STATUTORY CHECKLIST
FEDERAL LAWS AND AUTHORITIES LISTED AT SEC. 58.5

LG Energy Solutions Expansion * Attach evidence that required actions have been taken.

AREA OF STATUTORY OR REGULATORY COMPLIANCE	Not Applicable to This Project	Consultation Required *	Review Required *	Permits Required *	Determination of consistency	Approvals, Permits Obtained *	Conditions and/or Mitigation Actions Required	PROVIDE COMPLIANCE DOCUMENTATION. ADDITIONAL MATERIAL MAY BE ATTACHED.
Historic Properties							X	An application for Section 106 Review will be completed and submitted for review pending receipt of the requested information from SHPO. A previous review of the proposed expansion (dated January 28, 2021 prepared on behalf of the Department of Energy) indicated that the Project "will have no adverse effect". It is anticipated the SHPO response to our request for review, once submitted, will be consistent with the no adverse effect finding. Refer to Attachment 1.
Floodplain Management (HUD 8-step decision-making process must be used if project is located in/impacts floodplain)	X							According to the Federal Emergency Management Association (FEMA) a study to determine flood hazard for the subject property location has not been completed. A flood map has not been published at this time. ECS evaluated the USDA online resources and confirmed the Flooding Frequency Class was identified as “none” . Refer to Attachment 2 FEMA Flood Map Service Center, Panel 26139C0315E and USDA Flood Frequency documentation.
Wetlands Protection (HUD 8-step decision-making process must be used if project is located in/impacts wetlands)							X	The Project includes new construction. ECS evaluated the EGLE Wetlands Mapviewer and the FWS National Wetlands Inventory Maps. Forested wetlands appear to overlap the eastern boundary of the east parcel, and some areas of hydric soil were noted. A wetlands survey was previously conducted on the west parcel of the Project. Wetlands mitigation was completed associated with original site development. A formal wetland and waterbody delineation of the east parcel is recommended in coordination with EGLE. If ground disturbance impacts a wetland as defined in E. O. 11990, work with the RE to assist with the 8-Step Process. Refer to Attachment 3 for Wetlands documentation.
Coastal Zone Management	X							The Project is not located in a Coastal Zone. Refer to Attachment 4.
Water Quality	X							The Project is not located in a Sole Source Aquifer. The Project does not involve disposal or placement of dredged or fill material in navigable waters. Refer to Attachment 5.

Endangered Species	X							ECS obtained a list of protected species from FWS online tool IPaC. There are federally listed species in the area, however, there are no designated critical habitats in the action area. There is no potential habitat in the project area and the project is urban infill/industrial expansion. Refer to Attachment 6.
Wild and Scenic Rivers	X							The Project is not located in proximity of a Wild and Scenic River. Refer to Attachment 7.
Air Quality	X							The Project is located in Allegan County, and is in attainment status for all criteria pollutants, with the exception of Ozone. The Project temporary construction and final build is not anticipated to negatively affect community pollution levels. Based on the estimated emissions levels of the project for criteria pollutants (as summarized in client provided documentation), the project will not exceed de minimis or threshold emissions levels or screening levels. Refer to Attachment 8.
Farmlands Protection	X							The Project does occur on prime farmland, prime farmland if drained and farmland of local importance. The Site was purchased in 2010 and partially developed for industrial land use in 2011. The project is not subject to the Farmland Protection Policy Act (FPPA) . The Act does not apply to projects on land already in or committed to urban development. Attachment 9.
AREA OF STATUTORY OR REGULATORY COMPLIANCE	**Not Applicable to This Project**	**Consultation Required ***	**Review Required ***	**Permits Required ***	**Determination of consistency**	**Approvals, Permits Obtained ***	**Conditions and/or Mitigation Actions Required**	**PROVIDE COMPLIANCE DOCUMENTATION. ADDITIONAL MATERIAL MAY BE ATTACHED.**
Thermal/Explosive	X							The proposed Project does include a hazardous facility. The Project does not include activities that will increase residential density or conversion to residential. ECS calculated the acceptable separation distance (ASD) from the largest single AST. The facility is at an acceptable ASD from residences and other areas where people may congregate. Refer to Attachment 10.
Noise Control	X							The Project includes new construction for industrial use. The Project is not residential. The Project is not located in a noise sensitive use area. Refer to Attachment 11.
Airport Clear Zones	X							The Project is not located in a Runway Protection Zone/Clear Zone. The Project is not located within 15,000 feet of a military airport or 2,500 feet of a civilian airport. Refer to Attachment 12.

Contamination/Toxic Sites							X	A Phase I ESA dated February 25, 2022 was conducted at the Site. Refer to Attachment 13. The assessment revealed no evidence of RECs in connection with the subject property, with the exception of the following: • The subject property is a "facility" with a BEA report prepared and submitted in 2010 at the time of purchase. Arsenic in one soil sample and bis(2-ethylhexyl)phthalate in one groundwater sample above Residential Cleanup Criteria. The following items were also identified that warrant further discussion. • A release of acetone was noted in the EDR Radius Map Report circa 2011. The SPILLS listing identified a pipe from inside the building to the outside, with a spot visible on the concrete where some acetone spilled out. No additional details were provided with respect to the extent of impact, if any. • According to the EDR Radius Map Report, there was a fire in the activated carbon scrubber tower. The fire department came out and flushed it out and the water and carbon went into the drains that are connected to the retention ponds. The spill occurred in June 2012. No additional details were provided with respect to extent of impact, if any. <u>Recommendations</u>: No further assessment appears warranted with respect the "facility" listing. Previous Phase II ESA activities were conducted at the time of property purchase in 2010. The Arsenic and bis(2-ethylhexyl)phthalate detected do not present unacceptable human exposures for current or proposed site use. Additional discussion is warranted to further address the extent of impact, if any, from the two SPILLS listings. The Site is industrial (no human habitation). Lead based paint and Radon are not potential hazards at the Site. The Project does not include renovation/demolition to a portion of the existing building.
Environmental Justice	X							No adverse environmental impacts were identified in any other compliance review portion of this Projects ER. Chemical usage will increase due to expansion. Chemicals to be used are similar to those used currently. The existing facility has a SPCC/PIPP that covers chemical management, routes of possible spills and spill prevention measures. These plans would be expanded to address operations at the new facility. The local fire department would also be informed of potential hazards and facility construction/layout to ensure the public are protected from unacceptable exposures in the event of an

								accident. Because of the measures to address health and safety, including BMPs; compliance with federal, state, and local regulations and standards; plans for preventing chemical spills and potential mishandling of hazardous materials; and the facility's experience with handling and use of the same hazardous materials at the existing facility, impacts on the health and safety of workers and the public from Project construction and operation are not expected to be significant. A copy of the EJ Screen is included in Attachment 14.

FEDERAL LAWS AND AUTHORITIES LISTED AT SEC. 58.6 AND PERMITS, LICENSES, FORMS OF COMPLIANCE UNDER OTHER LAWS - FEDERAL, STATE AND LOCAL								
OTHER AREAS OF STATUTORY AND REGULATORY COMPLIANCE APPLICABLE TO PROJECT	**Not Applicable to This Project**	**Consultation Required ***	**Review Required ***	**Permits Required ***	**Determination of consistency**	**Approvals, Permits Obtained ***	**Conditions and/or Mitigation Actions Required**	**PROVIDE COMPLIANCE DOCUMENTATION. ADDITIONAL MATERIAL MAY BE ATTACHED.**
FEDERAL REQUIREMENTS								
Flood Insurance - 58.6(a)	X							According to the Federal Emergency Management Association (FEMA) a study to determine flood hazard for the subject property location has not been completed. A flood map has not been published at this time. ECS evaluated the USDA online resources and confirmed the Flooding Frequency Class was identified as "none" . Refer to Attachment 2 FEMA Flood Map Service Center, Panel 26139C0315E and USDA Flood Frequency documentation.
Coastal Barriers - 58.6(c)	X							The Project is not located in a Coastal Barrier Resources System. Refer to Attachment 15.
Airport Clear Zone Notification - 58.6(d)	X							The Project is not located in a Runway Protection Zone/Clear Zone. The Project is not located within 15,000 feet of a military airport or 2,500 feet of a civilian airport. Refer to Attachment 12.
Water Quality	X							The Project is not located in a Sole Source Aquifer. The Project does not involve disposal or placement of dredged or fill material in navigable waters. Refer to Attachment 5.
Solid Waste Disposal	X							The Project will comply with local, state and federal solid waste disposal requirements. The facility is a large quantity generator of hazardous waste. The Project expansion would not change the generator status. The facility has a hazardous waste contingency plan that covers the various hazardous waste streams including storage, labeling and inspections. This plan would be expanded to address the proposed expansion.
Fish and Wildlife	X							FWS ecological services were evaluated in the previous section, including Coastal Barrier Resource Systems, Endangered Species and Wetlands Inventory.

Storm Water	X							During construction, state and local statues pertaining to soil erosion and construction storm water will be complied with.

STATE STATUTES Use the Michigan Department of Environment, Great Lakes, and Energy (EGLE) **Permit Information** checklist to determine which, if any, state statutes apply (https://www.michigan.gov/documents/egle/egle-tou-permits-checklist_678821_7.pdf). Document any relevant state statute compliance below.								
EGLE Permit Checklist				X				A copy of the EGLE Permit Information checklist was provided to LG Energy. Applicable permits will be handled by LG Energy. Based on current site operations, LG Energy Solutions understands existing and future permitting requirements. Refer to Attachment 16.

Prepared by Environmental Consulting Solutions, LLC (ECS), Attn: Mr. Andrew Foerg

Title President/Owner

Date February 28, 2022

Attachments

Attachment 1 Section 106 Review

Attachment 2 Floodplain Management

Attachment 3 Wetlands

Attachment 4 Coastal Zone

Attachment 5 Sole Source Aquifers

Attachment 6 Endangered Species

Attachment 7 Wild and Scenic Rivers

Attachment 8 Air Quality

Attachment 9 Farmland Protection

Attachment 10 Explosives

Attachment 11 Noise

Attachment 12 Airports

Attachment 13 Phase I ESA Report

Attachment 14 Environmental Justice

Attachment 15 Coastal Barrier Resources

Attachment 16 EGLE Permit Checklist

Attachment 1

Section 106 Review

An application for Section 106 Review will be completed and submitted for review pending receipt of the requested information from SHPO. A previous review of the proposed expansion (dated January 28, 2021 prepared on behalf of the Department of Energy) indicated that the Project "will have no adverse effect". It is anticipated the SHPO response to our request for review, once submitted, will be consistent with the no adverse effect finding

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
MICHIGAN STRATEGIC FUND
STATE HISTORIC PRESERVATION OFFICE

MARK A. BURTON
PRESIDENT

January 28, 2021

MATTHEW MCMILLEN
DEPARTMENT OF ENERGY
DIRECTOR OF ENVIRONMENTAL COMPLIANCE LP-1
1000 INDEPENDENCER AVENUE SW
WASHINGTON DC 20585

RE: ER21-72 LG Chem Michigan Inc. (LGCMI) Expansion Project, 1 LG Way, Sec. 3, T4N, R15W, Holland, Allegan County (DOE)

Dear Mr. McMillen:

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 the effects of the proposed undertaking do not meet the criteria of adverse effect [36 CFR § 800.5(a)(1)]. Therefore, the project will have **no adverse effect** [36 CFR § 800.5(b)] on the Old Wing Mission, which is listed in the National Register of Historic Places.

This letter evidences the DOE's compliance with 36 CFR § 800.4 "Identification of historic properties" and 36 CFR § 800.5 "Assessment of adverse effects," and the fulfillment of the DOE's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.5(c) "Consulting party review." **If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.**

We remind you that federal agency officials or their delegated authorities are required to involve the public in a manner that reflects the nature and complexity of the undertaking and its effects on historic properties per 36 CFR § 800.2(d). The National Historic Preservation Act also requires that federal agencies consult with any Indian tribe and/or Tribal Historic Preservation Officer (THPO) that attach religious and cultural significance to historic properties that may be affected by the agency's undertakings per 36 CFR § 800.2(c)(2)(ii).

Finally, 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. Thank you for this opportunity to review and comment, and for your cooperation.

If you have any questions, please contact Brian Grennell, Cultural Resource Management Coordinator, at 517-335-2721 or by email at GrennellB@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.**

Sincerely,

Martha MacFarlane-Faes
Deputy State Historic Preservation Officer

MMF:SAT:BGG

copy: Jacquie Payette, Environmental Resources Management

Attachment 2

Floodplain Management

FEMA (//www.fema.gov/)

FEMA Flood Map Service Center: Search By Address

Navigation

Search

Languages

Enter an address, place, or coordinates:

875 E 48th Street, Holland, MI

Search

Whether you are in a high risk zone or not, you may need flood insurance (https://www.fema.gov/national-flood-insurance-program) because most homeowners insurance doesn't cover flood damage. If you live in an area with low or moderate flood risk, you are 5 times more likely to experience flood than a fire in your home over the next 30 years. For many, a National Flood Insurance Program's flood insurance policy could cost less than $400 per year. Call your insurance agent today and protect what you've built.

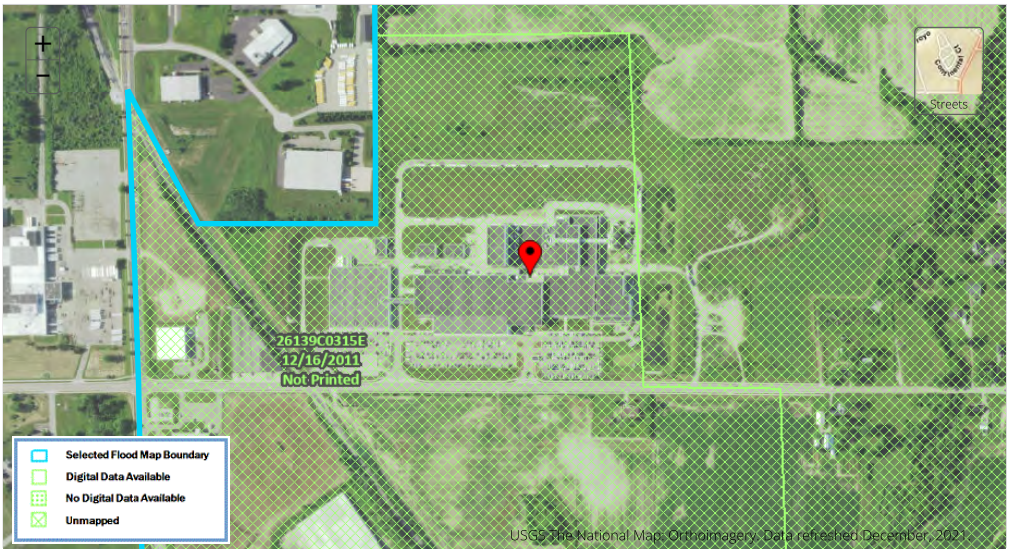
Learn more about steps you can take (https://www.fema.gov/what-mitigation) to reduce flood risk damage.

Search Results—Products for **HOLLAND, CITY OF**

Show ALL Products » (https://msc.fema.gov/portal/availabilitySearch?addcommunity=260006&communityName=HOLLAND, CITY OF#searchresul

FEMA has not completed a study to determine flood hazard for the selected location; therefore, a flood map has not been published at this time. You can contact your community or the FEMA FMIX for more information about flood risk and flood insurance in your community.

You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMette. If you are a person with a disability, are blind, or have low vision, and need assistance, please contact a map specialist (https://msc.fema.gov/portal/resources/contact).

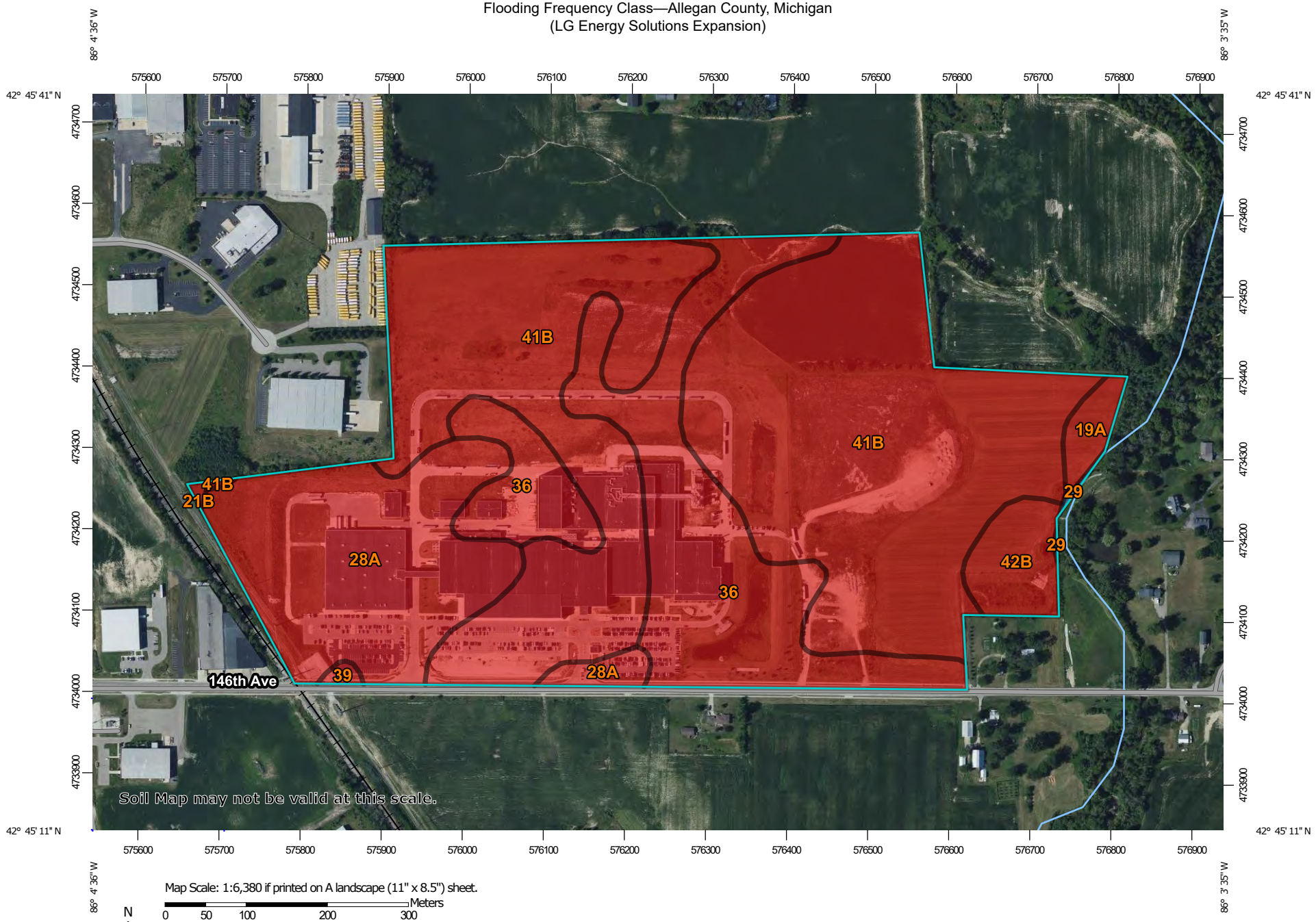


Share This Page.

(https://www.oig.dhs.gov/hotline)

Official website of the Department of Homeland Security

Flooding Frequency Class—Allegan County, Michigan
(LG Energy Solutions Expansion)



Map Scale: 1:6,380 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- None
- Very Rare
- Rare
- Occasional
- Frequent
- Very Frequent
- Not rated or not available

Soil Rating Lines
- None
- Very Rare
- Rare
- Occasional
- Frequent
- Very Frequent
- Not rated or not available

Soil Rating Points
- None
- Very Rare
- Rare
- Occasional
- Frequent
- Very Frequent
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Allegan County, Michigan
Survey Area Data: Version 19, Sep 2, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 12, 2020—Nov 3, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Flooding Frequency Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
19A	Brady sandy loam, 0 to 3 percent slopes	None	1.5	1.2%
21B	Capac-Wixom complex, 1 to 4 percent slopes	None	0.1	0.1%
28A	Rimer loamy sand, 0 to 4 percent slopes	None	20.5	17.4%
29	Cohoctah silt loam	Frequent	0.1	0.1%
36	Corunna sandy loam	None	24.7	20.9%
39	Granby loamy sand, lake plain, 0 to 2 percent slopes	None	0.3	0.2%
41B	Blount silt loam, 1 to 4 percent slopes	None	67.5	57.1%
42B	Metamora sandy loam, 1 to 4 percent slopes	None	3.5	3.0%
Totals for Area of Interest			**118.2**	**100.0%**

Description

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent.

"None" means that flooding is not probable. The chance of flooding is nearly 0 percent in any year. Flooding occurs less than once in 500 years.

"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

"Rare" means that flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5 percent in any year.

"Occasional" means that flooding occurs infrequently under normal weather conditions. The chance of flooding is 5 to 50 percent in any year.

"Frequent" means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year.

"Very frequent" means that flooding is likely to occur very often under normal weather conditions. The chance of flooding is more than 50 percent in all months of any year.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: More Frequent

Beginning Month: January

Ending Month: December

Attachment 3

Wetlands

U.S. Fish and Wildlife Service

National Wetlands Inventory

Wetlands

February 25, 2022

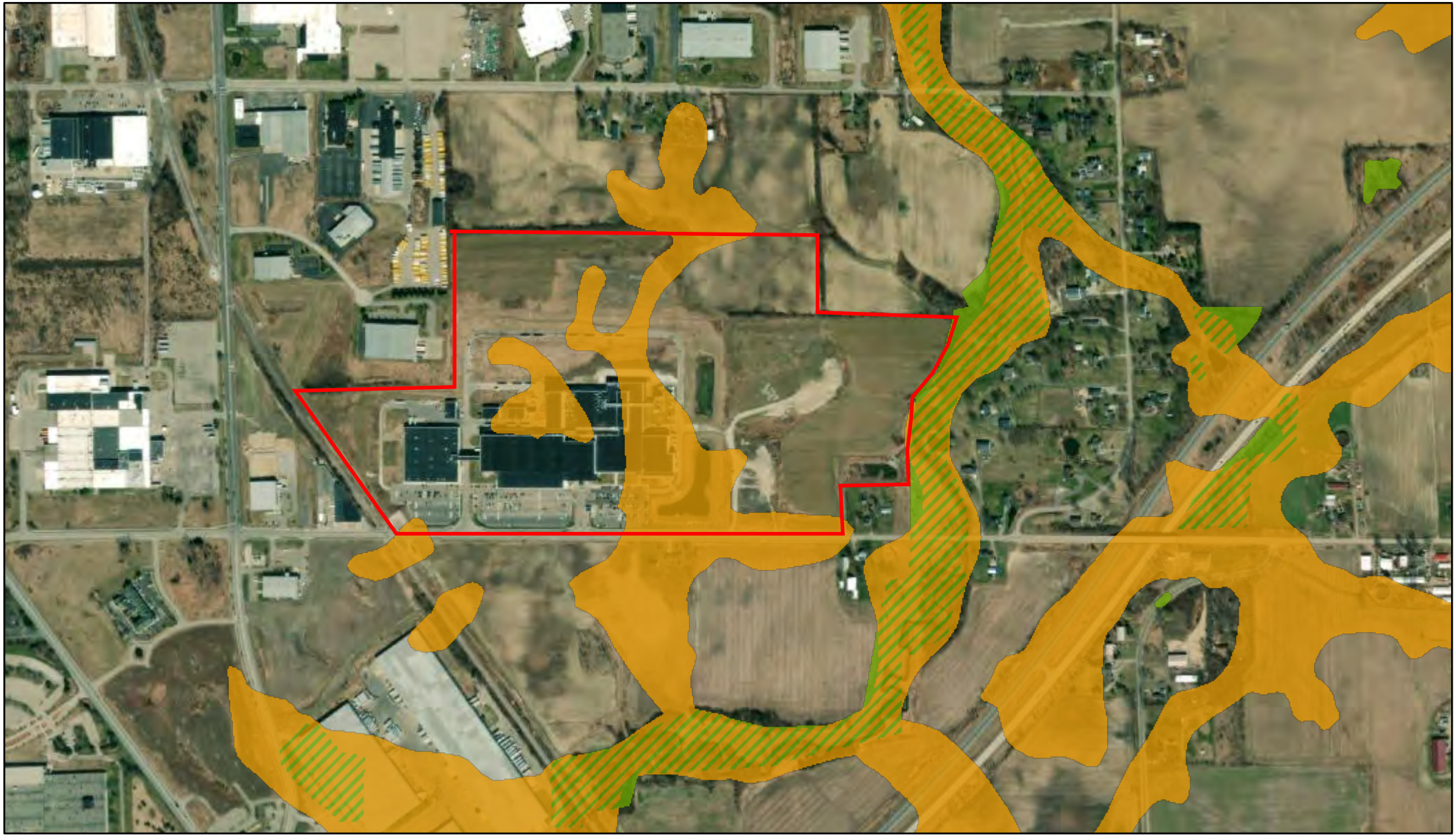
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Wetlands Map Viewer



February 24, 2022

Part 303 Final Wetlands Inventory

- Wetlands as identified on NWI and MIRIS maps
- Soil areas which include wetland soils
- Wetlands as identified on NWI and MIRIS maps and soil areas which include wetland soils

1:9,391

0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap

Notice of Authorization

Permit Number 10-03-0007-P

Issued: 05/14/2010
Expiration Date: 05/14/2015

The State of Department of Natural Resources and Environment, Land and Water Management Division, P. O. Box 30458, Lansing, Michigan 48909-7958, 517-335-3183, under provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and specifically:

- ☐ Part 31 Floodplain/Water Resources Protection.
- ☐ Part 301 Inland Lakes and Streams.
- ☒ Part 303 Wetland Protection.
- ☐ Part 315 Dam Safety.
- ☐ Part 325 Great Lakes Submerged Lands.
- ☐ Part 323 Shorelands Protection and Management.
- ☐ Part 353 Sand Dune Protection and Management.

Authorized activity:

Excavate approximately 8,058 cubic yards of material from 1.03 acres of wetland. Place 8,795 cubic yards of fill in 1.18 acres of wetland. Total wetland impact is 2.21 acres. Work is for the construction of a commercial development. Create 3.5 acres of wetland from an upland area as mitigation for the permitted wetland impact. All work shall be completed in accordance with the attached plans and conditions of this permit.

To be conducted at property located: Allegan County, Waterbody: wetland
Section 3 , Town 4N, Range 15W, Fillmore Township

Permittee: Compact Power Inc
1857 Technology Drive
Troy, MI 48083

Rebecca A. Humphries, Director
Department of Natural Resources and Environment

(for)

Katie Fairchild
District Representative

This notice must be displayed at the site of work.
Laminating this notice or utilizing sheet protectors is recommended.

Please refer to the above Permit Number with any questions or concerns.

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT
PERMIT

ISSUED TO:

Compact Power Inc
1857 Technology Drive
Troy, MI 48083

Permit No.	10-03-0007-P
Issued	May 14, 2010
Extended	
Revised	
Expires	May 14, 2015

This permit is being issued by the Michigan Department of Natural Resources and Environment (MDNRE) under the provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) and specifically:

- ☐ **Part 301 Inland Lakes and Streams**
- ☐ **Part 315 Dam Safety**
- ☐ **Part 325 Great Lakes Submerged Lands**
- ☐ **Part 323 Shorelands Protection and Management**
- ☒ **Part 303 Wetlands Protection**
- ☐ **Part 353 Sand Dune Protection and Management**
- ☐ **Part 31 Floodplain/Water Resources Protection**

Permission is hereby granted, based on permittee assurance of adherence to State requirements and permit conditions to:

Permitted Activity:

Excavate approximately 8,058 cubic yards of material from 1.03 acres of wetland. Place 8,795 cubic yards of fill in 1.18 acres of wetland. Total wetland impact is 2.21 acres. Work is for the construction of a commercial development. Create 3.5 acres of wetland from an upland area as mitigation for the permitted wetland impact. All work shall be completed in accordance with the attached plans and conditions of this permit.

