Muskegon and Newaygo Counties.

Dear Mr. Conway:

ENSR International (ENSR) requests information and a statement of determination regarding potential impacts to any archeological or natural history sites on or near a proposed electrical transmission line reconductoring project in western Michigan. The location of the reconductoring project is marked on the enclosed USGS topographic map (**Figure 1**). Specific site location details are as follows.

- Project size/site location: Approximately 4 miles of transmission lines running from a site just north of the County Sewage Reclamation Area (east central Muskegon County) into the southwest corner of Newaygo County.
- Township 10 North, Range 15 West, Sections 1, 2, and 11 in Muskegon County
- Township 11 North, Range 14 West, Sections 31 and 32 in Newaygo County

The reconductoring project involves the replacement of a power line located in an existing rights-of-way (ROW).

The information provided below is intended to satisfy State Historic Preservation Office (SHPO) guidelines, but does not constitute a Phase I archeological review.

Name of Federal Agency Funding, Licensing, or Assisting Project

The proposed project will require an Incidental Take Permit under Section 10 of the Endangered Species Act (ESA) for potential impacts to portions of the existing power line rights-of-way (ROW) occupied by the Karner Blue Butterfly (KBB), a Federally listed endangered species. The permit will be issued by the U.S. Fish and Wildlife Service (USFWS) in Fort Snelling, MN. The contact for this permit is Peter Fasbender, USFWS who can be reached at (612) 713-5343. Mailing address:

U.S. Fish and Wildlife Service
1 Federal Drive
Bishop Henry Whipple Federal Building
Fort Snelling, MN 55111-4056

This project will not be constructed using federal funding.

Indicate the Project's Area of Potential Effects

During construction activities METC expects to disturb the ground surface (0 to 6 inches) for an area approximately 200 feet long by 66 feet wide (13,200 square feet) surrounding each tower; centered at the current location of the towers to be replaced. Subsurface excavation will be limited to the boring of holes for new utility poles to replace existing metal towers. The current ROW was previously disturbed during original construction of the 138 kV power transmission line and the proposed project will take place within the existing ROW. Approximately 300-400 feet of ROW will remain unaffected by the project between towers. METC personnel and contractors will use the existing ROW access road, minimizing the disturbance to the ground surface and vegetation between pole locations. No negative impacts to the adjacent areas are anticipated and the adjacent properties do not appear to be of historic or have archeological significance.

Date of Existing Properties in the Project's APE

No existing properties appear to be located in the APE of the site. The existing ROW property is owned by Consumers Energy of Jackson, Michigan and leased by METC.

Identification of Historic Properties

No historic properties appear to be present within the transmission line right-of-ways identified APE.

Historic Significance and Context

No historic properties appear to be located within the APE of the site.

Original Photographs of Historic Properties

No historic properties appear to be located within the APE of the site. Photographs depicting the ROW along the proposed 4-mile project site are attached (Photo Log and Figure 2).

Project Work Description and Statement of Effects

The proposed work involves reconductoring a 4.07-mile segment of electric power transmission line within this ROW segment. Construction activities for the reconductoring project are scheduled to begin in February 2005 and will be completed by early spring 2005. All construction activities will take place within the existing 66-foot wide utility ROW. The reconductoring project will require METC's contractors to replace existing metal towers with new wooden utility poles (selected poles will require guy wires), and hang new 138 KV power

Mr. Brian D. Conway
January 26, 2005
Page 3

lines on new insulators. This reconductoring project is necessary to provide adequate load capacity for an anticipated increase in customer demand in the region. Without this project the existing line will eventually fail or will require that METC trip off load to keep the system in operation. The transmission line segment where reconductoring is proposed is identified on the enclosed USGS topographic map section (Figure 1). An overhead aerial photograph of the transmission line segment is presented on Figure 2. There are 40 towers spaced approximately 300 to 400 feet apart along the 4.07-mile stretch of ROW that will be replaced with wooden poles. During a reconductoring project certain construction activities may result in the impacts to the area. Those construction activities include:

- Truck and heavy equipment traffic
- Cutting and removal of the existing metal towers
- Boring of holes for transmission line support poles at existing tower locations
- Installation of new poles.