Water Course Affected: wetland
Property Location: Allegan **County,** Fillmore Township, **Section** 3
Subdivision, Lot **Town/Range** 4N, 15W **Property Tax No.** 03-02-03-300-017+

Authority granted by this permit is subject to the following limitations:

A. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.
B. The permittee in exercising the authority granted by this permit shall not cause unlawful pollution as defined by Part 31, Floodplain/Water Resources Protection of the NREPA.
C. This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.
D. All work shall be completed in accordance with the plans and the specifications submitted with the application and/or plans and specifications attached hereto.
E. No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved herein.
F. It is made a requirement of this permit that the permittee give notice to public utilities in accordance with Act 53 of the Public Act of 1974 and comply with each of the requirements of that act.
G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits or complying with other state statutes.
H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights.
I. Permittee shall notify the MDNRE within one week after the completion of the activity authorized by this permit, by completing and forwarding the attached, preaddressed post card to the office addressed thereon.
J. This permit shall not be assigned or transferred without the written approval of the MDNRE.
K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific State Act, Federal Act and/or Rule under which this permit is granted.
L. Work to be done under authority of this permit is further subject to the following special instructions and specifications:

Wetland Mitigation

The permittee shall, as a primary condition of this permit, mitigate the loss of 2.21 acres of wetland, consisting of 2.19 acres of emergent and 0.02 acres of scrub-shrub wetland. The authorization granted by this permit is contingent upon the completion of mitigation as follows:

a. A new 3.5 acre wetland area, consisting of 1.75 acres of emergent, 1.72 acres of sedge meadow, and 0.03 acres of scrub-shrub wetland, shall be created in accordance with plans approved by the MDNRE. If the permit conditions modify the mitigation plan, the permit conditions shall take precedence over the mitigation plan.

b. The mitigation grading, planting, and introduction of hydrology shall be constructed prior to or concurrent with initiating any other permitted activities.

c. The permittee has provided a bond or letter of credit to the MDNRE in a form identical to the financial assurance models on the MDNRE's website at www.michigan.gov/deqwetlands in the amount of $175,000 to ensure that the replacement wetland is constructed, the conservation easement is recorded, monitoring is completed, and corrective actions are performed as required to comply with the mitigation requirements and conditions of this permit. The financial assurance document has been provided and accepted by the MDNRE prior to signature of this permit by the MDNRE.

   Prior to the transfer of this permit to another person, the new person must obtain and provide a financial instrument acceptable to the MDNRE in the name of the new person and in the amount required by this permit.

   Upon request of the permittee and with the submittal of adequate proofs, the MDNRE may release portions of the financial instrument in accordance with the following guidelines:

   50 percent of the financial instrument may be released after the MDNRE concurs that the mitigation grading and planting have been completed, and that proper hydrology has been established for a minimum of two years after construction of the mitigation wetland.

   The remaining 50 percent of the financial instrument will be released upon all of the following:

   i. Submittal of all the required monitoring reports,
   ii. Substantial compliance with the performance standards as outlined in this permit, and
   iii. Final approval by the MDNRE.

d. The permittee shall execute a conservation easement over the mitigation area as shown on the permit plans in a form identical to the conservation easement model on the MDNRE's website at www.michigan.gov/deqwetlands. The original executed conservation easement and associated exhibits must be sent to the MDNRE for review and recording prior to initiation of any permitted activities. Send to: Conservation Easement Coordinator, MDNRE, Land and Water Management Division, P.O. Box 30458, Lansing, Michigan, 48909, with a copy of the executed easement mailed to the District Office's address above.

   An acceptable executed conservation easement must be submitted to the MDNRE by the permittee prior to commencement of any permitted work within regulated areas.

   The conservation easement boundary shall be demarcated by the placement of signs along the perimeter. The signs shall be placed at an adequate frequency, visibility, and height for viewing, made of a suitable material to withstand climatic conditions, and should be replaced as needed. The signs shall include the following language:

WETLAND CONSERVATION EASEMENT
NO CONSTRUCTION OR PLACEMENT OF STRUCTURES ALLOWED.
NO MOWING, CUTTING, FILLING, DREDGING OR
APPLICATION OF CHEMICALS ALLOWED.
MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT

To protect the wetland mitigation from encroachment, the permittee may establish a split rail fence or similar structure approved by the MDNRE, along the conservation easement boundary.

Except as otherwise provided by this permit or approved in writing by the MDNRE, the following activities are prohibited in perpetuity within the mitigation area: alteration of topography, creation of paths, trails, or roads; placement of fill, dredging, or excavation; drainage of surface or groundwater; construction or placement of any structure; plowing, tilling, or cultivating the soils or vegetation; cutting, removal, or alteration of vegetation; including the planting of non-native plant species; construction of unauthorized utility or petroleum lines; storage or disposal of garbage, trash, debris, abandoned equipment; accumulation of machinery or other waste materials; use or storage of off-road vehicles; placement of billboards or signs; or the use of the wetland for the dumping of storm water (except as otherwise allowed in this permit).

e. The mitigation site shall not be fine graded, but shall be left in a rough grade state (allowing for the establishment of micro-topography). Any planting or seeding of the mitigation site must consist of native Michigan plant materials.

f. It is recommended that the permittee install a water control structure that can manipulate the water levels in 2-6 inch increments. The failure to install adequate water control structures may lead to the need to re-grade the entire mitigation area should the hydrology establish differently than shown on the approved mitigation plans.

g. The permittee shall notify the MDNRE's District Office, in writing and within 20 days of completion of each of the following items:

    1) final grading
    2) seeding and plant installation

h. In the event the permitted activity is begun but not completed, the permittee or owner of record shall remain responsible for completion of the mitigation wetland and associated conditions, as determined by the MDNRE. Such determinations shall be based upon the extent of the disturbance to the existing wetlands.

i. Should the mitigation wetland fail to become established after two complete growing seasons, or fail to progress satisfactorily towards a self-sustaining wetland system as required by this permit, the permittee shall:

    i. Assess the problem and its probable causes;
    ii. develop reasonable and necessary corrective measures as a revision to original plans;
    iii. submit proposed corrective measures to the MDNRE for confirmation and approval within 60 days of identification of the problem; and
    iv. upon MDNRE approval, implement corrective measures.

Additional mitigation monitoring may be required to evaluate the success of the corrective measures.

Wetland Mitigation Performance Standards

The following performance standards will be used to evaluate the mitigation wetland:

a. Construction has been completed in accordance with the MDNRE's approved plans and specifications included in the permit and mitigation plan.

b. The mitigation wetland is characterized by the presence of water at a frequency and duration sufficient to support a predominance of wetland vegetation and the wetland types specified at the end of the monitoring period.

c. A layer of high-quality topsoil, from the A horizon of an organic or loamy surface texture soil, is placed (or exists) over the entire wetland mitigation area at a minimum thickness of six (6) inches.

d. The mitigation wetland shall be free of oil, grease, debris, and all other contaminants.

e. A minimum of six (6) habitat structures, consisting of at least three (3) types, have been placed per acre of mitigation wetland. At least 50 percent of each structure shall extend above the normal water level. The types of acceptable wildlife habitat structures are:

   i. Tree stumps laid horizontally within the wetland area. Acceptable stumps shall be a minimum of 6 feet long (log and root ball combined) and 12 inches in diameter.
   ii. Logs laid horizontally within the wetland area. Acceptable logs shall be a minimum of 10 feet long and 6 inches in diameter.
   iii. Whole trees laid horizontally within the wetland area. Acceptable whole trees shall have all of their fine structure left intact (i.e., not trimmed down to major branches for installation), be a minimum of 20 feet long (tree and root ball), and a minimum of 12 inches in diameter at breast height (DBH).
   iv. Snags which include whole trees left standing that are dead or dying, or live trees that will be flooded and die, or whole trees installed upright into the wetland. A variety of tree species should be used for the creation of snag habitat. Acceptable snags shall be a minimum of 20 feet tall (above the ground surface) and a minimum of 12 inches DBH. Snags should be grouped together to provide mutual functional support as nesting, feeding, and perching sites.
   v. Sand mounds at least 18 inches in depth and placed so that they are surrounded by a minimum of 30 feet of water measuring at least 18 inches in depth. The sand mound shall have at least a 200 square foot area that is 18 inches above the projected high water level and oriented to receive maximum sunlight.

f. The mean percent cover of native wetland species in the herbaceous layer at the end of the monitoring period is not less than:

   60 percent for emergent wetland.
   80 percent for scrub-shrub wetland.
   80 percent for wet meadow wetland.
   80 percent for forested wetland.

   Extensive open water and submergent vegetation areas having no emergent and/or floating vegetation shall not exceed 20 percent of the mitigation wetland area. Extensive areas of bare soil shall not exceed five percent of the mitigation wetland area. For the purposes of these performance standards, extensive refers to areas greater than 0.01 acre (436 square feet) in size.

   The total percent cover of wetland species in each plot shall be averaged for plots taken in the same wetland type to obtain a mean percent cover value for each wetland type. Plots within identified extensive open water and submergent areas, bare soil areas, and areas without a predominance of wetland vegetation shall not be included in this average. Wetland species refers to species listed as facultative and wetter (FAC, FAC+, FACW-, FACW, FACW+, OBL) on the U.S. Fish and Wildlife Service's "National List of Plant Species That Occur in Wetlands" for Region 3.

g. The mitigation wetland supports a predominance of wetland vegetation (as defined in the "MDNRE Wetland Identification Manual") in each vegetative layer, represented by a minimum number of native wetland species, at the end of the monitoring period. The minimum number of native wetland species per wetland type shall not be less than:

15 species within the emergent wetland.
15 species within the scrub-shrub wetland.
20 species within the wet meadow wetland.
15 species within the forested wetland.

The total number of native wetland plant species shall be determined by a sum of all species identified in sample plots of the same wetland type.

h. At the end of the monitoring period, the mitigation wetland supports a minimum of:

Three hundred (300) individual surviving, established, and free-to-grow trees per acre in the forested wetland that are classified as native wetland species and consisting of at least three different plant species. Three hundred (300) individual surviving, established, and free-to-grow shrubs per acre in the scrub-shrub wetland that are classified as native wetland species and consisting of at least four different plant species. Eight (8) native wetland species of grasses, sedges, or rushes in the wet meadow wetland.

i. The mean percent cover of invasive species including, but not limited to, *Phragmites australis* (Common Reed), *Lythrum salicaria* (Purple Loosestrife), and *Phalaris arundinacea* (Reed Canary Grass) shall in combination be limited to no more than ten (10) percent within each wetland type. Invasive species shall not dominate the vegetation in any extensive area of the mitigation wetland.

If the mean percent cover of invasive species is more than ten (10) percent within any wetland type or if there are extensive areas of the mitigation wetland in which an invasive species is one of the dominant plant species, the permittee shall submit an evaluation of the problem to the MDNRE. If the permittee determines that it is infeasible to reduce the cover of invasive species to meet the above performance standard, the permittee must submit an assessment of the problem, a control plan, and the projected percent cover that can be achieved for review by the MDNRE. Based on this information, the MDNRE may approve an alternative invasive species standard. Any alternative invasive species standard must be approved in writing by the MDNRE.

If the mitigation wetland does not satisfactorily meet these standards by the end of the monitoring period, or is not satisfactorily progressing during the monitoring period, the permittee will be required to take corrective actions.

Wetland Mitigation Monitoring

The permittee shall monitor the wetland mitigation for a minimum of five (5) years following grading, planting, and introduction of hydrology. A monitoring report, which compiles and summarizes all data collected during the monitoring period, be submitted annually by the permittee. Monitoring reports shall cover the period of January 1 through December 31 and be submitted to the MDNRE prior to January 31 of the following year. The permittee shall conduct the following activities and provide the information collected in the monitoring reports:

a. Measure inundation and saturation at all staff gauges, monitoring wells, and other stationary points shown in the mitigation plan monthly during the growing season. Hydrology data shall be measured and provided at sufficient sample points to accurately depict the water regime of each wetland type.

b. Sample vegetation in plots located along transects shown in the mitigation plan once between July 15 and August 31. The number of sample plots necessary within each wetland type shall be determined by use of a species-area curve or other approach approved by the MDNRE. The minimum number of sample plots for each wetland type shall be no fewer than five (5). Sample plots shall be located on the sample transect at evenly spaced intervals or by another approach acceptable to the MDNRE. If additional or alternative sample transects are needed to sufficiently evaluate each wetland type, they must be approved in advance in writing by the MDNRE.

   The herbaceous layer (all non-woody plants and woody plants less than 3.2 feet in height) shall be sampled using a 3.28 foot by 3.28 foot (one square meter) sample plot. The shrub and tree layer shall be sampled using a 30-foot radius sample plot. The data recorded for each herbaceous layer sample plot shall include a list of all living plant species, and an estimate of percent cover in five (5) percent intervals for each species recorded, bare soil areas, and open water relative to the total area of the plot. The number and species of surviving, established, and free-to-grow trees and surviving, established, and free-to-grow shrubs shall be recorded for each 30-foot radius plot.

   Provide plot data and a list of all the plant species identified in the plots and otherwise observed during monitoring. Data for each plant species must include common name, scientific name, wetland indicator category from the U.S. Fish and Wildlife Service's "National List of Plant Species That Occur in Wetlands" for Region 3, and whether the species is considered native according to the Michigan Floristic Quality Assessment (Michigan Department of Natural Resources, 2001). Nomenclature shall follow Voss (1972, 1985, and 1996) or Gleason and Cronquist (1991).

   The locations of sample transects and plots shall be identified in the monitoring report on a plan view showing the location of wetland types. Each transects shall be permanently staked at a frequency sufficient to locate the transect in the field.

c. Delineate any extensive (greater than 0.01 acre in size) open water areas, bare soil areas, areas dominated by invasive species, and areas without a predominance of wetland vegetation, and provide their location on a plan view.

d. Document any sightings or evidence of wading birds, songbirds, waterfowl, amphibians, reptiles, and other animal use (lodges, nests, tracks, scat, etc.) within the wetland noted during monitoring. Note the number, type, date, and hour of the sightings and evidence.

e. Inspect the site, during all monitoring visits and inspections, for oil, grease, man-made debris, and all other contaminants and report findings. Rate (e.g., poor, fair, good, excellent) and describe the water clarity in the mitigation wetland.

f. Provide annual photographic documentation of the development of the mitigation wetland during vegetation sampling from permanent photo stations located within the mitigation wetland. At a minimum, photo stations shall be located at both ends of each transect. Photos must be labeled with the location, date photographed, and direction.

g. Provide one-time photographic documentation during construction of the placement of at least six (6) inches of high quality soil, from the A horizon of an organic or loamy surface texture soil, across the site.

h. Provide the number and type of habitat structures placed and representative photographs of each structure type.

i. Provide a written summary of data from previous monitoring periods and a discussion of changes or trends based on all monitoring results. This summary shall include a calculation of the acres of each wetland type established, a plan view drawing depicting each ecological type, and identification of all performance standards and whether each standard has been met.

j. Provide a written summary of all the problem areas that have been identified and potential corrective measures to address them.

A qualified individual able to identify plants to genus and species must conduct the wetland monitoring. The MDNRE reserves the right to reject reports with substandard monitoring data.

The MDNRE will determine if the performance standards have been met. If the performance standards have not been met, the MDNRE may require subsequent annual monitoring until final approval from the MDNRE can be granted.

Prior to final written approval of the mitigation by the MDNRE, the permittee shall submit the following:

i. A written statement that the mitigation is complete and request for final approval of the mitigation.
ii. A copy of the permit.
iii. "As-built" plans and specifications signed and sealed by a registered surveyor or licensed engineer.
ii. A surveyed boundary of the established wetland within the mitigation area, including the total acreage of the mitigation wetland and the acreage of each type of wetland created.
iii. Complete all monitoring requirements including the submittal of all required monitoring reports.

If the construction of the wetland mitigation has not been completed due to the fact that the activities authorized by this permit have not been initiated, then the permittee shall provide a written status report by December 1 each year until the wetland mitigation construction is complete. The written status report shall document the anticipated start date and completion date of wetlands mitigation construction. The status report shall not be considered in lieu of or as a substitution for any of the annual monitoring reports required by this permit.

Documentation of Ownership

The permittee shall provide the following documentation of ownership for the wetland mitigation site. This documentation must be submitted with the original executed conservation easement to the address above.

- A 50-year ownership history including copies of all deeds, encumbrances, easements, severed mineral rights, and other pertinent documents.
- A written statement from the property owner that there are no easements, encumbrances, or transfers of the property, in whole or in part, not disclosed in the title search.
- Subordination of any property interest (e.g., mineral rights, mortgages, easements) which would interfere with establishment and protection of the conservation easement.
- A title insurance policy insuring the conservation easement area in the name of the MDNRE, in an amount determined by the MDNRE.
- If the property owner is a company, documentation that the person executing the conservation easement has the authority to convey land on behalf of the company.

General Conditions

1. Prior to initiating construction, authorized by this permit, the permittee is required to provide a copy of the permit to the contractor(s) for review.

2. The property owner, contractor(s), **and any agent involved in exercising this permit** are held responsible to ensure the project is constructed in accordance with all drawings and specifications

contained in this permit. The contractor is required to provide a copy of the permit to all subcontractors doing work authorized by this permit.

3. Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA, or the need to acquire applicable permits from the County Enforcing Agent (CEA). To locate the Soil Erosion Program Administrator for your county visit www.deq.state.mi.us/sesca/.

4. A storm water discharge permit may be required under the Federal Clean Water Act for construction activities that disturb one or more acres of land and discharge to surface waters. For sites over five (5) acres, the permit coverage may be obtained by a Part 91, Soil Erosion and Sedimentation Control (SESC), permit and filing a "Notice of Coverage" form to the MDNRE's Water Bureau. For sites with disturbance from one acre up to five acres, storm water coverage is automatic once the SESC permit is obtained. These one to five acre sites are not required to apply for coverage, but are required to comply with storm water discharge permit requirements. Information on the storm water discharge permit is available from the Water Bureau's Storm Water Permit Program by calling 517-373-8088 or at www.michigan.gov/deqwater. Select "surface water" and then select "storm water."

5. All excavated spoils including organic and inorganic soils, vegetation, and other material removed shall be placed on upland (non-wetland, non-floodplain or non-bottomland), prepared for stabilization, and stabilized with sod and/or seed and mulch in such a manner to prevent and ensure against erosion of any material into any waterbody, wetland, or floodplain.

6. All fill shall consist of clean inert material that will not cause siltation nor contain soluble chemicals, organic matter, pollutants, or contaminants. All fill shall be CONTAINED in such a manner so as not to erode into any surface water, floodplain, or wetland. All raw areas associated with the permitted activity shall be STABILIZED with sod and/or seed and mulch, riprap, or other technically effective methods as necessary to prevent erosion.

7. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.

8. In issuing this permit, the MDNRE has relied on the information and data that the permittee has provided in connection with the permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete, or inaccurate, the MDNRE may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.

9. The authority to conduct the activity as authorized by this permit is granted solely under provisions of the governing act as identified above. This permit does not convey, provide, or otherwise imply approval of any other governing act, ordinance, or regulation, nor does it waive the permittee's obligation to acquire any local, county, state, or federal approval or authorizations necessary to conduct the activity.

10. The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representatives of the permittee, undertaken in connection with this permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.

11. This permit is being issued for the maximum time allowed under Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, PA 451 of 1994, as amended, including all permit extensions allowed under the administrative rule R 281.923. Therefore, no extensions of this permit will be granted. Initiation of the construction work authorized by this permit indicates the permittee's acceptance of this condition. The permit, when signed by the MDNRE, will be for a five-year period beginning at the date of issuance.

12. This permit shall become effective on the date of the MDNRE representative's signature. Upon signing by the permittee named herein, this permit must be returned to the MDNRE's Land and Water Management Division, Kalamazoo District Office, 7953 Adobe Road, Kalamazoo, Michigan, 49009 for final execution.

Permittee hereby accepts and agrees to comply with the terms and conditions of this permit.

X Hee Yil Ro May 13, 2010
Permittee Date

X Hee Yil Ro / President of Cell manufacturing
Printed Name and Title of Permittee

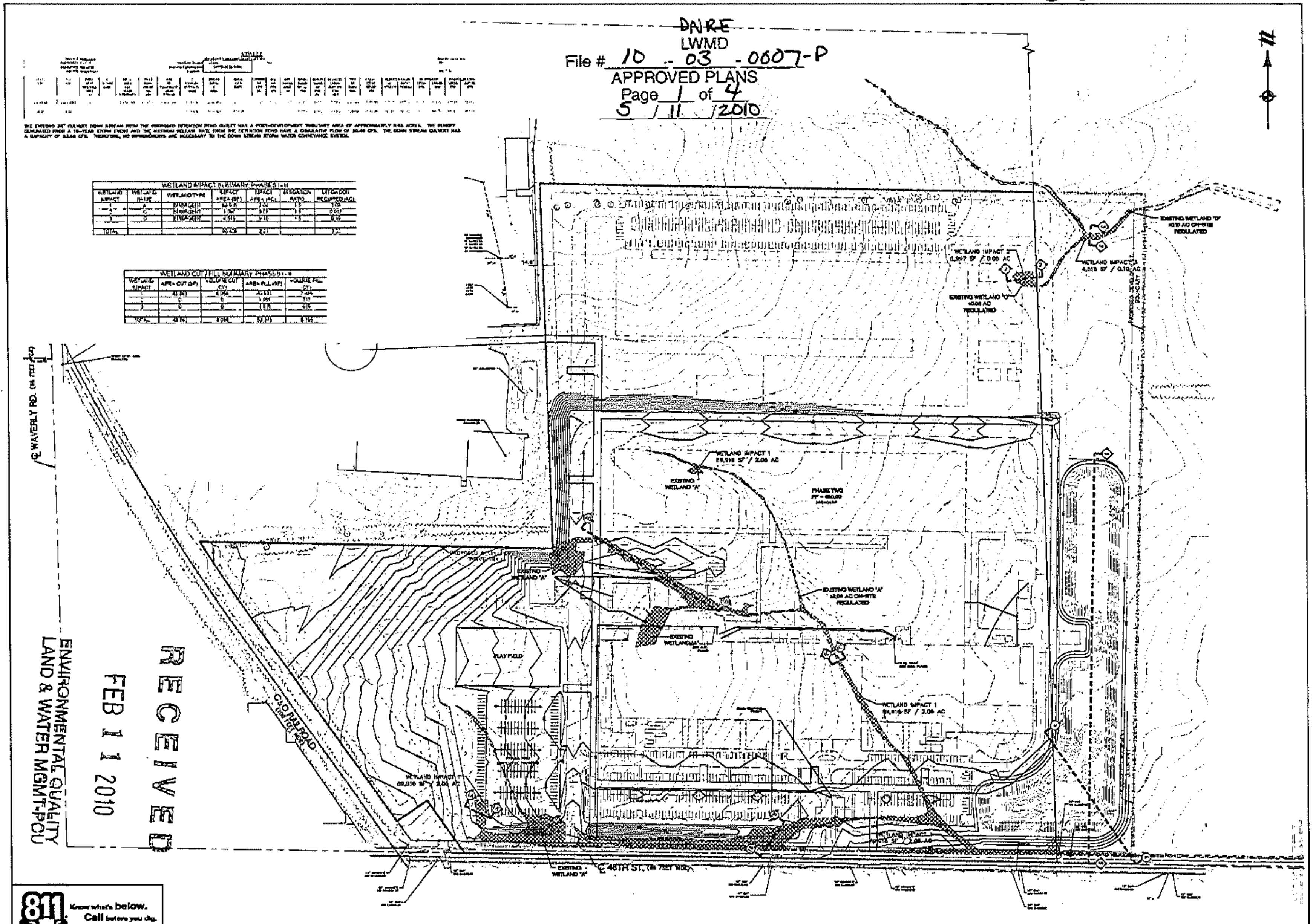
Rebecca A. Humphries, Director
Michigan Department of Natural Resources and Environment

By (for)
Kathleen Fairchild
Land and Water Management Division
269-567-3567

cc: Allegan CEA
Fillmore Township
City of Holland
Ms. Colleen O'Keefe, MDNRE
Ms. Bobbi Roberson, Atwell, LLC

Revised

File # 10 - 03 - 0007-P
~~DNRE~~ LWMD
APPROVED PLANS
Page 1 of 4
5 / 11 / 2010



WETLAND IMPACT SUMMARY PHASES I - III

WETLAND IMPACT	WETLAND NAME	WETLAND TYPE	IMPACT AREA (SF)	IMPACT AREA (AC)	MITIGATION RATIO	MITIGATION REQUIRED (AC)
1	A	EMERGENT	[illegible]	2.06	1.5	[illegible]
2	C	EMERGENT	[illegible]	[illegible]	1.5	[illegible]
3	D	EMERGENT	4,515	0.10	1.5	0.15
TOTAL			[illegible]	[illegible]		[illegible]

WETLAND CUT / FILL SUMMARY PHASES I - III

WETLAND IMPACT	AREA CUT (SF)	VOLUME CUT (CY)	AREA FILL (SF)	VOLUME FILL (CY)
1	[illegible]	[illegible]	[illegible]	[illegible]
2	0	0	[illegible]	[illegible]
3	0	0	[illegible]	[illegible]
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]

LEGEND

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NOTICE:

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FEB 11 2010
ENVIRONMENTAL QUALITY
LAND & WATER MGMT-PCU

Permittee Signature   Date 5/13/10

ROSSETTI

cpi compact power inc.

LGC
H-PROJECT
PHASES I - III
HOLLAND, MI

ATWELL

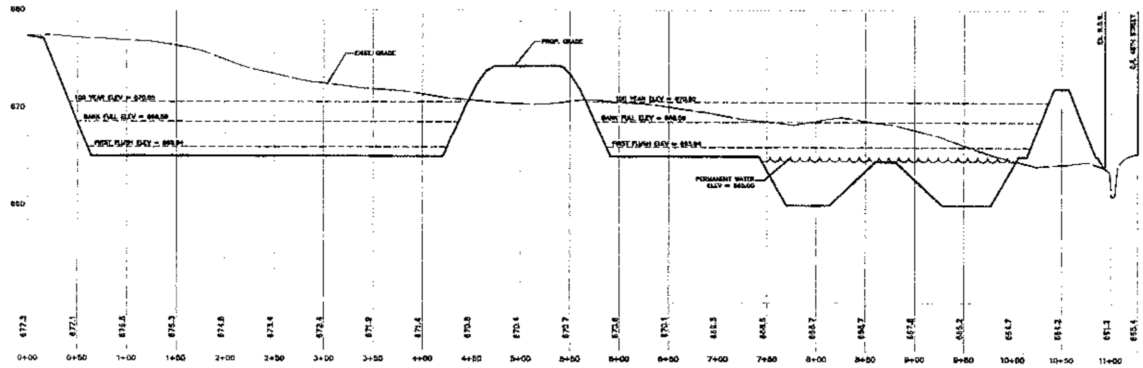
No.	Description	Date
1	MDEQ REVISIONS	2.10.10

Wetland Impact Plan

Date: January 22, 2010
Scale 0 50 100
1" = 100 Feet
Project Number 09001779

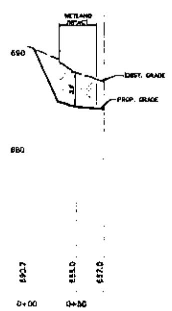
03

Revised



DETENTION POND SECTION 5-5'
HORZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'

POND CONSTRUCTION EARTH WORK		
CUT (cu. yds)	FILL (cu. yds)	NET (cu. yds)
27,150	7,850	19,300 Cut
POND AREA = 3.80 ACRES		



WETLAND IMPACT 1A-1A'
HORZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'

DNRE
LWMD
File # 10 - 03 - 0007-P
APPROVED PLANS
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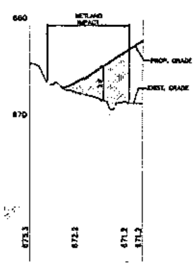
[signature] 5/13/10
Permittee Signature Date



WETLAND IMPACT 1B-1B'
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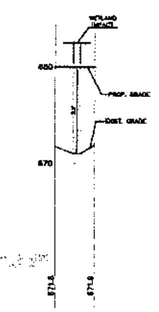
VERT. SCALE: 1" = 5'



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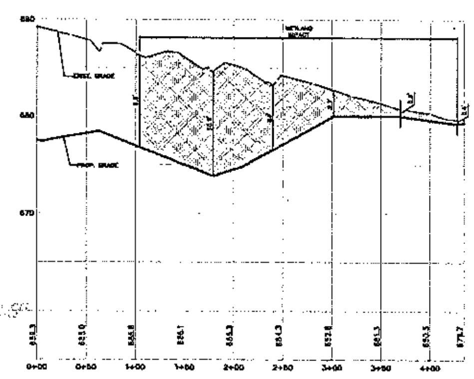
VERT. SCALE: 1" = 5'



WETLAND IMPACT 1D-1D'
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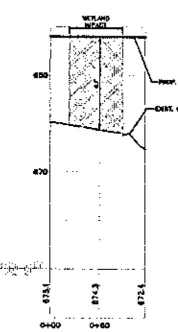
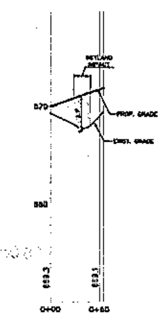
VERT. SCALE: 1" = 5'



WETLAND IMPACT 2-2'
HORZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'



WETLAND IMPACT 3-3'
HORZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 5'

DETENTION POND STORMWATER MANAGEMENT CALCULATIONS
City of Holland, Allegan County
[illegible]

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THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

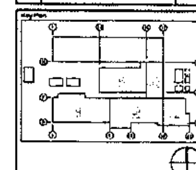
ROSSETTI

cpi compact power, inc.

LGC
H-PROJECT
PHASES I - III
HOLLAND, MI

ATWELL
OFFICES IN NORTH AMERICA AND ASIA

No.	Description	Date
1	MDEQ REVISIONS	2.10.10



Wetland Impacts Cross Sections

Date January 22, 2010
Project Number 05001770
Scale As Noted
Sheet Number 04

DNRE
LWMD
File # 10 -03 -0007-P
APPROVED PLANS
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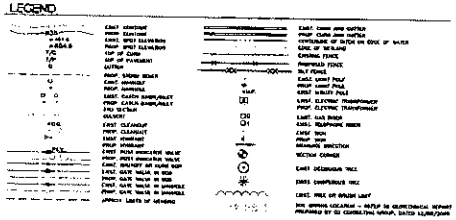
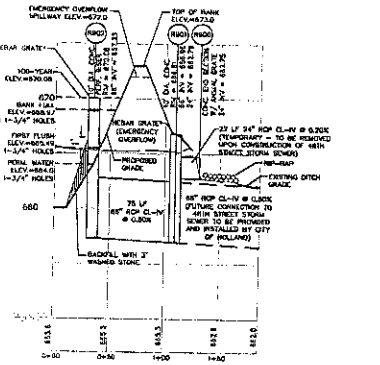
Permittee Signature

5/13/10
Date

LEGEND





DETENTION POND OUTLET
HOLE SCALE: 1" = 50'
VENT. SCALE: 1" = 5'

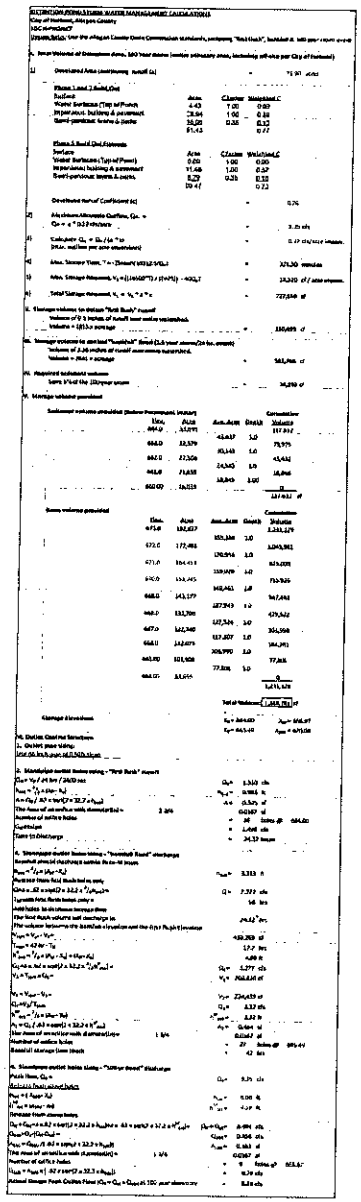
* REBAR GRATE TO HAVE 6"x6" OPENINGS AND HAVE A 24"x24" HINGED ACCESS HATCH FABRICATED NEAR EDGE OF STRUCTURE (TO ALIGN WITH MANHOLE STEPS). CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL.

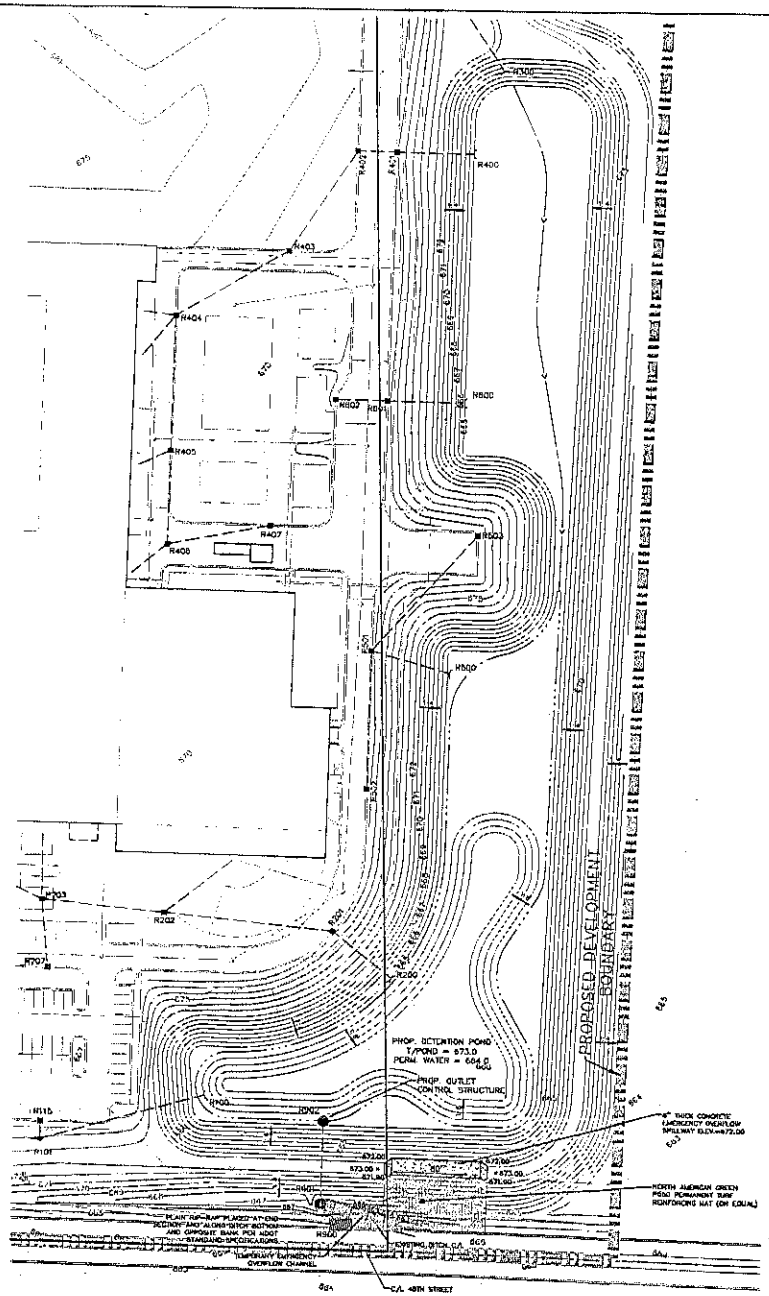
Channel Flow - Overflow Spillway Design

Trapezoidal	
Base Width	80.00 ft
Depth	1.00 ft
Side Slope (z)	0 on 1
Side Length	0.00 ft
Top Width	80.00 ft
Area (A)=	80.00 sf
Wetted Perimeter (P)=	82.17 ft
Hydraulic Radius (R)=	0.93
Roughness Coefficient (n)=	0.013
Slope (S)=	0.00%
Velocity Flowing Full (V)=	7.74 cfs
Capacity (Q)=	565.59 CFS
Drainage Area	71.00 Ac
Runoff Coeff = C	0.76
Rainfall Intensity = I	4.56 in/hr
Required Capacity (Q) =	246.16 cfs

Weir Flow - Overflow Spillway Design

Trapezoidal	
Base Weir Length	80.00 ft
Depth	1.00 ft
Side Slope (S)	1 on 0
Discharge Coefficient (C)=	3
Capacity (Q)=	253.60 CFS
Drainage Area	71.00 Ac
Runoff Coeff = C	0.76
Rainfall Intensity = I	4.56 in/hr
Required Capacity (Q) =	246.16 cfs





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THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE THE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF ANY WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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LGC
H-PROJECT
PHASE I

HOLLAND, MI

ATWELL

RECEIVED
APR 26 2010
[illegible]-KALAMAZOO

No.	Description	Date
1	DETAILED ENGINEERING	4.19.10
2	B.E./LC. PLAN SUBMITTAL	4.21.10
3	REVISIONS PER CITY REVIEW	4.26.10

Key Plan

Detention Pond Details

Date: April 8, 2010
Project Number: 09091778
Scale: 0 25 50, 1" = 50 Feet

C-536

Permittee Signature Date

Allecy Ro 5/13/10

LEGEND

LG Offsite Wetland Mitigation Water Budget

Month	Avg Precip (in.)	SRO (in.)	Adjusted Evaporation (in.)	ET Grasses (in.)	Seepage (in/mo)	Level** (in.)
						4.80
January	2.13	0.20	0.00	0.00	0	7.13
February	1.49	0.18	0.00	0.00	0	8.74
March	2.10	0.80	0.00	0.00	0	12.00
April	3.15	0.30	0.00	1.67	1.8	12.00
May	3.43	0.60	4.50	2.76	3.6	7.33
June	3.60	0.22	5.00	4.20	3.8	3.15
July	3.57	0.38	5.75	4.60	3.6	0.00
August	3.48	0.40	4.50	5.49	3.6	0.00
September	4.00	0.95	3.00	3.16	3.6	0.00
October	2.97	0.71	2.25	1.29	3.8	0.00
November	3.38	0.36	0.00	0.03	1.8	1.34
December	2.98	0.30	0.00	0.00	0	4.80
	38.10	4.76	25.00	25.07		

*Based on clay loam soils with a permeability of 1x10-6cm/sec. Soil Survey indicates a saturation zone 1 foot below surface so no infiltration assumed between mid November and mid April

**Starting water level is assumed from end of December Balance

Precipitation Data from WETS Station, Holland MI

Calculate Min precipitation event that will generate runoff

Pn.25 0.53 Minimum Precip for Runoff

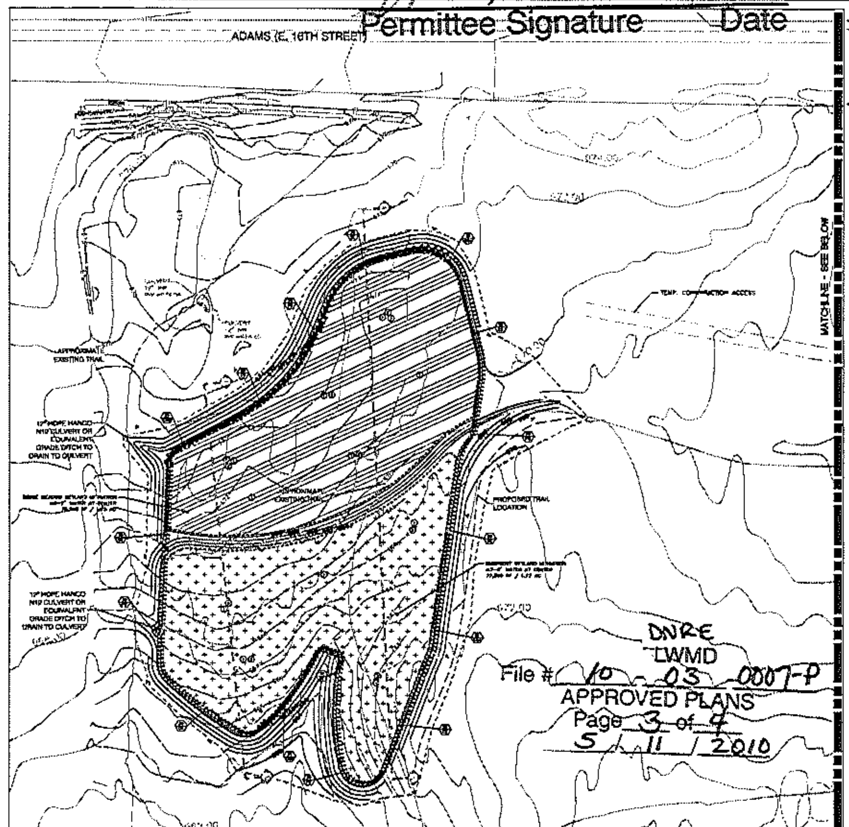
Wetland Mitigation Area Species List

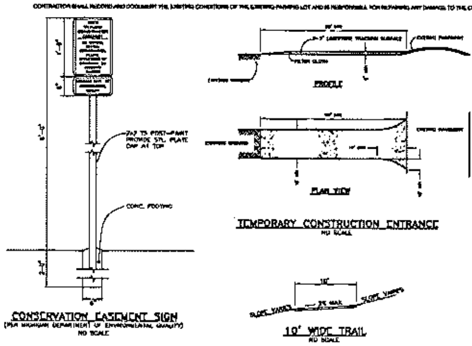
CUT / FILL ANALYSIS

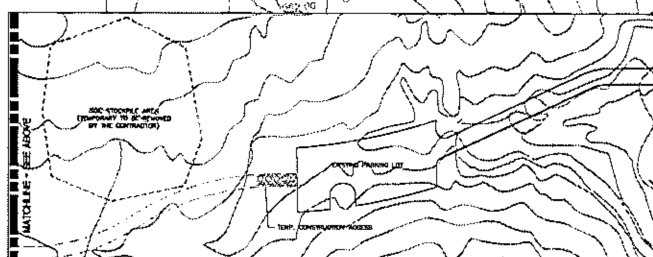
SHRUB PLANTING SCHEDULE

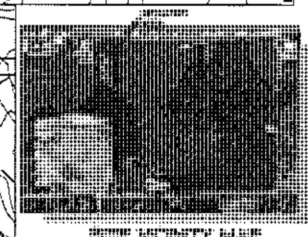
HABITAT STRUCTURE SPECIFICATIONS

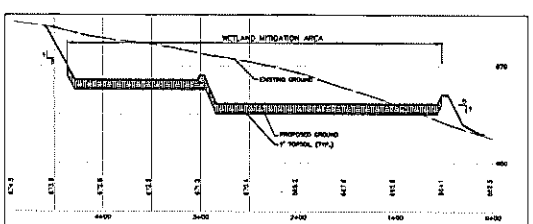
BREAKDOWN OF CONSTRUCTION ACTIVITIES

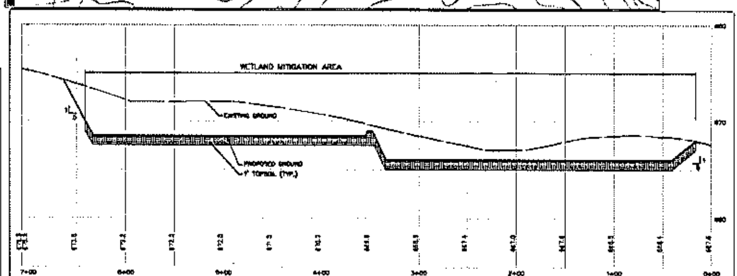


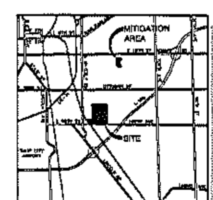












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LGC-BATTERY PROJECT
PHASES I - III
HOLLAND, MI

ATWELL

No.	Description	Date
	WETLAND MITIGATION REV	5.10.10

Off-Site Mitigation Plan

January 28, 2010

09001770

Scale 0 30 60
1" = 60 Feet

05

WETLAND DETERMINATION AND DELINEATION REPORT

for

THE ±69 ACRE PROPERTY LOCATED
Northeast of the Intersection of
S. Waverly Road & 48th Avenue
Fillmore Township
Allegan County, Michigan

Prepared for:

ROSSETTI
ARCHITECTURE | INTERIORS | GRAPHICS
PLANNING
TWO TOWNE SQUARE; SUITE 200
SOUTHFIELD, MI 48076

Atwell-Hicks, LLC Project No. 09001770

October 8, 2009

ATWELL
www.atwell-group.com
866.850.4200

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APPENDICES

EXECUTIVE SUMMARY

Atwell-Hicks, LLC (Atwell) has completed a wetland determination and delineation for the approximately 69-acre property located northeast of the intersection of S. Waverly Road and 48th Avenue in Section 03 of Fillmore Township (T4N – R15W), Allegan County, Michigan. The Wetland Determination and Delineation follows the scope of services presented in Section 1.1, *Scope of Service*.

This executive summary is intended to be taken in context with the complete report and is not designed to be used as a separate document. The following summarizes the findings of the Wetland Determination.

This document is a determination of the regulatory status of any wetlands, significant bodies of water, watercourses and/or floodplain located on the subject property, based on the Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA). This regulatory act includes three parts concerning this wetland determination and delineation. The first, Part 301, Inland Lakes and Streams, states that any watercourse, which has definable banks, a bed and visible evidence of a continued flow or continued occurrence of water, would be regulated. Additionally, any body of water with a surface area greater than five (5) acres would be regulated. The second, Part 303, Wetlands Protection, states that if a wetland is five (5) acres or larger or located within 500 feet of any regulated body of water or watercourse, it would be regulated. Both the above parts prohibit the fill, dredge, removal of soils, construction, placement or removal of structures, redirection of water and artificial drainage of any regulated wetland, body of water or waterway without a Michigan Department of Environmental Quality (MDEQ) issued permit. The third, Part 31, Water Resources Protection, states that a person shall not occupy or permit the occupation of land for residential, commercial or industrial purposes or fill or grade or permit the filling or grading for a purpose other than agricultural land in a floodplain, stream bed or channel of a stream, as ascertained and determined for the record by the department.

The site consists of an undeveloped, irregular-shaped property, which contains a mix of agricultural fields, hedgerows, shrubs and young forested areas. An old abandoned farmstead is located near the southwestern corner of the site (accessed from 48th Avenue). The information gathered from site reconnaissance and the review of historical and current documents indicates that three (3) wetland systems (Wetland A, B, & C) are located on the subject property. Wetlands A and C appear to meet the requirements of Part 303, Wetlands Protection of the Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA) and would be considered regulated by the Michigan Department of Environmental Quality (MDEQ).

Part 303, Wetlands Protection, clearly states that a wetland is considered regulated if it is five (5) acres or larger or if it is connected to or located within 500 feet of a lake, pond, river, stream or watercourse. The on-site acreage of Wetland A equals 2.02-acres but is interconnected with the Macatawa River (North Branch). Therefore, Wetland A would be considered regulated and subject to permitting by the MDEQ. The same applies to Wetland C (0.05-acres) in that it is interconnected with this same watercourse. Off-site Wetland D appears to be connected to

Wetland C. Wetland B (0.13-acres), however, is an isolated wetland and would not be regulated by the MDEQ.

Part 301, Inland Lakes and Streams, states that a feature is considered a regulated watercourse if it possesses a defined bed, banks and evidence of continued flow or continued occurrence of water. No continuous, defined channel continues through the aforementioned wetland areas. Consequently, it is Atwell's opinion that the on-site feature should be categorized as a linear wetland. As a result, the feature should be regulated under Part 303, Wetlands Protection, not Part 301, Inland Lakes and Streams.

Please be advised that MDEQ has the final authority on the extent and classification of regulated wetlands, lakes and streams in the state of Michigan.

A permit is required by the MDEQ for any proposed work (*e.g.*, filling, dredging, construction, draining and/or other wetland development) that takes place within the boundaries of a regulated wetland, body of water or floodplain. Any construction activities that take place outside of these boundaries do not require a permit from the MDEQ. Atwell's review of the proposed development plan indicates that wetland impact occurring to regulated features will occur during development. A permit with the MDEQ is anticipated. In addition due to the amount of impact, i.e. over one-third of an acre, wetland compensatory mitigation should be required to obtain a wetland permit for the site. Please note that impacts to the regulated features on site will require a 1.5 to 1.0 replacement ratio for impacted wetlands.

No state listed threatened or endangered species (TES) were documented within the vicinity of the project. Federal funding of the project will initiate compliance with the National Environmental Protection Act (NEPA). Prior to receiving NEPA approval, MDEQ, MDNR and other state and local permitting will need to be in the process of approval and/or approved. NEPA requirements may require additional natural resource services prior to approval including but not limited to federally listed TES review and specific species surveys, negotiation and coordination with federal agencies, such as the United States Fish and Wildlife Services (USFWS), United States Environmental Protection Agency (US EPA) and the Army Corps of Engineers (ACOE).

1.0-INTRODUCTION

Atwell-Hicks, LLC (Atwell) was contracted to perform a wetland determination and delineation for the approximately 69-acre property located northeast of the intersection of 48th Avenue and Waverly Road in Section 03 of Fillmore Township (T4N – R15W), Allegan County, Michigan.

The purpose of the site inspection and delineation was to determine if any wetlands, significant bodies of water, watercourses and/or floodplain are currently present on the subject property, and, if found, to establish if the entities would fall under the jurisdiction of the Michigan Department of Environmental Quality (MDEQ) by Part 303, Wetlands Protection, Part 301, Inland Lakes and Streams, and/or Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA). Additionally, an extensive review of current and historical documentation, which included available aerial photographs, National Wetland Inventory maps and soil survey maps for the property, took place in order to evaluate site specific characteristics. The following report discusses the findings and conclusions.

The wetland determination and delineation was performed in accordance with the MDEQ Wetland Identification Manual, *A Technical Manual for Identifying Wetlands in Michigan* (March 2001) and the Army Corps of Engineers *Wetlands Delineation Manual* (January 1987). The determination of any wetland depends on three basic parameters. These parameters are: 1) the presence of hydrophytic vegetation (plants adapted to living in saturated soils), 2) hydric soils (distinctive soil types that develop under saturated conditions), and 3) wetland hydrology (the presence of water at or near the surface for a specific period of time) (*Michigan Wetlands*, Tip of the Mitt Watershed Council, 1992). The above parameters are virtually always inter-related and present in wetland systems.

1.1 Scope of Service

Elements of the wetland determination and delineation include the site inspection, delineation of wetland boundaries, current and historical document review, and submittal of this report, which discusses the property's specific characteristics, including any wetland areas if encountered. Specifically, the Wetland Determination and Delineation included the following services:

- Perform a background documentation review that includes a review of the National Wetland Inventory Map, FIRM Floodplain Map, USGS Topographic Map, Allegan County Soil Survey and aerial photographs.
- Perform site reconnaissance, which evaluates specific site characteristics and features.
- Delineate (flag) the boundaries of the existing wetland area(s), which provides the size, shape and location of any wetland(s) on the subject property, as defined by Parts 301 and 303 of the NREPA.

- Prepare and submit this report summarizing the findings of the above-described tasks, evaluating the wetland characteristics and determining the wetland regulation(s), which may or may not apply to the wetland system(s) present on the subject property.

2.0 SITE DESCRIPTION

The subject property, consisting of approximately 69-acres, is located northeast of the intersection of S. Waverly Road and 48th Avenue in Fillmore Township, Allegan County, Michigan. Specifically, the property is located in the southern half of Section 03 (T4N – R15W). The property is currently an actively farmed agricultural landscape surrounded by a mix of industrial and residential areas. The site is bordered by 147th Avenue to the north along with a mix of industrial/corporate complexes and rural residential areas. To the east, the site is bound by the North Branch of the Macatawa River and rural residential areas (along 52nd Street just east of the river). Agricultural fields and isolated rural residences along 48th Avenue occupy the southern site boundary. A large industrial complex and a railroad right-of-way (intersecting both S. Waverly Road and 48th Avenue in a northwest to southeast direction) border the site to the west. Refer to the *Site Location Map* and *Property Features Map* included in *Appendix I.*

3.0 SITE RECONNAISSANCE & CHARACTERISTICS

Atwell conducted a site inspection and wetland determination and delineation on September 5, 2009. The site consists mainly of an irregularly shaped agricultural (planted in corn at time of inspection) property totaling approximately 69-acres. A large industrial complex and a transmission line right-of-way that parallels a railroad occupy the western boundary of the project. An old abandoned farmstead, demarcated by an unimproved dirt lane and a long-established grove of trees, is located towards the southwestern corner of the property. A treed hedgerow (west to east) is located in the northern portion of the property.

The topography of the site is relatively flat but tends to slope to the southeast towards the North Branch of the Macatawa River, which borders the property to the east. Topography, in addition to the sandy soils of the site, help contribute to a substantial drainage pattern that follows this southward slope and connects with a drainage ditch running parallel to and on the north side of 48th Avenue. This drainage ditch empties into the Macatawa River. A portion of the drainage system consists of a well-vegetated swale that lies just to the northeast of the abandoned farmstead (detectable on aerial images; **Appendix I**), which consists of shrub-scrub wetland type dominated by willows (*Salix sp.)*, cattails *(Typha sp.),* and other wetland plant species. The northeastern portion of the farmstead consists of a low depression with associated wetland vegetation but is likely not interconnected with the site's drainage system.

With the exception of wetland vegetation contained in each of the four wetlands, the site mainly consists of agricultural row crops. Upland vegetation is confined to the fencerows and the abandoned farmstead and is typical of that found in these types of locations. Vegetation in the upland portions include species such as tall goldenrod (*Solidago altissima*), silver maple (*Acer saccharinum*), Austrian pine (*Pinus nigra*), green ash (*Fraxinus pennsylvanica*), red maple (*Acer rubrum*), northern catalpa (*Catalpa speciosa*), osage orange (*Maclura pomifera*), American

basswood (*Tilia americana*), boxelder (*Acer negundo*), black cherry (*Prunus serotina*), American elm (*Ulmus americana*), red mulberry (*Morus rubra*), hawthorne (*Crataegus* spp.), apple (*Malus pumila*), red oak (*Quercus rubra*), and bitternut hickory (*Carya cordiformis*).

The information gathered from the delineation and the review of historical and current documents indicates that three (3) wetland systems are located on the subject property. These wetlands have been labeled Wetlands A-C. Refer to the *Wetland Location Map* presented in **Appendix III**. A discussion of this system follows:

Wetland A consists of an 2.02-acre emergent wetland dominated by field nut sedge (*Cyperus esculentus*), bigseed smartweed (*Polygonum pensylvanicum*), cattail (*Typha latifolia*), reed canary grass (*Phalaris arundinacea*), barnyard grass (*Echinochloa crusgalli*), New England aster (*Aster novae-angliae*), blue vervain (*Verbena hastata*), and sandbar willow (*Salix exigua*). Refer to the *Photographic Log* in **Appendix II**. This wetland is located within the southern portion of the property and extends to the north into agricultural field. Refer to the *Wetland Location Map* in **Appendix III**. These species range in wetland indicator status from FACW to OBL (see *Common Wetland Definitions* at the end of this report). At the time of the site visit, the majority of Wetland A contained saturated soils with small areas of inundation. The wetland appears to receive hydrology from precipitation and runoff from adjacent uplands. Refer to the *MDEQ Wetland Data Form* in **Appendix IV.**

Due to the sandy nature of the soils with Wetland A, the flowing water has created small drainage swales through the wetland. These multiple drainage swales connect and appear to outlet water into the road site ditch along the north side of 48th Avenue. The site visit revealed that the road site ditch connects and outlets into the Macatawa River (North Branch). Refer to the *Photographic Log* in **Appendix II**.