Determination of Effect

Based on the site review discussed above, that construction activities will be limited to an existing power line ROW and the lack of historic properties within the APE, the Cobb-Brickyard Reconductoring Project does not appear to affect historic properties.

Please call Gordon Ferguson or myself at (630) 836-1700 if you have any questions or require additional information to complete your review. Thank you for your assistance.

Sincerely,



Matt Groves
Environmental Scientist



Gordon A. Ferguson
Senior Project Manager

Attachments:

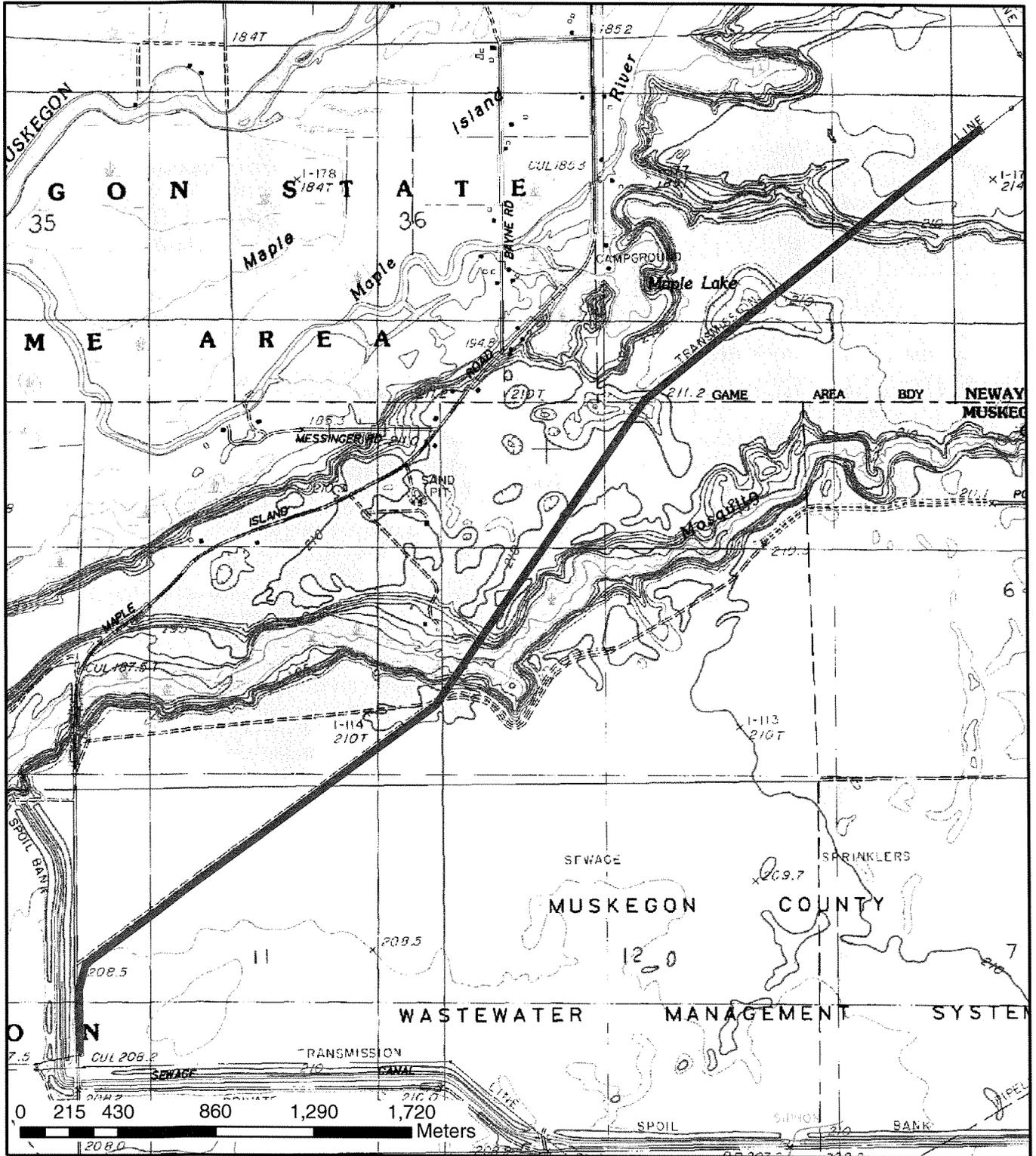
Figure 1 USGS Topographic Map
Figure 2 Aerial Photo
Photolog