Wetland B consists of a small 0.13-acre isolated scrub-shrub wetland located in the northeast corner of the old farmstead. Refer to the *Wetland Location Map* in **Appendix III**. The dominated species include field nut sedge, bigseed smartweed, barnyard grass, sandbar willow, and cottonwood (*Populus deltoides*) saplings. Refer to the *Photographic Log* in **Appendix II**. These species range in wetland indicator status from FAC+ to OBL (see *Common Wetland Definitions* at the end of this report). At the time of the site visit, the majority of Wetland B contained saturated soils. The wetland appears to receive hydrology from precipitation and runoff from adjacent uplands. Refer to the *MDEQ Wetland Data Form* in **Appendix IV.**

Wetland C consists of a small emergent approximately 0.05-acre wetland. Wetland C appears to be connected to Wetland D through an agricultural drainage tile. The dominant vegetation includes barnyard grass, bigseed smartweed, and common cocklebur. These species range in wetland indicator status from FAC to FACW+ (see *Common Wetland Definitions* at the end of this report). At the time of the site visit, the wetland contained saturated soils. The wetland appears to receive hydrology from precipitation and runoff from adjacent uplands. Refer to the *MDEQ Wetland Data Form* in **Appendix IV.**

Off-site Wetland D would be considered a linear emergent wetland. This wetland is located northeast of the subject property. Refer to the *Wetland Location Map* in **Appendix III**. This wetland appears to facilitate water drainage and eventually outlets/connects to Macatawa River (North Branch). Very little vegetation is growing within the wetland; however, the dominant vegetation includes barnyard grass, bigseed smartweed, and common cocklebur (*Xanthium strumarium*). Refer to the *Photographic Log* in **Appendix II**. These species range in wetland indicator status from FAC to FACW+ (see *Common Wetland Definitions* at the end of this report). At the time of the site visit, the wetland A contained saturated soils. The wetland appears to receive hydrology from precipitation and runoff from adjacent uplands. Refer to the *MDEQ Wetland Data Form* in **Appendix II.**

4.0 NATIONAL WETLAND INVENTORY MAP REVIEW

A review of the National Wetland Inventory Map (NWI) and Allegan County Wetland Map was conducted to determine the likely presence, location, size and type of wetlands that may be located on the subject property. The U.S. Fish and Wildlife Service generates the NWI maps through interpretation of topographic data and aerial photographs. The Allegan County Wetland Map is provided by the MDEQ. The MDEQ produces wetland inventory maps for the state of Michigan on a county-by-county basis through compilation of data from NWI, land cover and soil survey maps. Copies of the *National Wetland Inventory Map* and *Allegan County Wetland Map* are included in **Appendix V** for review.

The NWI map depicts no areas, outside of riparian areas associated with the Macatawa River (North Branch), within the boundary of the subject property that would be characteristic of land that typically supports wetland systems.

The Allegan County Wetland Map also shows no specific wetlands within the property boundaries. However, the County Wetland Map indicates that an extensive region of hydric soils is located just to the east of the abandoned farmstead. Farther to east is a more extensive hydric soil that spans the north-south length of the property, eventually intersecting to the south with 48th Avenue and then heading eastward toward the Macatawa River. These wetland soils correspond, for the most part, with Wetlands A, C, and D.

The wetland inventory maps show areas that are characteristic of land that typically supports wetland systems. NWI maps may not show accurately the extent or existence of wetland systems in a specific area or correctly identify the wetlands present. NWI maps are utilized for preliminary analysis only. Actual field reconnaissance is necessary to determine the actual existence and type of wetlands on a site.

5.0 FIRM FLOODPLAIN MAP REVIEW

A review of the FIRM floodplain map was conducted to determine the existence, location, and zone of any floodplain that may be located within the project corridor. FIRMs are maps that show floodplain areas along rivers and tributaries. The maps record the following data: 100 year (1% chance of annual flooding) and 500 year (0.2% annual chance of flooding) floodplains, the

height of the base flood (Base Flood Elevations), and the risk premium zones developed from topographical information across a floodplain. The FEMA generates FIRM floodplain maps for flood insurance purposes. The FIRM map for the assessment areas indicates that the site is unmapped. A copy of the *FIRM Floodplain Map* is included in **Appendix VI.**

6.0 USGS TOPOGRAPHIC MAP REVIEW

The USGS 7.5' Topographic Quadrangle for Holland East, Michigan (1972; Photorevised 1980) indicates that the subject property is at elevations between 700 and 660 feet above sea level. Overall, the site appears to drain to the southeast. The map shows that the lowest points of property flank the Macatawa River (North Branch). The property is shown as vacant with the exception of buildings that once were a part of the now abandoned farmstead. No forested areas are shown on-site, although areas of scrub-shrubs, treed fencerows, and abandoned farmstead tree plantings were observed on site. Apart from the Macatawa River (North Branch) on the properties eastern boundary, no watercourses, intermittent streams, or other wetlands are shown on-site.

Similar to the NWI maps, USGS maps typically show only the most distinct areas of wetland systems, and are utilized for preliminary analysis only. Once again, actual field reconnaissance is necessary to determine the actual existence, size, and type of a wetland on a site. A copy of the *USGS Topographic Map* is included in *Appendix VII.*

7.0 AERIAL PHOTOGRAPH REVIEW

Aerial photographs dated 1997, 1998, and 2005 were obtained from TerraServer and the State of Michigan TerraServer, respectively. These photographs were utilized to determine specific site characteristics. The 2005 aerial shows the subject property relatively the same as it appeared during the site inspections. See the *Property Features Map* in **Appendix I.** The property appears vacant with a mix of landscape types. The access drive that extends to the abandoned farmstead is visible. The photograph also shows the series of treed fencerows within the northern portion of the property. This corresponds with the conditions observed during the site inspections. Additionally, areas characteristic of the site's drainage system and associated wetland systems (i.e., the scrub-shrub swale) are visible on the 1998 aerial photograph. These areas correspond with the areas identified during the wetland delineation. Refer to the *Wetland Location Map* presented in **Appendix III**.

8.0 SITE SOILS & CHARACTERISTICS

According to the Soil Survey of Allegan County, four (4) major soil series area found on the subject property. These soils are Rimer loamy sand (28A), Corunna sandy loam (36), Granby loamy sand (39), and Blount silt loam 1 to 4 percent slopes (41B). Corunna sandy loam and Granby loamy sand are classified as Michigan hydric soils according to the Natural Resources Conservation Service. The term hydric indicates that the soil favors the growth and regeneration of hydrophytic (wetland) vegetation by its ability to hold water for extended periods of time. A

discussion of each soil type follows. Refer to the *Allegan County Soil Survey Map* presented in *Appendix VII* for the location of each soil within the property.

Corunna sandy loam (36) is a poorly drained soil type on till plains. A representative profile is sandy loam underlain by clay loam (33-60 inches deep). This type has a moderate available water capacity. Runoff is very slow, and the soil is ponded frequently over the majority of the year (March-May & November-February). This soil is extensive in the eastern portion of the property and extends in a north to south direction. A large portion of Wetland A corresponds to this soil type.

Granby loamy sand (39) is a poorly drained soil type on outwash plains. A representative profile consists of a layer of loamy sand underlain by sand (11 to 60 inches deep). This soil is subject to frequent ponding for long periods of time over 8 months of a calendar year (March-June & November-February). This soil type occupies a minor portion of the property in the extreme southwestern corner of the site and only corresponds with a small portion of the western fringe of Wetland A.

Rimer loamy sand (28A) is a poorly drained soil type found on till plains and low depressions. A representative profile consists of dark brown loam underlain by gray clay loam and gray loam. Runoff is very slow, and the soil is ponded at times. Permeability is moderately slow to moderate, and available moisture capacity is high. This soil occupies the majority of the southwestern portion of the property. This corresponds with the western extent of Wetland A and the isolated Wetland B.

Blount silt loam 1 to 4 percent slopes (41B) is a somewhat poorly drained sold type found on till plains. A representative profile consists of a thin layer of silt loam underlain by silty clay loam (6 to 60 inches deep). Runoff is fairly rapid, and the soil does not readily pond. This soil occupies the majority of the eastern portion of the property. A minimal portion of the site's drainage system is associated with this site, resulting in small sections of Wetland A occupying this soil type.

9.0 CONCLUSIONS & RECOMMENDATIONS

In conclusion, based on information gathered from site reconnaissance and the review of historical and current documents there are three (3) wetland systems (Wetland A, B, & C) located on the subject property. Wetlands A and C appear to meet the requirements of Part 303, Wetlands Protection of the Natural Resources and Environmental Protection Act, 1994 PA 451 (NREPA) and would be considered regulated by the Michigan Department of Environmental Quality (MDEQ).

Part 303, Wetlands Protection, clearly states that a wetland is considered regulated if it is five (5) acres or larger or if it is connected to or located within 500 feet of a lake, pond, river, stream or watercourse. The on-site acreage of Wetland A equals 2.02-acres but is interconnected with the Macatawa River (North Branch). Therefore, Wetland A would be considered regulated and subject to permitting by the MDEQ. The same applies to Wetland C (0.05-acres) in that it is

interconnected with this same watercourse. Off-site Wetland D appears to be connected to Wetland C which eventually connects to the Macatawa River (North Branch). Wetland B (0.13-acres), however, is an isolated wetland and would not be regulated by the MDEQ.

Part 301, Inland Lakes and Streams, states that a feature is considered a regulated watercourse if it possesses a defined bed, banks and evidence of continued flow or continued occurrence of water. No continuous, defined channel continues through the aforementioned wetland areas. Consequently, it is Atwell's opinion that the on-site feature should be categorized as a linear wetland. As a result, the feature should be regulated under Part 303, Wetlands Protection, not Part 301, Inland Lakes and Streams.

Please be advised that MDEQ has the final authority on the extent and classification of regulated wetlands, lakes and streams in the state of Michigan.

A permit is required by the MDEQ for any proposed work (*e.g.*, filling, dredging, construction, draining and/or other wetland development) that takes place within the boundaries of a regulated wetland, body of water or floodplain. Any construction activities that take place outside of these boundaries do not require a permit from the MDEQ. Atwell's review of the proposed development plan indicates that wetland impact occurring to regulated features will occur during development. A permit with the MDEQ is anticipated. In addition due to the amount of impact, i.e. over one-third of an acre, wetland compensatory mitigation should be required to obtain a wetland permit for the site. Please note that impacts to the regulated features on site will require a 1.5 to 1.0 replacement ratio for impacted wetlands.

No state listed threatened or endangered species (TES) were documented within the vicinity of the project. Federal funding of the project will initiate compliance with the National Environmental Protection Act (NEPA). Prior to receiving NEPA approval, MDEQ, MDNR and other state and local permitting will need to be in the process of approval and/or approved. NEPA requirements may require additional natural resource services prior to approval including but not limited to federally listed TES review and specific species surveys, negotiation and coordination with federal agencies, such as the United States Fish and Wildlife Services (USFWS), United States Environmental Protection Agency (US EPA) and the Army Corps of Engineers (ACOE).

The information used in determining the location of wetland areas contained within any given property is established by the *1987 Manual*. The following documents were also used to support our position.

Allegan County Soil Survey
Hydric Soils of Michigan
USGS Topographic Map – Holland East, Mich. Quadrangle
National Wetlands Inventory Map – Holland East, Mich. Quadrangle
FIRM Floodplain Map
1997, 1998 and 2005 Aerial Photographs of the subject property

If you have any questions regarding this or any other matter, please feel free to contact our offices at (734) 994-4000.

Sincerely,
ATWELL-HICKS, LLC

Aaron Boone
Ecological Specialist
Natural Resources Group

Bobbi Roberson
Project Manager
Natural Resources Group

COMMON WETLAND DEFINITIONS

Atypical wetland: This term refers to areas in which one or more parameters (vegetation, soil and/or hydrology) have been sufficiently altered by human activities or natural events to preclude the presence of wetland indicators of the parameter.

Emergent Wetland: Vegetative classification of a wetland system based on the dominate vegetation consisting of rooted herbaceous plant species that have parts extending above a water surface.

100-year flood: means a flood with a magnitude, which has a 1% chance of occurring or being exceeded in any given year.

Floodplain: The area of land adjoining a river or steam that will be inundated by a 100-year flood.

Floodway: The channel of a river or stream and the portions of the floodplain adjoining the channel that are reasonably required to carry and discharge a 100-year flood.

Inland lake or stream: "...any natural or artificial lake, pond or impoundment which has a surface area of 5 acres or greater; a river, stream or creek which may or may not be serving as a drain; any body of water which has definite banks, a bed and visible evidence of a continued flow or continued occurrence of water..." as defined by Part 301, Inland Lakes and Streams, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Hydric soil: Soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (1991 National Technical Committee on Hydric Soils definition).

Hydrophytes: A plant species that grows in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content; plants typically found in wet habitats.

Scrub/Shrub Wetland: Vegetative classification of a wetland system based on the dominate vegetation consisting of woody plants less than 3 inches in diameter but greater than 3 feet in height.

Typical situation: That, which normally, usually, or commonly occurs.

Vernal Pool: Shallow, intermittently flooded forested wetland, generally dry for most of the summer and fall

Wooded (Forested) Wetland: Vegetative classification of a wetland system based on the dominate vegetation consisting of woody plants 3 inches in diameter or greater regardless of height.

Wetland: "...land characterized by the presence of water at a frequency and duration sufficient to support and that under normal circumstances does support wetland vegetation or aquatic life and is commonly referred to as a bog, swamp, or marsh..." as defined by Part 303 Wetlands Protection of the Natural Resources and Environmental Protection Act, 1994 PA 451.

Wetland hydrology: Hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at sometime during the growing season.

Wetland Indicator List:

OBL: Obligate wetland plant that occurs almost always, 99%of the time, in wetlands under natural conditions, but which rarely occur in non-wetlands.

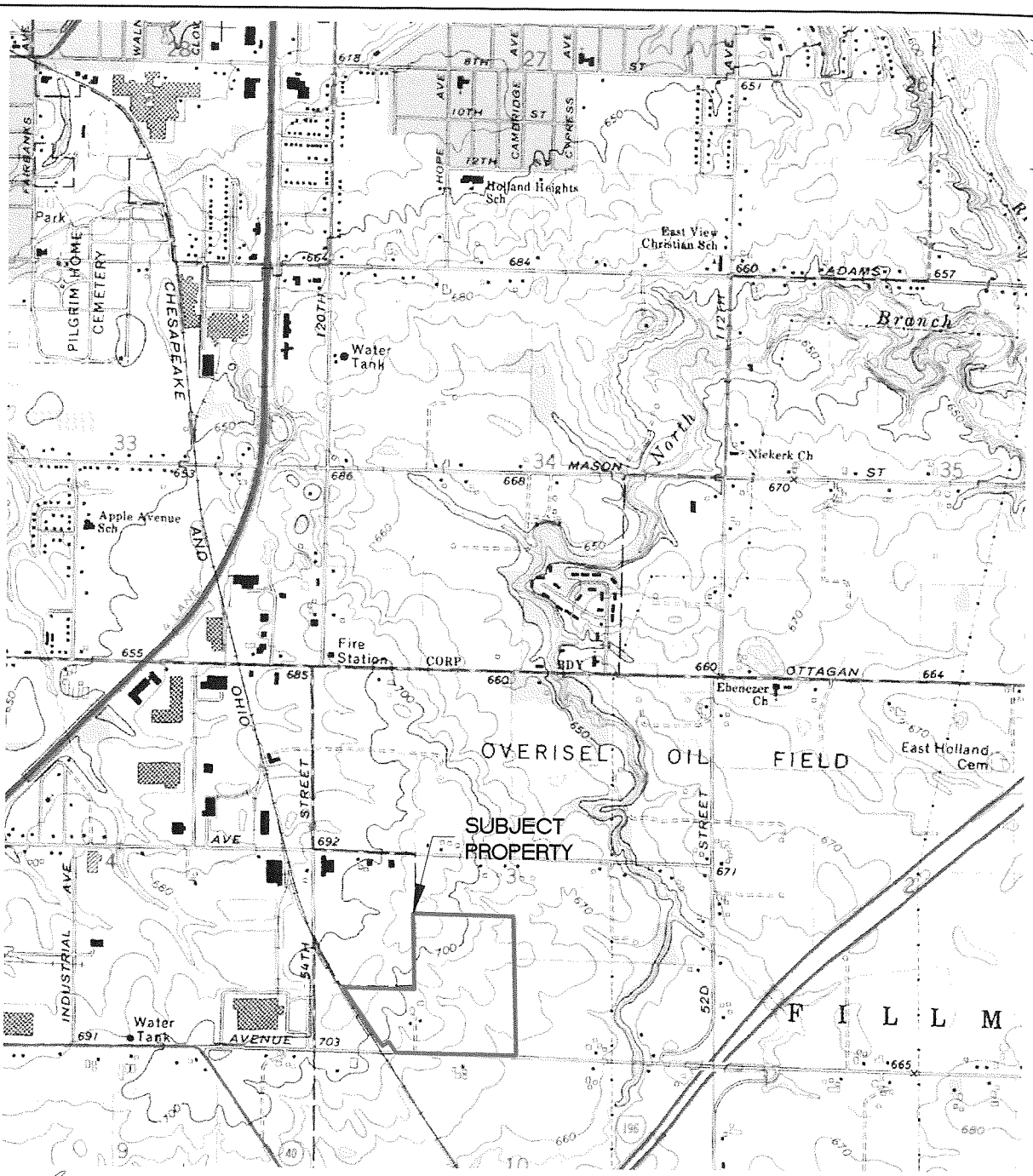
FACW: Facultative wetland plant, that occurs usually, 67% to 99% of the time, in wetlands, but also occurs 1% to 33% in non-wetlands.

FAC: Facultative plant, that occurs in both wetlands and non-wetlands 33% to 67% of the time.

FACU: Plant that occurs sometimes 1% to 33% of the time in wetlands but occurs more often, 67% to 99% in non-wetlands.

APPENDIX I

Site Location Map
&
Property Features Map



SITE LOCATION MAP
FILLMORE TOWNSHIP
ALLEGAN COUNTY, MICHIGAN

SCALE 0 1000 2000

1" = 2000 FEET

REFERENCE
USGS 7.5 MIN TOPOGRAPHIC QUADRANGLE
HOLLAND EAST, MICHIGAN QUADRANGLE
DATED: 1972, PHOTOREVISED: 1980
SECTION 3

PROJECT: 09001770
DATE: OCTOBER 6, 2009
DRAWN: FOD
CHECKED: BR
CAD FILE: 09001770EC-01

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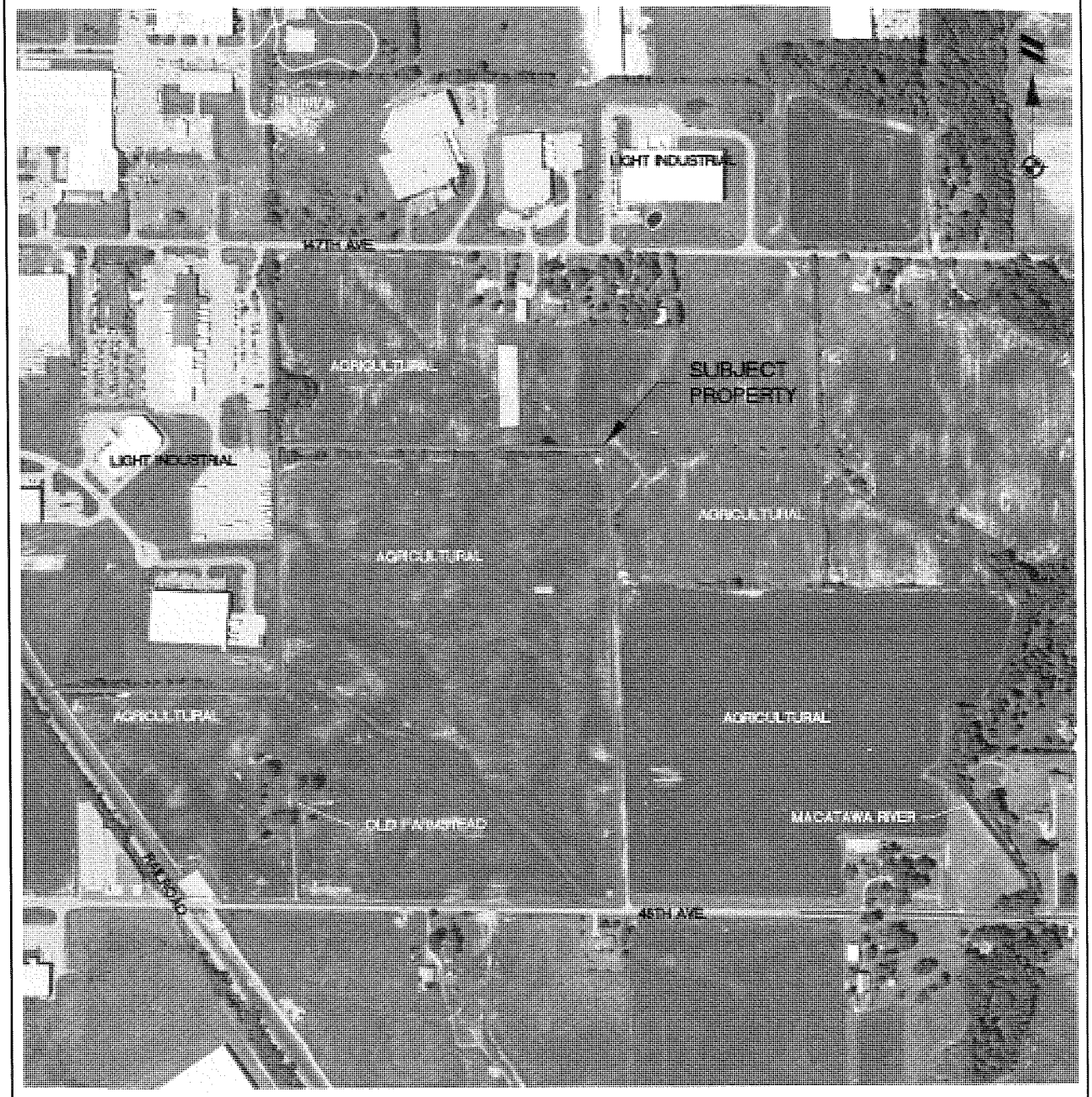
TENNESSEE
866 850 4200
Engineering Environmental
Surveying Ecological
Planning Water Resources



PROPERTY FEATURES MAP
FILLMORE TOWNSHIP
ALLEGAN COUNTY, MICHIGAN

SCALE 0 300 600

1" = 600 FEET

LEGEND:

SUBJECT PROPERTY

OPEN WATER OR STREAM

REFERENCE
AERIALS EXPRESS, LLC
2005 AERIAL PHOTOGRAPH
AERIAL IMAGERY AND GIS VIEWER, GRAND RAPIDS
ALLEGAN COUNTY, MICHIGAN

PROJECT: 09001770
DATE: OCTOBER 6, 2009
DRAWN: FOD
CHECKED: BR
CAD FILE: 09001770EC-01

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Planning Water Resources

K:\09001770\dwg\Ecological\09001770-EC-01.dwg, 12/15/2009 9:30:01 AM, bthomas

APPENDIX II

Photographic Log

PHOTOGRAPHIC LOG

A view looking north across the location of the old farmstead.

A view looking east across Wetland A.

PHOTOGRAPHIC LOG

A view looking north at a drainage swale portion of Wetland A.

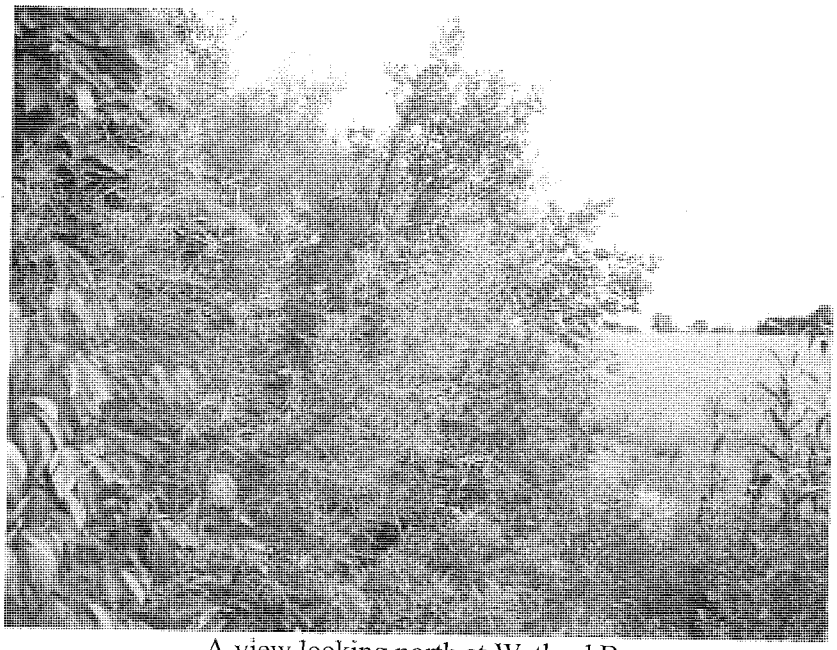
A view looking north at the small scrub-shrub portion of Wetland A.

PHOTOGRAPHIC LOG

A view looking east at the road side ditch along the north side of 146th Avenue.

A view looking west at the road side ditch as it outlets into the North Branch of the Macatawa River.

PHOTOGRAPHIC LOG



A view looking north at Wetland B.

A view looking northwest across a drain swale portion of Wetland C.

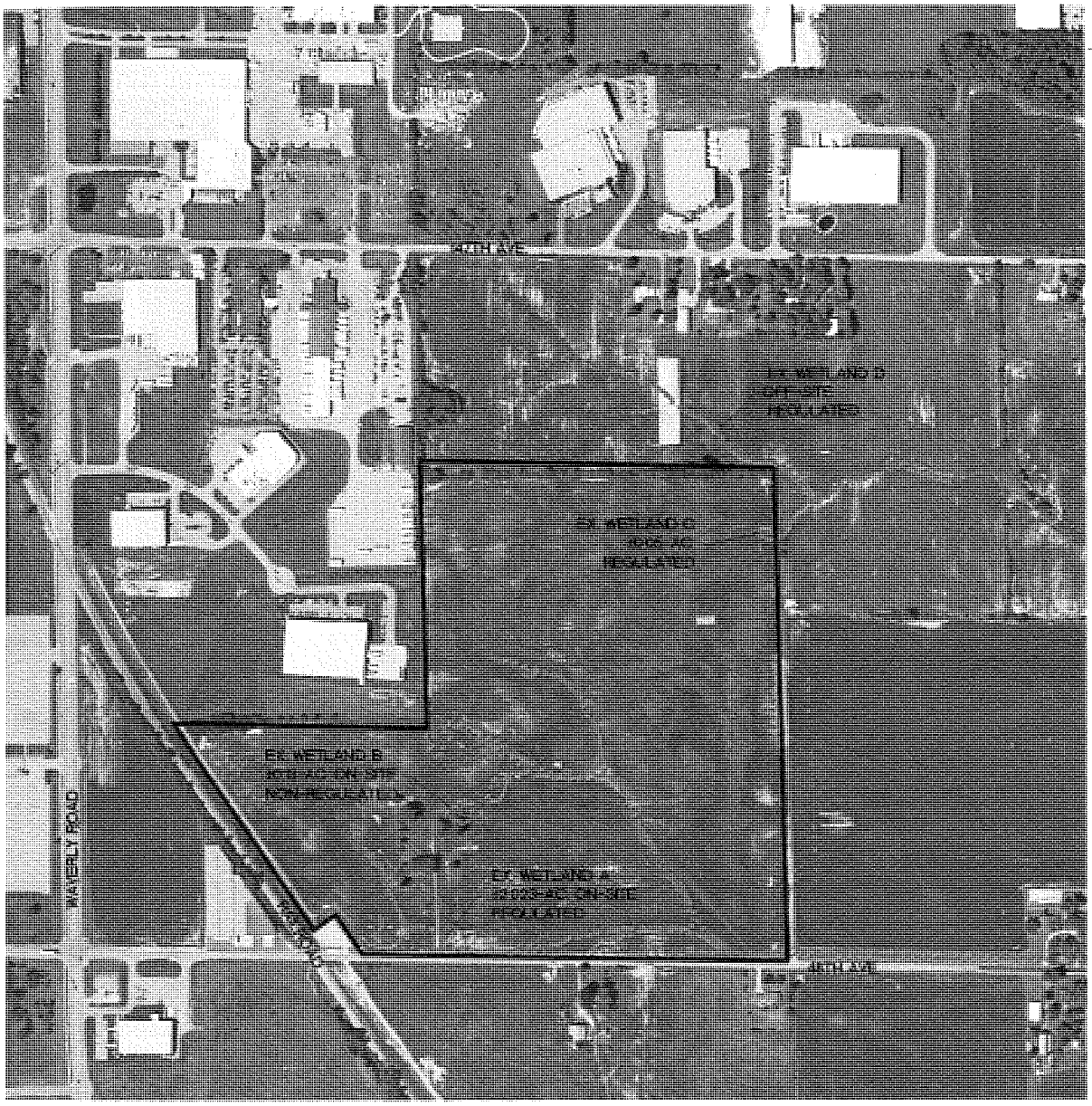
PHOTOGRAPHIC LOG

A view looking east across a drain swale portion of Wetland C.

A view looking west across Wetland D.

APPENDIX III

Wetland Location Map



WETLAND LOCATION MAP

FILLMORE TOWNSHIP
ALLEGAN COUNTY, MICHIGAN

SCALE 0 300 600

1" = 600 FEET

LEGEND:

SUBJECT PROPERTY

SURVEYED WETLAND BOUNDARY

NOTE: ATWELL-HICKS PERFORMED A WETLAND DELINEATION ON OCTOBER 5, 2009.

REFERENCE

MICHIGAN GEOGRAPHIC DATA LIBRARY
CENTER FOR GEOGRAPHIC INFORMATION
DIGITAL ORTHOGRAPHIC QUAD-2005 SERIES
ALLEGAN COUNTY

PROJECT: 09001770
DATE: OCTOBER 6, 2009
DRAWN: FOD
CHECKED: BR
CAD FILE: 09001770EC-01

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APPENDIX IV

MDEQ Wetland Data Form

DEQ MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, LAND AND WATER MANAGEMENT DIVISION

PART 303 – WETLAND DATA FORM

This information is collected pursuant to Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Applicant LG Chem	*For DEQ Use:* File: __ __-__ __-__ __ __ __ __ - __
County: Allegan T 4N R 15W S 3	Date: 10 / 05 / 2009
Form Completed By: Bourke Thomas	Wetland Area: A

Instructions:

Fill out all pertinent information on the following worksheets to substantiate your review. All methods should be in accordance with the *MDEQ Wetland Identification Manual: A Technical Manual for Identifying Wetlands in Michigan* and Part 303. Nomenclature shall follow Voss (1972, 1985, and 1996) or Gleason and Cronquist (2004).

SITE REVIEW:

N (Y/**N**) Is the site significantly disturbed? If yes, describe: _____

N (Y/**N**) Is there a potential Problem Area as described in the MDEQ Wetland Identification Manual? If yes, describe: _____

VEGETATION AND AQUATIC LIFE:

Dominant Vegetation on *Wetland Side* of the Boundary (use additional sheets if necessary)

Genus/Species	Common Name	Stratum*	Indicator Status
Cyperus esculentus	Field nut sedge	H	FACW
ECHINOCHLOA CRUSGALLI	Barnyard grass	H	FACW
Polygonum pensylvanicum	Bigseed smartweed	H	FACW+
Typha latifolia	Cattail	H	OBL
Aster novae-angliae	New England Aster	H	FACW
Phalaris arundinacea	Reed canary grass	H	FACW+
Verbena hastata	Blue vervain	H	FACW+
Penthorum sedoides	Ditch stonecrop	H	OBL
Salix exigua	Sandbar willow	S	OBL

Aquatic Life Observed _____

Dominant Vegetation on Upland Side of the Boundary: (use additional sheets if necessary)

Genus/Species	Common Name	Stratum*	Indicator Status
ZEA MAYS	Corn	H	UPL

* Stratum: H = Herbaceous (woody and herbaceous plants <3.2 ft. tall); S = Sapling/Shrub (≥3.2 ft. tall AND <3" DBH); O = Overstory (≥3" DBH)

HYDROLOGY (Requires One Primary or Two Secondary Indicators):

Primary Indicators:

__X__ (√) Visible observation of inundation (Depth __3__ in.)
__X__ (√) Visible observation of soil saturation (Depth __Surface__ in.)
_____ (√) Hydraulic soils (√ below)
_____ (√) Watermarks
_____ (√) Drift lines
_____ (√) Sediment deposits
_____ (√) Drainage patterns within wetlands

Secondary Indicators:

_____ (√) Oxidized rhizospheres in upper 12"
_____ (√) Water stained leaves
_____ (√) Confirm soil profile matches hydric soil list
_____ (√) FAC-Neutral test
__X__ (√) Bare soil areas
_____ (√) Morphological plant adaptations (√ below)

Other: _____

Hydric Indicators for Non-Sandy Soils

_____(√) Organic soils (Histosols)
_____(√) Histic epipedon
_____(√) Sulfidic material (H_2S odor)
_____(√) Soil color (immediately below A-horizon or within 10 inches of the surface, whichever is shallower)
  _____(√) Gleyed (gray) soil (i.e. matches Gley page)
  _____(√) Matrix chroma of 2 or less in mottled soils
  _____(√) Matrix chroma of 1 or less in unmottled soils
  _____(√) Black mineral soil with gray mottles at ≤ 10 inches
_____(√) Confirm soil profile matches local hydric soil test
_____(√) Iron and manganese concretions
_____(√) Reducing soil conditions (ferrous iron test)
_____(√) Aquic or peraquic moisture regime

Additional Hydric Indicators for Sandy Soils

_____(√) High organic matter in the surface horizon
__X__(√) Streaking of subsurface horizons by organic matter
_____(√) Organic pans: at depth of _____ inches

Supplement Indicators of Hydric Soils:
(e.g., NRCS Field Indicators of Hydric Soils):

_____

_____

_____

Morphological Plant Adaptations Observed(√): __X__Adventitious roots _____Shall root system _____Floating leaves
__X__Inflated leaves, stems, or root _____Polymorphic leaves _____Oxygen pathway to roots _____ Floating stem
_____Hypertrophied lenticels _____Multiple trunks or stooling _____Buttressed tree trunks _____ Pneumatophores

SOIL PROFILE NOTES:

Soil Profile on *Wetland Side* of the Boundary
Map Unit from Soil Survey: Blount Silt Loam (41B)

Depth (inches)	Matrix color (hue/value/chroma)	Motte Color (if present)	Texture (e.g., sandy loam, etc.)	Notes
0-3	10YR 3/2		Loam	
3-8	10YR 6/3		Loam	

Soil Profile on *Upland Side* of the Boundary
Map Unit from Soil Survey: Blount Silt Loam (41B)

Depth (inches)	Depth (inches)	Depth (inches)	Depth (inches)	Notes
0-3	0-3	0-3	0-3	
3-8	3-8	3-8	3-8	

WETLAND DETERMINATION

__X__(√) Predominance of wetland vegetation (Fac, Fac+, FacW-, FacW, FacW+, OBL) or aquatic life
__X__(√) Wetland hydrology and/or hydric soil present

__Y__ (Y/N) Is the area wetland (both wetland hydrology/soils and a predominance of wetland vegetation present)?
__Y__ (Y/N) Is the area REGULATED wetland (refer to *Part 303 – Wetland Jurisdictional Determination Form*)?

Wetland Types (√ all that are present):

__X__(√) Emergent Marsh __X__(√) Deciduous Swamp _____(√) Fen _____(√)Shrub Swamp
_____(√) Wet Meadow _____(√) Coniferous Swamp _____(√) Bog/Muskeg _____(√) Floodplain Forest
_____(√) Wet Prairie _____(√) Deciduous Forest _____(√) Great Lakes Marsh _____(√) Submergent Marsh
Other (e.g. rare and imperiled community, reed canary grass dominated, highly disturbed): _____

Comments: _____

DEQ MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, LAND AND WATER MANAGEMENT DIVISION

PART 303 – WETLAND DATA FORM

This information is collected pursuant to Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Applicant LG Chem	*For DEQ Use:* File: __ __-__ __-__ __ __ __ - __
County: Allegan T 4N R 15W S 3	Date: 10 / 05 / 2009
Form Completed By: Bourke Thomas	Wetland Area: B

Instructions:

Fill out all pertinent information on the following worksheets to substantiate your review. All methods should be in accordance with the *MDEQ Wetland Identification Manual: A Technical Manual for Identifying Wetlands in Michigan* and Part 303. Nomenclature shall follow Voss (1972, 1985, and 1996) or Gleason and Cronquist (2004).

SITE REVIEW:

N (Y/N) Is the site significantly disturbed? If yes, describe: _____

N (Y/N) Is there a potential Problem Area as described in the MDEQ Wetland Identification Manual? If yes, describe: _____

VEGETATION AND AQUATIC LIFE:

Dominant Vegetation on *Wetland Side* of the Boundary (use additional sheets if necessary)

Genus/Species	Common Name	Stratum*	Indicator Status
Cyperus esculentus	Field nut sedge	H	FACW
ECHINOCHLOA CRUSGALLI	Barnyard grass	H	FACW
Polygonum pensylvanicum	Bigseed smartweed	H	FACW+
Salix exigua	Sandbar willow	S	OBL
Populus deltoides	Cottonwood	O	FAC+

Aquatic Life Observed _____

Dominant Vegetation on Upland Side of the Boundary: (use additional sheets if necessary)

Genus/Species	Common Name	Stratum*	Indicator Status
ZEA MAYS	Corn	H	UPL

* Stratum: H = Herbaceous (woody and herbaceous plants <3.2 ft. tall); S = Sapling/Shrub (≥3.2 ft. tall AND <3" DBH); O = Overstory (≥3" DBH)

HYDROLOGY (Requires One Primary or Two Secondary Indicators):

Primary Indicators:

____ (√) Visible observation of inundation (Depth ____ in.)
__X__ (√) Visible observation of soil saturation (Depth Surface in.)
_____ (√) Hydraulic soils (√ below)
_____ (√) Watermarks
_____ (√) Drift lines
_____ (√) Sediment deposits
_____ (√) Drainage patterns within wetlands

Secondary Indicators:

_____ (√) Oxidized rhizospheres in upper 12"
_____ (√) Water stained leaves
_____ (√) Confirm soil profile matches hydric soil list
____ (√) FAC-Neutral test
__X__ (√) Bare soil areas
_____ (√) Morphological plant adaptations (√ below)

Other: _____

Hydric Indicators for Non-Sandy Soils

_____(√) Organic soils (Histosols)
_____(√) Histic epipedon
_____(√) Sulfidic material (H_2S odor)
_____(√) Soil color (immediately below A-horizon or within 10 inches of the surface, whichever is shallower)
  _____(√) Gleyed (gray) soil (i.e. matches Gley page)
  _____(√) Matrix chroma of 2 or less in mottled soils
  _____(√) Matrix chroma of 1 or less in unmottled soils
  _____(√) Black mineral soil with gray mottles at ≤ 10 inches
_____(√) Confirm soil profile matches local hydric soil test
_____(√) Iron and manganese concretions
_____(√) Reducing soil conditions (ferrous iron test)
_____(√) Aquic or peraquic moisture regime

Additional Hydric Indicators for Sandy Soils

_____(√) High organic matter in the surface horizon
__X__(√) Streaking of subsurface horizons by organic matter
_____(√) Organic pans: at depth of _____ inches

Supplement Indicators of Hydric Soils:
(e.g., NRCS Field Indicators of Hydric Soils):

_____
_____
_____

Morphological Plant Adaptations Observed(√): __X__Adventitious roots _____Shall root system _____Floating leaves
__X__Inflated leaves, stems, or root _____Polymorphic leaves _____Oxygen pathway to roots _____ Floating stem
_____Hypertrophied lenticels __X__Multiple trunks or stooling _____Buttressed tree trunks _____ Pneumatophores

SOIL PROFILE NOTES:

Soil Profile on *Wetland Side* of the Boundary
Map Unit from Soil Survey: Corunna Sandy Loam (36)

Depth (inches)	Matrix color (hue/value/chroma)	Motte Color (if present)	Texture (e.g., sandy loam, etc.)	Notes
0-11	10YR 2/1		Sandy loam	
11-21	10YR 5/1		Sandy loam	

Soil Profile on *Upland Side* of the Boundary
Map Unit from Soil Survey: Blount Silt Loam (41B)

Depth (inches)	Matrix color (hue/value/chroma)	Motte Color (if present)	Texture (e.g., sandy loam, etc.)	Notes
0-3	10YR 3/2		Loam	
3-8	10YR 6/3		Loam	

WETLAND DETERMINATION

__X__(√) Predominance of wetland vegetation (Fac, Fac+, FacW-, FacW, FacW+, OBL) or aquatic life
__X__(√) Wetland hydrology and/or hydric soil present

__Y__ (Y/N) Is the area wetland (both wetland hydrology/soils and a predominance of wetland vegetation present)?
__Y__ (Y/N) Is the area REGULATED wetland (refer to *Part 303 – Wetland Jurisdictional Determination Form*)?

Wetland Types (√ all that are present):

_____(√) Emergent Marsh __X__(√) Deciduous Swamp _____(√) Fen _____(√) Shrub Swamp
_____(√) Wet Meadow _____(√) Coniferous Swamp _____(√) Bog/Muskeg _____(√) Floodplain Forest
_____(√) Wet Prairie _____(√) Deciduous Forest _____(√) Great Lakes Marsh _____(√) Submergent Marsh
Other (e.g. rare and imperiled community, reed canary grass dominated, highly disturbed): _____

Comments: _____

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, LAND AND WATER MANAGEMENT DIVISION

PART 303 – WETLAND DATA FORM

This information is collected pursuant to Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Applicant LG Chem	*For DEQ Use:* File: __ __-__ __-__ __ __ __ - __
County: Allegan T 4N R 15W S 3	Date: 10 / 05 / 2009
Form Completed By: Bourke Thomas	Wetland Area: B

Instructions:

Fill out all pertinent information on the following worksheets to substantiate your review. All methods should be in accordance with the *MDEQ Wetland Identification Manual: A Technical Manual for Identifying Wetlands in Michigan* and Part 303. Nomenclature shall follow Voss (1972, 1985, and 1996) or Gleason and Cronquist (2004).

SITE REVIEW:

N (Y/N) Is the site significantly disturbed? If yes, describe: _____

N (Y/N) Is there a potential Problem Area as described in the MDEQ Wetland Identification Manual?

If yes, describe: _____

VEGETATION AND AQUATIC LIFE:

Dominant Vegetation on *Wetland Side* of the Boundary (use additional sheets if necessary)

Genus/Species	Common Name	Stratum*	Indicator Status
Cyperus esculentus	Field nut sedge	H	FACW
ECHINOCHLOA CRUSGALLI	Barnyard grass	H	FACW
Polygonum pensylvanicum	Bigseed smartweed	H	FACW+
Salix exigua	Sandbar willow	S	OBL
Populus deltoides	Cottonwood	O	FAC+

Aquatic Life Observed _____

Dominant Vegetation on Upland Side of the Boundary: (use additional sheets if necessary)

Genus/Species	Common Name	Stratum*	Indicator Status
ZEA MAYS	Corn	H	UPL

* Stratum: H = Herbaceous (woody and herbaceous plants <3.2 ft. tall); S = Sapling/Shrub (≥3.2 ft. tall AND <3" DBH); O = Overstory (≥3" DBH)

HYDROLOGY (Requires One Primary or Two Secondary Indicators):

Primary Indicators:

____ (√) Visible observation of inundation (Depth ____ in.)
__X__ (√) Visible observation of soil saturation (Depth __Surface__ in.)
_____ (√) Hydraulic soils (√ below)
_____ (√) Watermarks
_____ (√) Drift lines
_____ (√) Sediment deposits
_____ (√) Drainage patterns within wetlands

Secondary Indicators:

_____ (√) Oxidized rhizospheres in upper 12"
_____ (√) Water stained leaves
_____ (√) Confirm soil profile matches hydric soil list
____ (√) FAC-Neutral test
__X__ (√) Bare soil areas
_____ (√) Morphological plant adaptations (√ below)

Other: _____

Hydric Indicators for Non-Sandy Soils

_____(√) Organic soils (Histosols)
_____(√) Histic epipedon
_____(√) Sulfidic material (H_2S odor)
_____(√) Soil color (immediately below A-horizon or within 10 inches of the surface, whichever is shallower)
  _____(√) Gleyed (gray) soil (i.e. matches Gley page)
  _____(√) Matrix chroma of 2 or less in mottled soils
  _____(√) Matrix chroma of 1 or less in unmottled soils
  _____(√) Black mineral soil with gray mottles at ≤ 10 inches
_____(√) Confirm soil profile matches local hydric soil test
_____(√) Iron and manganese concretions
_____(√) Reducing soil conditions (ferrous iron test)
_____(√) Aquic or peraquic moisture regime

Additional Hydric Indicators for Sandy Soils

_____(√) High organic matter in the surface horizon
__X__(√) Streaking of subsurface horizons by organic matter
_____(√) Organic pans: at depth of _____ inches

Supplement Indicators of Hydric Soils:
(e.g., NRCS Field Indicators of Hydric Soils):

_____
_____
_____

Morphological Plant Adaptations Observed(√): __X__Adventitious roots _____Shall root system _____Floating leaves
__X__Inflated leaves, stems, or root _____Polymorphic leaves _____Oxygen pathway to roots _____ Floating stem
_____Hypertrophied lenticels __X__Multiple trunks or stooling _____Buttressed tree trunks _____ Pneumatophores

SOIL PROFILE NOTES:

Soil Profile on *Wetland Side* of the Boundary
Map Unit from Soil Survey: Corunna Sandy Loam (36)

Depth (inches)	Matrix color (hue/value/chroma)	Motte Color (if present)	Texture (e.g., sandy loam, etc.)	Notes
0-11	10YR 2/1		Sandy loam	
11-21	10YR 5/1		Sandy loam	

Soil Profile on *Upland Side* of the Boundary
Map Unit from Soil Survey: Blount Silt Loam (41B)

Depth (inches)	Matrix color (hue/value/chroma)	Motte Color (if present)	Texture (e.g., sandy loam, etc.)	Notes
0-3	10YR 3/2		Loam	
3-8	10YR 6/3		Loam	

WETLAND DETERMINATION

__X__(√) Predominance of wetland vegetation (Fac, Fac+, FacW-, FacW, FacW+, OBL) or aquatic life
__X__(√) Wetland hydrology and/or hydric soil present

__Y__ (Y/N) Is the area wetland (both wetland hydrology/soils and a predominance of wetland vegetation present)?
__Y__ (Y/N) Is the area REGULATED wetland (refer to *Part 303 – Wetland Jurisdictional Determination Form*)?

Wetland Types (√ all that are present):

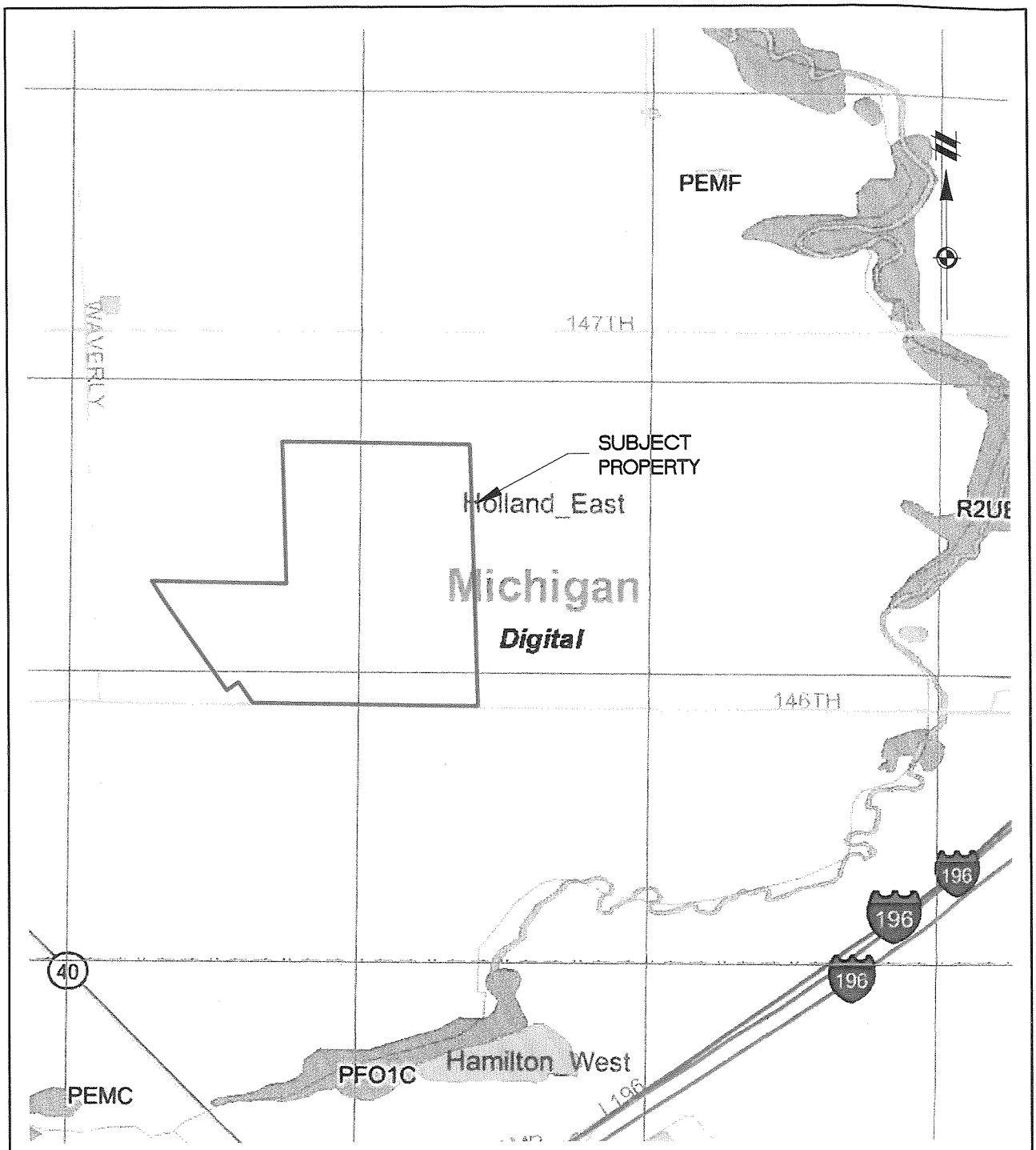
_____(√) Emergent Marsh __X__(√) Deciduous Swamp _____(√) Fen _____(√)Shrub Swamp
_____(√) Wet Meadow _____(√) Coniferous Swamp _____(√) Bog/Muskeg _____(√) Floodplain Forest
_____(√) Wet Prairie _____(√) Deciduous Forest _____(√) Great Lakes Marsh _____(√) Submergent Marsh
Other (e.g. rare and imperiled community, reed canary grass dominated, highly disturbed): _____

Comments: _____

_____

APPENDIX V

Wetland Inventory Maps



NATIONAL WETLAND INVENTORY

FILLMORE TOWNSHIP
ALLEGAN COUNTY, MICHIGAN

SCALE 0 500 1000

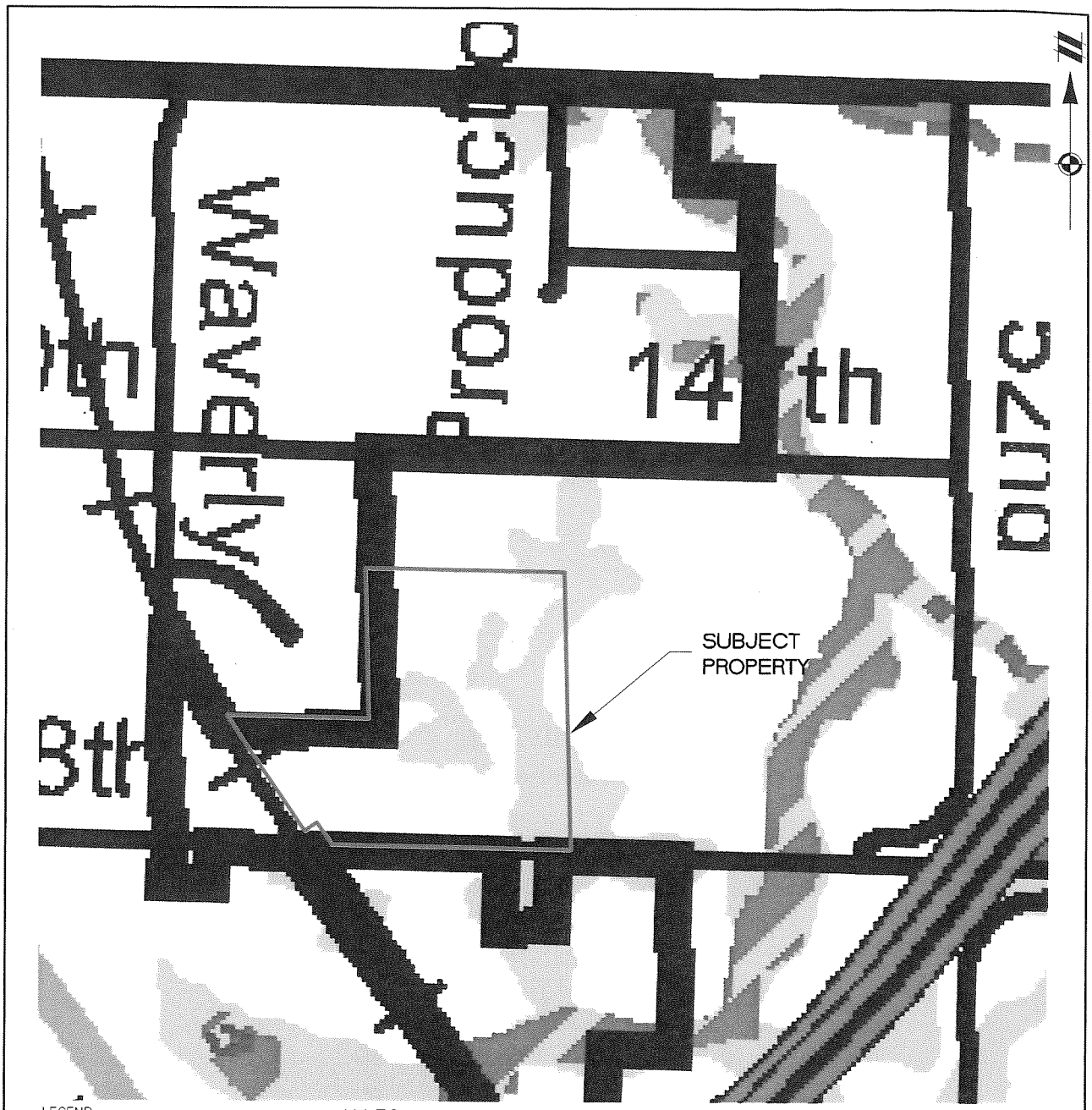
1" = 1000 FEET

LEGEND
P: PALUSTRINE
SS: SCRUB SHRUB
EM: EMERGENT
Y: SATURATED/SEMIPERMANENT/SEASONAL

REFERENCE
US FISH AND WILDLIFE SERVICE
HOLLAND EAST, MICH. QUADRANGLE
DATED: 19--

PROJECT: 09001770
DATE: OCTOBER 6, 2009
DRAWN: FOD
CHECKED: BR
CAD FILE: 09001770EC-01

ATWELL-HICKS
www.atwell-hicks.com
ARIZONA ARKANSAS FLORIDA ILLINOIS
MICHIGAN OHIO PENNSYLVANIA
TENNESSEE
866 850 4200
Engineering Surveying Planning
Environmental Ecological Water Resources



LEGEND:

- Interstate Highways
- US Highways
- State Highways
- Railways
- Open Water
- Rivers
- Drains
- Wetlands as identified on NWI and MIRIS maps
- Soil areas which include wetland soils
- Wetlands as identified on NWI and MIRIS maps and soil areas which include wetland soils
- County Boundary