Cc: Robert Schultz - METC

File: J:\Projects\P100\10333 - TransElect\10333-004 - Env Permitting Cobb-Brickyard\Correspondence\SHPO Letter 1-26-05.doc



Proposed Project Location



Legend

— Project_Location



ENSR
INTERNATIONAL

FIGURE 1

Proposed Project Location Map
COBB-BRICKYARD RECONDUCTORING PROJECT
Prepared by ENSR for METC, LLC.
24K USGS Topographic Map, 1985.

Aerial Photo of Proposed Project Location

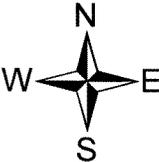
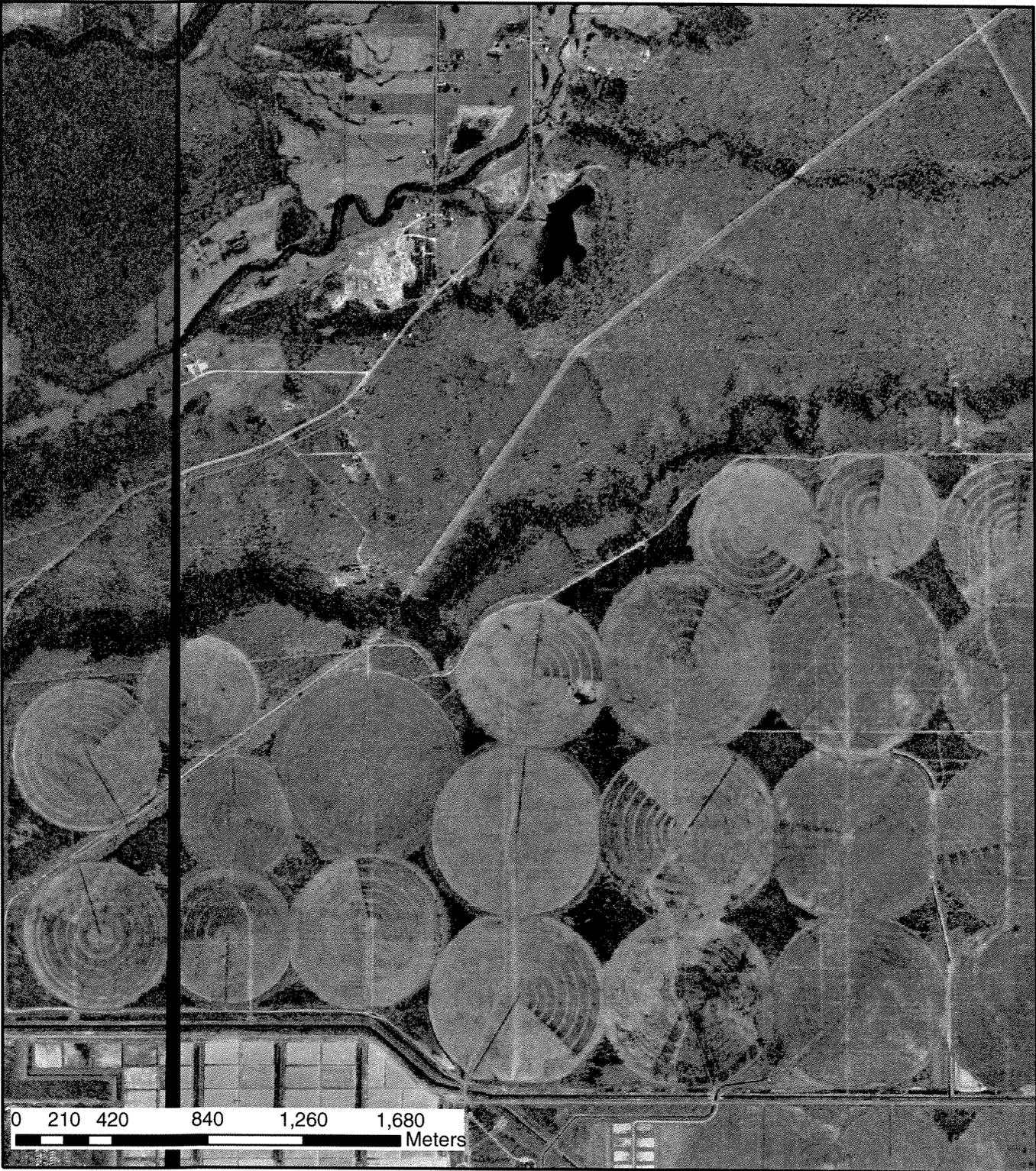