ALLEGAN COUNTY WETLAND INVENTORY

FILLMORE TOWNSHIP
ALLEGAN COUNTY, MI

SCALE 0 500 1000

1" = 1000 FEET

REFERENCE

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
COUNTY WETLAND INVENTORY MAPS
DATED: DECEMBER 15, 2006

PROJECT: 09001770
DATE: OCTOBER 6, 2009
DRAWN: FOD
CHECKED: BR
CAD FILE: 09001770EC-01

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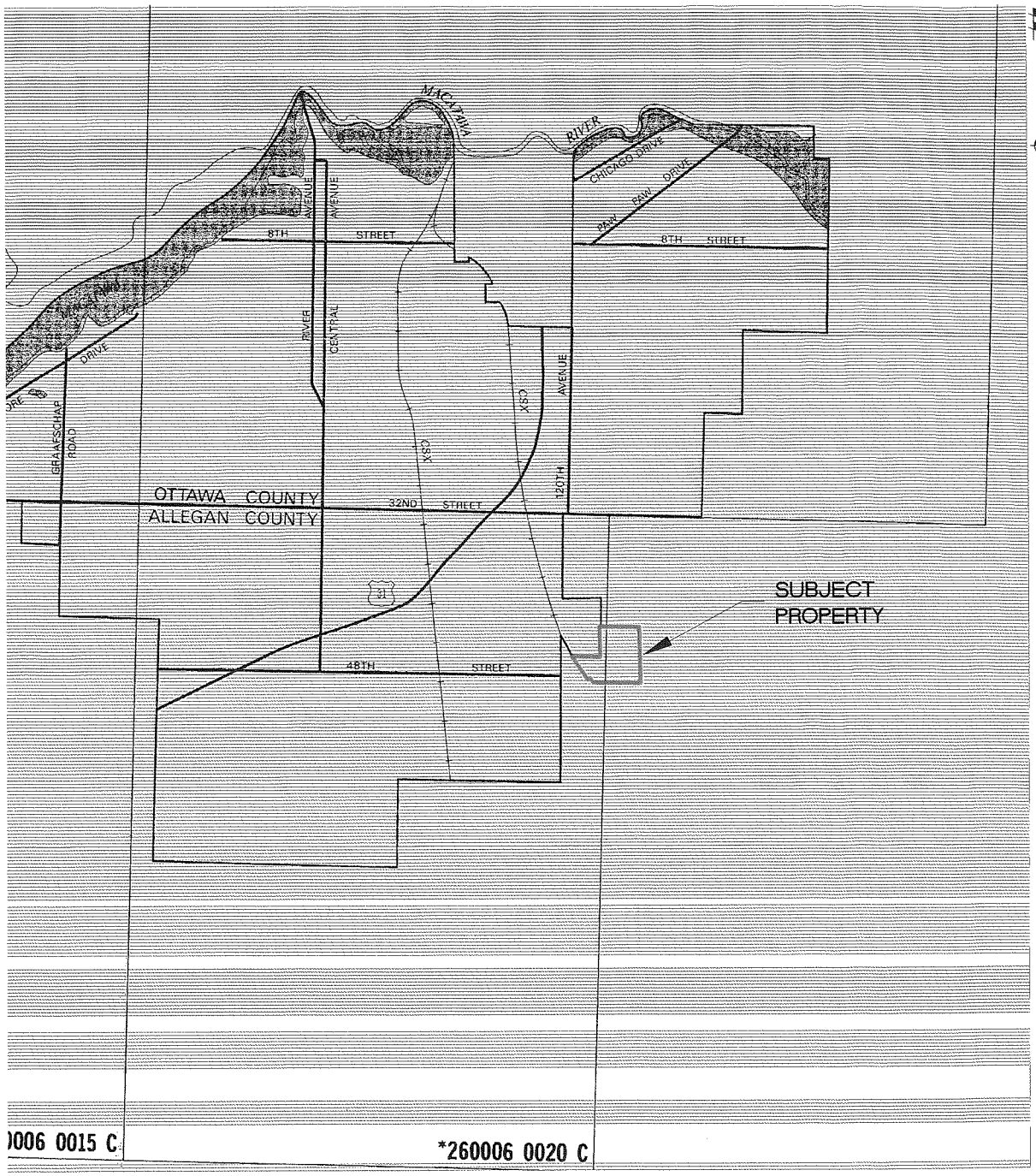
Surveying Ecological
Planning Water Resources

K:\09001770\dwg\Ecological\09001770-EC-01.dwg, 10/8/2009 9:04:15 AM, bthomas

APPENDIX VI

FEMA Flood Insurance Rate Map



FLOOD INSURANCE RATE MAP
FILLMORE TOWNSHIP
ALLEGAN COUNTY, MICHIGAN

LEGEND
ZONE A: AREAS WITHIN 100-YEAR FLOODPLAIN
ZONE X: AREAS OUTSIDE 100-YEAR FLOODPLAIN

SCALE 0 2500 5000
1" = 5000 FEET

REFERENCE
FEDERAL EMERGENCY MANAGEMENT AGENCY
PANEL NUMBER: 260006 0005-0020
EFFECTIVE DATE: SEPTEMBER 25, 1998

PROJECT: 09001770
DATE: OCTOBER 6, 2009
DRAWN: FOD
CHECKED: BR
CAD FILE: 09001770EC-01

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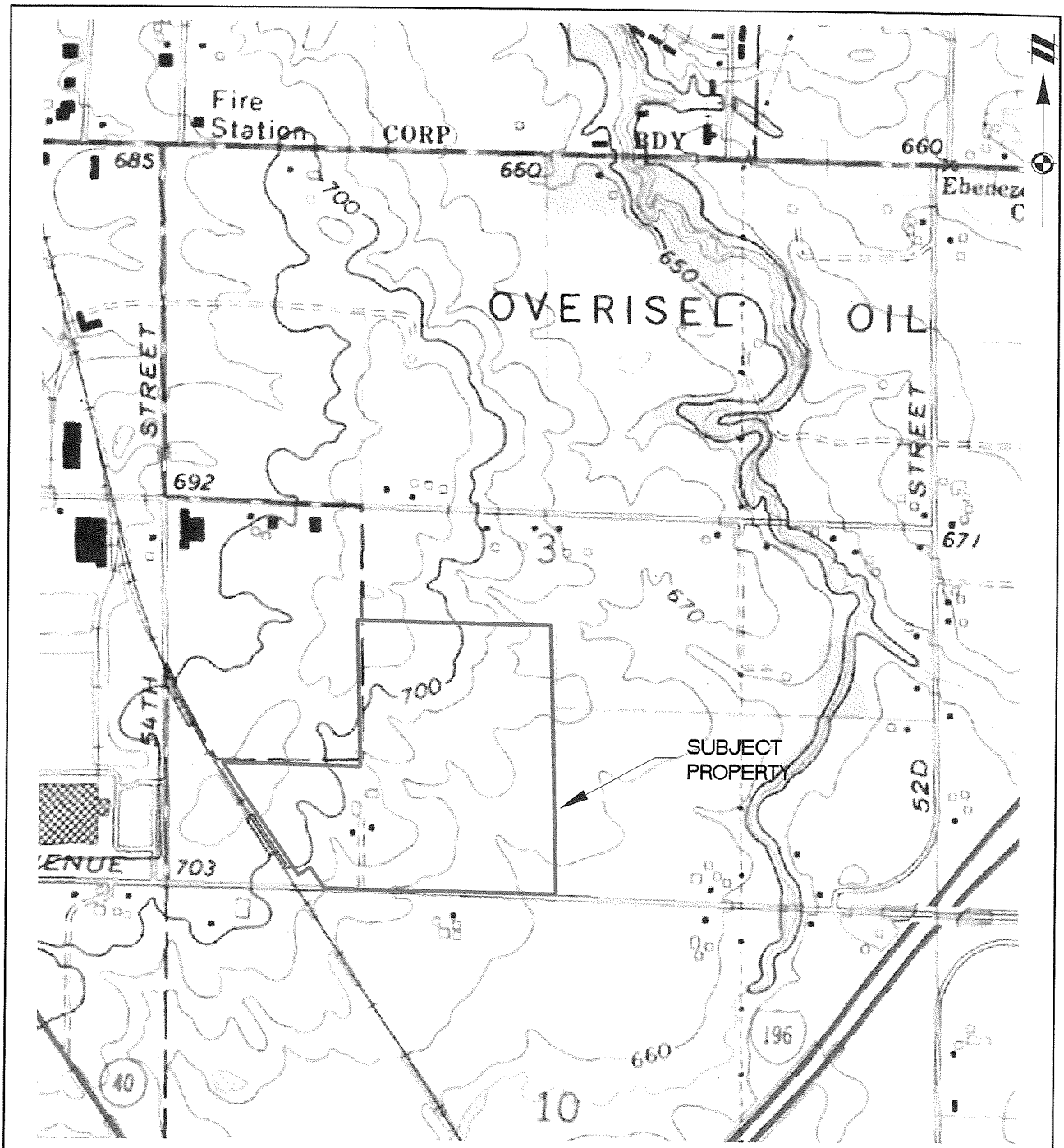
Environmental Ecological Water Resources

APPENDIX VII

USGS Topographic Map



USGS TOPOGRAPHIC MAP
FILLMORE TOWNSHIP
ALLEGAN COUNTY, MICHIGAN

SCALE 0 500 1000

1" = 1000 FEET

REFERENCE

USGS 7.5 MIN TOPOGRAPHIC QUADRANGLE
HOLLAND EAST, MICHIGAN QUADRANGLE
DATED: 1972, PHOTOREVISED: 1980

SECTION 3

PROJECT: 09001770
DATE: OCTOBER 6, 2009
DRAWN: FOD
CHECKED: BR
CAD FILE: 09001770EC-01

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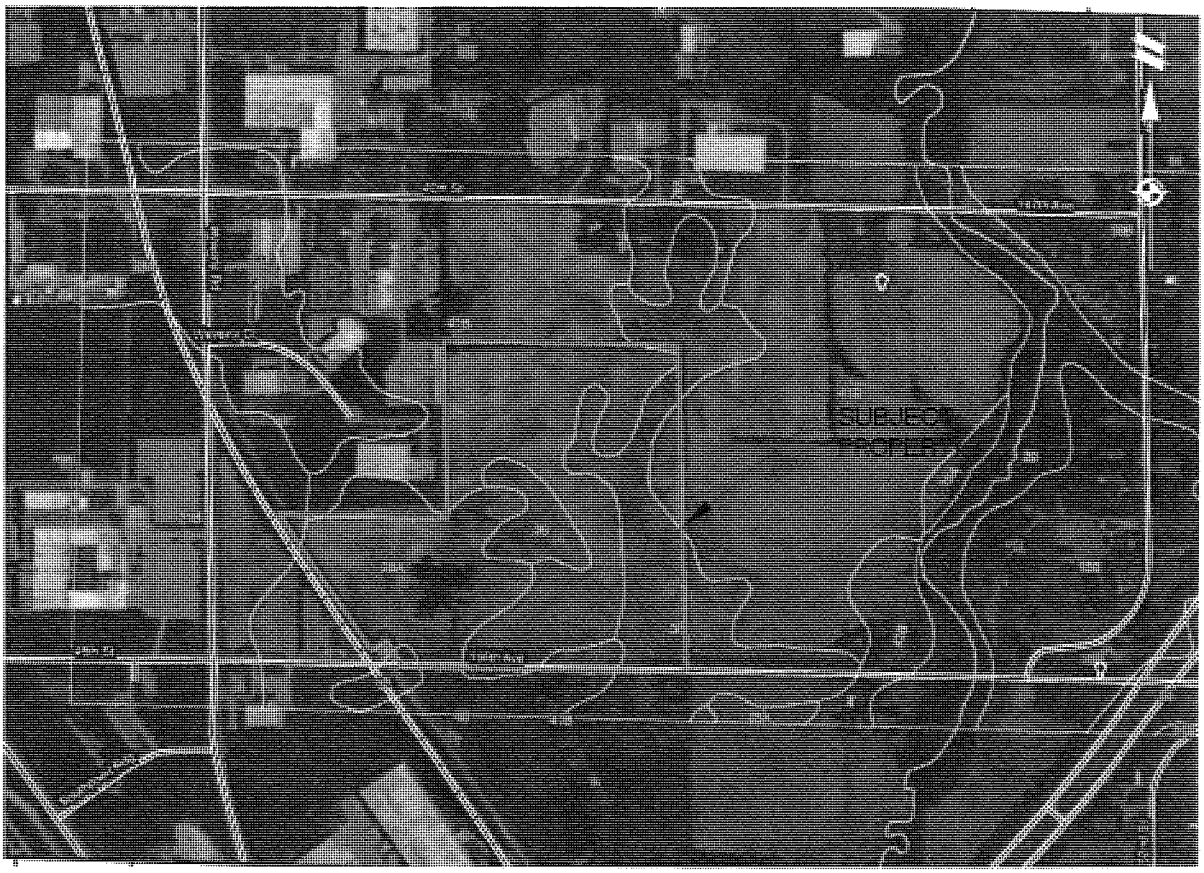
APPENDIX VIII

Allegan County Soil Survey Map



ALLEGAN COUNTY SOIL SURVEY MAP

FILLMORE TOWNSHIP
ALLEGAN COUNTY, MICHIGAN

LEGEND:
16B: Capac Loam, 0 to 6 percent slopes
19A: Brady Sandy Loam, 0 to 3 percent slopes
21B: Capac–Wixom Complex, 1 to 4 percent slopes
28A: Rimer Loamy Sand, 0 to 4 percent slopes
29: Cohoctah Silt Loam
36: Corunna Sandy Loam*
39: Granby Loamy Sand*
41B: Blount Silt Loam, 1 to 4 percent slopes
42B: Metamora Sandy Loam, 1 to 4 percent slopes
48: Belleville Loamy Sand*
64: Belleville–Brookston Complex*

*Indicates hydric soils as determined by the Natural Resource Conservation Service.

SCALE 0 500 1000

1" = 1000 FEET

REFERENCE
WEB SOIL SURVEY
NATURAL RESOURCE CONSERVATION SERVICE
http://websoilsurvey.nrcs.usda.gov/app/

PROJECT: 09001770
DATE: OCTOBER 6, 2009
DRAWN: FOD
CHECKED: BR
CAD FILE: 09001770EC-01

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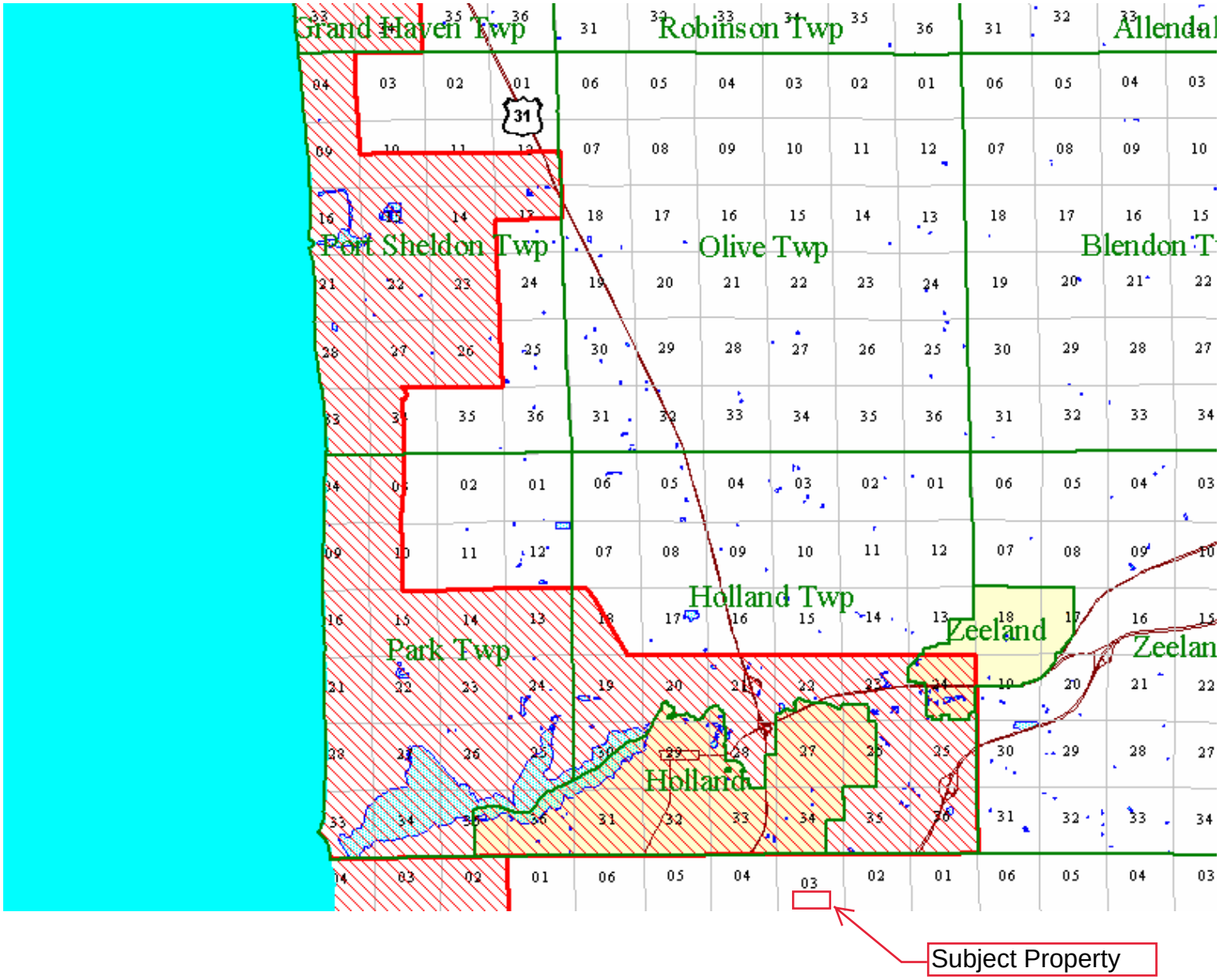
Planning Water Resources

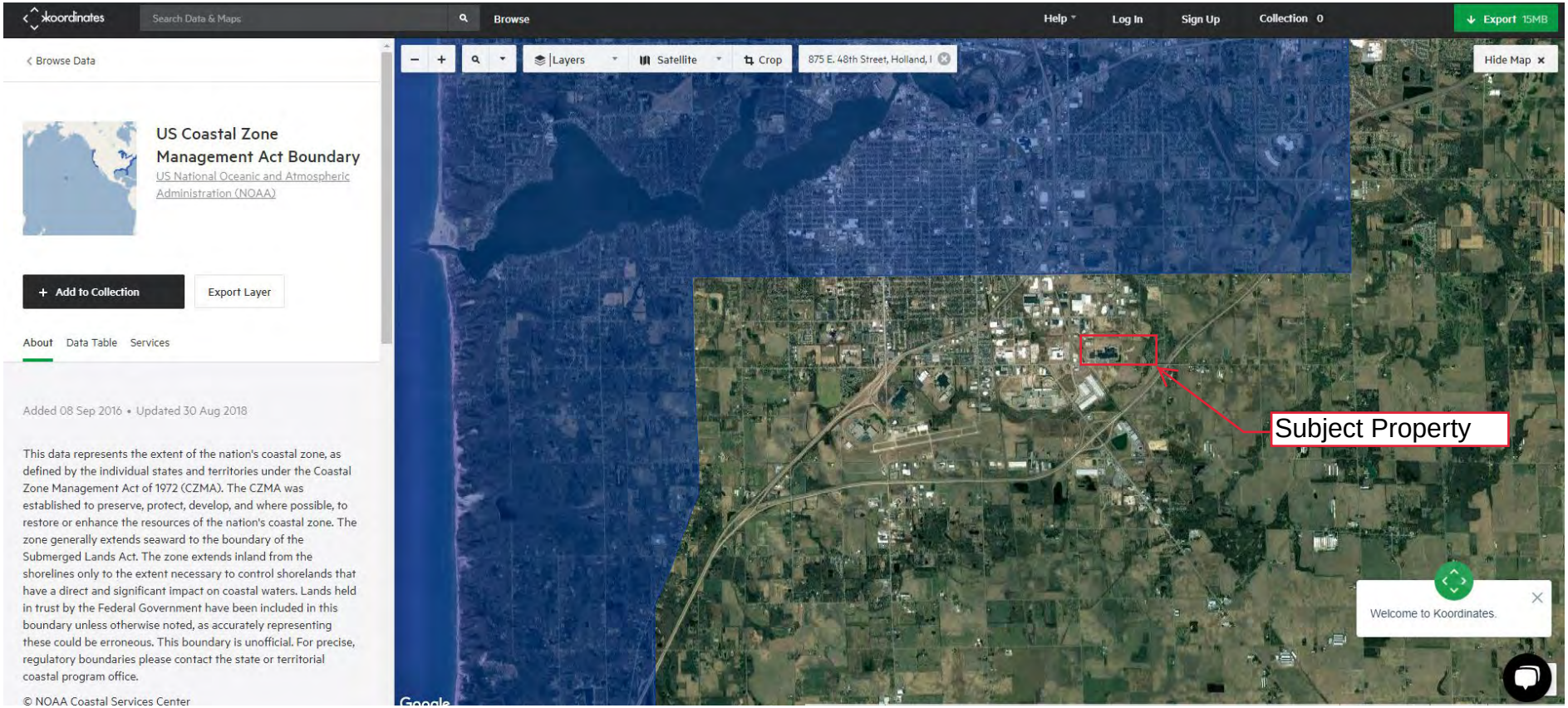
Attachment 4

Coastal Zone

Ottawa County
Port Sheldon Township, T6N R16W
Park Township, T5N R16W
Holland Township T5N R15W
Holland, T5N R15W
Zeeland, T5N R15W

The heavy red line is the ***Coastal Zone Management Boundary***
The red hatched area is the ***Coastal Zone Management Area***

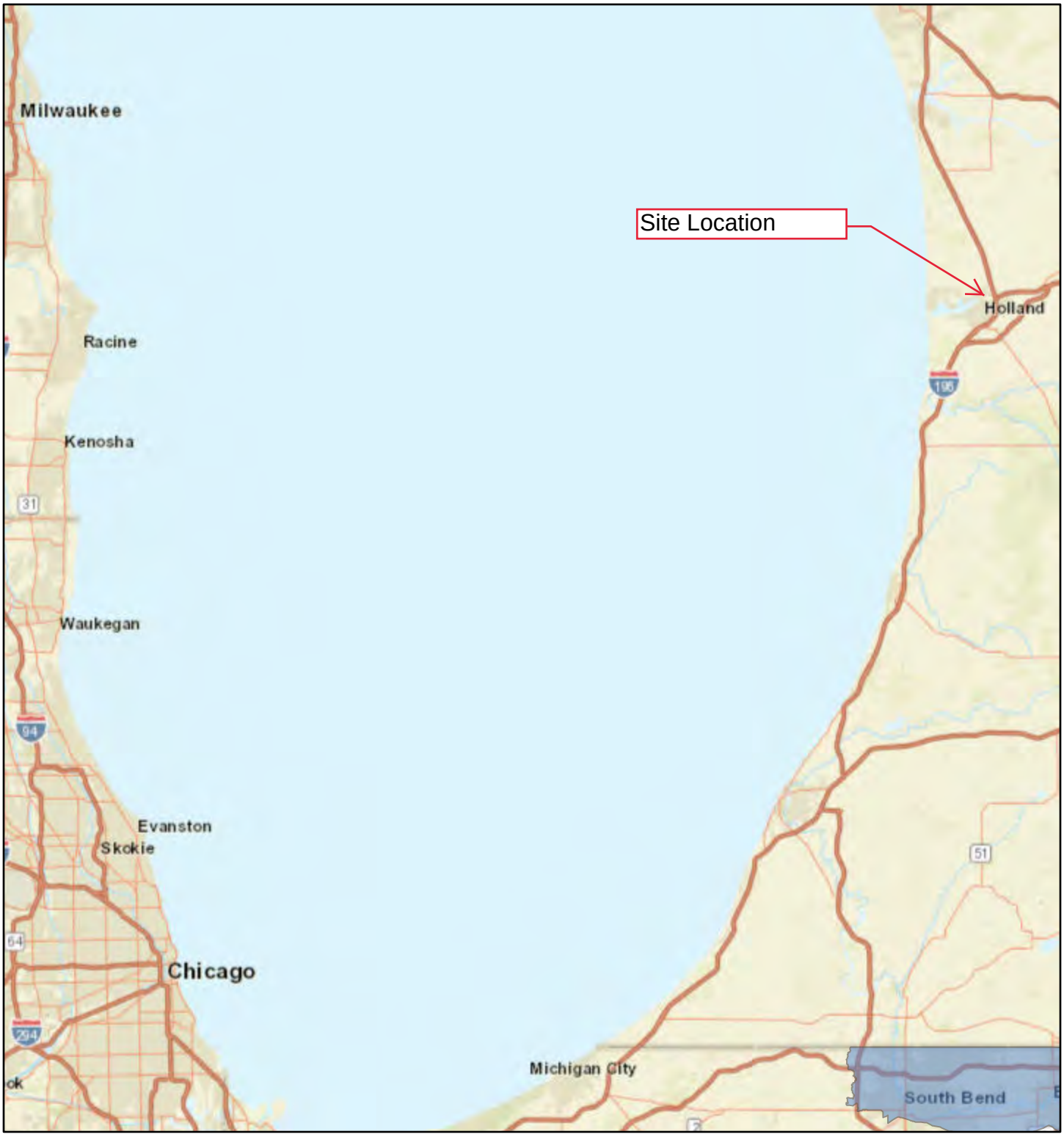



koordinates
Search Data & Maps
Browse
Help
Log In
Sign Up
Collection 0
Export 15MB
Browse Data
US Coastal Zone Management Act Boundary
US National Oceanic and Atmospheric Administration (NOAA)
+ Add to Collection
Export Layer
About
Data Table
Services
Added 08 Sep 2016 • Updated 30 Aug 2018
This data represents the extent of the nation's coastal zone, as defined by the individual states and territories under the Coastal Zone Management Act of 1972 (CZMA). The CZMA was established to preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone. The zone generally extends seaward to the boundary of the Submerged Lands Act. The zone extends inland from the shorelines only to the extent necessary to control shorelands that have a direct and significant impact on coastal waters. Lands held in trust by the Federal Government have been included in this boundary unless otherwise noted, as accurately representing these could be erroneous. This boundary is unofficial. For precise, regulatory boundaries please contact the state or territorial coastal program office.
© NOAA Coastal Services Center
Layers
Satellite
Crop
875 E. 48th Street, Holland, I
Hide Map
Subject Property
Welcome to Koordinates.
Google

Attachment 5

Sole Source Aquifers

ArcGIS Web AppBuilder



11/15/2021, 2:28:05 PM

1:1,155,581

0 5 10 20 mi

0 10 20 40 km

Sole_Source_Aquifers

There are no Sole Source Aquifers in Michigan.

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Attachment 6

Endangered Species

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Michigan Ecological Services Field Office
2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360
Phone: (517) 351-2555 Fax: (517) 351-1443
http://www.fws.gov/midwest/EastLansing/

In Reply Refer To:
Project code: 2022-0012641
Project Name: LG Energy Expansion

February 25, 2022

Subject: Consistency letter for 'LG Energy Expansion' for threatened and endangered species that may occur in your proposed project location consistent with the Michigan Endangered Species Determination Key (Michigan DKey)

Dear Julie Pratt:

The U.S. Fish and Wildlife Service (Service) received on **February 25, 2022** your effect determination(s) for the 'LG Energy Expansion' (the Action) using the Michigan DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance of the Service's Michigan DKey, you determined the proposed Action will have "No Effect" on the following species.

Species	Listing Status	Determination
Eastern Massasauga (=rattlesnake) (*Sistrurus catenatus*)	Threatened	No effect
Indiana Bat (*Myotis sodalis*)	Endangered	No effect
Karner Blue Butterfly (*Lycaeides melissa samuelis*)	Endangered	No effect
Northern Long-eared Bat (*Myotis septentrionalis*)	Threatened	No effect
Piping Plover (*Charadrius melodus*)	Endangered	No effect
Pitcher's Thistle (*Cirsium pitcheri*)	Threatened	No effect
Red Knot (*Calidris canutus rufa*)	Threatened	No effect
Whooping Crane (*Grus americana*)	Experimental Population, Non-Essential	No effect

Your agency has met consultation requirements for these species by informing the Service of the "No Effect" determinations. Please email a copy of this letter to MIFO_Dkey@fws.gov for our record keeping (include "No Effect for Project Name" in the subject line).

For non-Federal representatives: Please note that when a project requires consultation under section 7 of the Act, the Service must consult directly with the Federal action agency unless that agency formally designates a non-Federal representative (50 CFR 402.08). Non-Federal representatives may prepare analyses or conduct informal consultations; however, the ultimate responsibility for section 7 compliance under the Act remains with the Federal agency. If the Federal agency concurs with your determination, the project as proposed has completed section 7 consultation. All documents and supporting correspondence should be provided to the Federal agency for their records.
Please provide sufficient project details on your project homepage in IPaC (Define Project, Project Description) to support your conclusions. Failure to disclose important aspects of your project that would influence the outcome of your effects determinations may negate your determinations and invalidate this letter. If you have site-specific information that leads you to believe a different determination is more appropriate for your project than what the Dkey concludes, you can and should proceed based on the best available information.

The Service recommends that you contact the Service or re-evaluate the project in IPaC if: 1) the scope or location of the proposed Action is changed; 2) new information reveals that the action may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the Action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project changes are final or resources committed.

Bald and Golden Eagles:
Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the “taking” of bald and golden eagles and defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” The Eagle Act’s implementing regulations define disturb as “…to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

If the Action may impact bald or golden eagles, additional coordination with the Service under the Eagle Act may be required. For more information on eagles and conducting activities in the vicinity of an eagle nest, please visit https://www.fws.gov/midwest/eagle/. In addition, the Service developed the National Bald Eagle Management Guidelines (May 2007) in order to assist landowners in avoiding the disturbance of bald eagles. The full Guidelines are available at http://www.fws.gov/midwest/eagle/pdf/NationalBaldEagleManagementGuidelines.pdf.

If you have further questions regarding potential impacts to eagles, please contact Chris Mensing, Chris_Mensing@fws.gov or 517-351-2555.

Wetland impacts:
Section 404 of the Clean Water Act of 1977 (CWA) regulates the discharge of dredged or fill material into waters (including wetlands) of the United States. Regulations require that activities

permitted under the CWA (including wetland permits issued by the Michigan Department of Environment, Great Lakes, and Energy (EGLE)) not jeopardize the continued existence of species listed as endangered or threatened. Permits issued by the U.S. Army Corps of Engineers must also consider effects to listed species pursuant to section 7 of the Endangered Species Act. The Service provides comments to the agencies that may include permit conditions to help avoid or minimize impacts to wildlife resources including listed species. For this project, we consider the conservation measures you agreed to in the determination key and/or as part of your proposed action to be non-discretionary. If you apply for a wetland permit, these conservation measures should be explicitly incorporated as permit conditions. Include a copy of this letter in your wetland permit application to streamline the threatened and endangered species review process.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

LG Energy Expansion

2. Description

The following description was provided for the project 'LG Energy Expansion':

> Project contains construction of several buildings in aggregate sum of 1.4 million square feet in a vacant land owned by LG Energy Solution Michigan, Inc., which has a purpose of manufacturing lithium-ion battery components for electric vehicles.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.757245850000004,-86.06753036448572,14z

Qualification Interview

1. This determination key is intended to assist the user in the evaluating the effects of their actions on Federally listed species in Michigan. It does not cover other prohibited activities under the Endangered Species Act (e.g., for wildlife: import/export, Interstate or foreign commerce, possession of illegally taken wildlife, purposeful take for scientific purposes or to enhance the survival of a species, etc.; for plants: import/export, reduce to possession, malicious destruction on Federal lands, commercial sale, etc.) or other statutes. Click yes to acknowledge that you must consider other prohibitions of the ESA or other statutes outside of this determination key.

   Yes

2. Is the action the approval of a long-term (i.e., in effect greater than 10 years) permit, plan, or other action?

   No

3. Is the action being funded, authorized, or carried out by a Federal agency?

   Yes

4. Does the action involve the installation or operation of wind turbines?

   No

5. Does the action involve purposeful take of a listed animal?

   No

6. Does the action involve a new communication tower?

   No

7. Does the activity involve aerial or other large-scale application of any chemical (including insecticide, herbicide, etc.)?

   No

8. Will your action permanently affect local hydrology by impacting 1/2 acre or more of wetland; or by increasing or decreasing groundwater or surfacewater elevations?

   Yes

9. Does your project have the potential to indirectly impact the stream/river or the riparian zone (e.g., cut and fill, horizontal directional drilling, hydrostatic testing, construction, vegetation removal, discharge, etc.)?

   No

10. Will your action disturb the ground or existing vegetation? This includes any off road vehicle access, soil compaction, digging, seismic survey, directional drilling, heavy equipment, grading, trenching, placement of fill, pesticide application, vegetation management (including removal or maintenance using equipment or chemicals), cultivation, development, etc.

    Yes

11. Does your action area occur entirely within an already developed area with no natural habitat or trees present? For the purposes of this question, "already developed areas" are already paved, covered by existing structures, manicured lawns, industrial sites, or cultivated cropland, AND do not contain trees that could be roosting habitat. Be aware that listed species may occur in areas with natural, or semi-natural, vegetation immediately adjacent to existing utilities (e.g. roadways, railways) or within utility rights-of-way such as overhead transmission line corridors, and can utilize suitable trees, bridges, or culverts for roosting even in urban dominated landscapes (so these are NOT considered "already developed areas" for the purposes of this question).

    Yes

12. Does the action have potential indirect effects to listed species or the habitats they depend on (e.g., water discharge into adjacent habitat or waterbody, changes in groundwater elevation, introduction of an exotic plant species)?

    No

13. [Hidden Semantic] Does the action area intersect the Indiana bat AOI?

    Automatically answered
    Yes

14. Federally listed bats infrequently use anthropogenic structures for roosting, such as buildings, barns, sheds, and bat boxes. Are bats known to be roosting in a structure that occurs within your action area?

    No

15. [Hidden Semantic] Does the action intersect the Eastern massasauga rattlesnake area of influence?

    Automatically answered
    Yes

16. [Hidden Semantic] Does the action intersect the Karner blue butterfly area of influence?

    Automatically answered
    Yes

17. [Hidden Semantic] Does the action area intersect the piping plover area of influence?

    Automatically answered
    Yes

18. [Hidden Semantic] Does the action area intersect the rufa red knot area of influence?

    Automatically answered
    Yes

19. [Hidden Semantic] Does the action area intersect the whooping crane (ex. Pop) area of influence?

    Automatically answered
    Yes

20. [Hidden Semantic] Does the action area intersect the area of influence for Pitcher's thistle?

    Automatically answered
    Yes

21. [Hidden Semantic] Does the action area intersect the Indiana bat area of influence?

    Automatically answered

    Yes

22. [Hidden Semantic] Does this project intersect the northern long-eared bat area of influence?

    Automatically answered

    Yes

IPaC User Contact Information

Name: Julie Pratt
Address: 523 W. Sunnybrook Drive
City: Royal Oak
State: MI
Zip: 48034
Email jpratt@environmentalconsultingsolutions.com
Phone: 5864247355

Attachment 7

Wild and Scenic Rivers

Michigan Wild and Scenic Rivers

Legend

National Wild and Scenic Rivers System

Source: National Wild and Scenic Rivers System Website (https://www.rivers.gov/mapping-gis.php).

MSHDA
MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY

4/2018

Attachment 8

Air Quality

OMB No. 2506-0177
(exp.9/30/2021)

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-1000

This Worksheet was designed to be used by those "Partners" (including Public Housing Authorities, consultants, contractors, and nonprofits) who assist Responsible Entities and HUD in preparing environmental reviews, but legally cannot take full responsibilities for these reviews themselves. Responsible Entities and HUD should use the RE/HUD version of the Worksheet.

Air Quality (CEST and EA) – PARTNER

https://www.hudexchange.info/environmental-review/air-quality

1. **Does your project include new construction or conversion of land use facilitating the development of public, commercial, or industrial facilities OR five or more dwelling units?**

   ☒ Yes → *Continue to Question 2.*

   ☐ No → *If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Provide any documents used to make your determination.*

2. **Is your project's air quality management district or county in non-attainment or maintenance status for any criteria pollutants?**
   Follow the link below to determine compliance status of project county or air quality management district:
   http://www.epa.gov/oaqps001/greenbk/

   ☐ No, project's county or air quality management district is in attainment status for all criteria pollutants
   → *If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.*

   ☒ Yes, project's management district or county is in non-attainment or maintenance status for one or more criteria pollutants. → *Continue to Question 3.*

3. **Determine the estimated emissions levels of your project for each of those criteria pollutants that are in non-attainment or maintenance status on your project area. Will your project exceed any of the *de minimis or threshold* emissions levels of non-attainment and maintenance level pollutants or exceed the screening levels established by the state or air quality management district?**

   ☒ No, the project will not exceed *de minimis* or threshold emissions levels or screening levels
   → *If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Explain how you determined that the project would not exceed de minimis or threshold emissions.*

☐ Yes, the project exceeds *de minimis* emissions levels or screening levels.

→ *Continue to Question 4. Explain how you determined that the project would not exceed de minimis or threshold emissions in the Worksheet Summary.*

4. **For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.**
   Click here to enter text.

Worksheet Summary

Provide a full description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your program or region

Include all documentation supporting your findings in your submission to HUD.

Click here to enter text.

designated the Black-Macatawa hydrologic unit (HUC 04050002). No Federal Emergency Management Agency floodplains were identified at the Site as it is located in an area that is currently unmapped.

Project construction would be performed under terms required by a National Pollutant Discharge Elimination System permit for construction stormwater discharge, as well as an Allegan County SESC permit. As part of these permitting processes, LGCMI has developed an SESC Plan to minimize offsite erosion and sedimentation during Project construction. Controls that would be implemented include installing a silt fence around the perimeter of the area that would be disturbed by the Project. See Appendix B for more details.

The Project would cause an additional 23.42 acres of the Site to be covered by impervious surfaces, including the new building and paved parking, driveway, and sidewalk areas. Approximately 28 acres of the Site are currently covered by impervious surfaces. The effect on stormwater infiltration in the vicinity of the Site would not be significant in light of the remaining open space near the facility and the expanded stormwater retention pond that is sized to accommodate the proposed new facility. LGCMI's current stormwater retention facilities at the Site are permitted under Industrial Stormwater Permit No. MIS220096, and LGCMI would add the Project to this existing permit. Per the conditions of this permit, LGCMI employs an industrial stormwater-certified operator who has supervision over the stormwater treatment and control measures at the facility. In addition, the facility maintains a Storm Water Pollution Prevention Plan, which describes the nonstructural and structural controls implemented onsite to eliminate unauthorized non-stormwater discharges.

During operations, LGCMI would protect surface water by managing all hazardous liquids either inside the facility, in tanks, or in closed containers stored within secondary containment structures (see Section 3.9.2). Potential spills or releases of liquids during delivery would be minimized using the controls described by the Spill Prevention Pollution Plan and Pollution Incident Prevention Plan that is in place for the existing facility (see Section 3.9.2).

Because of the current plans for municipal water use, the absence of identified floodplains, anticipated stormwater control and treatment during construction and operation, and the control of onsite hazardous liquids, impacts on groundwater or surface water as a result of the proposed Project would not be significant.

3.4 Air Quality

The Project is located in Allegan County, Michigan, which has been designated as a nonattainment area for ozone (8-hour standard) under the National Ambient Air Quality Standards. Conformity with the EPA-approved Michigan State Implementation Plan is demonstrated if the Project emissions fall below the threshold value *de minimis* emissions.[5] The threshold values as set by the State Implementation Plan for Allegan County are 100 tons per year (tpy) for the ozone precursor nitrogen oxides (NOx) or 100 tpy for the ozone precursor volatile organic compounds (VOCs) (40 CFR 93 § 153). The estimated annual NOx Project emissions would be about 62.1 tpy, and the estimated annual emissions of VOCs would be about 69 tpy, both less than the threshold *de minimis* values for these pollutants (Table 1). As a result, the Project falls into conformity with the State Implementation Plan.

LGCMI has submitted a Permit To Install application to EGLE for the Project. The Project does not have the potential to emit above any of the major source thresholds, and the Project is not considered a major source of air contamination subject to federal Title V requirements. Likewise, the Project is not a major source under Part 18, Prevention of Significant Deterioration of Air Quality. The Project is not a major

[5] EPA (U.S. Environmental Protection Agency). 2009. General Conformity *De Minimis* Levels. Available at http://www.epa.gov/air/genconform/deminimis.htm.

modification subject to Prevention of Significant Deterioration because it would not cause a significant emissions increase and/or a significant net emissions increase. Following is a table of anticipated air emissions from the proposed Project.

Table 1: Project Potential to Emit

Pollutant	Current Facility		Proposed Project		Total	
	pounds per year	tpy	pounds per year	tpy	pounds per year	tpy
SO_2	1,220	0.61	960 – 1180	0.48 – 0.59	2,180 – 2,400	1.09 – 1.20
NOx	97,220	48.6	22,400 – 48,500	11.2 – 24.2	119,620 – 145,720	59.8 – 72.8
VOC[1]	92,920	46.5	109,500 – 111,540	54.8 – 55.8	166,900 – 168,940	83.5 – 84.5
PM10	7,370	3.68	4,150 – 6,970	2.08 – 3.48	11,520 – 14,340	5.76 – 7.16
PM2.5	7,370	3.68	4,150 – 6,970	2.08 – 3.48	11,520 – 14,340	5.76 – 7.16
CO	83,620	41.8	48,080 – 79,280	24.0 – 39.6	131,700 – 162,900	65.8 – 81.4

CO= carbon monoxide; NOx = nitrogen oxides; PM10 = particulate matter with diameters 10 microns and smaller; PM2.5 = particulate matter with diameters 2.5 microns and smaller; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound

1. *The total VOC emissions includes a proposed reduction of 17.76 tpy from the current facility.*

Controls that would be implemented during Project operation to minimize potential air quality impacts include:

- Dust collectors on mixing equipment with removal efficiency of up to approximately 99.99 percent each for particulate matter with diameters 10 microns and smaller (PM10) and particulate matter with diameters 2.5 microns and smaller (PM2.5) emissions;
- Absorber on slurry application line with approximately 99.7 percent efficiency rating for VOC emissions; and
- Dust collectors on notching equipment with removal efficiency of up to approximately 99.99 percent for PM10 and PM2.5 emissions.

Fugitive dust emissions during Project construction may temporarily impact air quality at the Site and in the surrounding area; however, these impacts would be minor and temporary. Per the SESC Plan, controls would be implemented to minimize fugitive dust emissions during construction such as watering as needed and the use of temporary construction entrances.

Carbon dioxide, considered a GHG, is not regulated in the same manner as the criteria pollutants shown in Table 1. Only major sources of carbon dioxide (emission greater than 100,000 tpy) are regulated in Michigan. The Project would result in 30,000 to 55,000 tpy of carbon dioxide emissions, which is well below the major source threshold.

Because of the location of the Project site and existing air quality conditions, the amount of anticipated air emissions, and the controls that would be implemented during Project construction and operation, impacts on air quality as a result of the proposed Project would not be significant.

3.5 Noise

The Project location is zoned industrial, with substantial industrial development in the surrounding area. Neighboring properties are host to a trucking company, railroad, various light industrial businesses, agricultural land, and a few residences. Existing sources of noise at the Site include vehicular traffic,

Attachment 9

Farmland Protection

Search

Soil Reports

Open All | Close All

- AOI Inventory
- Building Site Development
- Construction Materials
- Disaster Recovery Planning
- **Land Classifications**
  - Conservation Tree and Shrub Suitability Groups
  - Forage Suitability Groups
  - Hydric Soil List - All Components
  - Hydric Soils
  - Land Capability Classification
  - NCCPI Overall
  - Prime and other Important Farmlands

    View Description | View Soil Report

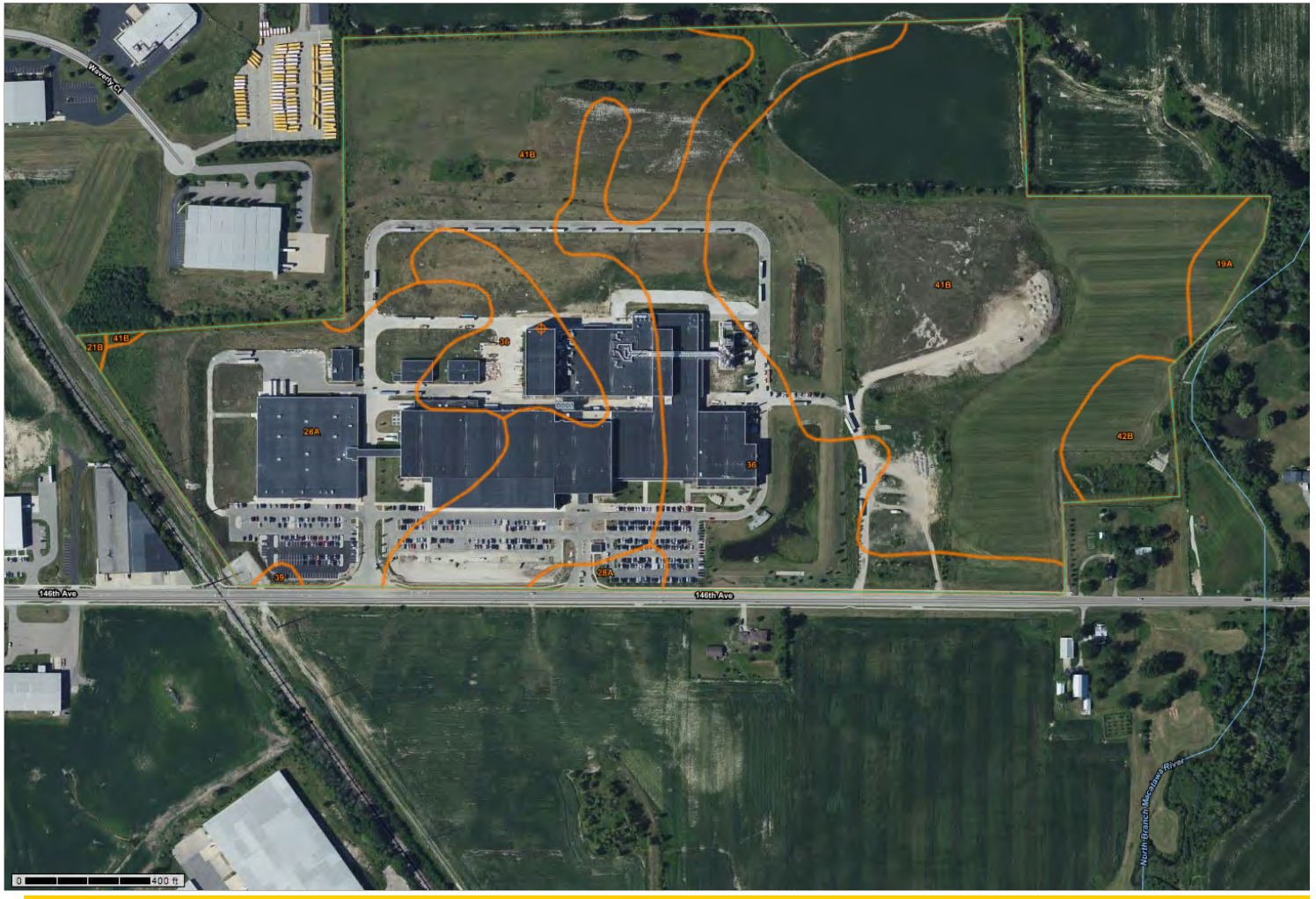
    Options

    This report has no options.

    View Description | View Soil Report
  - Taxonomic Classification of the Soils
- Land Management
- Recreational Development
- Sanitary Facilities
- Soil Chemical Properties
- Soil Erosion
- Soil Health
- Soil Physical Properties
- Soil Qualities and Features
- Vegetative Productivity
- Waste Management
- Water Features
- Water Management

Soil Map

Scale (not to scale)



Warning: Soil Map may not be valid at this scale.

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil surveys that comprise your AOI were mapped design of map units and the level of detail shown in the resulting soil map are dependent on that map scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting so been shown at a more detailed scale.

Report — Prime and other Important Farmlands

Allegan County, Michigan

Map Symbol	Map Unit Name	Farmland Classification
19A	Brady sandy loam, 0 to 3 percent slopes	All areas are prime farmland
21B	Capac-Wixom complex, 1 to 4 percent slopes	Prime farmland if drained
28A	Rimer loamy sand, 0 to 4 percent slopes	Farmland of local importance
36	Corunna sandy loam	Prime farmland if drained
39	Granby loamy sand, lake plain, 0 to 2 percent slopes	Farmland of local importance
41B	Blount silt loam, 1 to 4 percent slopes	Prime farmland if drained
42B	Metamora sandy loam, 1 to 4 percent slopes	Prime farmland if drained

Description — Prime and other Important Farmlands

Prime and Important Farmland

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Farmland Protection Policy Act

To learn more about the Farmland Protection Policy Act, you can play the webinar below or download the webinar's slides as a PDF.

Background

The National Agricultural Land Study of 1980-81 found that millions of acres of farmland were being converted in the United States each year. The 1981 Congressional report, Compact Cities: Energy-Saving Strategies for the Eighties, identified the need for Congress to implement programs and policies to protect farmland and combat urban sprawl and the waste of energy and resources that accompanies sprawling development.

The Compact Cities report indicated that much of the sprawl was the result of programs funded by the Federal Government. With this in mind, Congress passed the Agriculture and Food Act of 1981 (Public Law 97-98) containing the Farmland Protection Policy Act (FPPA) subtitle I of Title XV, Section 1539-1549. On June 17, 1994, the final rules and regulations were published in the Federal Register.

Purpose

The FPPA is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that to the extent possible federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years.

The FPPA does not authorize the Federal Government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners.

For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

Projects and Activities

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency.

Assistance from a Federal agency includes:

- Acquiring or disposing of land.
- Providing financing or loans.
- Managing property.
- Providing technical assistance

Activities that may be subject to FPPA include:

- State highway construction projects, (through the Federal Highway Administration)
- Airport expansions
- Electric cooperative construction projects
- Railroad construction projects
- Telephone company construction projects
- Reservoir and hydroelectric projects
- Federal agency projects that convert farmland
- Other projects completed with Federal assistance.

Activities not subject to FPPA include:

- Federal permitting and licensing
- Projects planned and completed without the assistance of a Federal agency
- Projects on land already in urban development or used for water storage
- Construction within an existing right-of-way purchased on or before August 4, 1984
- Construction for national defense purposes
- Construction of on-farm structures needed for farm operations
- Surface mining, where restoration to agricultural use is planned
- Construction of new minor secondary structures such as a garage or storage shed.

Farmland Conversion Impact Rating Form

If you represent a Federal agency in a project that has the potential to convert important farmland to non-farm use, please contact your local office of the Natural Resources Conservation Service (NRCS) or USDA Service Center. NRCS uses a land evaluation and site assessment (LESA) system to establish a farmland conversion impact rating score on proposed sites of Federally funded and assisted projects. This score is used as an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level.

The assessment is completed on form AD-1006, Farmland Conversion Impact Rating. The sponsoring agency completes the site assessment portion of the AD-1006, which assesses non-soil related criteria such as the potential for impact on the local agricultural economy if the land is converted to non-farm use and compatibility with existing agricultural use.

Program Contacts

Attachment 10

Explosives

Acceptable Separation Distance (ASD) Electronic Assessment Tool

The Environmental Planning Division (EPD) has developed an electronic-based assessment tool that calculates the Acceptable Separation Distance (ASD) from stationary hazards. The ASD is the distance from above ground stationary containerized hazards of an explosive or fire prone nature, to where a HUD assisted project can be located. The ASD is consistent with the Department's standards of blast overpressure (0.5 psi-buildings) and thermal radiation (450 BTU/ft^2 - hr - people and 10,000 BTU/ft^2 - hr - buildings). Calculation of the ASD is the first step to assess site suitability for proposed HUD-assisted projects near stationary hazards. Additional guidance on ASDs is available in the Department's guidebook "Siting of HUD- Assisted Projects Near Hazardous Facilities" and the regulation 24 CFR Part 51, Subpart C, Sitting of HUD-Assisted Projects Near Hazardous Operations Handling Conventional Fuels or Chemicals of an Explosive or Flammable Nature.

Note: Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the ASD result fields with the mouse.

Acceptable Separation Distance Assessment Tool

Is the container above ground?	**Yes:** ☑ **No:** ☐
Is the container under pressure?	**Yes:** ☐ **No:** ☑
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☐
Is the container diked?	**Yes:** ☑ **No:** ☐
What is the volume (gal) of the container?	
What is the Diked Area Length (ft)?	50
What is the Diked Area Width (ft)?	25
Calculate Acceptable Separation Distance	
Diked Area (sqft)	1250
ASD for Blast Over Pressure (ASDBOP)	
ASD for Thermal Radiation for People (ASDPPU)	
ASD for Thermal Radiation for Buildings (ASDBPU)	
ASD for Thermal Radiation for People (ASDPNPD)	169.83
ASD for Thermal Radiation for Buildings (ASDBNPD)	29.44

For mitigation options, please click on the following link: Mitigation Options (/resource/3846/acceptable-separation-distance-asd-hazard-mitigation-options/)

Providing Feedback & Corrections

After using the ASD Assessment Tool following the directions in this User Guide, users are encouraged to provide feedback on how the ASD Assessment Tool may be improved. Users are also encouraged to send comments or corrections for the improvement of the tool.

Please send comments or other input using the **Contact Us (https://www.hudexchange.info/contact-us/)** form.

Related Information

- **ASD User Guide (/resource/3839/acceptable-separation-distance-asd-assessment-tool-user-guide/)**
- **ASD Flow Chart (/resource/3840/acceptable-separation-distance-asd-flowchart/)**

ASD for Thermal Radiation for People (ASDPNPD)	169.83
ASD for Thermal Radiation for Buildings (ASDBNPD)	29.44

OMB No. 2506-0177
(exp.9/30/2021)

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-1000

This Worksheet was designed to be used by those "Partners" (including Public Housing Authorities, consultants, contractors, and nonprofits) who assist Responsible Entities and HUD in preparing environmental reviews, but legally cannot take full responsibilities for these reviews themselves. Responsible Entities and HUD should use the RE/HUD version of the Worksheet.

Explosive and Flammable Hazards (CEST and EA) – PARTNER

https://www.hudexchange.info/environmental-review/explosive-and-flammable-facilities

1. **Does the proposed HUD-assisted project include a hazardous facility (a facility that mainly stores, handles or processes flammable or combustible chemicals such as bulk fuel storage facilities and refineries)?**

   ☐ No
   → *Continue to Question 2.*

   ☒ Yes
   Explain: Project is a large quantity generator of hazardous waste. Bulk storage of materials associated with lithium ion battery production.
   → *Continue to Question 5.*

2. **Does this project include any of the following activities: development, construction, rehabilitation that will increase residential densities, or conversion?**

   ☐ No → *If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☐ Yes → *Continue to Question 3.*

3. **Within 1 mile of the project site, are there any current *or planned* stationary aboveground storage containers:**
   - Of more than 100-gallon capacity, containing common liquid industrial fuels OR
   - Of any capacity, containing hazardous liquids or gases that are not common liquid industrial fuels?

   ☐ No → *If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide all documents used to make your determination.*

   ☐ Yes → *Continue to Question 4.*

4. **Is the Separation Distance from the project acceptable based on standards in the Regulation?**
   Please visit HUD's website for information on calculating Acceptable Separation Distance.

   ☐ Yes
   → *If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Continue to the Worksheet Summary below.*

Provide map(s) showing the location of the project site relative to any tanks and your separation distance calculations. If the map identifies more than one tank, please identify the tank you have chosen as the "assessed tank."