FIGURE 2

Aerial Photo
COBB-BRICKYARD RECONDUCTORING PROJECT
Prepared by ENSR for METC, LLC
USGS DOQQ, 1992

ENSR

PHOTOGRAPHIC LOG

Client Name: Michigan Electric Transmission Company, LLC

Site Location:

Cobb to Brickyard Electric Transmission Line

Project No.:

10333-004

Photo No.
1

Date:
10/27/04

Direction Photo Taken:
southwest

Description:

Looking down into ravine above Wetland 1 along the ROW.



Photo No.
2

Date:
10/27/04

Direction Photo Taken:

northeast

Description:

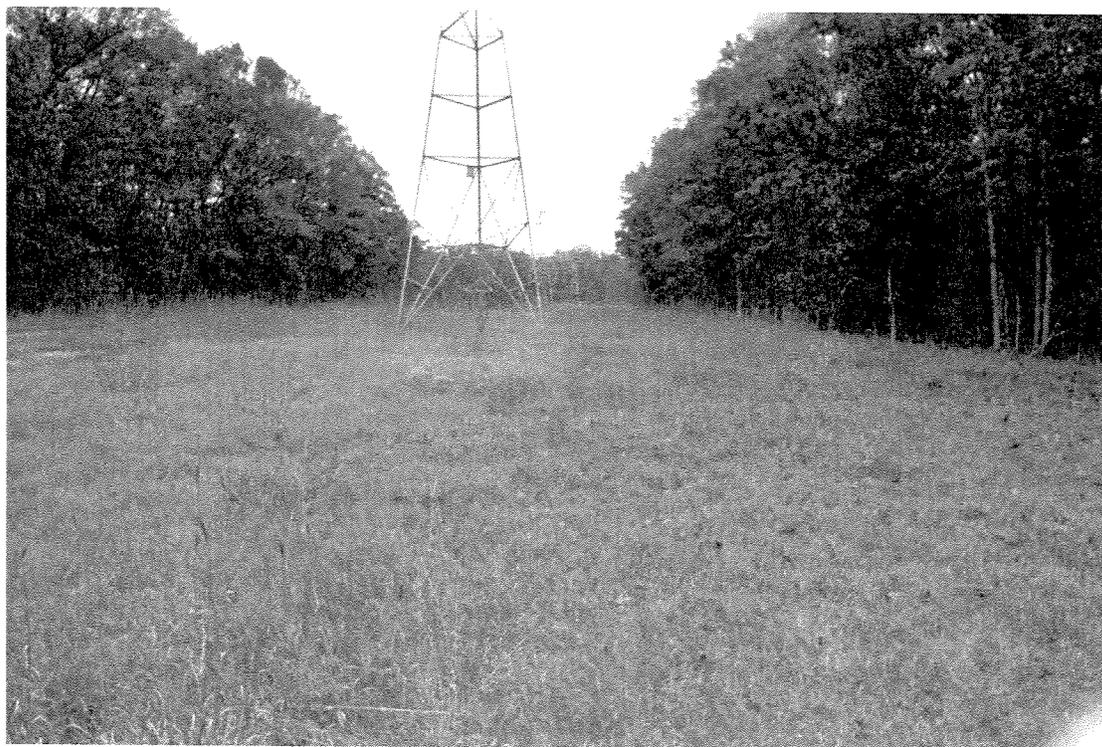
Looking down into ravine above Wetland 1 along the ROW.



Photo No. 3	Date: 10/27/04
Direction Photo Taken: southwest	
Description: Stream running through Wetland 2 across the METC ROW road.	



Photo No. 4	Date: 10/27/04
Direction Photo Taken: northeast	
Description: ROW along the transmission line.	





JENNIFER GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF HISTORY, ARTS AND LIBRARIES
LANSING

DR. WILLIAM ANDERSON
DIRECTOR

February 7, 2005

PETER FASBENDER
U S FISH AND WILDLIFE SERVICE
BISHOP HENRY WHIPPLE FEDERAL BUILDING
1 FEDERAL DRIVE
FT SNELLING MN 55111

RE: ER-05-173 Michigan Electric Transmission Company Cobb to Brickyard Reconductoring Project, T10N,
R15W, Section 1, Muskegon, Muskegon and Newaygo Counties (FWS)

Dear Mr. Fasbender:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertaking at the location noted above. Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that **no historic properties are affected** within the area of potential effects of this undertaking.

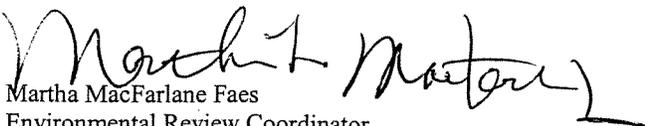
The views of the public are essential to informed decision making in the Section 106 process. Federal Agency Officials or their delegated authorities must plan to involve the public in a manner that reflects the nature and complexity of the undertaking, its effects on historic properties and other provisions per 36 CFR § 800.2(d). We remind you that Federal Agency Officials or their delegated authorities are required to consult with the appropriate Indian tribe and/or Tribal Historic Preservation Officer (THPO) when the undertaking may occur on or affect any historic properties on tribal lands. **In all cases**, whether the project occurs on tribal lands or not, Federal Agency Officials or their delegated authorities are also required to make a reasonable and good faith effort to identify any Indian tribes or Native Hawaiian organizations that might attach religious and cultural significance to historic properties in the area of potential effects and invite them to be consulting parties per 36 CFR § 800.2(c-f).

This letter evidences the U.S. Fish and Wildlife's compliance with 36 CFR § 800.4 "Identification of historic properties", and the fulfillment of U.S. Fish and Wildlife's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.4(d)(1) "No historic properties affected".

The State Historic Preservation Office is not the office of record for this undertaking. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking. If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.

If you have any questions, please contact Martha MacFarlane Faes, Environmental Review Coordinator, at (517) 335-2721 or by email at ER@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,


Martha MacFarlane Faes
Environmental Review Coordinator

for Brian D. Conway
State Historic Preservation Officer

MMF:DRT: JR: drt

Copy: Matt Groves, ENSR International

APPENDIX C

KBB Monitoring Plan

Karner Blue Butterfly Monitoring Plan

Introduction

Monitoring Plan

This monitoring plan is an attachment to the Michigan Electric Transmission Company, LLC (METC) Karner Blue Butterfly (KBB) Habitat Conservation Plan (HCP). The HCP is part of an incidental take permit application submitted by ENSR on behalf of METC under section 10(a)(1)(B) of the Endangered Species Act to mitigate for potential impacts to any state or federally protected species, critical habitat, or sensitive resources located along the Cobb to Brickyard portion of right-of-way (ROW) operated by METC. This plan describes procedures to monitor the post construction recovery and maintenance of the KBB population and its habitat along the Cobb to Brickyard portion of METC power transmission line ROW during the duration of the incidental take permit. Monitoring for wild lupine and the presence of KBB will be conducted by METC at the patches of wild lupine disturbed during construction activities and at the 1.4 acre proposed mitigation sites.

Project Background

The Karner Blue Butterfly, a state and federally listed endangered species, has been documented by field surveys conducted by the Michigan Natural Features Inventory (MNFI) and ENSR to populate portions of the Cobb to Brickyard portion of ROW in western Michigan. Wild lupine (*Lupinus perennis*), an obligate larval food plant for the KBB has also been documented to occur along this portion of transmission line ROW.

The proposed Cobb to Brickyard construction project involves reconductoring a 4.07-mile segment of electric power transmission line. All construction activities will take place within the existing utility ROW. The reconductoring project will require METC's contractors to replace 40 existing metal towers with new wooden utility poles (selected poles will require guy wires), and hang new 138 KV power lines on new insulators. The proposed reconductoring project will potentially impact an area approximately 200 feet long by 66 feet wide (13,200 square feet) surrounding each tower; centered at the current location of the towers to be replaced.

Monitoring Methods

Baseline Survey

ENSR conducted a survey of the Cobb to Brickyard portion of ROW accompanied by Jennifer Fettinger of the MNFI. Wild lupine densities were recorded based on the 9-point ranking protocol developed by the MNFI. These density rankings will be compared to future densities of wild lupine at disturbed sites and used to determine recovery success. KBB were sighted and counted but were not surveyed thoroughly enough to have a baseline dataset. KBB counts will be taken but will not be used to determine recovery success. Maps showing the location of wild lupine and KBB sightings during the June 2004 survey are included as figures 3A thru 3D of the HCP. At the time of the field survey flags were placed on the ground in the area of potential impacts at each pole. The flags were placed where there was no or the least amount of wild lupine present. These flags can serve as a

guide to contractors as to which direction it would be best to drop the existing metal tower to avoid impacting the wild lupine present in the impact area.

Mapping and Future Monitoring of Disturbed Patches

Prior to construction, the potentially impacted areas were identified and presence of wild lupine in each potentially impacted area was mapped. After construction is complete, the impact to vegetation along the ROW will be assessed by METC or their designated contractor and impacted areas will be mapped using GPS (field survey to be performed with a Trimble GPS receiver and maps will be created in Arcview 9 software, ESRI 2004) with focus on impacted areas known to previously contain wild lupine. The construction is proposed to take place during the winter of 2004 and 2005. Due to the time of year it is unlikely any vegetation will be present on the surface. Therefore, the assessment of impact will be based on field observations of ground disturbance as well as any disturbance to vegetation that can be seen in areas around poles. Any disturbance is expected to be only at the surface and existing root structures should not be affected. These impacted areas will then be monitored during the first, second and fifth years after patch disturbance.

During the first, second, and fifth years after construction activities, wild lupine densities at each disturbed area (each pole) will be monitored using the 9-point ranking protocol developed by the MNFI. The presence and relative abundance of native nectar plants other than wild lupine will also be monitored. If wild lupine does not repopulate disturbed areas previously inhabited by wild lupine during the first year, disturbed areas will be seeded during the spring of the second year.

Three sections of the ROW and the 1.4 acres of mitigation area will be monitored for the presence or absence of KBB and numbers of KBB. The sections will be: Section A (from the northern end of the project south to the creek tributary to the Maple River, Section B (from the Maple River tributary south to Mosquito Creek, and Section C (Mosquito Creek south to the southern end of the project). The mitigation area will lie within one or more of sections A, B, or C. Monitoring will occur during the first, second, and fifth year after construction activities. A Pollard Yates transect survey of each of the three representative sections and the mitigation area will be conducted once during each of the two flights. One flight occurs during late May to late June and one flight occurs during mid July to late August. Surveyors will use KBB and Lupine Survey Forms from the MNFI and will provide all information required on the forms. See KBB survey protocol adapted from Wisconsin HCP by the MNFI for weather requirements and survey methods below. The MNFI survey protocol has been altered slightly to fit the needs of this monitoring plan.

KBB SURVEY PROTOCOL - PRESENCE/ABSENCE SURVEYS

(Adapted from Wisconsin HCP by MNFI)

When To Survey:

- Surveys for the KBB will be conducted during both the first and second flight periods. The first flight normally begins in late May and ends in mid to late June while the second flight normally begins in mid-July and ends in mid to late August.

- Timing of flight periods can vary by as much as 2-3 weeks from year to year and from site to site, and the length of flight periods may vary from year to year (two weeks to five weeks in length).
- Survey during both the first and the main second flight period. Conduct surveys during optimal time and weather conditions as listed below:
 - between 8:00 a.m. and 6:00 p.m.
 - when temperatures are above 60°F
 - when temperatures are between 60°F and 70°F surveys should only be conducted under mostly sunny skies with calm to light wind
 - when temperatures are above 70°F, no restrictions on cloud cover
 - when winds are less than 20 mph
 - do not survey under drizzly or rainy conditions

How To Survey: An individual who is knowledgeable in the identification of KBBs should conduct the surveys. It is recommended that individuals conducting surveys obtain training in identifying KBBs. Reference photos of KBBs may be obtained from Jennifer Fettinger at MNFI. An alternative to this is having Jennifer Fettinger or Dave Cuthrell positively identify a voucher photograph. Photo must capture underside of wing for positive identification.

- The KBB habitat area (wild lupine and associated nectar species) has been identified ahead of time and is indicated on a topographic map in each field folder.
- Each of the three ROW sections will be surveyed separately, each having its own field form.
- A copy of a KBB and wild lupine Survey Form is proved in **Appendix E**.
- The surveyor(s) will walk the entire length of ROW (being careful not to step on wild lupine plants) at a leisurely pace until all three ROW sections are surveyed.

Intensity Of Survey: Approximately 10 minutes of effort per survey are recommended for each acre of habitat (i.e. wild lupine patches and important nectar flowers within 100 meters of the wild lupine patch) to determine presence/absence and to map lupine. Surveying for a longer period of time is encouraged (but not mandatory) if KBBs are not found during the first 10 minutes of survey effort per acre of habitat.

General Information:

- KBB numbers are normally significantly greater during the second flight period.
- KBB flight periods vary within year from site to site depending on the site's phenology (i.e. "fast" sites and "slow" sites). Flight periods normally occur first on sunny open sites and later on shady sites.

For information on identification of KBBs, contact:

Jennifer Fettinger
Michigan Natural Features Inventory Zoologist
4th Floor Stevens T. Mason Building
PO Box 30444
Lansing, MI 48909-7944
Office: (517) 241-5437
Fax: (517) 373-9566
email: fettingj@michigan.gov

APPENDIX D
METC Fund Availability Commitment Letter



Michigan Electric Transmission Company, LLC
540 Avis Drive, Suite H
Ann Arbor, MI, 48108

December 9, 2004

Peter J. Fasbender
U.S. Fish & Wildlife Service
Bishop Henry Whipple Federal Building
1 Federal Drive
Fort Snelling, MN 55111

RE: Financial Commitment for Karner Blue Habitat Conservation Plan for Cobb to Brickyard Reconductoring Project

Dear Mr. Fasbender:

Michigan Electric Transmission Company, LLC (METC) will fund activities for habitat conservation for the Karner Blue Butterfly (KBB), a federally endangered species, for a four mile segment of electric power transmission line right-of-way as described in the KBB Habitat Conservation Plan (HCP) for the Cobb to Brickyard reconductoring project. These activities will be initially funded out of METC's capital budget for the Cobb to Brickyard reconductoring project. Following construction of the reconductoring project, ongoing monitoring activities will be funded from METC's annual ROW maintenance budget.

Please contact Robert Schultz (734) 929-1200 if you have any further questions.

Sincerely,

Robert W. Schultz, PMP
Project Manager

David Tates
Asset Manager

cc: G. Ferguson - ENSR

APPENDIX E
MNFI KBB Survey Form

KBB and LUPINE SURVEY FORM

Fill out this section after the survey has been completed

KBB Present?: NO ____ Why? (see codes and circle all that apply) L N W S
 YES ____ Certainty of location: >95% (location gps'd*) ____ 80 – 95% ____ 20 – 80% ____ 0 – 20% ____ UNKN ____

SURVEYOR AND LOCATION INFORMATION

Survey date: _____ - _____ - _____	Time from: _____ to: _____	SITENAME: _____	Sourcecode: F _____ M I U S
Surveyors (principal surveyor first, include first & last name): _____			
TOWNSHIP: _____	RANGE: _____	SECTION: _____	QUARTER SECTION: _____
OWNERSHIP: _____		QUAD CODE: _____	
Weather (see codes page): Begin Temp: _____ Begin Wind code: _____ Begin Sky code: _____ End Temp: _____ End Wind code: _____ End Sky code: _____			

SITE CONDITION INFORMATION

Use space provided on back to sketch the area surveyed.

Type of opening (ROW, clearing, field, barrens, lawn): _____ Size of opening: _____

Vegetation surrounding opening (wooded, agriculture, etc.): _____

Has the area been disturbed? (burn, cut, planted): _____

Other threats to the area? (ORV, Mechanical, Horses, etc.) _____

Light: open ____ partial ____ filtered ____ shade ____ Moisture: moist (mesic) ____ dry-mesic ____ dry (xeric) ____

Ground cover description (Density, % bare soil, % grass/forb/fern): _____

WOODY VEGETATION ENCROACHMENT: Tree/shrub/stump species and form	Height	Distribution	Notes
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

EXOTICS ENCROACHMENT Species	Distribution	Notes
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

KARNER BLUE BUTTERFLY OCCURRENCE

Mark occurrence on map using a * to indicate an occurrence

Total number of KBB adults: Male _____ Female _____ Unknown _____	% of opening occupied _____	Survey effort: Time spent in opening _____ % of area surveyed _____	Notes, observations, etc.: _____ _____
--	-----------------------------	---	--

*If the location(s) were gps'd, fill out this section, otherwise leave blank

Type of unit: _____ Unit number: _____

Waypoint name/# (when using Garmin) _____ File name (when using Trimble) _____

OPTIONAL: Latitude _____ Longitude _____

FEATURE INFORMATION (mandatory) Point : <12.5 m in both dimensions Line: >12.5 m in one dimension Polygon: >12.5m in both dimensions

Source Feature (circle one): Single Source EO ____ Multi-Source EO ____ Conceptual Feature Type (circle one): Point ____ Line ____ Polygon ____

LUPINE OCCURRENCE

Map lupine distribution. Use a ● for scattered plants, an X for clumps, and circle (0) dense areas

Overall distribution pattern (see codes): _____

Estimated % of area covered: _____ Caterpillar feeding damage (circle) Y N

Estimated % of lupine blooming or in seed: _____ Ants present: _____ Evidence of Browse: _____

Comments: _____

NECTAR SPECIES PRESENT

List nectar species observed at this site. Note the number of plants and blooms where possible.				
Species	Blooming?		Distribution	Notes, observations, etc.
	Yes	No		
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

OTHER SPECIES PRESENT

List other species observed at this site. Note especially listed species and potential predators.		
Species:	Number Observed	Notes, observations, etc.
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Sketch the boundary of the area visited. Mark your survey route or area, KBB (*) and lupine (● X 0) occurrences and note other pertinent information.

Transcription Number _____
KBB and LUPINE SURVEY FORM CODES

WIND CODES (Beaufort wind scale)

- 0 = Calm (< 1 mph) smoke rises vertically
- 1 = Light air (1-3 mph) smoke drifts, weather vane inactive
- 2 = Light breeze (4-7 mph) leaves rustle, can feel wind on face
- 3 = Gentle breeze (8-12 mph) leaves and twigs move, small flag extends
- 4 = Moderate breeze (13-18 mph) moves thin branches, twigs, and leaves, raises loose paper
- 5 = Strong breeze (19-24 mph) trees sway, branches move, dust blows
- 6 = Windy (> 24 mph)

SKY CODES

- 0 = Clear to few clouds
- 1 = Partly cloudy or variable sky
- 2 = Cloudy or overcast
- 3 = Fog or haze
- 4 = Drizzle or light rain
- 5 = Rain showers

KBB ABSENCE CODES

- L = No lupine
- N = No nectar sources
- W = Weather was poor, KBB may not be detectible
- S = Area >75% shaded

LUPINE DISTRIBUTION PATTERN CODES

- 0 = No lupine present
- 1 = Lupine scattered and sparsely distributed in the area
- 2 = Lupine scattered but common and distributed through much of the area
- 3 = Lupine scattered but abundant and distributed through most or all of the area
- 4 = Clumps of lupine sparsely distributed in the area
- 5 = Clumps of lupine common and distributed through much of the area
- 6 = Clumps of lupine abundant and distributed through most or all of the area
- 7 = Dense stands of lupine sparsely distributed in the area
- 8 = Dense stands of lupine common and distributed through much of the area
- 9 = Dense stands of lupine abundant and distributed through most or all of the area