☐ No

→ *Continue to Question 6.*

Provide map(s) showing the location of the project site relative to any tanks and your separation distance calculations. If the map identifies more than one tank, please identify the tank you have chosen as the "assessed tank."

5. **Is the hazardous facility located at an acceptable separation distance from residences and any other facility or area where people may congregate or be present?**

   Please visit HUD's website for information on calculating Acceptable Separation Distance.

   ☒ Yes

   → *If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   Provide map(s) showing the location of the project site relative to residences and any other facility or area where people congregate or are present and your separation distance calculations.

   ☐ No

   → *Continue to Question 6.*

   Provide map(s) showing the location of the project site relative to residences and any other facility or area where people congregate or are present and your separation distance calculations.

6. **For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to make the Separation Distance acceptable, including the timeline for implementation. If negative effects cannot be mitigated, cancel the project at this location.**

   Note that only licensed professional engineers should design and implement blast barriers. If a barrier will be used or the project will be modified to compensate for an unacceptable separation distance, provide approval from a licensed professional engineer.

   Click here to enter text.

Worksheet Summary

Provide a full description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your program or region

Include all documentation supporting your findings in your submission to HUD.

Click here to enter text.

Attachment 11

Noise

OMB No. 2506-0177
(exp. 9/30/2021)

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-1000

This Worksheet was designed to be used by those "Partners" (including Public Housing Authorities, consultants, contractors, and nonprofits) who assist Responsible Entities and HUD in preparing environmental reviews, but legally cannot take full responsibilities for these reviews themselves. Responsible Entities and HUD should use the RE/HUD version of the Worksheet.

Noise (EA Level Reviews) – PARTNER

https://www.hudexchange.info/programs/environmental-review/noise-abatement-and-control

1. **What activities does your project involve? Check all that apply:**

☐ New construction for residential use

NOTE: HUD assistance to new construction projects is generally prohibited if they are located in an Unacceptable zone, and HUD discourages assistance for new construction projects in Normally Unacceptable zones. See 24 CFR 51.101(a)(3) for further details.

→ *Continue to Question 2.*

☐ Rehabilitation of an existing residential property

NOTE: For major or substantial rehabilitation in Normally Unacceptable zones, HUD encourages mitigation to reduce levels to acceptable compliance standards. For major rehabilitation in Unacceptable zones, HUD strongly encourages mitigation to reduce levels to acceptable compliance standards. See 24 CFR 51 Subpart B for further details.

→ *Continue to Question 2.*

☒ None of the above

→ *If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Continue to the Worksheet Summary below.*

2. **Complete the Preliminary Screening to identify potential noise generators in the vicinity (1000' from a major road, 3000' from a railroad, or 15 miles from an airport).**
Indicate the findings of the Preliminary Screening below:

☐ There are no noise generators found within the threshold distances above.

→ *If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map showing the location of the project relative to any noise generators.*

☐ Noise generators were found within the threshold distances.

→ *Continue to Question 3.*

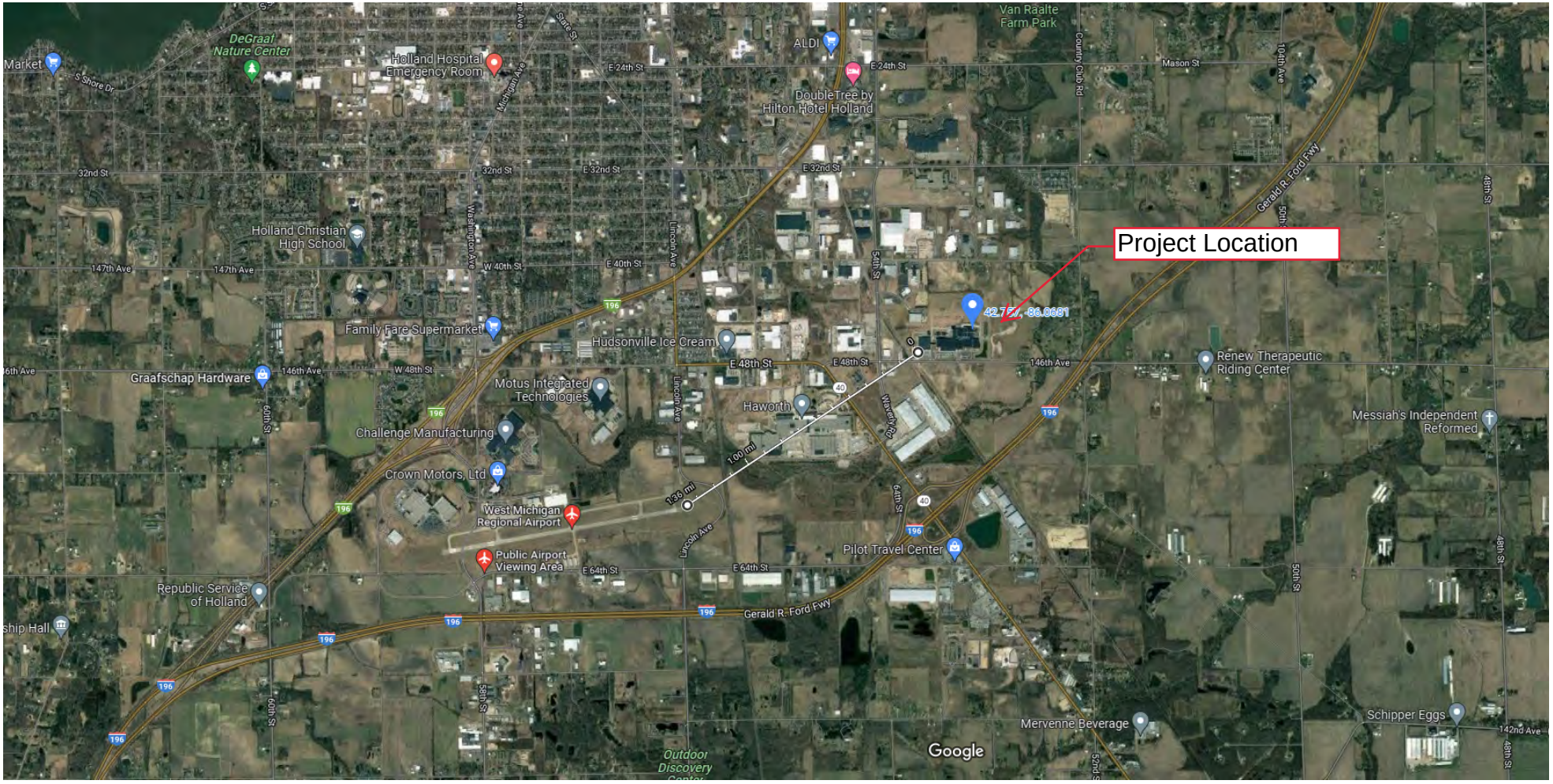
3. **Complete the Noise Assessment Guidelines to quantify the noise exposure. Indicate the findings of the Noise Assessment below:**

☐ Acceptable (65 decibels or less; the ceiling may be shifted to 70 decibels in circumstances described in §24 CFR 51.105(a))

Attachment 12

Airports

Google Maps airport



Imagery ©2022 Landsat / Copernicus, Maxar Technologies, NOAA, USDA Farm Service Agency, Map data ©2022 2000 ft

Rating All filters

West Michigan Regional Airport
4.2 (28)
Airport · 60 Geurink Blvd
(616) 392-7831
Website Directions

West Michigan Regional Airport
1.0 (1)
Airport · 270 S River Ave
(616) 392-7831
Website Directions

Kalamazoo/Battle Creek

The Project is not located within 15,000 feet of a military airport or 2,500 feet of a civilian airport.

Attachment 13

Phase I ESA Report

Submitted under separate cover.

Attachment 14

Environmental Justice

Save as PDF

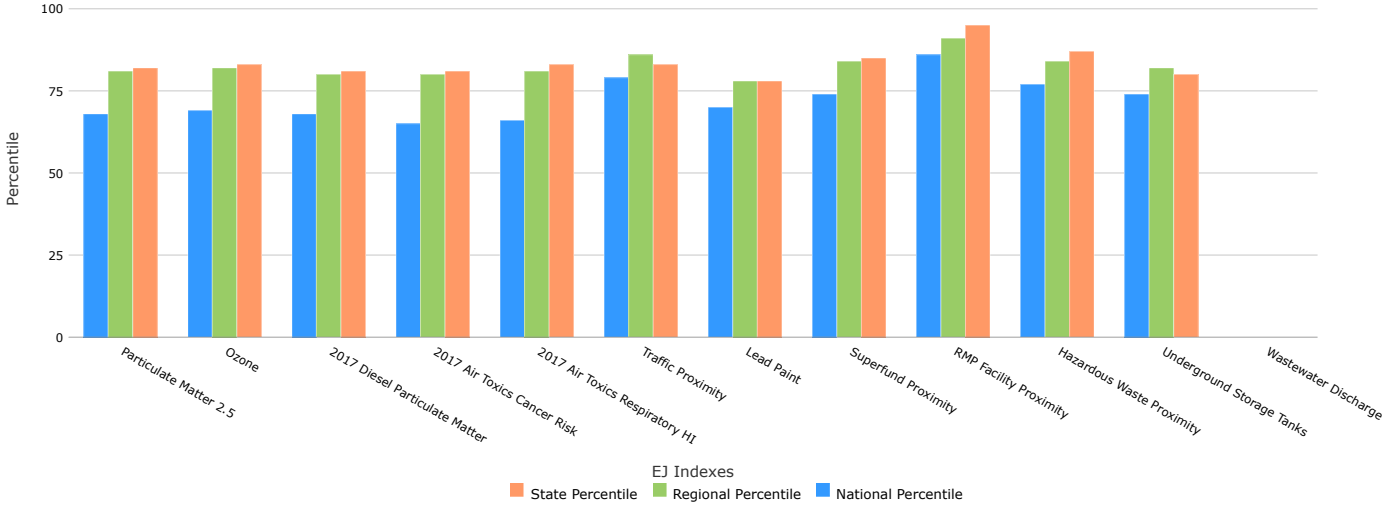
EJScreen Report (Version 2.0)

the User Specified Area
MICHIGAN, EPA Region 5
Approximate Population: 7
Input Area (sq. miles): 0.18

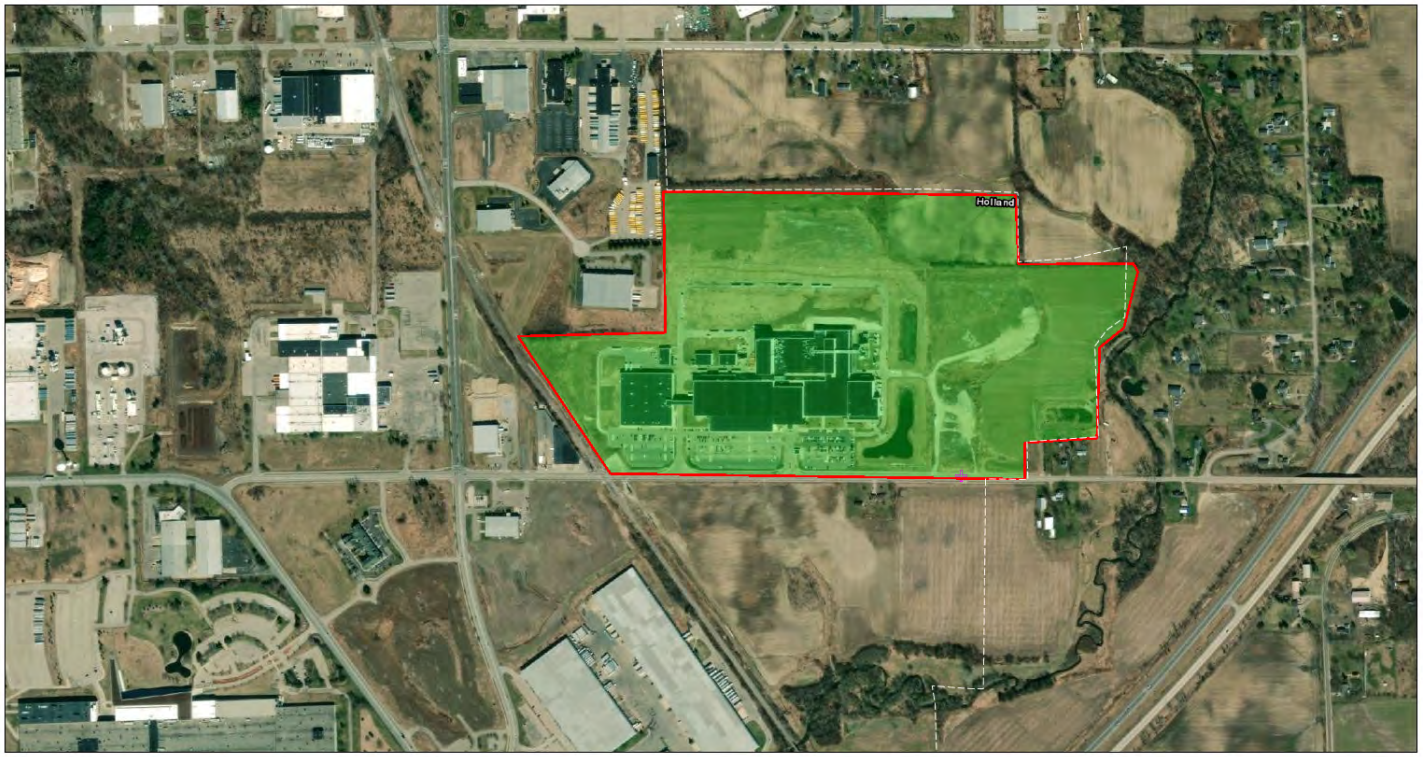
LG Energy

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
Environmental Justice Indexes			
EJ Index for Particulate Matter 2.5	82	81	68
EJ Index for Ozone	83	82	69
EJ Index for 2017 Diesel Particulate Matter*	81	80	68
EJ Index for 2017 Air Toxics Cancer Risk*	81	80	65
EJ Index for 2017 Air Toxics Respiratory HI*	83	81	66
EJ Index for Traffic Proximity	83	86	79
EJ Index for Lead Paint	78	78	70
EJ Index for Superfund Proximity	85	84	74
EJ Index for RMP Facility Proximity	95	91	86
EJ Index for Hazardous Waste Proximity	87	84	77
EJ Index for Underground Storage Tanks	80	82	74
EJ Index for Wastewater Discharge	N/A	N/A	N/A

EJ Index for the Selected Area Compared to All People's Blockgroups in the State/Region/US



This report shows the values for environmental and demographic indicators and EJScreen indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports.



February 26, 2022

LG Energy

Search Result (point)

1:9,028

0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

Esri, HERE, Garmin, GeoTechnologies, Inc., Maxar

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	1

Selected Variables	Value	State		EPA Region		USA	
		Avg.	%tile	Avg.	%tile	Avg.	%tile
Pollution and Sources							
Particulate Matter 2.5 (µg/m^3)	8.32	8.75	24	8.96	21	8.74	42
Ozone (ppb)	45.2	43.8	85	43.5	75	42.6	77
2017 Diesel Particulate Matter* (µg/m^3)	0.211	0.209	54	0.279	<50th	0.295	<50th
2017 Air Toxics Cancer Risk* (lifetime risk per million)	20	23	70	24	60-70th	29	<50th
2017 Air Toxics Respiratory HI*	0.3	0.25	99	0.3	70-80th	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	950	830	71	610	83	710	82
Lead Paint (% Pre-1960 Housing)	0.083	0.37	17	0.37	20	0.28	36
Superfund Proximity (site count/km distance)	0.097	0.15	66	0.13	68	0.13	65
RMP Facility Proximity (facility count/km distance)	2.9	0.53	97	0.83	94	0.75	95
Hazardous Waste Proximity (facility count/km distance)	2.2	1.1	82	1.8	73	2.2	72
Underground Storage Tanks (count/km^2)	2.8	7.3	52	4.8	62	3.9	66
Wastewater Discharge (toxicity-weighted concentration/m distance)	N/A	0.41	N/A	9	N/A	12	N/A
Socioeconomic Indicators							
Demographic Index	44%	28%	81	28%	81	36%	68
People of Color	56%	25%	86	26%	84	40%	69
Low Income	33%	32%	58	29%	63	31%	58
Unemployment Rate	1%	6%	13	5%	17	5%	15
Linguistically Isolated	2%	2%	78	2%	73	5%	58
Less Than High School Education	18%	9%	87	10%	86	12%	77
Under Age 5	10%	6%	90	6%	89	6%	87
Over Age 64	10%	17%	20	16%	23	16%	27

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's 2017 Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update. (https://www.epa.gov/haps/air-toxics-data-update)

For additional information, see: www.epa.gov/environmentaljustice (https://www.epa.gov/environmentaljustice)

Attachment 15

Coastal Barrier Resources

U.S. Fish and Wildlife Service
Coastal Barrier Resources System

CBRS

February 25, 2022

CBRS Buffer Zone

System Unit

CBRS Units

Otherwise Protected Area

This map is for general reference only. The Coastal Barrier Resources System (CBRS) boundaries depicted on this map are representations of the controlling CBRS boundaries, which are shown on the official maps, accessible at https://www.fws.gov/cbra/maps/index.html. All CBRS related data should be used in accordance with the layer metadata found on the CBRS Mapper website.

The CBRS Buffer Zone represents the area immediately adjacent to the CBRS boundary where users are advised to contact the Service for an official determination (http://www.fws.gov/cbra/Determinations.html) as to whether the property or project site is located "in" or "out" of the CBRS.

CBRS Units normally extend seaward out to the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS mapper.

Attachment 16

EGLE Permit Checklist

PERMIT INFORMATION

Michigan.gov/EGLEpermits

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has prepared a list of key questions to help identify what EGLE permits, licenses, or approvals of a permit-like nature may be needed. By contacting the appropriate offices indicated, you will help reduce the possibility that your project or activity will be delayed due to the untimely discovery of additional permitting requirements later in the construction process. While this list covers the existence of permits and approvals required from EGLE, it is not a comprehensive list of all legal responsibilities. A useful way to learn whether other requirements will apply is to go through the Self-Environmental Assessment in the Michigan Guide to Environmental, Health, and Safety Regulations, online at: Michigan.gov/EHSguide. Please call the Environmental Assistance Center at 800-662-9278 to talk with any of the EGLE programs noted below.

How Do I Know that I Need a Construction Permit?	**Yes** ☐	**No** ☐
1) Will your business involve the installation or construction of any process equipment that has the potential to emit air contaminants (e.g. dry sand blasting, boilers, standby generators)? Air Quality Permit to Install, Air Quality Division (AQD), Permit Section	Y☒	N☐
2) Does the project involve renovating or demolishing all or portions of a building? Notification is required for asbestos removal and required for all demolitions even if the structure never contained asbestos. Asbestos Notification, AQD, Asbestos Program, 517-284-6777	Y☐	N☒
3) Please consult the Permitting at the Land and Water Interface Decision Tree document to evaluate whether your project needs a land and water management permit (i.e., Does the project involve filling, dredging, placement of structures, draining, or use of a wetland?). Land and Water Featured Programs (Water Resources Division - WRD) - Joint Permit Application, 517-284-5567:		
a. Does the project involve construction of a building or septic system in a designated Great Lakes high risk erosion area?	Y☐	N☒
b. Does the project involve dredging, filling, grading, or other alteration of the soil, vegetation, or natural drainage, or placement of permanent structures in a designated environmental area?	Y☐	N☒
c. Does the project propose any development, construction, silvicultural activities or contour alterations within a designated critical dune area?	Y☐	N☒
d. Does the project involve construction of a dam, weir or other structure to impound flow?	Y☐	N☒
4) Does the project involve an earth change activity (including land balancing, demolition involving soil movement, and construction) or does the project involve construction which will disturb one or more acres that come into contact with storm water that enters a storm sewer, drain, lake, stream, or other surface water? Soil Erosion and Construction Storm Water, 269-567-3515, or Local Agency	Y☒	N☐
5) Does the project involve the construction or alteration of a water supply system or sewage disposal system for a manufactured housing project? Drinking Water & Environmental Health Division (DWEHD), 517-284-6524	Y☐	N☒
6) Does the project involve construction or alteration of any sewage collection or treatment facility? WRD, Part 41 Construction Permit Program (staff), 906-228-4527, or EGLE District Office	Y☐	N☒
7) Public Swimming Pool Construction (Spas/Hot Tubs) Permits: Will your business involve the construction or modification of a public swimming pool, spa or hot tub? Public Swimming Pool Program, 517-284-6541, or EGLE District Office	Y☐	N☒
8) Does the project involve the construction or modification of a campground? DWEHD, Campgrounds program, 517-284-6529	Y☐	N☒

9) Does the project involve construction of a facility that landfills, transfers, or processes of any type of solid non-hazardous waste on-site, or places industrial residuals/sludge into or onto the ground? Materials Management Division (MMD), Solid Waste, 517-284-6588, or EGLE District Office	Y☐	N☒
10) Does the project involve the construction of an on-site treatment, storage, or disposal facility for hazardous waste? MMD, Hazardous Waste Section, Treatment, Storage and Disposal, 517-284-6562	Y☐	N☒
Who Regulates My Drinking (Potable) Water Supply?		
11) I am buying water from my community water supply (i.e. city of Detroit or Grand Rapids), Contact Local Water Utility , 517-284-6512	Y☒	N☐
12) I have a Non-Community Water Supply (Type II) Guide, Contact (District or County) Local Health Department, 517-485-0660	Y☐	N☒
13) I am a community water supply (Type I) Community Water Supply, DWEHD District Office Community Water Supply Program, 517-284-6512	Y☐	N☒
14) Do you desire to develop a withdrawal of over 2,000,000 gallons of water per day from any source including groundwater, inland surface water, or the Great Lakes and their connecting waterways? WRD, Great Lakes Shorelands Unit, Water Use Program, 517-284-5563	Y☐	N☒
Who Regulates My Wastewater Discharge System?		
15) NPDES: Does the project involve the discharge of any type of wastewater to a storm sewer, drain, lake, stream, or other surface water? WRD, EGLE District Office, or National Pollutant Discharge Elimination (NPDES) Permit Program, 517-284-5568	Y☐	N☒
16) Does the facility have industrial activity that comes into contact with storm water that enters a storm sewer, drain, lake, stream, or other surface water? WRD, Permits Section, or EGLE District Office, 517-284-5588	Y☒	N☐
17) Does the project involve the discharge of wastewaters into or onto the ground (e.g. subsurface disposal or irrigation)? WRD, Groundwater Permits Program, 517-290-2570	Y☐	N☒
18) Does the project involve the drilling or deepening of wells for waste disposal? Oil, Gas and Minerals Division (OGMD), 517-284-6841	Y☐	N☒
What Operational Permits Are Relevant to My Operation and Air Emissions?		
19) Renewable Operating Permit: Does your facility have the potential to emit any of the following: 100 tons per year or more of any criteria pollutant; 10 tons per year or more of any hazardous air pollutant; or 25 tons per year or more of any combination of hazardous air pollutants? AQD, Permit Section, 517-284-6634	Y☒	N☐
20) Does your facility have an electric generating unit that sells electricity to the grid and burns a fossil fuel? AQD, Acid Rain Permit Program, 517-780-7843	Y☐	N☒
What Operational Permits Are Relevant to My Waste Management?		
21) Does the project involve landfilling, transferring, or processing of any type of solid non-hazardous waste on-site, or placing industrial residuals/sludge into or onto the ground? MMD, 517-284-6588 or EGLE District Office	Y☐	N☒
22) Does the project involve the on-site treatment, storage, or disposal of hazardous waste? MMD, Hazardous and Liquid Waste, 517-284-6562	Y☐	N☒
23) Does the project require a site identification number (EPA number) for regulated waste activities (used oil, liquid waste, hazardous waste, universal waste, PCBs)? (Hazardous Waste Program Forms & License Applications) MMD, EGLE District Office, 517-284-6562	Y☒	N☐

24) Does the project involve the receipt, possession, manufacture, use, storage, transport, transfer, release, or disposal of radioactive material in any form? MMD, Radioactive Material and Standards Unit, 517-284-6581	Y☒	N☐
25) Does the project involve decommissioning or decontamination of tanks, piping, and/or appurtenances that may have radioactive levels above background? MMD Radioactive Material and Standards Unit, 517-284-6581	Y☐	N☒
26) Does the project involve the generation of medical waste or a facility that treats medical waste prior to its disposal? MMD, Medical Waste Regulatory Program, 517-284-6594	Y☐	N☒
What Sector-Specific Permits May be Relevant to My Business?		
Transporters		
27) Does the project involve the *transport* of some other facility's non-hazardous liquid waste? MMD, Transporter Program, 517-284-6562	Y☐	N☒
28) Does the project involve the *transport* of hazardous waste? MMD, Transporter Program, 517-284-6562	Y☐	N☒
29) Do you engage in the business of transporting bulk water for drinking or household purposes (except for your own household use)? DWEHD, Water Hauler Information, 517-284-6527	Y☐	N☒
30) Does the project involve *transport* of septic tank, cesspool, or dry well contents or the discharge of septage or sewage sludge into or onto the ground? DWEHD, Septage Program, 517-284-6535	Y☐	N☒
31) Do you store, haul, shred or process *scrap tires*? MMD, Scrap Tire Program, 517-284-6586	Y☐	N☒
Sectors		
32) Is the project a *dry cleaning* establishment utilizing perchloroethylene or a flammable solvent in the cleaning process? AQD, Dry Cleaning Program, 517-284-6780	Y☐	N☒
33) Does your *laboratory* test potable water as required for compliance and monitoring purposes of the Safe Drinking Water Act? Laboratory Services Certifications, 517-284-5424	Y☐	N☒
34) Does the project involve the operation of a *public swimming pool*? DWEHD, Public Swimming Pools Program, 517-284-6529	Y☐	N☒
35) Does the project involve the operation of a *campground*? DWEHD, Campgrounds, 517-284-6529	Y☐	N☒
What Permits Do I Need to Add Chemicals to Lakes and Streams?		
36) Are you applying a chemical treatment for the purpose of aquatic nuisance control (pesticide/herbicide etc.) in a water body (i.e. lake, pond or river)? WRD, Aquatic Nuisance Control , 517-284-5593	Y☐	N☒
37) Are you applying materials to a water body for a water resource management project (i.e. mosquito control treatments, dye testing, or fish reclamation projects)? WRD, Surface Water Assessment Section, 517-331-5228	Y☐	N☒

Why would I be subject to Oil, Gas and Mineral Permitting?		
38) Do you want to operate a central production facility (applies to oil and gas production facilities where products of diverse ownership are commingled)? OGMD, Petroleum Geology and Production Unit, 517-284-6826	Y☐	N☒
39) Does the project involve the removal of sand from a sand dune area within two (2) miles of a Great Lakes shoreline? OGMD, Minerals and Mapping Unit, Sand Dune Mining Program, 517-284-6826	Y☐	N☒
40) Does the project involve decommissioning or decontamination of tanks, piping, and/or appurtenances that may have radioactive levels above background? MMD, Radioactive Protection Programs, 517-284-6581	Y☐	N☒
Petroleum & Mining, OGMD, 517-284-6826		
41) Does the project involve the diversion and control of water for the mining and processing of low-grade iron ore?	Y☐	N☒
42) Does the project involve the surface or open-pit mining of metallic mineral deposits?	Y☐	N☒
43) Does the project involve the mining of nonferrous mineral deposits at the surface or in underground mines?	Y☐	N☒
44) Does the project involve mining coal?	Y☐	N☒
45) Does the project involve changing the status or plugging of a mineral well?	Y☐	N☒
46) Does the project involve the drilling or deepening of wells for brine production, solution mining, storage, or as test wells?	Y☐	N☒
Permits & Bonding, OGMD, 517-284-6841		
47) Do you want to change the status of an oil or gas well (i.e. plug the well)?	Y☐	N☒
48) Does the project involve drilling of oil, gas, brine disposal, secondary recovery, or hydrocarbon storage wells?	Y☐	N☒

If you need further assistance, please fill out the information below and email the form to EGLE-assist@Michigan.gov.

Requester Information

First and Last Name:

Requester Phone:

E-mail: